

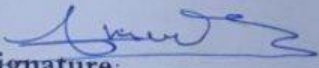
**Ministry of Higher Education and Scientific Research  
Scientific Supervision and Scientific Evaluation Apparatus  
Directorate of Quality Assurance and Academic Accreditation  
Accreditation Department**



**Description of the academic program and  
course of study for the  
Department of Food Science  
Faculty of  
Agriculture / Maysan University  
For the academic year 2023/2024**

## Academic Program Description Form

University Name: Misan University  
Faculty/Institute: College of Agriculture  
Scientific Department: Food Science  
Academic or Professional Program Name: .....  
Final Certificate Name: .....  
Academic System: .....  
Description Preparation Date: .....  
File Completion Date: .....

Signature: 

Head of Department Name:  
Anwaar Yasser Husein

Date: .....

Signature: 

Scientific Associate Name:  
Ahmed malik Sumeah

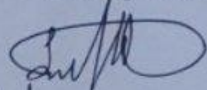
Date: .....

The file is checked by:

Department of Quality Assurance and University Performance

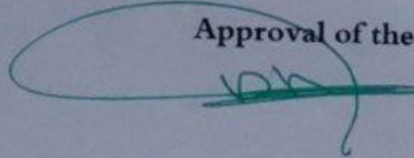
Director of the Quality Assurance and University Performance Department:

Date: .....

Signature: 

Salah Abdulsasan Ghailan

Approval of the Dean



## **Introduction:**

The educational program is a coordinated and organized package of courses that include organized procedures in the form of academic vocabulary, the main purpose of which is to build and refine the skills of graduates, and make them qualified to meet the requirements of the labor market. The academic program description provides a brief summary of the main specifications of the academic program followed to gain solid scientific skills that are compatible with the labor market, and the importance of this description is evident because it represents the cornerstone of obtaining program accreditation, and faculty members participate in writing it under the supervision of scientific committees in scientific departments. This guide includes in its first edition a description of the academic program followed in the Department of Food Science for the academic year 2023/2024. The academic program description also provides students with a comprehensive view of what they can expect from their academic career, from the prerequisites for entry to the career opportunities available after graduation. Courses are addressed as essential parts within this framework, where each course is defined by its objectives, content, and methods of evaluation, helping students understand what will be taught and how to achieve academic success. , and In this regard, we can only emphasize the importance of writing a description of academic programs and courses to ensure the proper functioning of the educational process.

### **Program Vision**

Developing the skills of undergraduate students to assume active roles in the food industry and food processing laboratories, detecting food spoilage and corruption, food security and food safety in food stores, marketing, standardization and quality control devices, which in turn enhances the labor market and develops effective solutions to food problems in line with the existing challenges in local and global food security, developing scientific research that contributes to the progress of society, and strengthening cooperation and partnerships with academic and professional institutions locally and internationally. It is hoped that the Department of Food Science will be a center for teaching, learning, research and consulting in the field of food science and technology, food quality and human nutrition in the future.

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### **program Mission**

Developing and transferring knowledge and expertise in the fields of food science and processing, providing sources of knowledge and research and training capabilities to develop the department's graduates by preparing qualified cadres for the labor market with bachelor's degrees, encouraging scientific research, innovation and solving problems facing the food industry sector. In addition to the advisory role to serve and develop work in the field of food science and processing and community service.

## Program Objectives

- ✓ Qualifying specialists in the fields of food science and human nutrition with knowledge and skills appropriate to the labor market, by providing high-quality academic programs at the university level
- ✓ Developing knowledge in the fields of food science, human nutrition and therapeutic nutrition through conducting creative applied research
- ✓ Holding scientific workshops and seminars on healthy food and nutrition in cooperation with institutions interested in health and food locally and globally.
- ✓ Spreading knowledge in the fields of food science and human nutrition and communicating with the community to educate for healthy food programs
- ✓ Educating the community about the role of nutrition in supporting health and preventing diseases and the importance of eliminating wrong food methods
- ✓ Community service and providing technical advice to food manufacturers and nutrition supervisors
- ✓ Developing continuous training programs for graduates to keep pace with the latest scientific developments in the field of specialization

First semester

## MODULE DESCRIPTION FORM

| Module Information      |                  |                                            |
|-------------------------|------------------|--------------------------------------------|
| معلومات المادة الدراسية |                  |                                            |
| Module Title            | English language | Module Delivery                            |
| Module Type             | Basic            | <input checked="" type="checkbox"/> Theory |

|                                    |                             |              |                                                                                                                                                                                                 |                                                                        |       |
|------------------------------------|-----------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------|
| Module Code                        | UOM 120                     |              | <input type="checkbox"/> Lecture<br><br><input type="checkbox"/> Lab<br><br><input type="checkbox"/> Tutorial<br><br><input type="checkbox"/> Practical<br><br><input type="checkbox"/> Seminar |                                                                        |       |
| ECTS Credits                       | 2                           |              |                                                                                                                                                                                                 |                                                                        |       |
| SWL (hr/sem)                       | 50                          |              |                                                                                                                                                                                                 |                                                                        |       |
| Module Level                       |                             | UC           | Semester of Delivery                                                                                                                                                                            |                                                                        | 1     |
| Administering Department           |                             | FOOD SCEINCE | College                                                                                                                                                                                         | Agriculture                                                            |       |
| Module Leader                      | Name                        |              | e-mail                                                                                                                                                                                          | E-mail                                                                 |       |
| Module Leader’s Acad. Title        |                             | . Prof.      | Module Leader’s Qualification                                                                                                                                                                   |                                                                        | Ph.D. |
| Module Tutor                       | Dr. Azaldeen kazalAlzubaidi |              | e-mail                                                                                                                                                                                          | <a href="mailto:ez_aldeen@uomisan.edu.iq">ez_aldeen@uomisan.edu.iq</a> |       |
| Peer Reviewer Name                 |                             | Name         |                                                                                                                                                                                                 |                                                                        |       |
| Scientific Committee Approval Date |                             | 01/10/2024   | Version Number                                                                                                                                                                                  |                                                                        | 1.0   |

### Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

|                      |      |          |  |
|----------------------|------|----------|--|
| Prerequisite module  | None | Semester |  |
| Co-requisites module | None | Semester |  |

### Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية | <p>1-The aim of this course is to provide English learners with integrated language skills such as reading, listening and writing resulting in a level of basic language knowledge.</p> <p>2-This course will focus on grammar rules, basic word knowledge and usage, reading comprehension, reading out of the lesson, and Paragraph writing.</p> <p>3- A student may be able to listen to native speakers and speak English Language.</p> <p>4- A student may be able to write and have creativity in his writing.</p> |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Learning Outcomes</b><br><br>مخرجات التعلم للمادة الدراسية | 1- Uses expressions of Quantity in elementary level of English.<br>2- Constructs sentences in Present Perfect Tense, Simple Future Tense and Going to Future Tense both in an oral and written task.<br>3- Defines basic Modals and employ them in elementary level of communication and writing skills.<br>4- Translates sentences in elementary level from English to another language.<br>5- Interprets the texts written in elementary level of English.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Indicative Contents</b><br><br>المحتويات الإرشادية                | <p>Language is a rule-governed behavior. It is defined as the comprehension and/or use of a spoken (i.e., listening and speaking), written (i.e., reading and writing), and/or other communication symbol system (e.g., American Sign Language). Spoken and written language are composed of receptive (i.e., listening and reading) and expressive (i.e., speaking and writing) components. Spoken language, written language, and their associated components (i.e., receptive and expressive) are each a synergistic system comprised of individual language domains (i.e., phonology, morphology, syntax, semantics, pragmatics) that form a dynamic integrative whole</p> <p>Phonology study of the speech sound (i.e., phoneme) system of a language, including the rules for combining and using phonemes.</p> <p>Morphology study of the rules that govern how morphemes, the minimal meaningful units of language, are used in a language.</p> <p>Syntax the rules that pertain to the ways in which words can be combined to form sentences in a language.</p> <p>Semantics the meaning of words and combinations of words in a language.</p> |

| <b>Learning and Teaching Strategies</b><br>استراتيجيات التعلم والتعليم |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b>                                                      | <p>Enable students to recognize:</p> <ul style="list-style-type: none"> <li>- 1 Enabling students to communicate effectively and appropriately in real-life situations.</li> <li>- 2 Enabling students to use the English language effectively for the purpose of study across the curriculum.</li> <li>- 3 Enabling students to develop and integrate the use of the four language skills: reading, listening, speaking and writing.</li> <li>- 4 Enabling students to develop interest in and learn about literature.</li> <li>- 5 Enable students to review and reinforce the structure that has already been learned</li> </ul> |

| <b>Student Workload (SWL)</b> |
|-------------------------------|
|-------------------------------|

| الحمل الدراسي للطلاب محسوب لـ ١٥ اسبوعا                                        |    |                                                                           |   |
|--------------------------------------------------------------------------------|----|---------------------------------------------------------------------------|---|
| <b>Structured SWL (h/sem)</b><br>الحمل الدراسي المنتظم للطلاب خلال الفصل       | 32 | <b>Structured SWL (h/w)</b><br>الحمل الدراسي المنتظم للطلاب أسبوعيا       | 2 |
| <b>Unstructured SWL (h/sem)</b><br>الحمل الدراسي غير المنتظم للطلاب خلال الفصل | 18 | <b>Unstructured SWL (h/w)</b><br>الحمل الدراسي غير المنتظم للطلاب أسبوعيا | 2 |
| <b>Total SWL (h/sem)</b><br>الحمل الدراسي الكلي للطلاب خلال الفصل              | 50 |                                                                           |   |

| Module Evaluation     |                 |             |                  |            |                           |
|-----------------------|-----------------|-------------|------------------|------------|---------------------------|
| تقييم المادة الدراسية |                 |             |                  |            |                           |
|                       |                 | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| Formative assessment  | Quizzes         | 2           | 10% (10)         | 5 and 10   | LO #1, #2 and #10, #11    |
|                       | Assignments     | 2           | 10% (10)         | 2 and 12   | LO #3, #4 and #6, #7      |
|                       | Projects / Lab. | 1           | 10% (10)         | Continuous | All                       |
|                       | Report          | 1           | 10% (10)         | 13         | LO #5, #8 and #10         |
| Summative assessment  | Midterm Exam    | 2hr         | 10% (10)         | 7          | LO #1 - #7                |
|                       | Final Exam      | 3hr         | 50% (50)         | 16         | All                       |
| Total assessment      |                 |             | 100% (100 Marks) |            |                           |

| Delivery Plan (Weekly Syllabus) |                  |
|---------------------------------|------------------|
| المنهاج الاسبوعي النظري         |                  |
|                                 | Material Covered |
| Week 1                          | Present simple   |

|         |                                       |
|---------|---------------------------------------|
| Week 2  | Past simple                           |
| Week 3  | Reading                               |
| Week 4  | Future simple                         |
| Week 5  | Listening and answering the questions |
| Week 6  | Quiz                                  |
| Week 7  | Opposites and synonyms                |
| Week 8  | Writing paragraph                     |
| Week 9  | Reading Stories                       |
| Week 10 | Quiz                                  |
| Week 11 | Quantity                              |
| Week 12 | Writing                               |
| Week 13 | Similarities                          |
| Week 14 | Listening and Writing vocabularies    |
| Week 15 | EXAM                                  |

| Learning and Teaching Resources |                                                                                                                                                                |                           |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| مصادر التعلم والتدريس           |                                                                                                                                                                |                           |
|                                 | Text                                                                                                                                                           | Available in the Library? |
| Required Texts                  | Yule, G. (2015). Oxford practice grammar advanced. Oxford University Press.<br><br>Alexander, L. G. (2019). Longman English grammar practice. Addison Wesley.- | Yes                       |
| Recommended Texts               | Various university research and dissertations in the English language related to animal productio                                                              |                           |
| Websites                        | <a href="https://agendaweb.org/listening/dictations.html">https://agendaweb.org/listening/dictations.html</a>                                                  |                           |



## Grading Scheme

### مخطط الدرجات

| Group                              | Grade                   | التقدير             | Marks %  | Definition                            |
|------------------------------------|-------------------------|---------------------|----------|---------------------------------------|
| <b>Success Group</b><br>(50 - 100) | <b>A - Excellent</b>    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                    | <b>B - Very Good</b>    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                    | <b>C - Good</b>         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                    | <b>D - Satisfactory</b> | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                    | <b>E - Sufficient</b>   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| <b>Fail Group</b><br>(0 – 49)      | <b>FX – Fail</b>        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                    | <b>F – Fail</b>         | راسب                | (0-44)   | Considerable amount of work required  |
|                                    |                         |                     |          |                                       |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

## MODULE DESCRIPTION FORM

| Module Information |                                   |                                                                                    |
|--------------------|-----------------------------------|------------------------------------------------------------------------------------|
| Module Title       | <b>Democracy and Human Rights</b> | Module Delivery                                                                    |
| Module Type        | Basic                             | <input checked="" type="checkbox"/> Theory<br><br><input type="checkbox"/> Lecture |
| Module Code        | <b>UOB104</b>                     |                                                                                    |
| ECTS Credits       | 2                                 |                                                                                    |

|                                    |                        |                               |                                                                                                                                             |       |
|------------------------------------|------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------|
| SWL (hr/sem)                       | 50                     |                               | <input type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |       |
| Module Level                       | UGx11 1                | Semester of Delivery          |                                                                                                                                             | 1     |
| Administering Department           | Food sciences          | College                       | Agriculture                                                                                                                                 |       |
| Module Leader                      |                        | e-mail                        |                                                                                                                                             |       |
| Module Leader's Acad. Title        | Assistant teacher      | Module Leader's Qualification |                                                                                                                                             | M.SC. |
| Module Tutor                       | Hussein Zughair Jassim | e-mail                        | <a href="mailto:hussein.zghair@uomisan.edu.iq">hussein.zghair@uomisan.edu.iq</a>                                                            |       |
| Peer Reviewer Name                 |                        | e-mail                        |                                                                                                                                             |       |
| Scientific Committee Approval Date |                        | Version Number                |                                                                                                                                             |       |

| Relation with other Modules |      |          |  |
|-----------------------------|------|----------|--|
| Prerequisite module         | None | Semester |  |
| Co-requisites module        | None | Semester |  |

| Module Aims, Learning Outcomes and Indicative Contents           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية                | Teaching students the basics of human rights and their laws.1<br>. Identify the most important rights and the most important problems and challenges they face 2<br>. Identify and understand concepts related to our freedoms, including individual rights and personal freedoms 3<br>Developing the ability to think critically about issues related to individual freedoms and rights 4                                                                                                                                                                          |
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية | . The student should know the concept of rights, their laws and applications-1<br>he student should know how to participate in spreading rights and their applications through real, practical work 2<br>The ability to use rights as a means for peaceful coexistence among the components of society -3<br>The ability to share these rights with others. -4<br>The ability to analyze and define the concept of freedom and distinguish between different types of freedoms 5<br>Interacting with freedom issues at the national and international levels and -6 |

|                                                   |                                                                                                                                                          |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | influencing the formation of public opinion.                                                                                                             |
| <b>Indicative Contents</b><br>المحتويات الإرشادية | Fundamental and non-fundamental rights and freedoms<br>Civil rights and liberties<br>political rights<br>Human Rights and International Humanitarian Law |

| Learning and Teaching Strategies |                                                                                                                      |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b>                | Participate in classroom preparation. \<br>Question and answer method in the classroom -2<br>Duties -3<br>Reports -4 |

| Student Workload (SWL)   |    |                        |   |
|--------------------------|----|------------------------|---|
| Structured SWL (h/sem)   | 32 | Structured SWL (h/w)   | ٣ |
| Unstructured SWL (h/sem) | ١8 | Unstructured SWL (h/w) | 1 |
| Total SWL (h/sem)        | ٥٠ |                        |   |

| Module Evaluation    |                 |             |                  |            |                           |
|----------------------|-----------------|-------------|------------------|------------|---------------------------|
| As                   |                 | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| Formative assessment | Quizzes         | 2           | 10% (10)         | 5 and 10   | LO #1, #2 and #10, #11    |
|                      | Assignments     | 2           | 10% (10)         | 2 and 12   | LO #3, #4 and #6, #7      |
|                      | Projects / Lab. | 1           | 10% (10)         | Continuous | All                       |
|                      | Report          | 1           | 10% (10)         | 13         | LO #5, #8 and #10         |
| Summative assessment | Midterm Exam    | 2hr         | 10% (10)         | 7          | LO #1 - #7                |
|                      | Final Exam      | 3hr         | 50% (50)         | 16         | All                       |
| Total assessment     |                 |             | 100% (100 Marks) |            |                           |

| Delivery Plan (Weekly Syllabus) |
|---------------------------------|
|---------------------------------|

| Week    | Material Covered                                                                                                                         |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| Week 1  | Definition of rights                                                                                                                     |
| Week 2  | Types of human rights                                                                                                                    |
| Week 3  | ndamental and non–fundamental rights                                                                                                     |
| Week 4  | Civil and political rights                                                                                                               |
| Week 5  | Economic, social and cultural rights, individual rights and collective rights                                                            |
| Week 6  | New Rights Sect Human Rights and International Humanitarian Law The Relationship Between Human Rights and International Humanitarian Law |
| Week 7  | Exam                                                                                                                                     |
| Week 8  | What is the concept of freedoms? The term freedom and public freedoms                                                                    |
| Week 9  | The evolution of the concept of public freedoms                                                                                          |
| Week 10 | Forms and types of public freedoms                                                                                                       |
| Week 11 | The legal system of public freedoms                                                                                                      |
| Week 12 | Regulation of public freedoms by public authorities                                                                                      |
| Week 13 | Guarantees of public freedoms                                                                                                            |
| Week 14 | Freedoms in modern political thought                                                                                                     |
| Week 15 | final exam                                                                                                                               |

| Learning and Teaching Resources |                                                                                                            |                           |
|---------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                                       | Available in the Library? |
| Required Texts                  | Diamond L. & M. F. Plattner, eds., (2009), Democracy. A Reader, Baltimore, Johns Hopkins University Press. | Yes                       |
| Recommended Texts               | مفهوم الحريات العامة وحقوق الانسان، اطارها التاريخي والفكري<br>والفلسفي، وضماناتها الأساسية                |                           |
| Websites                        | <a href="http://ghrorg-learning.blogspot.com">http://ghrorg-learning.blogspot.com</a>                      |                           |

| Grading Scheme                                                                                                                                                                                                                                                                                                                                                                       |                  |                     |          |                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                                | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100)                                                                                                                                                                                                                                                                                                                                                          | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                      | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                      | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                      | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                      | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)                                                                                                                                                                                                                                                                                                                                                               | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                      | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
|                                                                                                                                                                                                                                                                                                                                                                                      |                  |                     |          |                                       |
| <b>Note:</b> Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above. |                  |                     |          |                                       |

## MODULE DESCRIPTION FORM

| Module Information          |                            |             |                                                                                                                                          |                                                                        |  |  |
|-----------------------------|----------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--|--|
| Module Title                | <b>Engineering Drawing</b> |             | Module Delivery                                                                                                                          |                                                                        |  |  |
| Module Type                 | BASIC                      |             | <input checked="" type="checkbox"/> Lab<br><input checked="" type="checkbox"/> Tutorial<br><input checked="" type="checkbox"/> Practical |                                                                        |  |  |
| Module Code                 | <b>ENDR117</b>             |             |                                                                                                                                          |                                                                        |  |  |
| ECTS Credits                | <b>7</b>                   |             |                                                                                                                                          |                                                                        |  |  |
| SWL (hr/sem)                | <b>175</b>                 |             |                                                                                                                                          |                                                                        |  |  |
| Module Level                |                            |             | Semester of Delivery                                                                                                                     | 2                                                                      |  |  |
| Administering Department    |                            |             | College                                                                                                                                  | Agriculture                                                            |  |  |
| Module Leader               |                            |             | e-mail                                                                                                                                   | E-mail                                                                 |  |  |
| Module Leader's Acad. Title |                            | Asis prof . | Module Leader's Qualification                                                                                                            | Msc.                                                                   |  |  |
| Module Tutor                | Ali Abbas Hashim           |             | e-mail                                                                                                                                   | <a href="mailto:ali_abbas@uomisan.edu.iq">ali_abbas@uomisan.edu.iq</a> |  |  |
| Peer Reviewer Name          |                            |             | e-mail                                                                                                                                   | E-mail                                                                 |  |  |

|                                       |            |                |     |
|---------------------------------------|------------|----------------|-----|
|                                       |            |                |     |
| Scientific Committee Approval<br>Date | 01/10/2024 | Version Number | 1.0 |

| Relation with other Modules |      |          |  |
|-----------------------------|------|----------|--|
| Prerequisite module         | None | Semester |  |
| Co-requisites module        | None | Semester |  |

| Module Aims, Learning Outcomes and Indicative Contents           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية                | <ul style="list-style-type: none"> <li>Working in the field of engineering drawing to create engineering plans and drawings</li> <li>Obtaining the skills required for the post-graduation plan (postgraduate studies).</li> <li>Applying for external tests by local/regional/international bodies.</li> <li>Providing students with skills to work in scientific and research laboratories and study engineering drawing</li> </ul>                                                                                                           |
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية | 1- Learn about manual drawing tools and modern methods<br>2- Correct installation of the drawing board and implementation of the information table<br>3- Professional drawing of lines, curves and circles<br>4- Drawing of projections<br>5- Other methods for drawing projections<br>6- Perspective drawing<br>7- Section drawing, shading and drawing hidden parts<br>8- Detailed drawing<br>9- Assembly drawing<br>10- Inking<br>11- Methods of saving drawing boards<br>12- Quick drawing<br>13- Documenting and authenticating the boards |

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | 14- Executive drawing<br>15- Learn about automated drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Indicative Contents</b><br>المحتويات الإرشادية | <p>Indicative content includes the following.</p> <ul style="list-style-type: none"> <li>- Accuracy</li> <li>- Imagination</li> <li>- Clear ideas before starting to draw</li> <li>- Taking into account all dimensions includes the dimensions of the size and the dimensions of the site</li> <li>- Take all the information, date and ratification</li> <li>Determine the shades of the cut, the vehicle and the hidden parts</li> <li>- Setting details to read the painting and all process and assembly fees</li> <li>- Clean and taking into account the conditions for saving paintings</li> </ul> |

| <b>Learning and Teaching Strategies</b> |                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b>                       | <ul style="list-style-type: none"> <li>-To practice in the first place and apply scientific conditions in drawing parts and mechanical systems</li> <li>- Watch models and models on reality (physics) to help imagine and apply</li> <li>- Evaluating the duties after completing them immediately</li> <li>Classical evaluation and the end of the course</li> </ul> |

| <b>Student Workload (SWL)</b>   |            |                                           |   |
|---------------------------------|------------|-------------------------------------------|---|
| <b>Structured SWL (h/sem)</b>   | 48         | <b>Structured SWL (h/w)</b>               | 3 |
| <b>Unstructured SWL (h/sem)</b> | 127        | <b>Unstructured SWL (h/w)<sup>1</sup></b> | 5 |
| <b>Total SWL (h/sem)</b>        | <b>175</b> |                                           |   |

| Module Evaluation    |                 |             |                  |            |                             |
|----------------------|-----------------|-------------|------------------|------------|-----------------------------|
|                      |                 | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome   |
| Formative assessment | Quizzes         | 5           | 5%(5)            | 5 and 10   | All 3 h Structured          |
|                      | Assignments     | 5           | 5% (5)           | 2 and 15   | All 3 h Structured          |
|                      | Projects / Lab. | 10          | 20% (20)         | Continuous | All hours Structured        |
|                      | Report          | 0           | 0                | 0          |                             |
| Summative assessment | Midterm Exam    | 2hr         | 10% (10)         | 7          | The Structured after 7 week |
|                      | Final Exam      | 3hr         | 50% (50)         | 16         | The Structured all 16 week  |
| Total assessment     |                 |             | 100% (100 Marks) |            |                             |

| Delivery Plan (Weekly Lab. Syllabus) |                                                                                                                                                                          |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | Material Covered                                                                                                                                                         |
| Week 1                               | Introduction to engineering drawing tools                                                                                                                                |
| Week 2                               | Introduction to the types of engineering drawing lines                                                                                                                   |
| Week 3                               | How to plan and install a drawing board                                                                                                                                  |
| Week 4                               | Engineering operations, part one, includes A- Bisecting a straight line and B- Bisecting an angle.                                                                       |
| Week 5                               | Engineering operations, part two, includes: C- Draw a pentagon inside a circle.                                                                                          |
| Week 6                               | Engineering operations, part three, includes: D- Draw a hexagon given the side length and E- Draw a hexagon surrounding a circle                                         |
| Week 7                               | Engineering operations, part four, includes: E- Draw an arc tangent to a straight line                                                                                   |
| Week 8                               | Engineering operations, part Five, includes: F- Draw an arc tangent to the circumference of a circle and a known straight line and Draw a tangent to an interior circle. |



|         |                                                                                     |
|---------|-------------------------------------------------------------------------------------|
| Week 9  | Dimensions of size and dimensions of the site                                       |
| Week 10 | Drawing of the projected (three faces)                                              |
| Week 11 | The drawing of the engineering (six faces)                                          |
| Week 12 | Perspective drawing (model)                                                         |
| Week 13 | Draw the pieces and script                                                          |
| Week 14 | The concept of detailed and assembly                                                |
| Week 15 | Inheritance                                                                         |
| Week 16 | The concept of drawing using the machine and Preparatory week before the final Exam |

| Learning and Teaching Resources |                                                                                                                     |                           |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                                                | Available in the Library? |
| Required Texts                  | الرسم الهندسي لطلبة كليات الزراعة. د. ناطق صبري حسن 9 .                                                             | Yes                       |
| Recommended Texts               | Engineering drawing for engineers and technicians                                                                   | No                        |
| Websites                        | <a href="https://books-library.net/free-1020743869-download">https://books-library.net/free-1020743869-download</a> |                           |

| Grading Scheme              |                  |                     |          |                                       |
|-----------------------------|------------------|---------------------|----------|---------------------------------------|
| Group                       | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100) | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                             | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                             | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                             | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                             | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 - 49)      | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                             | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |

# MODULE DESCRIPTION FORM

| Module Information                 |                    |                               |                                                                                                                                                                                                                               |
|------------------------------------|--------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Title                       | <b>Mathematics</b> |                               | Module Delivery                                                                                                                                                                                                               |
| Module Type                        | Basic              |                               | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |
| Module Code                        | MATH111            |                               |                                                                                                                                                                                                                               |
| ECTS Credits                       | 5                  |                               |                                                                                                                                                                                                                               |
| SWL (hr/sem)                       | 125                |                               |                                                                                                                                                                                                                               |
| Module Level                       | UGx11 1            | Semester of Delivery          | 1                                                                                                                                                                                                                             |
| Administering Department           | قسم علوم الاغذية   | College                       | كلية الزراعة                                                                                                                                                                                                                  |
| Module Leader                      | Name               | e-mail                        | E-mail                                                                                                                                                                                                                        |
| Module Leader's Acad. Title        | ا.م.د.             | Module Leader's Qualification |                                                                                                                                                                                                                               |
| Module Tutor                       | علي عباس هاشم      | e-mail                        | <a href="mailto:ali_abbas@uomisan.edu.iq">ali_abbas@uomisan.edu.iq</a>                                                                                                                                                        |
| Peer Reviewer Name                 | Name               | e-mail                        | E-mail                                                                                                                                                                                                                        |
| Scientific Committee Approval Date | 1/10/2 024         | Version Number                | 1.0                                                                                                                                                                                                                           |

| Relation with other Modules |      |          |  |
|-----------------------------|------|----------|--|
| Prerequisite module         | None | Semester |  |
| Co-requisites module        | None | Semester |  |

| Module Aims, Learning Outcomes and Indicative Contents |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية      | <ul style="list-style-type: none"> <li>Explain the importance of statistics in the field of data collection and identify methods for tabulating and representing data.</li> <li>Develop a scientific understanding of statistical symbols, graphical representation methods, and theories related to statistics and their measures.</li> <li>Identify the most important statistical distributions and probability theory.</li> <li>Identify relationships between two variables, such as correlation and regression measures.</li> </ul> |

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية | ١- Familiarize yourself with the statistical methods for agricultural operations, their organization, presentation, and analysis<br>٢- Familiarize yourself with the measures of concentration and dispersion related to agricultural production<br>٣- The student will acquire the skills to understand the normal distribution curve and the standard curve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Indicative Contents</b><br>المحتويات الإرشادية                | .Introducing students to functions<br>.Introducing students to methods for finding the domain of functions<br>.Introducing students to methods for finding the range of functions<br>.Introducing students to methods for finding the limit of functions<br>.Explaining the properties of the limit and methods for finding it at infinity<br>.Introducing students to graphing functions<br>Introducing students to methods for differentiating functions using the definition and differentiation methods<br>.Explaining to students how to find the equation of the tangent to functions<br>.Explaining the definition of indefinite integral and its properties<br>.Explaining how to calculate definite integral and its properties<br>Explaining and introducing students to the derivative and integration of trigonometric functions and their properties. |

### Learning and Teaching Strategies

|                   |                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b> | The main strategy for delivering this unit is to encourage students to engage in exercises while simultaneously honing and expanding their critical thinking skills. This will be achieved through interactive classes and lessons, solving exercises, and examining simple experiments involving sampling activities and how to describe them statistically and analyze them |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Student Workload (SWL)

|                          |     |                                   |   |
|--------------------------|-----|-----------------------------------|---|
| Structured SWL (h/sem)   | 48  | Structured SWL (h/w) <sup>1</sup> | 1 |
| Unstructured SWL (h/sem) | 77  | Unstructured SWL (h/w)            | 1 |
| Total SWL (h/sem)        | 125 |                                   |   |

| Module Evaluation    |                 |             |                  |             |                            |
|----------------------|-----------------|-------------|------------------|-------------|----------------------------|
| As                   |                 | Time/Number | Weight (Marks)   | Week Due    | Relevant Learning Outcome  |
| Formative assessment | Quizzes         | 3           | 12% (10)         | 3, 5 and 10 | LO #1, #2 , # 3 and #4, #5 |
|                      | Assignments     | 3           | 12% (15)         | 3, 6 and 12 | LO #2, #3 and #4, #5       |
|                      | Projects / Lab. |             |                  |             |                            |
|                      | Report          | 1           | 12% (10)         | 13          | LO #2, #3 and #4           |
| Summative assessment | Midterm Exam    | 2hr         | 14% (15)         | 7           | LO #1 - #7                 |
|                      | Final Exam      | 3hr         | 50% (50)         | 16          | All                        |
| Total assessment     |                 |             | 100% (100 Marks) |             |                            |

| Delivery Plan (Weekly Syllabus) |                                           |
|---------------------------------|-------------------------------------------|
|                                 | Material Covered                          |
| Week 1                          | function                                  |
| Week 2                          | Domain of a Function                      |
| Week 3                          | Range of a Function                       |
| Week 4                          | Trigonometric Function                    |
| Week 5                          | Trigonometric Functions<br>Lecture + Exam |
| Week 6                          | Graphing a Function                       |
| Week 7                          | Derivative of a Function                  |
| Week 8                          | Equation of the Tangent to a Function     |
| Week 9                          | Indefinite Integral                       |
| Week 10                         | Definite Integral                         |

|                |                             |
|----------------|-----------------------------|
| <b>Week 11</b> | Trigometric Functions       |
| <b>Week 12</b> | Logarithmic Functions       |
| <b>Week 13</b> | Exponential Functions       |
| <b>Week 14</b> | Integration by Substitution |
| <b>Week 15</b> | Exam 2                      |

### Delivery Plan (Weekly Lab. Syllabus)

|               | Material Covered |
|---------------|------------------|
| <b>Week 1</b> |                  |
| <b>Week 2</b> |                  |
| <b>Week 3</b> |                  |
| <b>Week 4</b> |                  |
| <b>Week 5</b> |                  |
| <b>Week 6</b> |                  |
| <b>Week 7</b> |                  |

### Learning and Teaching Resources

|                          | Text                                                                                                                                                                                       | Available in the Library? |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Required Texts</b>    | Ayres, Frank and Mendelson, Elliott., (2012), Schaum's Outline of Calculus, 6th Edition. US: McGraw- Hill<br><br>Thomas, Jr., Weir, Hass, (2014), Thomas's Calculus, 13th Edition. Pearson | Yes                       |
| <b>Recommended Texts</b> | Various researches on functions and integrals                                                                                                                                              | No                        |
| <b>Websites</b>          | Mathway   Algebra Problem Solver                                                                                                                                                           |                           |

| Grading Scheme                                                                                                                                                                                                                                                                                                                                                                              |                  |                     |          |                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                                       | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100)                                                                                                                                                                                                                                                                                                                                                                 | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                             | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                             | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)                                                                                                                                                                                                                                                                                                                                                                      | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                             | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
| <p><b>Note:</b> Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p> |                  |                     |          |                                       |

## MODULE DESCRIPTION FORM

| Module Information          |                      |              |                               |                                                                                                                                                                                                                                                     |                                                                                                                                             |  |  |
|-----------------------------|----------------------|--------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Module Title                | Analysis chemistry   |              |                               | Module Delivery                                                                                                                                                                                                                                     |                                                                                                                                             |  |  |
| Module Type                 | B                    |              |                               | <input checked="" type="checkbox"/> Theory<br><input checked="" type="checkbox"/> Lecture<br><input checked="" type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |                                                                                                                                             |  |  |
| Module Code                 | ANCH121              |              |                               |                                                                                                                                                                                                                                                     |                                                                                                                                             |  |  |
|                             | 7                    |              |                               |                                                                                                                                                                                                                                                     |                                                                                                                                             |  |  |
| SWL (hr/sem)                | 78                   |              |                               |                                                                                                                                                                                                                                                     |                                                                                                                                             |  |  |
| Module Level                |                      | UG           | Semester of Delivery          |                                                                                                                                                                                                                                                     | 1                                                                                                                                           |  |  |
| Administering Department    |                      | Food science | College                       | Agriculture                                                                                                                                                                                                                                         |                                                                                                                                             |  |  |
| Module Leader               |                      |              | e-mail                        |                                                                                                                                                                                                                                                     |                                                                                                                                             |  |  |
| Module Leader's Acad. Title |                      | PROF.        | Module Leader's Qualification |                                                                                                                                                                                                                                                     | Ph.D.                                                                                                                                       |  |  |
| Module Tutor                | Dr. Azaldeen kazalAl |              | e-mail                        | e-mail                                                                                                                                                                                                                                              | <a href="mailto:ez_aldeen@uomisan.edu.iq">ez_aldeen@uomisan.edu.iq</a> <a href="mailto:azaldeen@uomisan.edu.iq">azaldeen@uomisan.edu.iq</a> |  |  |

|                                           |                                   |                       |               |  |  |
|-------------------------------------------|-----------------------------------|-----------------------|---------------|--|--|
|                                           | Asaad shame<br>ez_aldeen@uomisan. |                       |               |  |  |
| <b>Peer Reviewer Name</b>                 | <b>Name</b>                       | <b>e-mail</b>         | <b>E-mail</b> |  |  |
| <b>Scientific Committee Approval Date</b> | 01\10\2024                        | <b>Version Number</b> | 1.0           |  |  |

| Relation with other Modules |      |                 |  |
|-----------------------------|------|-----------------|--|
| <b>Prerequisite module</b>  | None | <b>Semester</b> |  |
| <b>Co-requisites module</b> | None | <b>Semester</b> |  |

| Module Aims, Learning Outcomes and Indicative Contents |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية      | <p>The curriculum included a general study of chemistry for some of its branches, including theories, laws of solubility and the solubility product constant, giving some examples of them</p> <p>* Objectives of general chemistry</p> <p>By knowing the objectives of general chemistry, the following can be reached:-</p> <p>Student review of his knowledge of chemistry</p> <p>This information is needed throughout the study period</p> <p>Definition of solubility and solubility product constant.</p> <p>Study of atomic structure and atomic theory.</p> <p>Study of atomic quantum numbers.</p> <p>Knowing the electronic arrangement of atoms, ions and transition elements.</p> <p>Study of the periodic table and its properties.</p> <p>The study of a branch of chemistry that deals with radioactivity.</p> |
| <b>Module Learning Outcomes</b>                        | The graduate of the department is awarded a degree (Bachelor of Science in general chemistry)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| مخرجات التعلم للمادة الدراسية                                | <p>and acquires the following skills:</p> <p>1- The ability to apply knowledge of the general chemistry method and related techniques</p> <p>2- The ability to evaluate and implement experiments.</p> <p>3- The ability to use ready-made programs to accomplish the required cases.</p> <p>4- The ability to work with diverse teams.</p> <p>5- The ability to know and bear responsibility.</p> <p>6- The ability to communicate.</p> <p>7- The ability to use skills.</p> <p>8- The ability to intertwine with other specializations to serve them</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p><b>Indicative Contents</b></p> <p>المحتويات الإرشادية</p> | <p>The guiding content includes the following.</p> <p>General chemistry is a set of concepts in chemistry, to prepare the basic atomic structure and electronic distribution of elements - the periodic table and electronic distribution - special bonds - the covalent contribution group and some of its properties - resonance - partial molecules and electronegativity - the kitchen and reduction and oxidation numbers - covalent participation and welcoming structure - planning cooperative metals (VBT) and marine orbits - the theory of valence layer double electron repulsion (VSEPR) - the theory of orbital triad (MOT) - metal ores and how to conduct them (minerals) - processes and reduction and purification - special ionic contribution to the bonds of metal with non-metals and the explanation of their multiple colors. General chemistry also includes organic chemistry, which is one of the most famous sciences of chemistry. Its studies contain the composition, properties and military reactions specific to the compound, i.e. materials containing the element carbon. They are reactions that contain a part of living organisms or are produced by a living organism, and therefore are called organic.</p> |

| Learning and Teaching Strategies |  |
|----------------------------------|--|
| Strategies                       |  |

| Student Workload (SWL) |    |                      |   |
|------------------------|----|----------------------|---|
| Structured SWL (h/sem) | 78 | Structured SWL (h/w) | 7 |



|                                                                                |            |                                                                           |   |
|--------------------------------------------------------------------------------|------------|---------------------------------------------------------------------------|---|
| الحمل الدراسي المنتظم للطالب خلال الفصل                                        |            | الحمل الدراسي المنتظم للطالب أسبوعيا                                      |   |
| <b>Unstructured SWL (h/sem)</b><br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 97         | <b>Unstructured SWL (h/w)</b><br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 6 |
| <b>Total SWL (h/sem)</b><br>الحمل الدراسي الكلي للطالب خلال الفصل              | <b>175</b> |                                                                           |   |

| Module Evaluation    |                 |             |                  |            |                           |
|----------------------|-----------------|-------------|------------------|------------|---------------------------|
|                      |                 | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| Formative assessment | Quizzes         | 2           | 10% (10)         | 5 and 10   | LO #1, #2 and #10, #11    |
|                      | Assignments     | 2           | 10% (10)         | 2 and 12   | LO #3, #4 and #6, #7      |
|                      | Projects / Lab. | 1           | 10% (10)         | Continuous | All                       |
|                      | Report          | 1           | 10% (10)         | 13         | LO #5, #8 and #10         |
| Summative assessment | Midterm Exam    | 2hr         | 10% (10)         | 7          | LO #1 - #7                |
|                      | Final Exam      | 3hr         | 50% (50)         | 16         | All                       |
| Total assessment     |                 |             | 100% (100 Marks) |            |                           |

| Delivery Plan (Weekly Syllabus) |                                          |
|---------------------------------|------------------------------------------|
|                                 | Material Covered                         |
| Week 1                          | Solubility & Solubility Product Constant |
| Week 2                          | Atomic Structure                         |
| Week 3                          | quantum number                           |
| Week 4                          | Electron Configuration of Atom           |
| Week 5                          | Assignment 1                             |
| Week 6                          | Periodic table                           |

|                |                                                           |
|----------------|-----------------------------------------------------------|
| <b>Week 7</b>  | Mid-term Exam                                             |
| <b>Week 8</b>  | Atomic Structure                                          |
| <b>Week 9</b>  | Electronic configuration of the basic transition elements |
| <b>Week 10</b> | Assignment 1                                              |
| <b>Week 11</b> | Periodic properties of atoms                              |
| <b>Week 12</b> | Nuclear chemistry                                         |
| <b>Week 13</b> | Electronegativity and ionization potential meters         |
| <b>Week 14</b> | Nuclear binding energy                                    |
| <b>Week 15</b> | <b>Preparatory week before the final Exam</b>             |
| <b>Week 16</b> |                                                           |

| <b>Delivery Plan (Weekly Lab. Syllabus)</b><br>المنهاج الاسبوعي للمختبر |                                    |
|-------------------------------------------------------------------------|------------------------------------|
|                                                                         | <b>Material Covered</b>            |
| <b>Week 1</b>                                                           | Lab 1: Analysis of Cations         |
| <b>Week 2</b>                                                           | Lab 2: Analysis of Group 1 Cations |
| <b>Week 3</b>                                                           | Lab 3: Analysis of Group 2 Cations |
| <b>Week 4</b>                                                           | Lab 4: Analysis of Group 3 Cations |
| <b>Week 5</b>                                                           | Lab 5: Analysis of Group 4 Cations |
| <b>Week 6</b>                                                           | Lab 6: Analysis of Group 5 Cations |
| <b>Week 7</b>                                                           | Lab 7: final Exam                  |

| <b>Learning and Teaching Resources</b> |                                       |                                  |
|----------------------------------------|---------------------------------------|----------------------------------|
|                                        | <b>Text</b>                           | <b>Available in the Library?</b> |
| <b>Required Texts</b>                  | [1] Fundamentals of general chemistry | Yes                              |

|                          |                                                             |    |
|--------------------------|-------------------------------------------------------------|----|
|                          | [2] basics of quantum chemistry                             |    |
| <b>Recommended Texts</b> | Pauling, L. (1988). General chemistry. Courier Corporation. | No |
| <b>Websites</b>          |                                                             |    |

| Grading Scheme                                                                                                                                                                                                                                                                                                                                                                              |                         |                     |          |                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                                       | Grade                   | التقدير             | Marks %  | Definition                            |
| <b>Success Group</b><br>(50 - 100)                                                                                                                                                                                                                                                                                                                                                          | <b>A - Excellent</b>    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>B - Very Good</b>    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>C - Good</b>         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>D - Satisfactory</b> | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>E - Sufficient</b>   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| <b>Fail Group</b><br>(0 – 49)                                                                                                                                                                                                                                                                                                                                                               | <b>FX – Fail</b>        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>F – Fail</b>         | راسب                | (0-44)   | Considerable amount of work required  |
|                                                                                                                                                                                                                                                                                                                                                                                             |                         |                     |          |                                       |
| <p><b>Note:</b> Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p> |                         |                     |          |                                       |

## MODULE DESCRIPTION FORM

| Module Information |                          |                                            |
|--------------------|--------------------------|--------------------------------------------|
| Module Title       | <b>Animal Production</b> | Module Delivery                            |
| Module Type        | <b>Basic</b>             | <input checked="" type="checkbox"/> Theory |

|                                    |                                              |              |                               |                                                                                                                                                                              |
|------------------------------------|----------------------------------------------|--------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Code                        | ANPR123                                      |              |                               | <input checked="" type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input checked="" type="checkbox"/> Practical<br>Seminar |
| ECTS Credits                       | 7                                            |              |                               |                                                                                                                                                                              |
| SWL (hr/sem)                       | 175                                          |              |                               |                                                                                                                                                                              |
| Module Level                       |                                              | UC           | Semester of Delivery          | 1                                                                                                                                                                            |
| Administering Department           |                                              | Food science | College                       | College of Agriculture                                                                                                                                                       |
| Module Leader                      |                                              |              | e-mail                        | E-mail:                                                                                                                                                                      |
| Module Leader's Acad. Title        |                                              |              | Module Leader's Qualification | Ph.D.                                                                                                                                                                        |
| Module Tutor                       | Saba Muhammad Jaafar Faleh<br>rasha naji abd |              | e-mail                        | <a href="mailto:Rashanaji@uomisan.edu.iq">Rashanaji@uomisan.edu.iq</a>                                                                                                       |
| Peer Reviewer Name                 |                                              | Name         | e-mail                        | E-mail                                                                                                                                                                       |
| Scientific Committee Approval Date |                                              | 01/10/2024   | Version Number                | 1.0                                                                                                                                                                          |

| Relation with other Modules |  |      |          |
|-----------------------------|--|------|----------|
| Prerequisite module         |  | None | Semester |
| Co-requisites module        |  | None | Semester |

| Module Aims, Learning Outcomes and Indicative Contents           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية                | Enables the student to gain knowledge:<br><ol style="list-style-type: none"> <li>1. The importance of the science of the principles of animal production, which deals in detail with the economic importance of livestock and types of global and local livestock, and their management and care.</li> <li>2. Studying the types and importance of other farm animals such as buffaloes, sheep and goats, and their management and care.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية | <ol style="list-style-type: none"> <li>1. Familiarity with general information about animal production and its economic and nutritional importance.</li> <li>2. Discuss the factors affecting production efficiency and how to improve it.</li> <li>3. Explain and clarify the obstacles facing livestock and ways to improve it.</li> <li>4. Introducing students to livestock, their types, and how to care for them.</li> <li>5. Introducing students to dual-purpose cattle and local and international sheep and goat breeds.</li> <li>6. Defining how to establish and care for a flock of sheep and goats.</li> <li>7. Defining the specifications of global and local buffalo and their different breeds.</li> <li>8. We are introducing students to the importance of poultry projects and meat</li> </ol> |

|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                              | <p>and egg production.</p> <ol style="list-style-type: none"> <li>9. Providing an overview of Farm animals feed materials and the process for preparing balanced nutritional rations.</li> <li>10. Explanation and clarification of health programs for animals, how to prevent diseases and ways to improve the health of animals and increase their productivity.</li> <li>11. A detailed explanation of the importance of raising calves and heifers and providing the necessary needs for their rearing.</li> <li>12. A detailed description of the reproductive system of cows and a statement of its importance in the reproductive process, and how to increase the reproductive efficiency of the animal and increase the birth rate.</li> <li>13. Explain animal breeding and improvement programs and discuss the importance of breeding, selection, and exclusion of weak animals.</li> <li>14. A detailed explanation of the importance of camels and the equine species and how to manage and care for them.</li> </ol> |
| <p><b>Indicative Contents</b></p> <p>المحتويات الإرشادية</p> | <p>Indicative content includes the following.</p> <ol style="list-style-type: none"> <li>1. Disseminating the culture of livestock's nutritional and economic importance as a major source of agricultural wealth and having a major role in the Country's economy.</li> <li>2. Following modern methods and techniques in animal management, milking operations, and large animal slaughterhouses.</li> <li>3. Teaching students the role of successful management (human factor or the breeder himself) of small and large ruminant fields.</li> <li>4. Spreading the culture of benefiting from animal by-products such as manure waste and animal waste, and benefiting from animals in work.</li> <li>5. Identifying the types of farm animals and the most important projects related to their breeding.</li> <li>6. Solving administrative problems in cattle, sheep, and goat breeding fields.</li> </ol>                                                                                                                    |

| Learning and Teaching Strategies |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Strategies</b></p>         | <ol style="list-style-type: none"> <li>1. Enabling students to think and analyze topics related to the intellectual framework of the Principles of Animal Production subject</li> <li>2. Enabling students to think and analyze topics related to animal species and the most important projects related to their breeding.</li> <li>3. Enabling students to think and analyze topics related to identifying administrative problems in animal fields and working to address them.</li> <li>4. Enabling students to think and analyze to identify the role of management (the role of the human factor or the breeder himself) in the success of animal fields of various types.</li> </ol> |

| Student Workload (SWL)   |     |                                     |   |
|--------------------------|-----|-------------------------------------|---|
| Structured SWL (h/sem)   | 48  | Structured SWL (h/w)                | 5 |
| Unstructured SWL (h/sem) | 127 | Unstructured SWL (h/w) <sup>1</sup> | 3 |

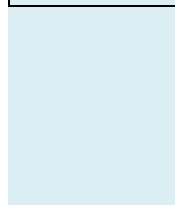
|                          |            |
|--------------------------|------------|
| <b>Total SWL (h/sem)</b> | <b>175</b> |
|--------------------------|------------|

| <b>Module Evaluation</b>    |                        |                    |                       |                 |                                  |
|-----------------------------|------------------------|--------------------|-----------------------|-----------------|----------------------------------|
|                             |                        | <b>Time/Number</b> | <b>Weight (Marks)</b> | <b>Week Due</b> | <b>Relevant Learning Outcome</b> |
| <b>Formative assessment</b> | <b>Quizzes</b>         | 2                  | 10% (10)              | 5 and 10        | LO #1, #2 and #10, #11           |
|                             | <b>Assignments</b>     | 2                  | 10% (10)              | 2 and 12        | LO #3, #4 and #6, #7             |
|                             | <b>Projects / Lab.</b> | 1                  | 10% (10)              | Continuous      | All                              |
|                             | <b>Report</b>          | 1                  | 10% (10)              | 13              | LO #5, #8 and #10                |
| <b>Summative assessment</b> | <b>Midterm Exam</b>    | 2hr                | 10% (10)              | 7               | LO #1 - #7                       |
|                             | <b>Final Exam</b>      | 3hr                | 50% (50)              | 16              | All                              |
| <b>Total assessment</b>     |                        |                    | 100% (100 Marks)      |                 |                                  |

| <b>Delivery Plan (Weekly Syllabus)</b> |                                                                                                   |
|----------------------------------------|---------------------------------------------------------------------------------------------------|
|                                        | <b>Material Covered</b>                                                                           |
| <b>Week 1</b>                          | A general introduction to animal production and its importance.                                   |
| <b>Week 2</b>                          | Factors affecting the production efficiency of farm animals.                                      |
| <b>Week 3</b>                          | Obstacles facing animal production in Iraq and ways to improve them.                              |
| <b>Week 4</b>                          | Cattle classification - global dairy cows - management and care.                                  |
| <b>Week 5</b>                          | Dual-purpose cows - Iraqi cows - International breeds of sheep and goats. First Exam.             |
| <b>Week 6</b>                          | Establishing and managing a flock of sheep and goats.                                             |
| <b>Week 7</b>                          | Buffalo - general characteristics of buffalo - physiological characteristics - breeds of buffalo. |
| <b>Week 8</b>                          | Poultry birds - the economic importance of poultry projects- the production of eggs and meat.     |
| <b>Week 9</b>                          | Nutrition and feed- Preparing animal feed.                                                        |
| <b>Week 10</b>                         | Health care for agricultural animals. Second Exam.                                                |

|                |                                                                  |
|----------------|------------------------------------------------------------------|
| <b>Week 11</b> | The importance of raising calves and heifers in cow fields.      |
| <b>Week 12</b> | The physiology of reproduction and artificial insemination.      |
| <b>Week 13</b> | Genetic improvement in poultry. Third Exam.                      |
| <b>Week 14</b> | Other agricultural animals - camels - their management and care. |
| <b>Week 15</b> | Other Farm Animals - Horses - Fish - Their Management and Care.  |
| <b>Week 16</b> | End of Semester Exam.                                            |

| <b>Delivery Plan (Weekly Lab. Syllabus)</b> |                                                                                                      |
|---------------------------------------------|------------------------------------------------------------------------------------------------------|
|                                             | <b>Material Covered</b>                                                                              |
| <b>Week 1</b>                               | Lab 1: Visit the animal field (cow and sheep fields).                                                |
| <b>Week 2</b>                               | Lab 2: Joint field operations for cows and sheep.                                                    |
| <b>Week 3</b>                               | Lab 3: Milking cows, learning about the lactation system of cattle and the automatic milking device. |
| <b>Week 4</b>                               | Lab 4: Suckling young calves.                                                                        |
| <b>Week 5</b>                               | Lab 5: Learning about animal records.                                                                |
| <b>Week 6</b>                               | Lab 6: Scientific trip to one of the livestock projects.                                             |
| <b>Week 7</b>                               | Lab 7: Methods of collecting semen and artificial insemination.                                      |
| <b>Week 8</b>                               | Lab 8: Feed materials and feed composition.                                                          |
| <b>Week 9</b>                               | Lab 9: Animal housing.                                                                               |
| <b>Week 10</b>                              | Lab 10: Parasite control and treatment.                                                              |



| <b>Learning and Teaching Resources</b> |             |                                  |
|----------------------------------------|-------------|----------------------------------|
|                                        | <b>Text</b> | <b>Available in the Library?</b> |

|                          |                                                                                                                                                         |     |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Required Texts</b>    | Principles of Animal Production, written by Dr. Muzaffar Nafie Al-Sayegh - Dr. Taha Jassem Al-Taha - Dr. Suhaib Saeed Alwan Al-Zubaidi (1987).          | Yes |
| <b>Recommended Texts</b> | Basics of animal production, written by A. Dr.. Ahmed Suleiman Mahmoud and A. Dr.. Mahmoud Riyad Al Mahdi (2013).                                       | No  |
| <b>Websites</b>          | <a href="https://nicehatchincubators.com/the-principles-of-poultry-husbandry/">https://nicehatchincubators.com/the-principles-of-poultry-husbandry/</a> |     |

| Grading Scheme                                                                                                                                                                                                                                                                                                                                                                              |                         |                     |          |                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                                       | Grade                   | التقدير             | Marks %  | Definition                            |
| <b>Success Group</b><br>(50 - 100)                                                                                                                                                                                                                                                                                                                                                          | <b>A</b> - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>B</b> - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>C</b> - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>D</b> - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>E</b> - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| <b>Fail Group</b><br>(0 – 49)                                                                                                                                                                                                                                                                                                                                                               | <b>FX</b> – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>F</b> – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
|                                                                                                                                                                                                                                                                                                                                                                                             |                         |                     |          |                                       |
| <p><b>Note:</b> Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p> |                         |                     |          |                                       |

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second semester

## MODULE DESCRIPTION FORM

| Module Information |                 |                 |
|--------------------|-----------------|-----------------|
| Module Title       | <b>Computer</b> | Module Delivery |



|                                    |                    |                |                                                                                                                                                                                                                                       |                                                                         |
|------------------------------------|--------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Module Type                        | Basic              |                | <input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |                                                                         |
| Module Code                        | UOM 122            |                |                                                                                                                                                                                                                                       |                                                                         |
| ECTS Credits                       | 3                  |                |                                                                                                                                                                                                                                       |                                                                         |
| SWL (hr/sem)                       | 75                 |                |                                                                                                                                                                                                                                       |                                                                         |
| Module Level                       |                    | UOM            | Semester of Delivery                                                                                                                                                                                                                  | 2                                                                       |
| Administering Department           |                    | Food Sciences  | College                                                                                                                                                                                                                               | Agriculture                                                             |
| Module Leader                      |                    |                | e-mail                                                                                                                                                                                                                                | E-mail:                                                                 |
| Module Leader's Acad. Title        |                    | Asst. Lecturer | Module Leader's Qualification                                                                                                                                                                                                         | Follow up and practice scientific computer applications and update them |
| Module Tutor                       | Abbas luaibi obaid |                | e-mail                                                                                                                                                                                                                                | abbas.alrajhe@uomisan.edu.iq                                            |
| Peer Reviewer Name                 |                    | Name           | e-mail                                                                                                                                                                                                                                | E-mail                                                                  |
| Scientific Committee Approval Date |                    | 01/10/2024     | Version Number                                                                                                                                                                                                                        | 1.0                                                                     |

| Relation with other Modules |      |          |  |
|-----------------------------|------|----------|--|
| Prerequisite module         | None | Semester |  |
| Co-requisites module        | None | Semester |  |

| Module Aims, Learning Outcomes and Indicative Contents           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية                | The computer has entered all scientific, applied and academic fields, and it has become necessary to learn how to deal with and manage the computer to reach the goal that the user seeks to achieve by referring to the important basics in the computer and addressing the most important steps that make the work more accurate.                                                                                                                                                                                                                                                                                          |
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية | <ol style="list-style-type: none"> <li>1. Understand the roles of the Start Menu, Taskbar, Desktop, and File Explorer.</li> <li>2. Create, organize, rename, and delete files and folders effectively.</li> <li>3. Adjust personalization options, including desktop backgrounds, themes, and user account configurations.</li> <li>5. Use Windows 10 security features</li> <li>6. Utilize Task Manager, Disk Cleanup, and System Restore to maintain system performance.</li> <li>7. Optimize system performance: Use virtual desktops, manage startup programs, and optimize settings for efficient operation.</li> </ol> |

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <b>Indicative Contents</b><br>المحتويات الإرشادية | <p style="text-align: right;"><b>Indicative content includes the following.</b></p> <p style="text-align: right;"><b>Part A - .</b></p> <ol style="list-style-type: none"> <li><b>1. Computer Fundamentals [SSWL = 6 hrs]</b></li> <li><b>2. Computer Basics [SSWL = 6 hrs]</b></li> <li><b>3. Inside the Computer [SSWL = 6 hrs]</b></li> <li><b>4. Peripheral Devices and Connectivity [SSWL = 6 hrs]</b></li> </ol> <p style="text-align: right;"><b>Part B –</b></p> <ol style="list-style-type: none"> <li><b>5. Operating Systems Software [SSWL = 6 hrs]</b></li> <li><b>6. Windows XP operation [SSWL = 6 hrs]</b></li> <li><b>7. Folder formation, folder delete [SSWL = 6 hrs]</b></li> <li><b>8. Menu lists, Window lists, Icons bar [SSWL = 6 hrs]</b></li> <li><b>9. Control Panel, Task Bar [SSWL = 6 hrs]</b></li> <li><b>10. Start list [SSWL = 6 hrs]</b></li> </ol> <p style="text-align: right;"><b>Part C–</b></p> <ol style="list-style-type: none"> <li><b>11. Keyboard, Windows XP [SSWL = 6 hrs]</b></li> <li><b>12. Windows XP hidden files [SSWL = 6 hrs]</b></li> <li><b>13. Paint program, Burning CD [SSWL = 6 hrs]</b></li> <li><b>14. Fire Wall, Last version of Windows XP [SSWL = 6 hrs]</b></li> <li><b>15. Fire Wall, Last version of Windows XP [SSWL = 6 hrs]</b></li> <li><b>16. Revision and Preparatory Week for Final Exam</b> <ul style="list-style-type: none"> <li>○ Review of key concepts and practical exercises</li> <li>○ Practice exams and Q&amp;A sessions</li> </ul> </li> </ol> <p style="text-align: right;"><b>Total hours = 105 (SSWL - Self-Study and Lecture hours)</b></p> |  |  |
|                                                   | <b>Learning and Teaching Strategies</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |
| <b>Strategies</b>                                 | <p>The learning strategy for this model is focused on encouraging students to become familiar with computer hardware components, operating systems, and essential software. This approach will provide participants with a solid scientific foundation in the field of computing, which they will be able to practically apply in their studies within the agricultural sciences field. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |

| Student Workload (SWL) |    |                      |   |
|------------------------|----|----------------------|---|
| Structured SWL (h/sem) | 48 | Structured SWL (h/w) | 1 |

|                          |    |                        |   |
|--------------------------|----|------------------------|---|
| Unstructured SWL (h/sem) | 27 | Unstructured SWL (h/w) | 1 |
| Total SWL (h/sem)        | 75 |                        |   |

| Module Evaluation    |                 |             |                  |            |                           |
|----------------------|-----------------|-------------|------------------|------------|---------------------------|
|                      |                 | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| Formative assessment | Quizzes         | 2           | 10% (10)         | 5 and 10   | LO #1, #2 and #10, #11    |
|                      | Assignments     | 2           | 10% (10)         | 2 and 12   | LO #3, #4 and #6, #7      |
|                      | Projects / Lab. | 1           | 10% (10)         | Continuous | All                       |
|                      | Report          | 1           | 10% (10)         | 13         | LO #5, #8 and #10         |
| Summative assessment | Midterm Exam    | 2hr         | 10% (10)         | 7          | LO #1 - #7                |
|                      | Final Exam      | 3hr         | 50% (50)         | 16         | All                       |
| Total assessment     |                 |             | 100% (100 Marks) |            |                           |

| Delivery Plan (Weekly Syllabus) |                                                                                                                                                                                                                                                                        |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | Material Covered                                                                                                                                                                                                                                                       |
| Week 1                          | <b>Introduction to Computers</b> <ul style="list-style-type: none"> <li>Definition and purpose of computers</li> <li>History and evolution of computers</li> <li>Types of computers (desktop, laptop, tablet, etc.)</li> </ul>                                         |
| Week 2                          | <b>Computer Hardware Basics</b> <ul style="list-style-type: none"> <li>Understanding computer hardware components</li> <li>Overview of the CPU, motherboard, RAM, and storage devices</li> <li>Introduction to input and output devices</li> </ul>                     |
| Week 3                          | <b>Inside the Computer</b> <ul style="list-style-type: none"> <li>Detailed exploration of the internal components</li> <li>How different parts work together (CPU, RAM, hard drive)</li> <li>Basic troubleshooting and hardware maintenance</li> </ul>                 |
| Week 4                          | <b>Peripheral Devices and Connectivity</b> <ul style="list-style-type: none"> <li>Common peripheral devices (mouse, keyboard, printer, etc.)</li> <li>Introduction to ports and connectors (USB, HDMI, etc.)</li> <li>How to set up and connect peripherals</li> </ul> |

|                |                                                                                                                                                                                                                                                                                           |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Week 5</b>  | <p style="text-align: right;"><b>Operating Systems Software</b></p> <ul style="list-style-type: none"> <li>• Development of Information Network Systems</li> <li>• E-mail</li> <li>• Internet</li> <li>• Computers in Our Daily Life</li> <li>• Insurance, Copyright and Law</li> </ul>   |
| <b>Week 6</b>  | <p style="text-align: right;">- Windows XP operation</p> <ul style="list-style-type: none"> <li>• Working with menus and icons</li> <li>• Main entrances to the icon system</li> <li>• Windows Explorer</li> <li>• Control Panel</li> <li>• Shutdown</li> <li>• Window control</li> </ul> |
| <b>Week 7</b>  | <p style="text-align: right;"><b>Folder formation, folder delete</b></p> <ul style="list-style-type: none"> <li>• How to create or create a folder</li> <li>• Delete folders</li> <li>• Right-click menu for folders and files</li> </ul>                                                 |
| <b>Week 8</b>  | <p style="text-align: right;">Menu lists, Window lists, Icons bar</p> <ul style="list-style-type: none"> <li>• Explanation of menus</li> <li>• Explanation of window components</li> <li>• Button bar or components</li> </ul>                                                            |
| <b>Week 9</b>  | <p style="text-align: right;"><b>Control Panrl, Task Bar</b></p> <ul style="list-style-type: none"> <li>• Control Panel</li> <li>• Taskbar Right-Click Menu</li> </ul>                                                                                                                    |
| <b>Week 10</b> | <p style="text-align: right;"><b>File Management in Windows 10</b></p> <ul style="list-style-type: none"> <li>• Taskbar Properties</li> <li>• Start Menu View</li> </ul>                                                                                                                  |
| <b>Week 11</b> | <p style="text-align: right;"><b>Keyboard, Windows XP</b></p> <ul style="list-style-type: none"> <li>• Definition of extensions and their benefits</li> <li>• Uses of some keyboard keys in Windows operating system XP</li> </ul>                                                        |
| <b>Week 12</b> | <p style="text-align: right;"><b>Windows XP hidden files</b></p> <ul style="list-style-type: none"> <li>• Hidden Programs in Windows XP</li> <li>• WordPad</li> </ul>                                                                                                                     |
| <b>Week 13</b> | <p style="text-align: right;"><b>Paint program, Burning CD</b></p> <ul style="list-style-type: none"> <li>• Drawing application</li> <li>• Methods for running discs in Windows XP without installation</li> <li>• Special programs for burning CD</li> </ul>                             |
| <b>Week 14</b> | <p style="text-align: right;"><b>FAT32 of Windows xp</b></p> <ul style="list-style-type: none"> <li>• What is the recommended file system to use in Windows XP FAT32 OR NTFS</li> <li>• How to improve the appearance of screen lines when using flat panel LCD displays or</li> </ul>    |

|                |                                                                                                                                                                                    |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | laptop computers Dynamic disk                                                                                                                                                      |
| <b>Week 15</b> | <b>Fire Wall, Last version of Windows XP</b> <ul style="list-style-type: none"> <li>Windows XP Startup Options</li> <li>What is Windows Firewall and how to activate it</li> </ul> |
| <b>Week 16</b> | <b>Preparatory week before the final Exam</b>                                                                                                                                      |

| <b>Delivery Plan (Weekly Lab. Syllabus)</b> |                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             | <b>Material Covered</b>                                                                                                                                                                                                                                                                                                                   |
| <b>Week 1</b>                               | <b>Introduction to Windows 10 Interface</b> <ul style="list-style-type: none"> <li>Explore the Start Menu, Taskbar, and Desktop.</li> <li>Practice opening, closing, and organizing windows.</li> <li>Customize the Start Menu and Taskbar.</li> <li>Use the search function to locate apps and settings.</li> </ul>                      |
| <b>Week 2</b>                               | <b>Basic File Management</b> <ul style="list-style-type: none"> <li>Navigate File Explorer and its main components.</li> <li>Create, rename, move, and delete files and folders.</li> <li>Use keyboard shortcuts for file operations (copy, cut, paste, undo).</li> <li>Understand file properties and extensions.</li> </ul>             |
| <b>Week 3</b>                               | <b>Personalization and System Settings</b> <ul style="list-style-type: none"> <li>Change desktop backgrounds, themes, and screen savers.</li> <li>Configure Taskbar and notification area icons.</li> <li>Manage user accounts (create, modify, delete).</li> <li>Adjust basic system settings: display, sound, notifications.</li> </ul> |
| <b>Week 4</b>                               | <b>Networking and Internet Basics</b> <ul style="list-style-type: none"> <li>Connect to Wi-Fi and Ethernet networks.</li> <li>Troubleshoot common network connectivity issues.</li> <li>Use Microsoft Edge for browsing, bookmarking, and managing history.</li> <li>Learn basic internet safety and security tips.</li> </ul>            |
| <b>Week 5</b>                               | <b>Security and Antivirus</b> <ul style="list-style-type: none"> <li>Access and navigate Windows Security settings.</li> <li>Use Windows Defender for scans and threat management.</li> <li>Configure basic Windows Firewall settings.</li> <li>Manage user account control (UAC) for added protection.</li> </ul>                        |
| <b>Week 6</b>                               | <b>Maintenance and Troubleshooting</b> <ul style="list-style-type: none"> <li>Monitor system performance using Task Manager.</li> <li>End unresponsive tasks and manage startup programs.</li> <li>Perform basic system maintenance (Disk Cleanup, System Restore).</li> <li>Explore Control Panel for advanced settings.</li> </ul>      |

|                                 |                                                                                                                                                                                                                                                                                            |                           |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Week 7                          | Advanced Features and Optimization                                                                                                                                                                                                                                                         |                           |
|                                 | <ul style="list-style-type: none"><li>• Use virtual desktops for multitasking.</li><li>• Introduction to Windows PowerShell commands.</li><li>• Customize and use built-in Windows apps (e.g., Calendar, Mail).</li><li>• Tips for optimizing system performance.</li></ul>                |                           |
| Learning and Teaching Resources |                                                                                                                                                                                                                                                                                            |                           |
|                                 | Text                                                                                                                                                                                                                                                                                       | Available in the Library? |
| Required Texts                  | <p>الربيعي، خالد عبد الوهاب. (2020) مدخل إلى علوم الحاسوب. بغداد: دار الثقافة والنشر</p> <p>حسن، علي عبد الله. (2016) مقدمة في الحاسوب ونظم التشغيل. بغداد: دار الجامعات العراقية.</p> <p>□ السامرائي، سعد عبد القادر. (2014) أساسيات الحاسوب ونظام التشغيل. بغداد: دار الكتب والوثائق</p> | Yes                       |
| Recommended Texts               |                                                                                                                                                                                                                                                                                            | No                        |
| Websites                        | <a href="https://www.rwaq.org">https://www.rwaq.org</a><br><a href="http://www.cprogramming.comebooks.com/12082-free-book">http://www.cprogramming.comebooks.com/12082-free-book</a>                                                                                                       |                           |

| Grading Scheme              |                  |                     |          |                                       |
|-----------------------------|------------------|---------------------|----------|---------------------------------------|
| Group                       | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100) | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                             | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                             | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                             | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                             | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 - 49)      | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                             | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
|                             |                  |                     |          |                                       |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the

automatic rounding outlined above.

## MODULE DESCRIPTION FORM

| Module Information                 |                                                                     |                      |                                                                                                                                                                                                                                                     |                              |       |
|------------------------------------|---------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------|
| Module Title                       | Food industry principles                                            |                      | Module Delivery                                                                                                                                                                                                                                     |                              |       |
| Module Type                        | B                                                                   |                      | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><input checked="" type="checkbox"/> Lab<br><input checked="" type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |                              |       |
| Module Code                        | FOIN131                                                             |                      |                                                                                                                                                                                                                                                     |                              |       |
| ECTS Credits                       | 7                                                                   |                      |                                                                                                                                                                                                                                                     |                              |       |
| SWL (hr/sem)                       | 110                                                                 |                      |                                                                                                                                                                                                                                                     |                              |       |
| Module Level                       | UGI                                                                 | Semester of Delivery |                                                                                                                                                                                                                                                     |                              |       |
| Administering Department           | Food Science                                                        | College              | College of Agriculture                                                                                                                                                                                                                              |                              |       |
| Module Leader                      | Dr. Mustafa Adnan Idan + Dr. Anwar Yaser Hussien + Inaam Abdulredha |                      | e-mail                                                                                                                                                                                                                                              | mustafa.adnan@uomisan.edu.iq |       |
| Module Leader's Acad. Title        |                                                                     | Lecturer             | Module Leader's Qualification                                                                                                                                                                                                                       |                              | Ph.D. |
| Module Tutor                       |                                                                     |                      | e-mail                                                                                                                                                                                                                                              |                              |       |
| Peer Reviewer Name                 |                                                                     |                      | e-mail                                                                                                                                                                                                                                              |                              |       |
| Scientific Committee Approval Date |                                                                     | 10/10/2024           | Version Number                                                                                                                                                                                                                                      | 1.0                          |       |

| Relation with other Modules |      |          |  |
|-----------------------------|------|----------|--|
| Prerequisite module         | None | Semester |  |
| Co-requisites module        | None | Semester |  |

| Module Aims, Learning Outcomes and Indicative Contents |                                                                                                                                 |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Module Objectives                                      | <ul style="list-style-type: none"><li>The student's knowledge of the practical foundations of the Principles of Basic</li></ul> |

|                                                           |                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| أهداف المادة الدراسية                                     | Industries subject <ul style="list-style-type: none"> <li>• The extent to which the subject is related to daily life and how to deal with it</li> <li>• Knowledge of manufacturing methods and the most common mistakes in the process of selecting the raw material</li> <li>• Knowledge of how to produce food products within the standard specifications for product quality</li> </ul> |
| Module Learning Outcomes<br>مخرجات التعلم للمادة الدراسية | Students will learn: <ol style="list-style-type: none"> <li>1. Preparing solutions and measuring methods</li> <li>2. Methods of preserving processed food materials</li> <li>3. Preparing the student to work in various food industries</li> </ol>                                                                                                                                         |
| Indicative Contents<br>المحتويات الإرشادية                | It is necessary to know the appropriate conditions for laboratory work related to food manufacturing, as well as to know the healthy methods for manufacturing different foods and methods for preserving them, in addition to knowing the methods for preparing sugar and salt solutions and methods for measuring them.                                                                   |

| Learning and Teaching Strategies |                                                                                                                                                                                                                                                                              |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies                       | The main strategy for delivering this unit is to encourage and prepare students for work in the food market and laboratories while refining and expanding their work skills. This will be achieved through classroom, interactive lessons and simple laboratory experiments. |

| Student Workload (SWL)   |     |                        |   |
|--------------------------|-----|------------------------|---|
| Structured SWL (h/sem)   | 64  | Structured SWL (h/w)   | 4 |
| Unstructured SWL (h/sem) | 61  | Unstructured SWL (h/w) | 4 |
| Total SWL (h/sem)        | 125 |                        |   |

| Module Evaluation |         |             |                |          |                           |
|-------------------|---------|-------------|----------------|----------|---------------------------|
|                   |         | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
| Formative         | Quizzes | 2           | 10% (10)       | 5 and 10 | LO #1, #2 and #7, #6      |



|                      |                 |     |                  |            |                      |
|----------------------|-----------------|-----|------------------|------------|----------------------|
| assessment           | Assignments     | 2   | 10% (10)         | 2 and 12   | LO #3, #4 and #6, #7 |
|                      | Projects / Lab. | 1   | 10% (10)         | Continuous | All                  |
|                      | Report          | 1   | 10% (10)         | 13         | LO #5, #7 and #8     |
| Summative assessment | Midterm Exam    | 2hr | 10% (10)         | 7          | LO #1 - #7           |
|                      | Final Exam      | 3hr | 50% (50)         | 16         | All                  |
| Total assessment     |                 |     | 100% (100 Marks) |            |                      |

### Delivery Plan (Weekly Syllabus)

|         | Material Covered                                 |
|---------|--------------------------------------------------|
| Week 1  | Preparation of solutions and measurement methods |
| Week 2  | Manufacture of cheese and tomato paste           |
| Week 3  | Manufacture of jams and jelly                    |
| Week 4  | Four lectures                                    |
| Week 5  | Manufacture of juices and drinks                 |
| Week 6  | Manufacture of molasses                          |
| Week 7  | Manufacture of pickles                           |
| Week 8  | Quiz 1                                           |
| Week 9  | Three lectures exam                              |
| Week 10 | Manufacture of bread and bread                   |
| Week 11 | Manufacture of pastries                          |
| Week 12 | Manufacture of birquier                          |
| Week 13 | Three lectures exam                              |
| Week 14 | Preservation methods                             |
| Week 15 | Drying, freezing and cooling process             |

|         |        |
|---------|--------|
| Week 16 | Quiz 2 |
|---------|--------|

| Delivery Plan (Weekly Lab. Syllabus) |                                                                    |
|--------------------------------------|--------------------------------------------------------------------|
|                                      | Material Covered                                                   |
| Week 1                               | Methods of measuring the concentration of sugar and salt solutions |
| Week 2                               | Bread industry                                                     |
| Week 3                               | Pickle industry                                                    |
| Week 4                               | Molasses industry                                                  |
| Week 5                               | Jam industry                                                       |
| Week 6                               | Ketchup and tomato paste industry                                  |
| Week 7                               | Preservation methods                                               |

| Learning and Teaching Resources |                                                                                             |                           |
|---------------------------------|---------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                        | Available in the Library? |
| Required Texts                  | [1] Basic principles of industries<br>[2] Food chemistry<br>[3] Manufacturing process chain | yes                       |
| Recommended Texts               |                                                                                             |                           |
| Websites                        |                                                                                             |                           |

| Grading Scheme                  |               |         |          |                                |
|---------------------------------|---------------|---------|----------|--------------------------------|
| Group                           | Grade         | التقدير | Marks %  | Definition                     |
| Success Group<br><br>(50 - 100) | A - Excellent | امتياز  | 90 - 100 | Outstanding Performance        |
|                                 | B - Very Good | جيد جدا | 80 - 89  | Above average with some errors |

|                        |                  |                     |         |                                       |
|------------------------|------------------|---------------------|---------|---------------------------------------|
|                        | C - Good         | جيد                 | 70 - 79 | Sound work with notable errors        |
|                        | D - Satisfactory | متوسط               | 60 - 69 | Fair but with major shortcomings      |
|                        | E - Sufficient   | مقبول               | 50 - 59 | Work meets minimum criteria           |
| Fail Group<br>(0 – 49) | FX – Fail        | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
|                        | F – Fail         | راسب                | (0-44)  | Considerable amount of work required  |
|                        |                  |                     |         |                                       |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

## Course Description Form

| Module Information                 |                             |                               |                                                                                                                                                                                                                                          |                                                                                |
|------------------------------------|-----------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Module Title                       | <b>Organic Chemistry</b>    |                               | Module Delivery                                                                                                                                                                                                                          |                                                                                |
| Module Type                        | <b>Basic</b>                |                               | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><input checked="" type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |                                                                                |
| Module Code                        | <b>ORCH125</b>              |                               |                                                                                                                                                                                                                                          |                                                                                |
| ECTS Credits                       | <b>7</b>                    |                               |                                                                                                                                                                                                                                          |                                                                                |
| SWL (hr/sem)                       | <b>175</b>                  |                               |                                                                                                                                                                                                                                          |                                                                                |
| Module Level                       | 1                           | Semester of Delivery          |                                                                                                                                                                                                                                          |                                                                                |
| Administering Department           | Food science                | College                       | Agriculture college                                                                                                                                                                                                                      |                                                                                |
| Module Leader                      |                             |                               | e-mail                                                                                                                                                                                                                                   |                                                                                |
| Module Leader's Acad. Title        | LECTURER                    | Module Leader's Qualification | PhD                                                                                                                                                                                                                                      |                                                                                |
| Module Tutor                       | Dr. Azaldeen kazalAlzubaidi |                               | e-mail                                                                                                                                                                                                                                   | <a href="mailto:asaad.shameel@uomisan.edu.iq">asaad.shameel@uomisan.edu.iq</a> |
|                                    | Asaad shameel Atiya         |                               |                                                                                                                                                                                                                                          | ez_aldeen@uomisan.edu.iq                                                       |
| Peer Reviewer Name                 | Name                        | e-mail                        | E-mail                                                                                                                                                                                                                                   |                                                                                |
| Scientific Committee Approval Date | 01/10/2024                  | Version Number                | 1.0                                                                                                                                                                                                                                      |                                                                                |

### Relation with other Modules

|                             |      |                 |  |
|-----------------------------|------|-----------------|--|
| <b>Prerequisite module</b>  | None | <b>Semester</b> |  |
| <b>Co-requisites module</b> | None | <b>Semester</b> |  |

### Module Aims, Learning Outcomes and Indicative Contents

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية                | <p>The curriculum included a general study of the organic chemistry of some of its formulations, including aliphatic compounds, their preparation methods, their most important reactions and their naming, as well as aromatic compounds and their derivatives and their nomenclature, halogen organic compounds, oxygen organic compounds, nitrogen compounds, and stereochemistry.</p>                                                                               |
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية | <p>The organic chemistry curriculum is one of a series of important curricula in the Department of Food Sciences as a guide for students about the most important principles of organic chemistry, explaining the properties of chemicals and how to prepare them and reveal their presence to help know the dangers of these materials to humans and their environment and how to avoid these risks and to know the areas in which they can be used this Materials</p> |
| <b>Indicative Contents</b><br>المحتويات الإرشادية                | <p>Indicative content includes the following.</p> <p><b>Keeping abreast of the amazing developments taking place in various fields and sciences, especially organic chemistry, by clarifying the theoretical foundations and scientific and applied courses of the organic chemistry course through a detailed study of the composition, naming and preparation of chemicals and the chemical reactions explained by their mechanics.</b></p>                           |

### Learning and Teaching Strategies

|                   |                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b> | <p>The modern teaching strategy includes achieving learning objectives in general and teaching chemical concepts in particular, and the difficulties that the student faces in understanding and acquiring the concepts of organic chemistry, and treating the difficulties by defining the concepts of organic chemistry and helping students acquire the correct chemical concepts.</p> |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Student Workload (SWL)

|                          |     |                                     |   |
|--------------------------|-----|-------------------------------------|---|
| Structured SWL (h/sem)   | 78  | Structured SWL (h/w)                | 5 |
| Unstructured SWL (h/sem) | 97  | Unstructured SWL (h/w) <sup>1</sup> | 5 |
| Total SWL (h/sem)        | 175 |                                     |   |

| Module Evaluation    |                 |             |                  |            |                           |
|----------------------|-----------------|-------------|------------------|------------|---------------------------|
|                      |                 | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| Formative assessment | Quizzes         | 2           | 10% (10)         | 5 and 10   | LO #1, #2 and #10, #11    |
|                      | Assignments     | 2           | 10% (10)         | 2 and 12   | LO #3, #4 and #6, #7      |
|                      | Projects / Lab. | 1           | 10% (10)         | Continuous | All                       |
|                      | Report          | 1           | 10% (10)         | 13         | LO #5, #8 and #10         |
| Summative assessment | Midterm Exam    | 2hr         | 10% (10)         | 7          | LO #1 - #7                |
|                      | Final Exam      | 3hr         | 50% (50)         | 16         | All                       |
| Total assessment     |                 |             | 100% (100 Marks) |            |                           |

| Delivery Plan (Weekly Syllabus) |                                                                                                                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | Material Covered                                                                                                                                                                   |
| Week 1                          | Introduction to organic chemistry - the most important bonds - hybridization - the probabilities of C-C covalent bond cleavage - the most important reactions in organic chemistry |
| Week 2                          | Alkanes - Definition - Nomenclature - Examples - Sp <sup>3</sup> hybridization - Rotational motion - Preparation - Reactions                                                       |
| Week 3                          | Alkenes - Definition - Nomenclature - Examples - Sp <sup>2</sup> hybridization - Double bond formation - Preparation - Reactions                                                   |
| Week 4                          | Hydrocarbon compounds that contain more than one double bond - examples - dienes - their types - their reactions                                                                   |
| Week 5                          | Alkynes - Definition - Nomenclature - Examples - Sp hybridization - Formation of the triple bond - Preparation - Reactions                                                         |
| Week 6                          | Aliphatic cyclic compounds - definition - most important rings - preparation - most important reactions                                                                            |

|         |                                                                                                                                                                     |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 7  | First theoretical exam                                                                                                                                              |
| Week 8  | Aromatic compounds - definition - nomenclature - electron swing energy calculation - aromatic ring formation - activity and orientation - preparation - reactions   |
| Week 9  | Aliphatic and aromatic halides - definition - nomenclature - examples - preparation - reactions SN1, SN2, E1, E2-                                                   |
| Week 10 | Nucleophilic substitution in aryl halides                                                                                                                           |
| Week 11 | Alcohols, phenols and ethers - definition, nomenclature, preparation, reactions                                                                                     |
| Week 12 | Aldehydes and ketones - definition - examples - nomenclature - carbonyl group - preparation - reactions - nitrogen derivatives of aldehydes and ketones             |
| Week 13 | Second theoretical exam                                                                                                                                             |
| Week 14 | Amines - definition - types - nomenclature - examples - preparation - reactions                                                                                     |
| Week 15 | Carboxylic acids - definition - examples - nomenclature - carboxyl group - preparation - reactions                                                                  |
| Week 16 | We are usually unable to deal with carboxylic acid derivatives (esters, anhydrides, amides, acid halides) due to the time constraints compared to the previous one. |

| Delivery Plan (Weekly Lab. Syllabus) |                                                             |
|--------------------------------------|-------------------------------------------------------------|
|                                      | Material Covered                                            |
| Week 1                               | Lab 1: Physical properties of organic materials             |
| Week 2                               | Lab 2: Boiling Point Measurement                            |
| Week 3                               | Lab 3: Purification of organic matter and recrystallization |
| Week 4                               | Lab 4: solubility of organic compounds                      |
| Week 5                               | Lab 5: Effective totals                                     |
| Week 6                               | Lab 6: Detecting the double bond                            |
| Week 7                               | Lab 7: Stereoisomers                                        |
| Week8                                | Lab8: Detection of alcohols and phenols                     |
| Week9                                | Lab9: NS                                                    |

|               |                                                                               |
|---------------|-------------------------------------------------------------------------------|
| <b>Week10</b> | <b>Lab10:</b> Detecting aldehydes and ketones and distinguishing between them |
| <b>Week11</b> | <b>Lab11:</b> Aspirin preparation                                             |
| <b>Week12</b> | <b>Lab12:</b> Methane                                                         |
| <b>Week13</b> | <b>Lab13:</b> Physical properties of organic materials                        |

| Learning and Teaching Resources |                                                                                                                                           |                           |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                                                                      | Available in the Library? |
| <b>Required Texts</b>           | <b>Osman, Ibrahim Mohamed (2005). Organic Chemistry: Concepts and Applications. Dar Al-Amal for Publishing and Distribution</b>           | NO                        |
| <b>Recommended Texts</b>        | <b>Mazahreh, Ayman Mokhtar (2017). Basics of organic chemistry and its applications. Curriculum House for Publishing and Distribution</b> | No                        |
| <b>Websites</b>                 | Scientific Researcher and Scientific Journals                                                                                             |                           |

| Grading Scheme                            |                         |                     |          |                                       |
|-------------------------------------------|-------------------------|---------------------|----------|---------------------------------------|
| Group                                     | Grade                   | التقدير             | Marks %  | Definition                            |
| <b>Success Group</b><br><b>(50 - 100)</b> | <b>A - Excellent</b>    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                           | <b>B - Very Good</b>    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                           | <b>C – Good</b>         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                           | <b>D - Satisfactory</b> | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                           | <b>E - Sufficient</b>   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| <b>Fail Group</b><br><b>(0 – 49)</b>      | <b>FX – Fail</b>        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                           | <b>F – Fail</b>         | راسب                | (0-44)   | Considerable amount of work required  |
|                                           |                         |                     |          |                                       |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the

automatic rounding outlined above.

#### MODULE DESCRIPTION FORM

| Module Information                 |                   |                      |                                                                                                                                                                                                                               |                                                                              |      |
|------------------------------------|-------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------|
| معلومات المادة الدراسية            |                   |                      |                                                                                                                                                                                                                               |                                                                              |      |
| Module Title                       | General Arabic    |                      | Module Delivery                                                                                                                                                                                                               |                                                                              |      |
| Module Type                        | Core              |                      | <input type="checkbox"/> Theory<br><input checked="" type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |                                                                              |      |
| Module Code                        |                   |                      |                                                                                                                                                                                                                               |                                                                              |      |
| ECTS Credits                       |                   |                      |                                                                                                                                                                                                                               |                                                                              |      |
| SWL (hr/sem)                       |                   |                      |                                                                                                                                                                                                                               |                                                                              |      |
| Module Level                       |                   | Semester of Delivery |                                                                                                                                                                                                                               |                                                                              |      |
| Administering Department           | Food science      | College              | College of Agriculture                                                                                                                                                                                                        |                                                                              |      |
| Module Leader                      | Jihad Naeem Aliwi |                      | e-mail                                                                                                                                                                                                                        | <a href="mailto:jehaad.naeem@uomisan.edu.iq">jehaad.naeem@uomisan.edu.iq</a> |      |
| Module Leader's Acad. Title        |                   | Assistant Lecturer   | Module Leader's Qualification                                                                                                                                                                                                 |                                                                              | MS.C |
| Module Tutor                       | N.A               |                      | e-mail                                                                                                                                                                                                                        | N.A                                                                          |      |
| Peer Reviewer Name                 |                   | N.A                  | e-mail                                                                                                                                                                                                                        | N.A                                                                          |      |
| Scientific Committee Approval Date |                   | / /2025              | Version Number                                                                                                                                                                                                                |                                                                              |      |

#### Relation with other Modules

| Relation with other Modules       |      |          |  |
|-----------------------------------|------|----------|--|
| العلاقة مع المواد الدراسية الأخرى |      |          |  |
| Prerequisite module               | None | Semester |  |
| Co-requisites module              | None | Semester |  |



## Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

|                                                                  |                                                                                                                                                                                                        |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية                | Introducing students to the basic rules of the Arabic language and enhancing their ability to write correctly, with a focus on training them to prepare scientific research free of linguistic errors. |
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية | <p style="text-align: right;">Students will learn:</p> <p>Grammar of the Arabic language, Arabic literature, spelling rules, the Holy Quran.</p>                                                       |
| <b>Indicative Contents</b><br>المحتويات الإرشادية                |                                                                                                                                                                                                        |

## Learning and Teaching Strategies:

### Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

|                   |                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b> | The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students. |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Student Workload (SWL):

| Student Workload (SWL)                      |  |                                          |  |
|---------------------------------------------|--|------------------------------------------|--|
| الحمل الدراسي للطلاب محسوب لـ ١٥ أسبوعا     |  |                                          |  |
| Structured SWL (h/sem)                      |  | Structured SWL (h/w)                     |  |
| الحمل الدراسي المنتظم للطلاب خلال الفصل     |  | الحمل الدراسي المنتظم للطلاب أسبوعيا     |  |
| Unstructured SWL (h/sem)                    |  | Unstructured SWL (h/w)                   |  |
| الحمل الدراسي غير المنتظم للطلاب خلال الفصل |  | الحمل الدراسي غير المنتظم للطلاب أسبوعيا |  |
| Total SWL (h/sem)                           |  |                                          |  |
| الحمل الدراسي الكلي للطلاب خلال الفصل       |  |                                          |  |

### Module Evaluation:

| Module Evaluation     |                 |             |                  |          |                           |
|-----------------------|-----------------|-------------|------------------|----------|---------------------------|
| تقييم المادة الدراسية |                 |             |                  |          |                           |
|                       |                 | Time/Number | Weight (Marks)   | Week Due | Relevant Learning Outcome |
| Formative assessment  | Quizzes         | 2           | 10% (10)         | 6 and 13 | LO #1, #2 and #8, #9      |
|                       | Assignments     | 2           | 10% (10)         | 5 and 11 | LO #5, #6 and #9, #10     |
|                       | Projects / Lab. |             |                  |          |                           |
|                       | Report          | 2           | 10% (10)         | 11       | LO #5, #6 and #7, #8      |
| Summative assessment  | Midterm Exam    | 2hr         | 20% (10)         | 7        | LO #1 - #7                |
|                       | Final Exam      | 3hr         | 50% (50)         | 16       | All                       |
| Total assessment      |                 |             | 100% (100 Marks) |          |                           |

| Delivery Plan (Weekly Syllabus) |
|---------------------------------|
| المناهج الاسبوعي النظري         |

|         | Material Covered                                                        |
|---------|-------------------------------------------------------------------------|
| Week 1  | The subject and the predicate                                           |
| Week 2  | The subject and the deputy subject                                      |
| Week 3  | The name of Kahn and her sisters                                        |
| Week 4  | News that and her sisters                                               |
| Week 5  | Literary life in the era of early Islam (features and characteristics)  |
| Week 6  | The Farewell Pilgrimage Sermon of the Holy Prophet Muhammad (PBUH)      |
| Week 7  | The poem Burdah by Ka'b ibn Zuhayr (his life and critical commentary)   |
| Week 8  | Literary life in the Umayyad era                                        |
| Week 9  | Poetry of contradictions                                                |
| Week 10 | Jarir and Al-Farazdaq (his life and critical commentary)                |
| Week 11 | The alphabetical, phonetic and alphabetical order of the Arabic letters |
| Week 12 | Solar and lunar letters                                                 |
| Week 13 | Writing the marbuta ta' and the simple ta'                              |
| Week 14 |                                                                         |
| Week 15 |                                                                         |
| Week 16 |                                                                         |

| Delivery Plan (Weekly Lab. Syllabus) |  |
|--------------------------------------|--|
| المنهاج الاسبوعي للمختبر             |  |
|                                      |  |
| Week 1                               |  |
| Week 2                               |  |
| Week 3                               |  |

|        |  |
|--------|--|
| Week 4 |  |
| Week 5 |  |
| Week 6 |  |

| Learning and Teaching Resources |      |                           |
|---------------------------------|------|---------------------------|
| مصادر التعلم والتدريس           |      |                           |
|                                 | Text | Available in the Library? |
| Required Texts                  | *    |                           |
| Recommended Texts               |      |                           |
| Websites                        |      |                           |

| Grading Scheme              |                  |                     |          |                                       |
|-----------------------------|------------------|---------------------|----------|---------------------------------------|
| مخطط الدرجات                |                  |                     |          |                                       |
| Group                       | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100) | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                             | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                             | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                             | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                             | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)      | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                             | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
|                             |                  |                     |          |                                       |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# Course Description Form

| Module Information                 |                                                      |                               |                                                                                                                                                                                                                                                     |
|------------------------------------|------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| معلومات المادة الدراسية            |                                                      |                               |                                                                                                                                                                                                                                                     |
| Module Title                       | Principles of dairy science                          |                               | Module Delivery                                                                                                                                                                                                                                     |
| Module Type                        | Core                                                 |                               | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><input checked="" type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input checked="" type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |
| Module Code                        | DAIR140                                              |                               |                                                                                                                                                                                                                                                     |
| ECTS Credits                       | 6                                                    |                               |                                                                                                                                                                                                                                                     |
| SWL (hr/sem)                       | 150                                                  |                               |                                                                                                                                                                                                                                                     |
| Module Level                       | ١                                                    | Semester of Delivery          |                                                                                                                                                                                                                                                     |
| Administering Department           | Food sciences                                        | College                       | Agriculture                                                                                                                                                                                                                                         |
| Module Leader                      | LECTUER                                              |                               | e-mail                                                                                                                                                                                                                                              |
| Module Leader's Acad. Title        |                                                      | Module Leader's Qualification |                                                                                                                                                                                                                                                     |
| Module Tutor                       | Dr. Abdulridha Ati Jaafar<br>Dr.Sadeq Fenjan Hasnawi | e-mail                        | <a href="mailto:84@uomisan.edu.iq">84@uomisan.edu.iq</a>                                                                                                                                                                                            |
| Peer Reviewer Name                 |                                                      | e-mail                        | Sadiq.fanjan@uomisan.edu.iq                                                                                                                                                                                                                         |
| Scientific Committee Approval Date | 01/10/2024                                           | Version Number                |                                                                                                                                                                                                                                                     |

| Relation with other Modules       |                 |          |   |
|-----------------------------------|-----------------|----------|---|
| العلاقة مع المواد الدراسية الأخرى |                 |          |   |
| Prerequisite module               | Dairy Chemistry | Semester | 4 |
| Prerequisite module               | Food Industries | Semester | 2 |
| Prerequisite module               | Food Chemistry  | Semester | 7 |
| Prerequisite module               | None            | Semester |   |
| Co-requisites module              | None            | Semester |   |

| Module Aims, Learning Outcomes and Indicative Contents |
|--------------------------------------------------------|
|                                                        |

## أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Module Objectives</b></p> <p>أهداف المادة الدراسية</p>                | <ol style="list-style-type: none"> <li>1. Introducing students to the components of milk and the high nutritional value that makes it an important product from a nutritional, health and economic perspective</li> <li>2. Developing students' theoretical and practical skills that enable them to detect milk fraud</li> <li>3. Developing students' milk manufacturing skills such as making cheese, fermented milk, butter, skimmed milk, yogurt ice cream, etc.</li> <li>4. Teaching students how to protect milk from contamination with pathogenic microorganisms</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p><b>Module Learning Outcomes</b></p> <p>مخرجات التعلم للمادة الدراسية</p> | <p style="text-align: center;">Students will learn:</p> <ol style="list-style-type: none"> <li>4. Enabling students to conduct tests on milk components .</li> <li>5. Introducing students to the chemical components of milk .</li> <li>6. Introducing students to the most important factors affecting milk production .</li> <li>7. Introducing students to milk proteins</li> <li>8. Introducing students to fats and fatty acids in milk</li> <li>9. Introducing students to how to estimate the concentration in milk</li> <li>10. Introducing students to how to detect milk adulteration</li> <li>11. Introducing students to the most important salts and vitamins found in milk</li> <li>12. Introducing students to methods of sorting milk and factors affecting the greenness</li> <li>13. Introducing students to milk microbiology</li> <li>14. Introducing students to methods of cheese manufacturing</li> <li>15. Teaching students to make ice cream</li> <li>16. Introducing students to quality control of milk</li> <li>17. Introducing students to dairy laboratories</li> <li>18. Introducing students to thermal treatments of milk</li> </ol> |
| <p><b>Indicative Contents</b></p> <p>المحتويات الإرشادية</p>                | <ol style="list-style-type: none"> <li>1. Student contact time refers to the professor-mediated time allocated to teaching, provision of guidance, and feedback to students.</li> <li>2. This time includes activities that take place in face-to-face contexts such as lectures, seminars, demonstrations, tutorials, supervised laboratory workshops, practical classes, project supervision as well as where the professor is available for one-to-one discussions and interaction by email.</li> <li>3. Student contact time also includes professor-mediated activities that take place in online environments, which may be synchronous (using real-time digital tools such as Zoom or Blackboard Collaborate Ultra) or asynchronous (using digital tools such as tutor-moderated discussion forums or blogs often delivered through the School's virtual learning environment, Moodle).</li> </ol>                                                                                                                                                                                                                                                               |

## Learning and Teaching Strategies

|                          |                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Strategies</b></p> | <ol style="list-style-type: none"> <li>1- Lectures and tutorials provide background information using pictures and illustrations that facilitate the student's understanding of the material.</li> <li>2- Training students to conduct laboratory tests on dairy products in a way that develops students' skills in this field.</li> </ol> |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                          |                                                                                                              |                        |     |
|--------------------------|--------------------------------------------------------------------------------------------------------------|------------------------|-----|
|                          | 3- Conducting discussions and dialogues with students, which in turn enhances the student’s self-confidence. |                        |     |
| Student Workload (SWL)   |                                                                                                              |                        |     |
| Structured SWL (h/sem)   | 78                                                                                                           | Structured SWL (h/w)   | 5   |
| Unstructured SWL (h/sem) | 72                                                                                                           | Unstructured SWL (h/w) | 4.8 |
| Total SWL (h/sem)        | 150                                                                                                          |                        |     |

|                             |                        |                    |                       |                 |                                  |
|-----------------------------|------------------------|--------------------|-----------------------|-----------------|----------------------------------|
| <b>Module Evaluation</b>    |                        |                    |                       |                 |                                  |
| <b>As</b>                   |                        | <b>Time/Number</b> | <b>Weight (Marks)</b> | <b>Week Due</b> | <b>Relevant Learning Outcome</b> |
| <b>Formative assessment</b> | <b>Quizzes</b>         | 2                  | 20% (20)              | 5 and 10        |                                  |
|                             | <b>Assignments</b>     | 1                  | 10% (10)              | continuous      |                                  |
|                             | <b>Projects / Lab.</b> |                    |                       |                 |                                  |
|                             | <b>Report</b>          | 1                  | 10% (10)              | 12              |                                  |
| <b>Summative assessment</b> | <b>Midterm Exam</b>    | 2hr                |                       | 7               | LO #2-#7                         |
|                             | <b>Final Exam</b>      | 3hr                | 50%(50)               | 16              | All                              |
| <b>Total assessment</b>     |                        |                    | 100% (100 Marks)      |                 |                                  |

|                                        |                                   |
|----------------------------------------|-----------------------------------|
| <b>Delivery Plan (Weekly Syllabus)</b> |                                   |
| <b>Week</b>                            | <b>Material Covered</b>           |
| <b>Week 1</b>                          | Milk components                   |
| <b>Week 2</b>                          | Chemical composition of milk      |
| <b>Week 3</b>                          | Factors affecting milk production |
| <b>Week 4</b>                          | Milk proteins                     |

|         |                                   |
|---------|-----------------------------------|
| Week 5  | Milk fat                          |
| Week 6  | Milk acidity                      |
| Week 7  | Specific gravity of milk          |
| Week 8  | Milk salts and vitamins           |
| Week 9  | Factors affecting milking         |
| Week 10 | Milk microorganisms               |
| Week 11 | Cheese making                     |
| Week 12 | Ice cream making                  |
| Week 13 | Quality control of milk received  |
| Week 14 | Milk treatment in dairy factories |
| Week 15 | Heat treatments of milk           |
| Week 16 | Milk components                   |

### Delivery Plan (Weekly Practical Syllabus)

المنهاج الاسبوعي للمختبر

| Week   | Material Covered                                                         |
|--------|--------------------------------------------------------------------------|
| Week 1 | Milk components testing                                                  |
| Week 2 | Milk chemical composition tests                                          |
| Week 3 | Factors affecting milk production                                        |
| Week 4 | Milk protein tests                                                       |
| Week 5 | Microscopic fat tests and fat percentage estimation (Babcock and Kerber) |
| Week 6 | Acidity estimation in milk                                               |
| Week 7 | Specific gravity tests and milk adulteration                             |
| Week 8 | Milk salts and vitamins                                                  |



|         |                                   |
|---------|-----------------------------------|
| Week 9  | Milk sorting and butter making    |
| Week 10 | Milk microbiology tests           |
| Week 11 | Cheese making                     |
| Week 12 | Ice cream making                  |
| Week 13 | Quality control of received milk  |
| Week 14 | Milk treatment in dairy factories |
| Week 15 | Milk thermal treatments           |

| Learning and Teaching Resources |                                                                                                                           |                           |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------|
| مصادر التعلم والتدريس           |                                                                                                                           |                           |
|                                 | Text                                                                                                                      | Available in the Library? |
| Required Texts                  | كتاب مبادئ اللبان العامة تأليف د. محسن الشبيبي ودكتور نزار شكري والدكتور صادق جواد طعمة والدكتور هيلان حمادي علي ١٩٩٩     | yes                       |
| Recommended Texts               | مبادئ الالبان العامة جمال عبد التواب<br>مبادئ الالبان رمزي عبد الرحمن<br>كتاب مبادئ اللبان تالف دكتور محسن الشبيبي واخرون | Yes                       |
| Websites                        | <a href="https://www.scribd.com/document/491738379">https://www.scribd.com/document/491738379</a>                         |                           |

## نموذج وصف المادة الدراسية

| معلومات المادة الدراسية  |                       |               |                      |                                                                                                                                                                                                                                   |   |
|--------------------------|-----------------------|---------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Module Title             | Engineering workshops |               |                      | Module Delivery                                                                                                                                                                                                                   |   |
| Module Type              | Basic                 |               |                      | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><br><input type="checkbox"/> Seminar |   |
| Module Code              | ENWK113               |               |                      |                                                                                                                                                                                                                                   |   |
| ECTS Credits             | 6                     |               |                      |                                                                                                                                                                                                                                   |   |
| SWL (hr/sem)             | 150                   |               |                      |                                                                                                                                                                                                                                   |   |
| Module Level             |                       | 1             | Semester of Delivery |                                                                                                                                                                                                                                   | 2 |
| Administering Department |                       | FOOD SCIENCES | College              | Agriculture                                                                                                                                                                                                                       |   |

|                                           |                     |                                      |                                                                        |
|-------------------------------------------|---------------------|--------------------------------------|------------------------------------------------------------------------|
| <b>Module Leader</b>                      | Ali Abbas Hashim    | <b>e-mail</b>                        | <a href="mailto:ali_abbas@uomisan.edu.iq">ali_abbas@uomisan.edu.iq</a> |
| <b>Module Leader's Acad. Title</b>        | assistant professor | <b>Module Leader's Qualification</b> | Ph.D                                                                   |
| <b>Module Tutor</b>                       | Ali Abbas Hashim    | <b>e-mail</b>                        | <a href="mailto:ali_abbas@uomisan.edu.iq">ali_abbas@uomisan.edu.iq</a> |
| <b>Peer Reviewer Name</b>                 |                     | <b>e-mail</b>                        |                                                                        |
| <b>Scientific Committee Approval Date</b> |                     | <b>Version Number</b>                |                                                                        |

### Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

|                             |      |                 |  |
|-----------------------------|------|-----------------|--|
| <b>Prerequisite module</b>  | None | <b>Semester</b> |  |
| <b>Co-requisites module</b> | None | <b>Semester</b> |  |

### Module Aims, Learning Outcomes and Indicative Contents

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b><br>أهداف المادة الدراسية                | It is essential to understand the engineering foundations of dimensions and units due to the many dimensional terms and unit systems. Ultimately, it is important to be able to convert between different units while operating and monitoring food processing equipment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية | <p>Important: Write at least six learning outcomes, ideally equal to the number of weeks of study.</p> <ol style="list-style-type: none"> <li>1. Identify the physics of food laboratories and engineering.</li> <li>2. List the various terms associated with electrical circuits.</li> <li>3. Summarize the meaning of motion, its types, and Newton's laws.</li> <li>4. Discuss the fact that the student is a resident engineer and has ventilation problems.</li> <li>5. Describe electrical power, charge, and current intensity.</li> <li>6. Define Ohm's Law.</li> <li>7. Identify basic pumps and their applications.</li> <li>8. Discuss fluid transport processes in pipes.</li> <li>9. Discuss the operation of refrigerated warehouses.</li> </ol> |

|                                                       |  |
|-------------------------------------------------------|--|
| <b>Indicative Contents</b><br><br>المحتويات الإرشادية |  |
|-------------------------------------------------------|--|

| Learning and Teaching Strategies |                                                                                                                                                                                                                                                                                                                                                                                            |                        |     |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----|
| استراتيجيات التعلم والتعليم      |                                                                                                                                                                                                                                                                                                                                                                                            |                        |     |
| Strategies                       | Write something like: The main strategy that will be adopted in delivering this unit is to encourage student participation in exercises, while simultaneously improving and expanding their critical thinking skills. This will be achieved through interactive classes and tutorials, and by considering simple experiments that involve some sampling activities that interest students. |                        |     |
| Student Workload (SWL)           |                                                                                                                                                                                                                                                                                                                                                                                            |                        |     |
| Structured SWL (h/sem)           | 78                                                                                                                                                                                                                                                                                                                                                                                         | Structured SWL (h/w)   | 5   |
| Unstructured SWL (h/sem)         | 72                                                                                                                                                                                                                                                                                                                                                                                         | Unstructured SWL (h/w) | 4.8 |
| Total SWL (h/sem)                | 150                                                                                                                                                                                                                                                                                                                                                                                        |                        |     |

| <b>Module Evaluation</b>    |                        |             |                  |            |                           |
|-----------------------------|------------------------|-------------|------------------|------------|---------------------------|
|                             |                        | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| <b>Formative assessment</b> | <b>Quizzes</b>         | ٢           | 20% (20)         | 5 and 10   |                           |
|                             | <b>Assignments</b>     | 1           | 10% (10)         | continuous |                           |
|                             | <b>Projects / Lab.</b> |             |                  |            |                           |
|                             | <b>Report</b>          | 1           | 10% (10)         | 12         |                           |
| <b>Summative assessment</b> | <b>Midterm Exam</b>    | 2hr         |                  | 7          | LO #2-#7                  |
|                             | <b>Final Exam</b>      | 3hr         | 50%(50)          | 16         | All                       |
| <b>Total assessment</b>     |                        |             | 100% (100 Marks) |            |                           |

### Delivery Plan (Weekly Syllabus)

|         | Material Covered                                                                                                         |
|---------|--------------------------------------------------------------------------------------------------------------------------|
| Week 1  | Introduction - The importance of introducing students to the basics of engineering workshops and the practical workshop. |
| Week 2  | Dimensions and Units                                                                                                     |
| Week 3  | Motion and its Types, Part One                                                                                           |
| Week 4  | Motion and its Types, Part Two                                                                                           |
| Week 5  | Means of Motion Transmission                                                                                             |
| Week 6  | Requirements for Food Laboratories                                                                                       |
| Week 7  | Food Laboratories Ventilation                                                                                            |
| Week 8  | Pumps and their Types, Part One                                                                                          |
| Week 9  | Pumps and their Types, Part Two                                                                                          |
| Week 10 | Supercritical Fluids                                                                                                     |
| Week 11 | Fluid Flow                                                                                                               |
| Week 12 | Main Electricity                                                                                                         |
| Week 13 | Food Storage                                                                                                             |
| Week 14 | Requirements for Food Laboratories                                                                                       |
| Week 15 | Preparatory Week Before the Final Exam                                                                                   |

### Delivery Plan (Weekly Practical Syllabus)

|        | Material Covered                                                                         |
|--------|------------------------------------------------------------------------------------------|
| Week 1 | Lab 1: Applications of Newton's Laws of Motion                                           |
| Week 2 | Lab 2: Enter the pilot lab and have students use the propulsion devices inside it        |
| Week 3 | Lab 3: Learn about the different methods of laboratory ventilation                       |
| Week 4 | Lab 4: Learn about the operation of different pumps and their importance in laboratories |
| Week 5 | Lab 5: Learn about and work on electrical circuits and their installations               |
| Week 6 | Lab 6: Conduct experiments on food preservation and the introduction of mechanization    |

### Learning and Teaching Resources

|                   | Text                                                                                                       | Available in the Library? |
|-------------------|------------------------------------------------------------------------------------------------------------|---------------------------|
| Required Texts    | Fundamentals of Electrical Circuits, C.K. Alexander and M.N.O. Sadiku, McGraw-Hill Education               | Yes                       |
| Recommended Texts | Engineering Workshop Manual, authored by Prof. Dr. Asad Rahman Saeed and Asst. Prof. Dr. Hassan Hadi Mahdi | Yes                       |
| Websites          | -engineering/electrical-and-science-org/browse/physical.https://www.coursera engineering                   |                           |

## Grading Scheme

### مخطط الدرجات

| Group                              | Grade                   | التقدير             | Marks %  | Definition                            |
|------------------------------------|-------------------------|---------------------|----------|---------------------------------------|
| <b>Success Group</b><br>(50 - 100) | <b>A - Excellent</b>    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                    | <b>B - Very Good</b>    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                    | <b>C - Good</b>         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                    | <b>D - Satisfactory</b> | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                    | <b>E - Sufficient</b>   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| <b>Fail Group</b><br>(0 – 49)      | <b>FX – Fail</b>        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                    | <b>F – Fail</b>         | راسب                | (0-44)   | Considerable amount of work required  |
|                                    |                         |                     |          |                                       |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# First semester

## Course Description Form

| 1. Course Name: Design and Analysis of Experiments                     |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
|------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------|---------------------------------------------------------------------|
| 2. Course Code: DAAE319                                                |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
| 3. Semester / Year: Semester-based – First Course                      |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
| 4. Description Preparation Date: 1/10/2024                             |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
| 5. Forms of Attendance: Weekly                                         |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
| 6. Number of Studying Hours (Total) / Number of Units (Total) 75 hours |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
| 7. Course Administrator's Name (mention all, if more than one name)    |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
| Name: Dr. Yahya Ajib Oudeh                                             |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Email: Yahya.ajjb@uomisan.edu.iq   |                          |                                                                     |
| 8. Course Objectives                                                   |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
| Course Objectives                                                      |                                | Educate students on the fundamental principles of designing and analyzing experiments, emphasizing the importance of this subject in reinforcing the practical aspect of conducting scientific research. Students will learn about the main concepts of design such as experiments, experimental units, factors, treatments, replications, and experimental error, and how to choose the appropriate design for agricultural experiments to reach correct conclusions and decisions |                                    |                          |                                                                     |
| 9. Teaching and Learning Strategies                                    |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
| Strategies                                                             |                                | The strategy is implemented through lectures, discussions, solving scientific and practical examples, daily and monthly exams, assignments, and brainstorming sessions.                                                                                                                                                                                                                                                                                                             |                                    |                          |                                                                     |
| 10. Course Structure                                                   |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |                          |                                                                     |
| Week                                                                   | Hours                          | Required Learning Outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Unit or subject name               | Learning method          | Evaluation method                                                   |
| 1                                                                      | 2<br>Theory,<br>3<br>Practical | Design of Completely Randomized Block Design (R.B.C.D)                                                                                                                                                                                                                                                                                                                                                                                                                              | Design and Analysis of Experiments | Lectures and Discussions | Semester Exam, Daily Exam, Student Performance Evaluation, Homework |
| 2                                                                      | 2<br>Theory,<br>3<br>Practical | Significant differences according to the Least Significant                                                                                                                                                                                                                                                                                                                                                                                                                          | Design and Analysis of Experiments | Lectures and Discussions |                                                                     |
| 3                                                                      | 2<br>Theory,<br>3<br>Practical | Estimation of missing data in R.B.C.D design                                                                                                                                                                                                                                                                                                                                                                                                                                        | Design and Analysis of Experiments | Lectures and Discussions |                                                                     |
| 4                                                                      | 2<br>Theory,                   | R.B.C.D design with more than one                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Design and Analysis of             | Lectures and Discussions |                                                                     |

|                                                                                                                                                          |                                |                                                                      |                                                                                     |                             |                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------|
|                                                                                                                                                          | 3<br>Practical                 | observation                                                          | Experiments                                                                         |                             | Semester<br>Exam, Daily<br>Exam,<br>Student<br>Performance<br>Evaluation,<br>Homework |
| 5                                                                                                                                                        | 2<br>Theory,<br>3<br>Practical | Latin Square Design<br>(L.S.D)                                       | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 6                                                                                                                                                        | 2<br>Theory,<br>3<br>Practical | Dunnett's Comparison<br>Test                                         | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 7                                                                                                                                                        | 2<br>Theory,<br>3<br>Practical | Monthly Exam                                                         | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 8                                                                                                                                                        | 2<br>Theory,<br>3<br>Practical | Types of complex<br>experiments and how to<br>distinguish between    | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 9                                                                                                                                                        | 2<br>Theory,<br>3<br>Practical | Factorial experiments<br>with two factors in C.R.D<br>design         | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 10                                                                                                                                                       | 2<br>Theory,<br>3<br>Practical | Factorial experiments in<br>R.B.C.D design                           | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 11                                                                                                                                                       | 2<br>Theory,<br>3<br>Practical | Factorial experiments in<br>Latin Square Design                      | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 12                                                                                                                                                       | 2<br>Theory,<br>3<br>Practical | Monthly Exam                                                         | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 13                                                                                                                                                       | 2<br>Theory,<br>3<br>Practical | Split-plot experiments<br>with two factors in C.R.D<br>design        | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 14                                                                                                                                                       | 2<br>Theory,<br>3<br>Practical | Split-plot experiments<br>with two factors in<br>R.B.C.D design      | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 15                                                                                                                                                       | 2<br>Theory,<br>3<br>Practical | Split-plot experiments<br>with two factors in Latin<br>Square Design | Design and<br>Analysis of<br>Experiments                                            | Lectures and<br>Discussions |                                                                                       |
| 11. Course Evaluation                                                                                                                                    |                                |                                                                      |                                                                                     |                             |                                                                                       |
| Distribution of the grade out of 50 according to the tasks assigned to the student, such as homework, .daily, oral, monthly, written exams, reports, etc |                                |                                                                      |                                                                                     |                             |                                                                                       |
| 12. Learning and Teaching Resources                                                                                                                      |                                |                                                                      |                                                                                     |                             |                                                                                       |
| Required textbooks (curricular books, if any)                                                                                                            |                                |                                                                      | "Design and Analysis of Agricultural<br>Experiments" by Dr. Khasha Mahmoud Al-Rawi. |                             |                                                                                       |
| Main references (sources)                                                                                                                                |                                |                                                                      | From textbooks, supplementary books, the                                            |                             |                                                                                       |

|                                                                    |                                                   |
|--------------------------------------------------------------------|---------------------------------------------------|
|                                                                    | internet, and scientific research                 |
| Recommended books and references (scientific journals, reports...) | "Design and Analysis of Agricultural Experiments" |
| Electronic References, Websites                                    |                                                   |

### MODULE DESCRIPTION FORM

| Module Information                 |                         |                                 |        |                                                                                                                                                                                                                                                         |                                                                           |
|------------------------------------|-------------------------|---------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| معلومات المادة الدراسية            |                         |                                 |        |                                                                                                                                                                                                                                                         |                                                                           |
| Module Title                       | Computer applications/2 |                                 |        | Module Delivery                                                                                                                                                                                                                                         |                                                                           |
| Module Type                        | Support                 |                                 |        | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><br><input checked="" type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input checked="" type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |                                                                           |
| Module Code                        | UM-212                  |                                 |        |                                                                                                                                                                                                                                                         |                                                                           |
| ECTS Credits                       | 3                       |                                 |        |                                                                                                                                                                                                                                                         |                                                                           |
| SWL (hr/sem)                       | 75                      |                                 |        |                                                                                                                                                                                                                                                         |                                                                           |
| Module Level                       |                         | UG                              |        | Semester of Delivery                                                                                                                                                                                                                                    | 1                                                                         |
| Administering Department           |                         |                                 |        | College                                                                                                                                                                                                                                                 | College of Agriculture                                                    |
| Module Leader                      | Abbas luaibi obaid      |                                 | e-mail | abbas.alrajhe@uomisan.edu.iq                                                                                                                                                                                                                            |                                                                           |
| Module Leader's Acad. Title        |                         | Asst.Lecturer                   |        | Module Leader's Qualification                                                                                                                                                                                                                           | Msc.Engineering                                                           |
| Module Tutor                       | Abbas luaibi obaid      |                                 | e-mail | abbas.alrajhe@uomisan.edu.iq                                                                                                                                                                                                                            |                                                                           |
| Peer Reviewer Name                 |                         | Department of Animal Production |        | e-mail                                                                                                                                                                                                                                                  | <a href="mailto:Itdept.bmtc@stu.edu.iq">mailto:Itdept.bmtc@stu.edu.iq</a> |
| Scientific Committee Approval Date |                         | 29/09/2024                      |        | Version Number                                                                                                                                                                                                                                          | 1.0                                                                       |

| Relation with other Modules       |      |  |          |
|-----------------------------------|------|--|----------|
| العلاقة مع المواد الدراسية الأخرى |      |  |          |
| Prerequisite module               | None |  | Semester |



|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |  |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--|
| Co-requisites module                                      | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Semester |  |
| Module Objectives<br>أهداف المادة الدراسية                | 1- Guiding the student how to use the computer in a manner compatible with his cultural level<br>2- Directing the student how to deal with social sites                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |  |
| Module Learning Outcomes<br>مخرجات التعلم للمادة الدراسية | Students will learn:<br><br>1. The basics, basic ideas and concepts necessary to understand the structure of the computer.<br>2. Explain the basic components of the computer and learn about them in detail.<br>3. Explain computer security and explain malware and how to prevent it.<br>4. Understand how to deal with programs safely.<br>5. Explain operating systems and learn about them.<br>6. Explain how to deal with the Windows system and how to install it on computers.<br>7. Learn about keyboard shortcuts and how to use them.                                                                                                                                         |          |  |
| Indicative Contents<br>المحتويات الإرشادية                | Here's a detailed outline of indicative contents for an computer Basics course. The indicative contents typically cover the following key topics:<br><br>1. Computer Basics <ul style="list-style-type: none"> <li>1. The development of computer generations</li> <li>2. Electronic computer</li> <li>3. Data and information</li> <li>4. Computer features</li> <li>5. Areas of computer use</li> <li>6. Computer components</li> <li>7. Types of computers</li> <li>8. Classification of computers</li> </ul> 2. Computer components <ul style="list-style-type: none"> <li>1. Computer components</li> <li>2. The physical parts of the computer</li> <li>3. Input devices</li> </ul> |          |  |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>4. Output devices</p> <p>5. Computer box</p> <p>1. Software entity</p> <p>6. Number systems</p> <p>7. Your personal computer</p> <p>8. Computer platform</p> <p>9. Factors that must Take this into consideration when purchasing a computer</p> <p>3.(Computer security and licensing programs)</p> <p>1. Ethics of the electronic world</p> <p>2. Forms of abuses in the world Electronic</p> <p>3. Computer security</p> <p>4. Computer privacy</p> <p>5. Computer software licenses</p> <p>6. Types of licenses</p> <p>7. Intellectual property</p> <p>8. Electronic hacking</p> <p>9. Types of electronic hacking</p> <p>10. Sources of hacking Electronic</p> <p>11. The most security risks widespread</p> <p>12. Malicious software</p> <p>13. Computer viruses</p> <p>14. Damages resulting from Viruses</p> <p>15. Components of viruses</p> <p>16. Types of viruses</p> <p>17. Necessary steps for protection From viruses</p> <p>18. Computer damage On human health</p> <p>4.Operating Systems</p> <p>1. Definition of the operating system</p> <p>2. Operating system functions</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|  |                                                                                                                                                                                                                                                |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 3. Objectives of the operating system<br>4. Operating system classification<br>5. Examples of some operating systems<br>6.Windows 7 operating system<br>7.Windows 7 installation requirements<br>8.Windows 7 features<br>9. Surface components |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies                                                      | 1- Explanation, clarification, and honing general and qualifying skills<br>2- Urging the student to write simple research using the lecture method to create a state of balance between methodological information and source information.<br>3- Urging the student to work on practical projects on the calculator and hold discussion circles among the students on the methodology of the subject and distribute the students into groups.<br>4-Practical lessons in the laboratory<br>5- The method of self-learning and writing scientific reports, and urging the student to evaluate the answers of his fellow students to develop self-development. |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا       |    |                                                                    |     |
|-------------------------------------------------------------------------|----|--------------------------------------------------------------------|-----|
| Structured SWL (h/sem)<br>الحمل الدراسي المنتظم للطالب خلال الفصل       | 48 | Structured SWL (h/w)<br>الحمل الدراسي المنتظم للطالب أسبوعيا       | 3   |
| Unstructured SWL (h/sem)<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 27 | Unstructured SWL (h/w)<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 1.8 |
| Total SWL (h/sem)<br>الحمل الدراسي الكلي للطالب خلال الفصل              | 75 |                                                                    |     |

### Module Evaluation

#### تقييم المادة الدراسية

|                      |                         | Time/Number | Weight (Marks)   | Week Due       | Relevant Learning Outcome           |
|----------------------|-------------------------|-------------|------------------|----------------|-------------------------------------|
| Formative assessment | Quizzes                 | 2           | 10% (10)         | 5 and 10       | To be selected by the module leader |
|                      | Class group assignments | 1           | 5% (5)           | Continuou<br>s |                                     |
|                      | Report                  | 1           | 10% (10)         | 12             |                                     |
| Summative assessment | Midterm Exam            | 1hr         | 25% (25)         | 7              | LO #1 - #7                          |
|                      | Final Exam              | 3hr         | 50% (50)         | 16             | All                                 |
| Total assessment     |                         |             | 100% (100 Marks) |                |                                     |

### Delivery Plan (Weekly Syllabus)

#### المنهاج الاسبوعي النظري

|        | Material Covered                                                                                                                                                                                                                    |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 1 | <p>Chapter One:</p> <ol style="list-style-type: none"> <li>1. Operating the Word program 2010 File Burning,</li> <li>2. Program Interfaces</li> <li>3.Tapes Home tab, group</li> <li>4.Horizon, line and paragraph...</li> </ol>    |
| Week 2 | <ol style="list-style-type: none"> <li>5.Paragraph group and Order group</li> <li>6.And the View tab, the Views group</li> <li>7.Documents, Show group, and Zoom group</li> <li>8.Minimize the window, help instructions</li> </ol> |

|         |                                                                                                                                                                                                                                                                                                           |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 3  | Chapter Two /<br>1. Insert tab, Page group,<br>2. Table group,<br>3. Table Tools tab,<br>.....4. Table Design tab, and Skip tab                                                                                                                                                                           |
| Week 4  | 5. Graphics set, tools<br>6. Image, set of links<br>7. Header and footer group,<br>8. text group, and symbol group                                                                                                                                                                                        |
| Week 5  | Chapter Three/Additional tasks<br>For Microsoft Word, the References and Tables of Contents tab, the Footnotes group, the References, Citations and Captions group, and the Indexing group....<br>Resource table set, tbul b                                                                              |
| Week 6  | Correspondence and group creation, merging Correspondence<br>A group of writing and inserting fields Preview results set<br>Review, proofread and language tab And a comment group, a tracking group<br>Changes set and comparison set And a protection group                                             |
| Week 7  | Mid-term Exam                                                                                                                                                                                                                                                                                             |
| Week 8  | Chapter Four Powerpoint Run it<br>The program interfaces and the File tab Open a presentation file and save a new one<br>Save a stock presentation as Open and close an inventory presentation<br>View and print slides on paper and the Home tab Page setup, theme and background set<br>Slideshow tab h |
| Week 9  |                                                                                                                                                                                                                                                                                                           |
| Week 10 | View tab and Views group<br>Presentation and presentation set Main Show set and set<br>Direction, color and grayscale<br>Zoom in, zoom out and group<br>Help window and instructions                                                                                                                      |

|         |                                                                                                                                                                                                                                                                                                                             |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | Chapter Five / Inserting and adding objects Motions, adding shapes and groups<br>Drawing and investigating t                                                                                                                                                                                                                |
| Week 11 |                                                                                                                                                                                                                                                                                                                             |
| Week 12 | Inserts tab and Tables group<br>And a set of photos<br>Collection of illustrations and links A set of text and symbols<br>Adding animations to slides and objects The Transitions tab and the Preview group<br>A group is transferred to a slide Set the timing and movements tab<br>A preview group and an animation group |
| Week 13 |                                                                                                                                                                                                                                                                                                                             |
| Week 14 | Custom drivetrain and kit<br>The timing is a comprehensive exam as a review and solution<br>Book questions b                                                                                                                                                                                                                |
| Week 15 |                                                                                                                                                                                                                                                                                                                             |
| Week 16 | Final examination                                                                                                                                                                                                                                                                                                           |

| Delivery Plan (Weekly Lab. Syllabus) |                                                                                                                |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------|
| المنهاج الاسبوعي للمختبر             |                                                                                                                |
|                                      | Material Covered                                                                                               |
| Week 1                               | Showing the components of the computer to the students and what the parts of the computer consist of in detail |
| Week 2                               | Introducing students to the input and output parts and explaining the operation of each device.                |
| Week 3                               | Opening the computer case, explaining the internal parts and explaining the function of each part              |
| Week 4                               | Show programming examples inside the lab using one of the programming languages to familiarize students        |
| Week 5                               | Introducing students to personal computers, explaining their components and parts, how to choose them, and     |
| Week 6                               | what are the most important factors to consider when purchasing a computer.                                    |

|             |                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 7      | Mid-term Exam                                                                                                                                                                                                                                                                                                                                                   |
| Week 8      | Practical implementation of computer security, privacy protection and computer software licenses and identifying types of licenses, intellectual property statement, examples of hacking and types of hacking                                                                                                                                                   |
| Week 9      | Practical implementation of Introducing students to the sources of hacking, its risks, the most important malware, and examples of it in the form of a presentation. Introducing students practically to computer viruses and the damages resulting from them, what are the types of viruses, and the most important steps necessary to protect against hacking |
| Week 10     | Practical implementation of The harms of computers on human health, introducing students to using computers for prevention and , Introducing students to the operating system, what are the requirements for installing the operating system, and how to install the operating system.                                                                          |
| Week 11     | Practical implementation of Explain the components of the desktop, the Start menu, and the taskbar.                                                                                                                                                                                                                                                             |
| Week 12     | Practical implementation of Folders and files. Explaining the types of files. Introducing the student to the main icons.                                                                                                                                                                                                                                        |
| Week 13, 14 | Practical implementation of Perform operations on windows, how to change the desktop,                                                                                                                                                                                                                                                                           |
| Week 15     | Practical implementation of To explain the control panel in detail, and to show the control button, and how to install programs                                                                                                                                                                                                                                 |
| Week 16     | Final examination                                                                                                                                                                                                                                                                                                                                               |

| Learning and Teaching Resources |                                                                                                                                                                                                                                                                                                                                                    |                           |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| مصادر التعلم والتدريس           |                                                                                                                                                                                                                                                                                                                                                    |                           |
|                                 | Text                                                                                                                                                                                                                                                                                                                                               | Available in the Library? |
| Required Texts                  | <p>Written by:</p> <p>1- Professor Dr. Ghassan Hamid Abdel Majeed</p> <p>2-Professor Dr. Ziad Muhammad Abboud</p> <p>3-Professor Dr. Muhammad Nasser Al-Tarfi</p> <p>4-Professor Dr. Safaa Abbas Al-Mamouri</p> <p>2- International Information Network, the Internet</p> <p>1- Internet Ethics - A. M. Alawi Hind - Al-Shabsi Arab University</p> | yes                       |

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|          | Center<br>2- Ethics of dealing with technical and communication resources -<br>Dr. Hussein bin Saeed bin Saif<br>3- Ethics of the virtual world - Dr. Louay Al-Zoubi 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| Websites | Library Genesis<br>:websites<br>History of the development of computer networks, objective website: -<br><a href="http://mawdoo3.com">http://mawdoo3.com</a><br><a href="http://youstaff.blogspot.com">http://youstaff.blogspot.com</a> : Information and Internet security<br>- <a href="http://geeklesstech.com">http://geeklesstech.com</a> : Internet Law Laws for using the Internet<br>Real-time communication protocols in the Internet (RTP SIP), World of -<br>.Technology website<br>.ARPANET logical map, <a href="http://russbellew.com/Documents/Arpanet_sep_1974">http://russbellew.com/Documents/Arpanet_sep_1974</a> |  |

| Grading Scheme              |                  |                     |          |                                       |
|-----------------------------|------------------|---------------------|----------|---------------------------------------|
| مخطط الدرجات                |                  |                     |          |                                       |
| Group                       | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100) | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                             | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                             | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                             | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                             | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)      | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                             | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
|                             |                  |                     |          |                                       |



Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

### Course Description Form

| 1. Course Name:                                                     |                                   |                                                                                                        |                                   |                                                                                   |                   |
|---------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------|-------------------|
| Organic Chemistry                                                   |                                   |                                                                                                        |                                   |                                                                                   |                   |
| 2. Course Code:                                                     |                                   |                                                                                                        |                                   |                                                                                   |                   |
|                                                                     |                                   |                                                                                                        |                                   |                                                                                   |                   |
| 3. Semester / Year:                                                 |                                   |                                                                                                        |                                   |                                                                                   |                   |
| The Second spring course / Second year                              |                                   |                                                                                                        |                                   |                                                                                   |                   |
| 4. Description Preparation Date:                                    |                                   |                                                                                                        |                                   |                                                                                   |                   |
|                                                                     |                                   |                                                                                                        |                                   |                                                                                   |                   |
| 5. Forms of Attendance:                                             |                                   |                                                                                                        |                                   |                                                                                   |                   |
| Mandatory (Theoretical / Practical)                                 |                                   |                                                                                                        |                                   |                                                                                   |                   |
| 6. Number of Studying Hours (Total) / Number of Units (Total)       |                                   |                                                                                                        |                                   |                                                                                   |                   |
| 75 H                                                                |                                   |                                                                                                        |                                   |                                                                                   |                   |
| 7. Course Administrator's Name (mention all, if more than one name) |                                   |                                                                                                        |                                   |                                                                                   |                   |
| Name: Anwaar Yasser                                                 |                                   |                                                                                                        |                                   | Email: <a href="mailto:anwaaryaser@uomisan.edu.iq">anwaaryaser@uomisan.edu.iq</a> |                   |
| 8. Course Objectives                                                |                                   |                                                                                                        |                                   |                                                                                   |                   |
| Course Objectives                                                   |                                   | Definition the student to Organic chemistry                                                            |                                   |                                                                                   |                   |
| 9. Teaching and Learning Strategies                                 |                                   |                                                                                                        |                                   |                                                                                   |                   |
| Strategies                                                          |                                   | Theoretical lectures<br>Use the Curriculum book Use the blackboard                                     |                                   |                                                                                   |                   |
| 10. Course Structure                                                |                                   |                                                                                                        |                                   |                                                                                   |                   |
| Week                                                                | Hours                             | Required Learning Outcomes                                                                             | Unit or subject name              | Learning method                                                                   | Evaluation method |
| 1                                                                   | 2 theoretical<br>+<br>3 Practical | Definition the student to Organic chemistry, Properties of the element carbon, Types of chemical bonds | Introduction of Organic Chemistry | Using theoretical lectures and using the blackboard structures                    | Quiz              |

|   |                                      |                                                                                           |                                   |                                                                |      |
|---|--------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------|------|
| 2 | 2 theoretical<br>+<br>3<br>Practical | Definition the student to Hybridization                                                   | Introduction of Organic Chemistry | Using theoretical lectures and using the blackboard structures | Quiz |
| 3 | 2 theoretical<br>+<br>3<br>Practical | Definition the student to Alkanes , Name them , isomers, physical and chemical properties | Saturated Hydrocarbons 'AlKanes'  | Using theoretical lectures and using the blackboard structures | Quiz |

|   |                                      |                                                                                           |                                    |                                                                |      |
|---|--------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------|------|
| 4 | 2 theoretical<br>+<br>3<br>Practical | Preparation of alkanes, cycloalkanes                                                      | Saturated Hydrocarbons 'AlKanes'   | Using theoretical lectures and using the blackboard structures | Quiz |
| 5 | 2 theoretical<br>+<br>3<br>Practical | Definition the student to Alkenes , Name them , isomers, physical and chemical properties | unSaturated Hydrocarbons 'AlKenes' | Using theoretical lectures and using the blackboard structures | Quiz |
| 6 | 2 theoretical<br>+<br>3<br>Practical | Preparation of alkenes                                                                    | unSaturated Hydrocarbons 'AlKenes' | Using theoretical lectures and using the blackboard structures | Quiz |
| 7 | 2 theoretical<br>+<br>3<br>Practical | Definition the student to Dienes , name and preparation them                              | unSaturated Hydrocarbons 'AlKenes' | Using theoretical lectures and using the blackboard structures | Quiz |
| 8 | 2 theoretical<br>+<br>3<br>Practical | Definition the student to Alkynes , Name them , physical and chemical properties          | unSaturated Hydrocarbons 'AlKynes' | Using theoretical lectures and using the blackboard structures | Quiz |
| 9 | 2 theoretical<br>+<br>3<br>Practical | Preparation of alkynes                                                                    | unSaturated Hydrocarbons 'AlKynes' | Using theoretical lectures and using the blackboard structures | Quiz |

|                                                                                                                                                                  |                                   |                                                                                              |                                                               |                                                                |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------|------|
| 10                                                                                                                                                               | 2 theoretical<br>+<br>3 Practical | Definition the student to Aromatic Comopounds , Name them , physical and chemical properties | Aromatic Comopounds                                           | Using theoretical lectures and using the blackboard structures | Quiz |
| 11. Course Evaluation                                                                                                                                            |                                   |                                                                                              |                                                               |                                                                |      |
| The theoretical part (30) marks:<br>Written exam (25) marks + quiz exams (5) marks.<br>Practical part (20) marks:<br>The first month: a written exam (20 marks). |                                   |                                                                                              |                                                               |                                                                |      |
| 12. Learning and Teaching Resources                                                                                                                              |                                   |                                                                                              |                                                               |                                                                |      |
| Required textbooks (curricular books, if any)                                                                                                                    |                                   |                                                                                              | Introduction of Organic Chemistry Dr. Fadel Suleiman Kammouna |                                                                |      |

|                                                                    |  |
|--------------------------------------------------------------------|--|
| Main references (sources)                                          |  |
| Recommended books and references (scientific journals, reports...) |  |
| Electronic References, Websites                                    |  |

### Course Description Template

|                                                                |
|----------------------------------------------------------------|
| 1- Course Title:                                               |
| Principles of Microbiology                                     |
| 2- Course Code: DAIR240                                        |
| DAIR240                                                        |
| ٣- Semester / Academic                                         |
| Year: 2024 – 2025 (Fall Semester)                              |
| ٤ - Date of Course Description Preparation                     |
| 1 – 10 – 2024—                                                 |
| 5- Available Attendance Modes                                  |
| In-Person                                                      |
| 6- Total Study Hours / Total Units: 75                         |
| hours (2 Theory + 3 Practical) * 15 Weeks                      |
| ٧- Course Coordinator(s): (If more than one, mention all names |

|                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                    |                               |          |      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|-------------------------------|----------|------|
| Name:                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                    |                               |          |      |
| Dr. Abdul Ridha Ati Jaafar                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                    | Email: ridha84@uomisan.edu.iq |          |      |
| Asaad Shamil Atiyah                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                    |                               |          |      |
| 8. Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                    |                               |          |      |
| <ul style="list-style-type: none"><li>● Introduce students to microbiology and its various species and types.</li><li>● Develop students' theoretical and practical skills to enable them to identify different types of microorganisms, whether harmful or beneficial.</li><li>● Enhance students' skills in various microbiological techniques and their applications in medical, industrial, and environmental fields.</li></ul> |                 |                    | Course Objectives             |          |      |
| 9. Teaching and Learning Strategies                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                    |                               |          |      |
| 1- Presenting course materials using images and illustrative diagrams that facilitate students' understanding of the subject.<br><br>2- Training students in microbiological culturing of microorganisms to develop their skills in this field.<br><br>3- Conducting discussions and dialogues with students to enhance their self-confidence.                                                                                      |                 |                    |                               | Strategy |      |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                    |                               |          |      |
| Assessment Method                                                                                                                                                                                                                                                                                                                                                                                                                   | Learning Method | Unit or Topic Name | Required Learning Outcomes    | Hours    | Week |

|                                     |                         |                                                                                              |                                                                                                                                             |   |        |
|-------------------------------------|-------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---|--------|
| Daily and Monthly Reports and Exams | Theoretical Lectures    | A historical overview of microbiology and the scientists who contributed to its .development | Introducing students to microbiology and the most prominent scientists who significantly contributed to its development .throughout history | ◦ | First  |
|                                     | Practical Lectures      |                                                                                              |                                                                                                                                             |   |        |
|                                     | Presentation Methods    |                                                                                              |                                                                                                                                             |   |        |
|                                     | Discussion and Dialogue |                                                                                              |                                                                                                                                             |   |        |
| Daily and Monthly Reports and Exams | Theoretical Lectures    | Bacteria (Morphological traits and functional anatomy<br><br>Fungi (Molds and (Yeasts        | Introducing students to bacteria and fungi, and the most important shapes, genera, and species .within them                                 | ◦ | second |
|                                     | Practical Lectures      |                                                                                              |                                                                                                                                             |   |        |
|                                     | Presentation Methods    |                                                                                              |                                                                                                                                             |   |        |
|                                     | Discussion and Dialogue |                                                                                              |                                                                                                                                             |   |        |
| Daily and Monthly Reports and Exams | Theoretical Lectures    | Algae<br><br>Viruses                                                                         | Introducing students to algae and viruses, their way of life, .and reproduction                                                             | ◦ | Third  |
|                                     | Practical Lectures      |                                                                                              |                                                                                                                                             |   |        |
|                                     | Presentation Methods    |                                                                                              |                                                                                                                                             |   |        |
|                                     | Discussion and Dialogue |                                                                                              |                                                                                                                                             |   |        |

|                                            |                                                                                                                  |                                                 |                                                                                |          |               |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------|----------|---------------|
| <p>Daily and Monthly Reports and Exams</p> | <p>Theoretical Lectures</p> <p>Practical Lectures</p> <p>Presentation Methods</p> <p>Discussion and Dialogue</p> | <p>Pathogenic microorganisms</p>                | <p>Introducing students to pathogenic .microorganisms</p>                      | <p>◦</p> | <p>Fourth</p> |
| <p>Daily and Monthly Reports and Exams</p> | <p>Theoretical Lectures</p> <p>Practical Lectures</p> <p>Presentation Methods</p> <p>Discussion and Dialogue</p> | <p>Microorganisms in water and sewage water</p> | <p>Introducing students to microorganisms found in water and .sewage water</p> | <p>◦</p> | <p>Fifth</p>  |
| <p>Daily and Monthly Reports and Exams</p> | <p>Theoretical Lectures</p> <p>Practical Lectures</p> <p>Presentation Methods</p> <p>Discussion and Dialogue</p> | <p>Preservation of microbial cell cultures</p>  | <p>Teaching students how to preserve microbial cell .cultures</p>              | <p>◦</p> | <p>sixth</p>  |

|                                     |                                                                                                           |                                                                                                 |                                                                                 |   |         |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---|---------|
| Daily and Monthly Reports and Exams | Theoretical Lectures<br><br>Practical Lectures<br><br>Presentation Methods<br><br>Discussion and Dialogue | Introduction to microbiology laboratory equipment                                               | Introducing students to laboratory equipment used for detecting .microorganisms | ◦ | seventh |
| Daily and Monthly Reports and Exams | Theoretical Lectures<br><br>Practical Lectures<br><br>Presentation Methods<br><br>Discussion and Dialogue | Preparation of culture media<br><br>Sterilization                                               | Teaching students how to prepare culture media and sterilization .methods       | ◦ | Eighth  |
| Daily and Monthly Reports and Exams | Theoretical Lectures<br><br>Practical Lectures<br><br>Presentation Methods<br><br>Discussion and Dialogue | Simple staining<br><br>Differential staining (Gram staining<br>Special staining (Spore staining | Teaching students different staining methods for .microorganisms                | ◦ | Ninth   |

|                                     |                                                                                                                  |                                                         |                                                                               |   |          |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------|---|----------|
| Daily and Monthly Reports and Exams | <p>Theoretical Lectures</p> <p>Practical Lectures</p> <p>Presentation Methods</p> <p>Discussion and Dialogue</p> | Isolation of microorganisms                             | Teaching students methods of isolating microorganisms from various .sources   | ◦ | Tenth    |
| Daily and Monthly Reports and Exams | <p>Theoretical Lectures</p> <p>Practical Lectures</p> <p>Presentation Methods</p> <p>Discussion and Dialogue</p> | Examination of bacterial movement (hanging drop (method | Introducing students to drop hanging microscopy to detect .bacterial movement | ◦ | Eleventh |
| Daily and Monthly Reports and Exams | <p>Theoretical Lectures</p> <p>Practical Lectures</p> <p>Presentation Methods</p> <p>Discussion and Dialogue</p> | Counting microorganisms (Plate count (method            | Teaching students how to count microorganisms using plate counting .methods   | ◦ | Twelfth  |



|                                     |                                                                                                                  |                                                                 |                                                                                        |   |            |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------|---|------------|
| Daily and Monthly Reports and Exams | <p>Theoretical Lectures</p> <p>Practical Lectures</p> <p>Presentation Methods</p> <p>Discussion and Dialogue</p> | Examination of fungi                                            | Teaching students how to examine .fungi                                                | ◦ | Thirteenth |
| Daily and Monthly Reports and Exams | <p>Theoretical Lectures</p> <p>Practical Lectures</p> <p>Presentation Methods</p> <p>Discussion and Dialogue</p> | Water examination (is it suitable for human consumption or (not | Teaching students how to examine .water                                                | ◦ | Fourteenth |
| Daily and Monthly Reports and Exams | <p>Theoretical Lectures</p> <p>Practical Lectures</p> <p>Presentation Methods</p> <p>Discussion and Dialogue</p> | Examination of bacterial sensitivity .to antibiotics            | Teaching students how to test microorganism sensitivity and resistance to .antibiotics | ◦ | Fifteenth  |

|                                                                                                                                                                                                |                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 11. course Evaluation                                                                                                                                                                          |                                                                                  |
| Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily and oral exams, monthly exams, written exams, reports, etc.              |                                                                                  |
| 12. Learning and Teaching Resources                                                                                                                                                            |                                                                                  |
| Microbiology: Translation by Wafa Jasim, Hassan Mohsen Ali, 1986, Mosul University.<br><br>Introduction to Microbiology: Translation by Dr. Khudhair Dawood, Mazahim Qasim, Wael Yaseen, 1985. | Required Textbooks (Curriculum-based, if (available                              |
| Soil Microbiology: Ghiath Qasim, Mudhir Abdul-Sattar, 1989, Mosul University.                                                                                                                  | (Main References (Sources                                                        |
| Fungi: Dr. Ibrahim Aziz, Dr. Kaisar Najib.<br><br>Microorganisms: Dr. Najm Al-Din Al-Sharabi and others, 2004, Damascus University                                                             | Recommended Supporting Books and (.References (Scientific Journals, Reports, etc |
| <a href="https://www.scribd.com/document/491738379">https://www.scribd.com/document/491738379</a>                                                                                              | Electronic References, Websites                                                  |

### Course Description Form

|                                                                   |
|-------------------------------------------------------------------|
| -١-Course name                                                    |
| Principles of dairy science                                       |
| -٢-Course code                                                    |
| DAIR240                                                           |
| -٣-Semester/Year                                                  |
| ٢٠٢٤ – ٢٠٢٣ (Spring semester)                                     |
| -٤-Date of preparation of this description                        |
| 2024 -4-1                                                         |
| -٥-Available forms of attendance                                  |
| My presence                                                       |
| 6- Number of study hours (total) / Number of units (total)        |
| 75 hours (2 theoretical + 3 practical) * 15 weeks                 |
| 7- Name of course supervisor (if more than one name is mentioned) |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                        |                                |                                                         |         |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------|---------|----------|
| Email :sadiq.fanjan@uomisan.edu.iq                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Name:<br><br>Assistant Professor Abdul-Ridha Ati Jafar<br><br>Assistant Professor Sadiq Finjan Hasnawi |                                |                                                         |         |          |
| -٨-Course objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                        |                                |                                                         |         |          |
| <ul style="list-style-type: none"><li>●Introducing students to the components of milk and its high nutritional value, which makes it an important product from a nutritional, health, and economic perspective.</li><li>●Developing students' theoretical and practical skills that enable them to detect milk adulteration.</li><li>●Developing students' milk processing skills, such as making cheese, fermented milk, butter, skimmed milk, and dairy ice cream, among others.</li><li>●Teaching students how to protect milk from contamination by pathogenic microorganisms .</li></ul> |                                                                                                        |                                | Course objectives                                       |         |          |
| -٩-Teaching and learning strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                        |                                |                                                         |         |          |
| 1. Presenting the curriculum using images and illustrations that facilitate students' understanding of the material.<br>2. Training students in conducting laboratory tests on dairy products, developing their skills in this field.<br>3. Conducting discussions and dialogues with students, which in turn enhances students' self-confidence.                                                                                                                                                                                                                                             |                                                                                                        |                                |                                                         |         | Strategy |
| 10- Course structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                        |                                |                                                         |         |          |
| Evaluation Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Learning Method                                                                                        | Unit or Topic Name             | Desired Learning Outcomes                               | watches | week     |
| Daily and Monthly Reports and Exams                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Theoretical Lectures                                                                                   | Examination of Milk Components | Enabling students to conduct tests on milk components   | o       | First    |
| Daily and Monthly Reports and Exams                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Practical Lectures                                                                                     | Chemical Composition of Milk   | Introducing students to the chemical components of milk | o       | Second   |

|                                     |                                                                         |                                                                                                 |                                                                              |   |         |
|-------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---|---------|
| Daily and Monthly Reports and Exams | Presentation Methods                                                    | Factors Affecting Milk Production                                                               | Introducing students to the most important factors affecting milk production | ◦ | Third   |
| Daily and Monthly Reports and Exams | المحاضرات النظرية<br>المحاضرات العملية<br>طرق العرض<br>المناقشة والحوار | بروتينات الحليب                                                                                 | Introducing students to milk proteins                                        | ◦ | Fourth  |
| Daily and Monthly Reports and Exams | Theoretical Lectures                                                    | Milk fat, microscopic examination of fat, and fat percentage determination (Babcock and Kerber) | Introducing students to fats and fatty acids in milk                         | ◦ | Fifth   |
| Daily and Monthly Reports and Exams | Practical Lectures                                                      | Milk acidity determination                                                                      | Introducing students to how to estimate the concentration of fat in milk     | ◦ | Sixth   |
| Daily and Monthly Reports and Exams | Presentation Methods                                                    | Specific gravity and adulteration                                                               | Introducing students to how to detect adulteration in milk                   | ◦ | Seventh |
| Daily and Monthly Reports and Exams | Discussion and Dialogue                                                 | Milk salts and vitamins                                                                         | Introducing students to the important salts and vitamins found in milk       | ◦ | Eighth  |
| Daily and Monthly Reports and Exams | Theoretical Lectures                                                    | Milk sorting, butter production, and factors affecting milking                                  | Introducing students to milk sorting methods and factors affecting curd      | ◦ | Ninth   |
| Daily and Monthly Reports and Exams | Theoretical Lectures                                                    | Milk microorganisms                                                                             | Introducing students to milk microbiology                                    | ◦ | Tenth   |

|                                     |                      |                                  |                                                 |   |            |
|-------------------------------------|----------------------|----------------------------------|-------------------------------------------------|---|------------|
| Daily and Monthly Reports and Exams | Practical Lectures   | Cheese making                    | Introducing students to cheese-making methods   | ◦ | Eleventh   |
| Daily and Monthly Reports and Exams | Presentation Methods | Dairy ice cream making           | Teaching students to make ice cream             | ◦ | Twelfth    |
| Daily and Monthly Reports and Exams | Theoretical Lectures | Quality control of milk received | Introducing students to milk quality control    | ◦ | Thirteenth |
| Daily and Monthly Reports and Exams | Practical Lectures   | Milk handling in dairy factories | Introducing students to dairy laboratories      | ◦ | Fourteenth |
| Daily and Monthly Reports and Exams | Presentation Methods | Milk thermal treatments          | Introducing students to milk thermal processing | ◦ | Fifteenth  |

١١ - تقييم المقرر

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc

#### 12- Learning and Teaching Resources

|                                                                                                                            |                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| General Dairy Principles by Dr. Mohsen Al-Shabibi, Dr. Nizar Shukri, Dr. Sadiq Jawad Taama, and Dr. Hilan Hamadi Ali, 1999 | Required textbooks (methodology, if available)                                   |
| General Dairy Principles by Gamal Abdel Tawab                                                                              | Primary references (sources)                                                     |
| Dairy Principles by Ramzi Abdel Rahman                                                                                     | Recommended supporting books and references (scientific journals, reports, etc.) |
| <a href="https://www.scribd.com/document/491738379">https://www.scribd.com/document/491738379</a>                          | Electronic references, websites                                                  |

### MODULE DESCRIPTION FORM

#### Module Information

معلومات المادة الدراسية

|                                    |                      |              |                               |                                                                                                                                                                                                                                                                                                        |       |
|------------------------------------|----------------------|--------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Module Title                       | industrial crops     |              |                               | Module Delivery                                                                                                                                                                                                                                                                                        |       |
| Module Type                        | Core                 |              |                               | <div><input checked="" type="checkbox"/> Theory</div> <div><input checked="" type="checkbox"/> Lecture</div> <div><input checked="" type="checkbox"/> Lab</div> <div><input type="checkbox"/> Tutorial</div> <div><input type="checkbox"/> Practical</div> <div><input type="checkbox"/> Seminar</div> |       |
| Module Code                        | INCR212              |              |                               |                                                                                                                                                                                                                                                                                                        |       |
|                                    |                      |              |                               |                                                                                                                                                                                                                                                                                                        |       |
| SWL (hr/sem)                       | 75                   |              |                               |                                                                                                                                                                                                                                                                                                        |       |
| Module Level                       |                      | ٢U           | Semester of Delivery          |                                                                                                                                                                                                                                                                                                        | ١     |
| Administering Department           |                      | Food science | College                       | Agriculture                                                                                                                                                                                                                                                                                            |       |
| Module Leader                      | Sadeq Fenjan Hasnawi |              | e-mail                        | <a href="mailto:sadiq.fanjan@uomisan.edu.iq">sadiq.fanjan@uomisan.edu.iq</a>                                                                                                                                                                                                                           |       |
| Module Leader’s Acad. Title        |                      | lecturer     | Module Leader’s Qualification |                                                                                                                                                                                                                                                                                                        | Ph.D. |
| Module Tutor                       | Sadeq Fenjan Hasnawi |              | e-mail                        | <a href="mailto:sadiq.fanjan@uomisan.edu.iq">sadiq.fanjan@uomisan.edu.iq</a>                                                                                                                                                                                                                           |       |
| Peer Reviewer Name                 |                      | Name         | e-mail                        | E-mail                                                                                                                                                                                                                                                                                                 |       |
| Scientific Committee Approval Date |                      |              | Version Number                |                                                                                                                                                                                                                                                                                                        | 1.0   |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخرى |  |      |          |
|------------------------------------------------------------------|--|------|----------|
| Prerequisite module                                              |  | None | Semester |
| Co-requisites module                                             |  | None | Semester |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Objectives<br>أهداف المادة الدراسية                                                                         | <p>the following can be reached:-</p> <ul style="list-style-type: none"> <li>Preparing scientific cadres specialized in the science and technology of modern food manufacturing.</li> <li>Developing the study skills of students</li> <li>Understanding the nature of agricultural work based on international and local statistical standards.</li> <li>Providing students with knowledge of the nature and function of agricultural methods for industrial crops.</li> </ul> |
| Module Learning Outcomes<br>مخرجات التعلم للمادة الدراسية                                                          | <p>The graduate of the department is awarded a degree (Bachelor of Food Sciences)</p> <p>And acquires the following skills:</p> <ol style="list-style-type: none"> <li>The ability to know industrial crops</li> <li>The ability to know and bear responsibility.</li> <li>The ability to communicate.</li> <li>The ability to use skills in food sciences.</li> </ol>                                                                                                          |

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | 5- The ability to intertwine with other disciplines to serve them                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Indicative Contents<br>المحتويات الإرشادية | <p>The guiding content includes the following.</p> <ul style="list-style-type: none"> <li>•Instructions for students and workers on equipment related to laboratory industrial crops</li> <li>•Getting to know some of the devices related to laboratory industrial crops</li> <li>•Opening the door for discussion and questions with students</li> <li>•Conducting visits to Biochemistry laboratorys</li> <li>• Conducting experiments related to the science of industrial crops</li> </ul> |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم |                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies                                                      | <p>1- Presenting the curriculum using images and illustrations that facilitate students' understanding of the material.</p> <p>2- Training students to conduct laboratory tests in a way that develops their skills in this area.</p> <p>3- Conducting discussions and dialogues with students , which in turn enhances students' self-confidence.</p> |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا       |     |                                                                    |   |
|-------------------------------------------------------------------------|-----|--------------------------------------------------------------------|---|
| Structured SWL (h/sem)<br>الحمل الدراسي المنتظم للطالب خلال الفصل       | 109 | Structured SWL (h/w)<br>الحمل الدراسي المنتظم للطالب أسبوعيا       | 7 |
| Unstructured SWL (h/sem)<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 91  | Unstructured SWL (h/w)<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 6 |
| Total SWL (h/sem)<br>الحمل الدراسي الكلي للطالب خلال الفصل              | 200 |                                                                    |   |

| Module Evaluation<br>تقييم المادة الدراسية |                 |             |                |                |                           |
|--------------------------------------------|-----------------|-------------|----------------|----------------|---------------------------|
|                                            |                 | Time/Number | Weight (Marks) | Week Due       | Relevant Learning Outcome |
| Formative assessment                       | Quizzes         | 2           | 10% (10)       | 5 and 10       | LO #1, #2 and #10, #11    |
|                                            | Assignments     | 2           | 10% (10)       | 2 and 12       | LO #3, #4 and #6, #7      |
|                                            | Projects / Lab. | 1           | 10% (10)       | Continuou<br>s | All                       |
|                                            | Report          | 1           | 10% (10)       | 13             | LO #5, #8 and #10         |
| Summative assessment                       | Midterm Exam    | 2hr         | 10% (10)       | 7              | LO #1 - #7                |
|                                            | Final Exam      | 3hr         | 50% (50)       | 16             | All                       |
| Total assessment                           |                 |             | 100% (100      |                |                           |

|  |        |  |  |
|--|--------|--|--|
|  | Marks) |  |  |
|--|--------|--|--|

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظري |                                                                                                                          |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|                                                            | Material Covered                                                                                                         |
| Week 1                                                     | Introduction to Industrial Crops – Definition – Importance – Classification                                              |
| Week 2                                                     | Oil Crops – Chemical Composition of Vegetable Oils                                                                       |
| Week 3                                                     | Sesame Crop – Economic Importance – Suitable Environment – Sesame Varieties                                              |
| Week 4                                                     |                                                                                                                          |
| Week 5                                                     | Pistachio Crop – Economic Importance – Suitable Environment – Varieties                                                  |
| Week 6                                                     | First Month Exam                                                                                                         |
| Week 7                                                     | Sunflower Crop – Economic Importance – Suitable Environment – Varieties                                                  |
| Week 8                                                     | Soybean Crop – Economic Importance – Suitable Environment – Varieties                                                    |
| Week 9                                                     | Rapeseed Crop – Economic Importance – Suitable Environment – Varieties                                                   |
| Week 10                                                    | Cotton Crop – Economic Importance – Suitable Environment – Varieties                                                     |
| Week 11                                                    | Flax Crop – Economic Importance – Suitable Environment – Varieties                                                       |
| Week 12                                                    | Second Month Exam                                                                                                        |
| Week 13                                                    | Students' knowledge of the importance of sugar crops and their role in stimulating the economy Through financial returns |
| Week 14                                                    | Sugar beet crop – economic importance – suitable environment – varieties                                                 |
| Week 15                                                    | Fiber crops – economic importance – suitable environment                                                                 |

| Delivery Plan (Weekly Lab. Syllabus)<br>المنهاج الاسبوعي للمختبر |                                                                                                   |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
|                                                                  | Material Covered                                                                                  |
| Week 1                                                           | The most important agricultural service operations applied in the cultivation of industrial crops |
| Week 2                                                           | Methods of extracting oils from oil crops                                                         |
| Week 3                                                           | Botanical description and agricultural service operations for sesame                              |
| Week 4                                                           | Botanical description and agricultural service operations for pistachio                           |



|         |                                                                                                                                        |
|---------|----------------------------------------------------------------------------------------------------------------------------------------|
| Week 5  | Lab 5: First month exam                                                                                                                |
| Week 6  | Botanical description and agricultural service operations for sunflower                                                                |
| Week 7  | Botanical description and agricultural service operations for soybean                                                                  |
| Week 8  | Botanical description and agricultural service operations for rape                                                                     |
| Week 9  | Botanical description and agricultural service operations for cotton                                                                   |
| Week 10 | Botanical description and agricultural service operations for flax                                                                     |
| Week 11 | Second Month Exam                                                                                                                      |
| Week 12 | Introduction, explanation of their economic importance, types of sugars, global Sugar crops: and Arab sugar production and consumption |
| Week 13 | Botanical description and agricultural service operations for sugar beet                                                               |
| Week 14 | Botanical description and agricultural service operations for sugarcane                                                                |
| Week 15 | Definition Fiber crops and their industrial importance                                                                                 |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس |                                                                                                                                                                             |                           |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                                          | Text                                                                                                                                                                        | Available in the Library? |
| Required Texts                                           | 1- Al-Baldawi and others. 2014. Principles of Field Crops Production.<br>2- Safar, Nasser Hussein. 1990. Oil and Sugar Crops.<br>3- Rizk and Ali. 1981. Oil and Sugar Crops | Yes                       |
| Recommended Texts                                        | Mahmoud Al-Shaer and others. 2015. Oil, sugar and wheat crops.                                                                                                              | Yes                       |
| Websites                                                 |                                                                                                                                                                             |                           |

| Grading Scheme<br>مخطط الدرجات |                  |                     |          |                                       |
|--------------------------------|------------------|---------------------|----------|---------------------------------------|
| Group                          | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100)    | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 - 49)         | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
|                                |                  |                     |          |                                       |

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

## second semester

### Course Description / Food Laboratory Management

|                                                                                           |
|-------------------------------------------------------------------------------------------|
| Course Name / Food factories Management                                                   |
|                                                                                           |
| Course code 301/                                                                          |
|                                                                                           |
| Semester/Year/Spring Semester/Second Stage                                                |
| Date this description was prepared<br>٢٠٢٥ -3-12 //                                       |
|                                                                                           |
| Available attendance forms // Weekly                                                      |
|                                                                                           |
| Number of study hours (total) / Number of units (total) // 30 theoretical hours / 2 units |
|                                                                                           |
| Course administrator name (if more than one name is mentioned)                            |
| Name: Dr . Anwaar Yasser                                                                  |

:anwaaryaser@uomisan.edu.iq

M.M. Rasha Naji Abdel-Aleem

: [rashanaji@uomisan.edu.iq](mailto:rashanaji@uomisan.edu.iq)

## Course objectives

Theoretical section // Provides a general overview of food plant management, including the historical development of the food industry and its importance, as well as management in terms of concept and functions, in addition to production management, human resources management, warehouse management, marketing management in food plants, and health regulations and industrial relations specific to food plants.

Practical section // None.

Course  
objectives

## Teaching and learning strategies

1- Explanation and clarification

2- Lecture method

3- Student groups

Strategy

## Course structure

| Evaluation<br>method | Learning<br>method | Name of the<br>unit or topic | Required learning<br>outcomes | hours       | week      |
|----------------------|--------------------|------------------------------|-------------------------------|-------------|-----------|
| my tests .....       | Explanation        | Food                         | Historical development        | Theoretical | the first |

|  |                                                   |                              |                                                                                      |               |            |
|--|---------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------|---------------|------------|
|  | and presentation of the lecture model             | Laboratories Management      | of food industries, importance of food industries                                    | 2             |            |
|  | nothing                                           | nothing                      | nothing                                                                              | Practical 3   |            |
|  | Explanation and presentation of the lecture model | Food Laboratories Management | The concept of management; the importance of management; the functions of management | Theoretical ۲ | the second |
|  | nothing                                           | nothing                      | nothing                                                                              | Practical 3   |            |
|  | Explanation and presentation of the lecture model | Food Laboratories Management | Planning in food factories                                                           | Theoretical ۲ | the third  |
|  | nothing                                           | nothing                      | nothing                                                                              | Practical 3   |            |
|  |                                                   |                              |                                                                                      |               |            |
|  |                                                   |                              |                                                                                      |               |            |
|  |                                                   |                              |                                                                                      |               |            |
|  |                                                   |                              |                                                                                      |               |            |

|  |                                                   |                              |                                |               |         |
|--|---------------------------------------------------|------------------------------|--------------------------------|---------------|---------|
|  |                                                   |                              |                                |               |         |
|  | Explanation and presentation of the lecture model | Food Laboratories Management | Organization in food factories | Theoretical ۲ | Fourth  |
|  | nothing                                           | nothing                      | nothing                        | Practical 3   |         |
|  | First month test                                  |                              |                                | Theoretical ۲ | Fifth   |
|  | nothing                                           |                              |                                | Practical 3   |         |
|  | Explanation and presentation of the lecture model | Food Laboratories Management | Guidance in food laboratories  | Theoretical ۲ | Sixth   |
|  | nothing                                           | nothing                      | nothing                        | Practical 3   |         |
|  | Explanation and                                   | Food Laboratories            | Food laboratory control        | Theoretical ۲ | Seventh |

|  |                                                                  |                                    |                                            |               |        |
|--|------------------------------------------------------------------|------------------------------------|--------------------------------------------|---------------|--------|
|  | presentation<br>of the<br>lecture<br>model                       | Management                         |                                            |               |        |
|  | nothing                                                          | nothing                            | nothing                                    | Practical 3   |        |
|  | Explanation<br>and<br>presentation<br>of the<br>lecture<br>model | Food<br>Laboratories<br>Management | Production management<br>in food factories | Theoretical ۲ | Eighth |
|  | nothing                                                          | nothing                            | nothing                                    | Practical 3   |        |
|  | Explanation<br>and<br>presentation<br>of the<br>lecture<br>model | Food<br>Laboratories<br>Management | Marketing management<br>in food factories  | Theoretical ۲ | Ninth  |
|  | nothing                                                          | nothing                            | nothing                                    | Practical 3   |        |

|  |                                                                  |                                    |                                                       |                  |            |
|--|------------------------------------------------------------------|------------------------------------|-------------------------------------------------------|------------------|------------|
|  | Second month test                                                |                                    |                                                       | ۲<br>Theoretical | tenth      |
|  | nothing                                                          |                                    |                                                       | Practical 3      |            |
|  | Explanation<br>and<br>presentation<br>of the<br>lecture<br>model | Food<br>Laboratories<br>Management | Human Resources<br>Management in Food<br>Laboratories | ۲<br>Theoretical | eleventh   |
|  | nothing                                                          | nothing                            | nothing                                               | Practical 3      |            |
|  | Explanation<br>and<br>presentation<br>of the<br>lecture<br>model | Food<br>Laboratories<br>Management | Financial management<br>in food factories             | ۲<br>Theoretical | twelfth    |
|  | nothing                                                          | nothing                            | nothing                                               | Practical 3      |            |
|  | Explanation<br>and<br>presentation                               | Food<br>Laboratories<br>Management | Inventory management<br>in food factories             | ۲<br>Theoretical | thirteenth |

|            |                                                                  |                                    |                                                                |               |            |
|------------|------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------|---------------|------------|
|            | of the<br>lecture<br>model                                       |                                    |                                                                |               |            |
|            | nothing                                                          | nothing                            | nothing                                                        | Practical 3   |            |
|            | Explanation<br>and<br>presentation<br>of the<br>lecture<br>model | Food<br>Laboratories<br>Management | Hygiene rules in food<br>factories and industrial<br>relations | Theoretical   | fourteenth |
|            | nothing                                                          | nothing                            | nothing                                                        | Practical 3   |            |
|            | Third month test                                                 |                                    |                                                                | Theoretical   | fifteenth  |
|            | nothing                                                          |                                    |                                                                | Practical 3   |            |
|            | Course evaluation                                                |                                    |                                                                |               |            |
| Final exam | Project or<br>report                                             | Daily exams                        | Practical exams                                                | Monthly exams |            |
| ١٠٠%       | -                                                                | ٥٠%                                | -                                                              | ٤٠%           |            |



|                                                                                                                               |                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Learning and teaching resources                                                                                               |                                                                               |
| Food Laboratories Management, Al-Takriti and others                                                                           | Required prescribed books                                                     |
| Helan Hammadi Ali Al-Tikriti, Food Laboratories Department, University of Baghdad, College of Agriculture, 1986               | Main references (sources)                                                     |
| Hassoun Muhammad Ali Al-Haddad, Department of Food and Dairy Laboratories, University of Basra, College of Agriculture, 1986. | Recommended supporting books and references (scientific journals and reports) |
|                                                                                                                               | Electronic references, websites                                               |

### MODULE DESCRIPTION FORM

| Module Information<br>معلومات المادة الدراسية |                                      |                                                                                                                                                                                          |                      |
|-----------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Module Title                                  | Principles of Agricultural Extension | Module Delivery                                                                                                                                                                          |                      |
| Module Type                                   | Core                                 | <input checked="" type="checkbox"/> Theory<br><input checked="" type="checkbox"/> Lecture<br><input checked="" type="checkbox"/> Tutorial<br><input checked="" type="checkbox"/> Seminar |                      |
| Module Code                                   | AGEC129                              |                                                                                                                                                                                          |                      |
| ECTS Credits                                  | 5                                    |                                                                                                                                                                                          |                      |
| SWL (hr/sem)                                  | 125                                  |                                                                                                                                                                                          |                      |
| Module Level                                  |                                      | Semester of Delivery                                                                                                                                                                     | SEMESTER OF<br>FIFTH |

|                                    |                                      |                               |                         |
|------------------------------------|--------------------------------------|-------------------------------|-------------------------|
| Administering Department           | Principles of Agricultural Extension | College                       | College of Agriculture  |
| Module Leader                      | Dr. Alaa Kazem Farhan                | e-mail                        | alaa.k.f@uomisan.edu.iq |
| Module Leader's Acad. Title        | Lecturer                             | Module Leader's Qualification |                         |
| Module Tutor                       |                                      | e-mail                        |                         |
| Peer Reviewer Name                 |                                      | e-mail                        |                         |
| Scientific Committee Approval Date | 19/1/2025                            | Version Number                |                         |

| Relation with other Modules       |      |          |  |
|-----------------------------------|------|----------|--|
| العلاقة مع المواد الدراسية الأخرى |      |          |  |
| Prerequisite module               | None | Semester |  |
| Co-requisites module              | None | Semester |  |

| Module Aims, Learning Outcomes and Indicative Contents    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Module Objectives<br>أهداف المادة الدراسية                | 5. Introducing students to the importance of agricultural extension in the agricultural process.<br>6. Introducing rural leadership and its role in transferring the new from modern sciences and using them in the agricultural process.<br>7. Introducing students to the tasks performed by the agricultural advisor.<br>8. Introducing students to rural leaders and their role in the agricultural extension process.<br>9. Introducing students to the categories of adopters of agricultural innovations.<br>10. Introducing students to the methods used to introduce the new innovations that serve the agricultural process. |
| Module Learning Outcomes<br>مخرجات التعلم للمادة الدراسية | Students will learn:<br>19. Clarifying the basic concepts and principles of agricultural extension<br>20. Address possible problems that arise in how economic resources are used in the production process. How to plan the production process.<br>21. Familiarize the student with the distribution of leadership roles in the counseling process.                                                                                                                                                                                                                                                                                   |

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                       | <p>22. Introducing students to the tasks performed by the agricultural advisor.</p> <p>23. Introducing students to the categories of adopters of agricultural innovations.</p> <p>24. Introducing students to the methods used to introduce the new innovations that serve the agricultural process.</p>                                                                                                                                                                                                                                                                                          |
| <p>Indicative Contents</p> <p>المحتويات الإرشادية</p> | <ul style="list-style-type: none"> <li>• Introduction, main principles of agricultural extension, main definitions of agricultural extension science.</li> <li>• Publicizing agricultural problems and their causes.</li> <li>• Study the relations between the agricultural extension and the extension and its mutual potential.</li> <li>• Study the relationships between agricultural extension and rural women's development and.</li> <li>• Study of adopter categories.</li> <li>• Studying the development of the rural community and ways to improve its level of suffering.</li> </ul> |

| <p>Learning and Teaching Strategies</p> <p>استراتيجيات التعلم والتعليم</p> |                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Strategies</p>                                                          | <p>The main strategy that will be adopted in offering this module is to encourage students' participation in discussion and lectures, while at the same time improving and expanding their critical thinking skills. This will be achieved through classrooms where learning takes place through classroom lectures, participation in lecturing, and snap, semester and final exams.</p> |

| <p>Student Workload (SWL)</p> <p>الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا</p>       |     |                                                                               |     |
|------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------|-----|
| <p>Structured SWL (h/sem)</p> <p>الحمل الدراسي المنتظم للطالب خلال الفصل</p>       | 48  | <p>Structured SWL (h/w)</p> <p>الحمل الدراسي المنتظم للطالب أسبوعيا</p>       | 8.3 |
| <p>Unstructured SWL (h/sem)</p> <p>الحمل الدراسي غير المنتظم للطالب خلال الفصل</p> | 77  | <p>Unstructured SWL (h/w)</p> <p>الحمل الدراسي غير المنتظم للطالب أسبوعيا</p> | 3.2 |
| <p>Total SWL (h/sem)</p> <p>الحمل الدراسي الكلي للطالب خلال الفصل</p>              | 125 |                                                                               |     |

| Module Evaluation     |                 |             |                  |          |                           |
|-----------------------|-----------------|-------------|------------------|----------|---------------------------|
| تقييم المادة الدراسية |                 |             |                  |          |                           |
|                       |                 | Time/Number | Weight (Marks)   | Week Due | Relevant Learning Outcome |
| Formative assessment  | Quizzes         | 2           | 20% (20)         | 5 and 10 | LO #1, #2 and #7, #6      |
|                       | Assignments     | 2           | 10% (10)         | 2 and 12 | LO #3, #4 and #6, #7      |
|                       | Projects / Lab. |             |                  |          |                           |
|                       | Report          | 2           | 10% (10)         | 13       | LO #5, #7 and #8          |
| Summative assessment  | Midterm Exam    | 2hr         | 10% (10)         | 7        | LO #1 - #7                |
|                       | Final Exam      | 3hr         | 50% (50)         | 16       | All                       |
| Total assessment      |                 |             | 100% (100 Marks) |          |                           |

| Delivery Plan (Weekly Syllabus) |                                                            |
|---------------------------------|------------------------------------------------------------|
| المنهاج الاسبوعي النظري         |                                                            |
|                                 | Material Covered                                           |
| Week 1                          | Introduction to the science of agricultural extension.     |
| Week 2                          | Agricultural Advisor ... Who is he and what are his roles? |
| Week 3                          | Rural Leaders.                                             |
| Week 4                          | Principles and objectives of agricultural extension work.  |
| Week 5                          | The process of guidance communication and its elements     |
| Week 6                          | Factors affecting the process of guidance communication.   |
| Week 7                          | examination                                                |
| Week 8                          | .New agricultural technology                               |

|         |                                                                                |
|---------|--------------------------------------------------------------------------------|
| Week 9  | Evaluation of Mentorship Programs.                                             |
| Week 10 | Areas of Evaluation of Guidance Programs.                                      |
| Week 11 | Ways to adopt modern ideas.                                                    |
| Week 12 | Categories of adopters of new technologies.                                    |
| Week 13 | The place of agriculture in the economy and its place in economic development. |
| Week 14 | The relationship of agricultural extension to some applied sciences.           |
| Week 15 | Preparatory week before the final Exam                                         |
| Week 16 | examination                                                                    |

| Learning and Teaching Resources |                                                                                                       |                           |
|---------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------|
| مصادر التعلم والتدريس           |                                                                                                       |                           |
|                                 | Text                                                                                                  | Available in the Library? |
| Required Texts                  | - Contemporary Agricultural Extension, Dr. Ahmed Mohamed / Faculty of Agriculture - Cairo University. |                           |
| Recommended Texts               | Agricultural Extension, Dr. Ahmed Galal Owais / Faculty of Specific Education - Cairo University      |                           |
| Websites                        |                                                                                                       |                           |

| Grading Scheme              |                  |         |          |                                  |
|-----------------------------|------------------|---------|----------|----------------------------------|
| مخطط الدرجات                |                  |         |          |                                  |
| Group                       | Grade            | التقدير | Marks %  | Definition                       |
| Success Group<br>(50 - 100) | A - Excellent    | امتياز  | 90 - 100 | Outstanding Performance          |
|                             | B - Very Good    | جيد جدا | 80 - 89  | Above average with some errors   |
|                             | C - Good         | جيد     | 70 - 79  | Sound work with notable errors   |
|                             | D - Satisfactory | متوسط   | 60 - 69  | Fair but with major shortcomings |
|                             | E - Sufficient   | مقبول   | 50 - 59  | Work meets minimum criteria      |

|                        |           |                     |         |                                       |
|------------------------|-----------|---------------------|---------|---------------------------------------|
| Fail Group<br>(0 – 49) | FX – Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
|                        | F – Fail  | راسب                | (0-44)  | Considerable amount of work required  |
|                        |           |                     |         |                                       |

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

#### IMODULE DESCRIPTION FORM

| Module Information                 |                 |                      |                                                                                                                                                                                                                                          |                                                                          |
|------------------------------------|-----------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| معلومات المادة الدراسية            |                 |                      |                                                                                                                                                                                                                                          |                                                                          |
| Module Title                       | Storage Pest    |                      | Module Delivery                                                                                                                                                                                                                          |                                                                          |
| Module Type                        | Basic           |                      | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input checked="" type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |                                                                          |
| Module Code                        | MPP3534         |                      |                                                                                                                                                                                                                                          |                                                                          |
| ECTS Credits                       | 5               |                      |                                                                                                                                                                                                                                          |                                                                          |
| SWL (hr/sem)                       | 125             |                      |                                                                                                                                                                                                                                          |                                                                          |
| Module Level                       | 2               | Semester of Delivery |                                                                                                                                                                                                                                          |                                                                          |
| Administering Department           | FOOD Science    |                      | College                                                                                                                                                                                                                                  | Agriculture                                                              |
| Module Leader                      | Ali Hussein Ali |                      | e-mail                                                                                                                                                                                                                                   | <a href="mailto:Ali_hussain@uomisan.ed.iq">Ali_hussain@uomisan.ed.iq</a> |
| Module Leader's Acad. Title        | Teacher         |                      | Module Leader's Qualification                                                                                                                                                                                                            | M.Sc                                                                     |
| Module Tutor                       | N.A.            |                      | e-mail                                                                                                                                                                                                                                   | N.A.                                                                     |
| Peer Reviewer Name                 | N.A.            |                      | e-mail                                                                                                                                                                                                                                   | N.A.                                                                     |
| Scientific Committee Approval Date | 4/10/2024       |                      | Version Number                                                                                                                                                                                                                           | 1.0                                                                      |

| Relation with other Modules       |                   |          |   |
|-----------------------------------|-------------------|----------|---|
| العلاقة مع المواد الدراسية الأخرى |                   |          |   |
| Prerequisite module               | None              | Semester |   |
| Prerequisite module               | None              | Semester |   |
| Prerequisite module               | None              | Semester |   |
| Prerequisite module               | None              | Semester |   |
| Co-requisites module              | Insect laboratory | Semester | 4 |

| Module Aims, Learning Outcomes and Indicative Contents   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p>Module Objectives</p> <p>أهداف المادة الدراسية</p>    | <ol style="list-style-type: none"> <li>1. Pests found in warehouses give students a complete idea about us</li> <li>2. Knowing how much damage these pests can cause.</li> <li>3. Teaching students the most important methods of detecting and diagnosing these pests.</li> <li>4. Developing students' abilities to recognize the signs and symptoms caused by pests in stores and fields and</li> <li>5. distinguishing them from symptoms caused by other insect pests.</li> <li>6. To provide students with basic skills and how to deal with and control the infestations caused by these pests in warehouses.</li> <li>7. Developing students' abilities to eliminate these pests in safe ways.</li> </ol> |

|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Learning Outcomes<br>مخرجات التعلم للمادة الدراسية | <ol style="list-style-type: none"> <li>1. Ability to analyze problems and suggest appropriate solutions.</li> <li>2. The ability to participate with confidence and success in agricultural projects in terms of technical and administrative aspects. And communicate effectively with the relevant parties to resolve them.</li> <li>3. Applying acquired concepts and skills in diverse contexts.</li> <li>4. Developing capabilities to enable working independently and effectively as part of a team.</li> <li>5. effective methods to protect stored materials from warehouse pests.</li> <li>6. Use Knowing how environmental factors affect and how they affect insect and non-insect pests.</li> </ol> |
| Indicative Contents<br>المحتويات الإرشادية                | <ol style="list-style-type: none"> <li>1. participation in the lecture topics through discussion.</li> <li>2. Students diagnose some types of warehouse pests by collecting infected specimens.</li> <li>3. Use of light and conventional microscopes to identify types of store pests .</li> <li>4. Identifying warehouse pests through field visits to grain stores.</li> </ol>                                                                                                                                                                                                                                                                                                                                |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم |                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies                                                      | <ol style="list-style-type: none"> <li>1. Use the lecture method to deliver information.</li> <li>2. Encouraging students to obtain information by requiring them to submit scientific reports.</li> <li>3. Training students on the logical discussion cup to reach the results.</li> <li>4. Learning through field and mental.</li> </ol> |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا |     |                                                              |      |
|-------------------------------------------------------------------|-----|--------------------------------------------------------------|------|
| Structured SWL (h/sem)<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 108 | Structured SWL (h/w)<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 7.2  |
| Unstructured SWL (h/sem)                                          | 17  | Unstructured SWL (h/w)                                       | 1.13 |



|                                             |     |                                          |  |
|---------------------------------------------|-----|------------------------------------------|--|
| الحمل الدراسي غير المنتظم للطلاب خلال الفصل |     | الحمل الدراسي غير المنتظم للطلاب أسبوعيا |  |
| Total SWL (h/sem)                           | 125 |                                          |  |
| الحمل الدراسي الكلي للطلاب خلال الفصل       |     |                                          |  |

### Module Evaluation

#### تقييم المادة الدراسية

|                      |                 | Time/Number | Weight (Marks)   | Week Due | Relevant Learning Outcome |
|----------------------|-----------------|-------------|------------------|----------|---------------------------|
| Formative assessment | Quizzes         | 2           | 10% (10)         | ٢#٨      | ٣                         |
|                      | Assignments     | 2           | 10% (10)         | ١#٦#٧    | ٦3#                       |
|                      | Projects / Lab. | 4           | 10% (10)         | ٦#٨      | ٤                         |
|                      | Report          | 2           | 10% (10)         | ٢#٩      | ٥                         |
| Summative assessment | Midterm Exam    | 2hr         | 10% (10)         | 7        | ALL                       |
|                      | Final Exam      | 3hr         | 50% (50)         | 16       | ALL                       |
| Total assessment     |                 |             | 100% (100 Marks) |          |                           |

### Delivery Plan (Weekly Syllabus)

#### المنهاج الاسبوعي النظري

|        | Material Covered                                                                                     |
|--------|------------------------------------------------------------------------------------------------------|
| Week 1 | The importance of storing grains.                                                                    |
| Week 2 | Factors affecting the nutritional value and spoilage of grains during storage. Properties of grains. |
| Week 3 | Insect damage to stored materials, conditions suitable for the growth of storage fungi on grains.    |
| Week 4 | Classification and diagnosis of important grain and stored material insects according to families.   |

|         |                                                                                                                                        |
|---------|----------------------------------------------------------------------------------------------------------------------------------------|
| Week 5  | Origin of storehouse insects, storehouse insects prefer to reproduce on grains.                                                        |
| Week 6  | of insect infestation of stored materials, detection of insect infestation in stores, examination and taking samples.                  |
| Week 7  | Midterm Examination.                                                                                                                   |
| Week 8  | Methods of controlling stored material insects, traditional methods of control, modern methods of control.                             |
| Week 9  | .Biological control, legislative control and chemical control                                                                          |
| Week 10 | Mycotoxins, factors affecting the formation of mycotoxins, general properties of mycotoxins                                            |
| Week 11 | Study of the biological and environmental aspects of the most important types of warehouse insects.                                    |
| Week 12 | Study of insects of the legume family.                                                                                                 |
| Week 13 | Study of the most important non-insect grain and stored materials, science and its economic importance and the impact on stored grains |
| Week 14 | Rodents: Economic importance, the most important types of rodents found in grain and food stores, and their classification             |
| Week 15 | Harmful birds in grain stores, their types, their importance from an agricultural perspective, and methods of controlling them.        |
| Week 16 | Final exam.                                                                                                                            |

| Delivery Plan (Weekly Practical Syllabus) |                                                                                                                                                                                                 |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| المنهاج الاسبوعي للمختبر                  |                                                                                                                                                                                                 |
|                                           | Material Covered                                                                                                                                                                                |
| Week 1                                    | Symptoms of infestation of grains and other stored materials with different types of storage insects.                                                                                           |
| Week 2                                    | Distinguishing between internal and external types of infection on stored infected grains, comparing them with some types of grains healthy grains free of infection .                          |
| Week 3                                    | Review of some methods for detecting internal infection of grains, with the implementation of four types of laboratory experiments (dye method. Transparency, X-ray, grinding and sterilization |
| Week 4                                    | Methods of collection acts with methods of preserving insects                                                                                                                                   |

|         |                                                                                                                                                                                                                              |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 5  | Studying the most important types of warehouse insects, diagnosing them and distinguishing between their different types, the Sedney and similar flour beetles                                                               |
| Week 6  | Small grain borer Sawtooth grain beetle, Cuddle beetle, Tobacco beetle.                                                                                                                                                      |
| Week 7  | Field visit.                                                                                                                                                                                                                 |
| Week 8  | Study the morphological characteristics of grain weevil species and distinguish between them: rice weevil, grain weevil, yellow corn weevil. and distinguish between the damage each species causes to the hosts it infects. |
| Week 9  | Carpet beetle, carpet beetle, clothes moth of all types and distinguishing between the different damages they cause to the types of infected fabrics.                                                                        |
| Week 10 | Legume family insects: large bean beetle, southern bean beetle, chickpea beetle, lentil beetle, bean beetle, distinguishing between their different types and identifying different types of infestation                     |
| Week 11 | Field visit.                                                                                                                                                                                                                 |
| Week 12 | Study of different types of warehouse mites and types of predatory mites.                                                                                                                                                    |
| Week 13 | Identify different types of rodents, distinguish between them, and notice some of their harmful effects.                                                                                                                     |
| Week 14 | Learn about some types of harmful birds with pictures and slides.                                                                                                                                                            |
| Week 15 | Field visit.                                                                                                                                                                                                                 |

| Learning and Teaching Resources |                                                                             |                           |
|---------------------------------|-----------------------------------------------------------------------------|---------------------------|
| مصادر التعلم والتدريس           |                                                                             |                           |
|                                 | Text                                                                        | Available in the Library? |
| Required Texts                  | Mahdi 1983) Warehouse insects Al-Azzawi, Abdullah Falih and Muhammad Tahir. | Yes                       |
| Recommended Texts               |                                                                             |                           |
| Websites                        | All agricultural magazines and magazines related to warehouse pests.        |                           |

| Grading Scheme                                                                                                                                                                                                                                                                                                                                                                       |                  |                     |          |                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|----------|---------------------------------------|
| مخطط الدرجات                                                                                                                                                                                                                                                                                                                                                                         |                  |                     |          |                                       |
| Group                                                                                                                                                                                                                                                                                                                                                                                | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100)                                                                                                                                                                                                                                                                                                                                                          | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                      | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                      | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                      | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                      | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)                                                                                                                                                                                                                                                                                                                                                               | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                      | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
|                                                                                                                                                                                                                                                                                                                                                                                      |                  |                     |          |                                       |
| <p>Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p> |                  |                     |          |                                       |

### MODULE DESCRIPTION FORM

| Module Information       |                             |         |                                                                                                                                                                                                                              |     |  |  |
|--------------------------|-----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--|--|
| معلومات المادة الدراسية  |                             |         |                                                                                                                                                                                                                              |     |  |  |
| عنوان الوحدة             | Baath regime crimes in Iraq |         | Module Delivery                                                                                                                                                                                                              |     |  |  |
| نوع الوحدة               | Support                     |         | <input checked="" type="checkbox"/> نظرية<br><input type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |     |  |  |
| رمز الوحدة               | University of Maysan        |         |                                                                                                                                                                                                                              |     |  |  |
| ECTS Credits             | 2                           |         |                                                                                                                                                                                                                              |     |  |  |
| SWL (hr/sem)             | 50                          |         |                                                                                                                                                                                                                              |     |  |  |
| Module Level             | 1                           | 1       | Semester of Delivery                                                                                                                                                                                                         | One |  |  |
| Administering Department | Food sciences               | College | Agriculture                                                                                                                                                                                                                  |     |  |  |

|                                    |                        |                               |                                                                                  |
|------------------------------------|------------------------|-------------------------------|----------------------------------------------------------------------------------|
| Module Leader                      |                        | e-mail                        |                                                                                  |
| Module Leader's Acad. Title        | Assistant Teacher.     | Module Leader's Qualification | M.SC.                                                                            |
| Module Tutor                       | Hussein Zughair Jassim | e-mail                        | <a href="mailto:hussain.zghair@uomisan.edu.iq">hussain.zghair@uomisan.edu.iq</a> |
| Peer Reviewer Name                 | Name                   | e-mail                        | E-mail                                                                           |
| Scientific Committee Approval Date |                        | Version Number                |                                                                                  |

| Relation with other Modules       |      |          |  |
|-----------------------------------|------|----------|--|
| العلاقة مع المواد الدراسية الأخرى |      |          |  |
| Prerequisite module               | None | Semester |  |
| Co-requisites module              | None | Semester |  |

| Module Aims, Learning Outcomes and Indicative Contents    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Module Objectives<br>أهداف المادة الدراسية                | <p>1. Introducing students to the concept of crimes and their types.</p> <p>2. Introducing students to the types of international crimes.</p> <p>3. Introducing students to the decisions issued by the Supreme Criminal Court.</p> <p>4. Emphasizing the features and characteristics of crime departments.</p> <p>5. Emphasizing the application of the crime and its violation of Iraqi laws.</p>                                                                                                                                                                                                                                                     |
| Module Learning Outcomes<br>مخرجات التعلم للمادة الدراسية | <p>1- The student should know the concept of Baath crimes and their violation of laws and their applications</p> <p>2- The student should know how to deal with people and apply penalties for violations</p> <p>3- The ability to prosecute perpetrators among the components of society</p> <p>4- The ability to share with others in spreading these violations and raising awareness among members of society</p> <p>5- The ability to analyze and define the concept of crimes and distinguish between different types of crimes</p> <p>6- Identifying crime issues at the national and international levels and their impact on public opinion</p> |
| Indicative Contents<br>المحتويات الإرشادية                | <p>Crimes and their types</p> <p>Mass grave crimes</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|  |                                                     |
|--|-----------------------------------------------------|
|  | Violations of Iraqi laws<br>human rights violations |
|--|-----------------------------------------------------|

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم |                                                                                                                     |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Strategies                                                      | Participate in classroom preparation-١<br>Question and answer method in the classroom -2<br>Duties -3<br>Reports -4 |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا       |    |                                                                    |   |
|-------------------------------------------------------------------------|----|--------------------------------------------------------------------|---|
| Structured SWL (h/sem)<br>الحمل الدراسي المنتظم للطالب خلال الفصل       | 32 | Structured SWL (h/w)<br>الحمل الدراسي المنتظم للطالب أسبوعيا       | ٣ |
| Unstructured SWL (h/sem)<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | ١8 | Unstructured SWL (h/w)<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 1 |
| Total SWL (h/sem)<br>الحمل الدراسي الكلي للطالب خلال الفصل              | ٥٠ |                                                                    |   |

| Module Evaluation<br>تقييم المادة الدراسية |                 |             |                |                |                           |
|--------------------------------------------|-----------------|-------------|----------------|----------------|---------------------------|
|                                            |                 | Time/Number | Weight (Marks) | Week Due       | Relevant Learning Outcome |
| Formative assessment                       | Quizzes         | 2           | 10% (10)       | 5 and 10       | LO #1, #2 and #10, #11    |
|                                            | Assignments     | 2           | 10% (10)       | 2 and 12       | LO #3, #4 and #6, #7      |
|                                            | Projects / Lab. | 1           | 10% (10)       | Continuou<br>s | All                       |
|                                            | Report          | 1           | 10% (10)       | 13             | LO #5, #8 and #10         |

|                      |              |     |                  |    |            |
|----------------------|--------------|-----|------------------|----|------------|
| Summative assessment | Midterm Exam | 2hr | 10% (10)         | 7  | LO #1 - #7 |
|                      | Final Exam   | 3hr | 50% (50)         | 16 | All        |
| Total assessment     |              |     | 100% (100 Marks) |    |            |

| Delivery Plan (Weekly Syllabus) |                                                                                       |
|---------------------------------|---------------------------------------------------------------------------------------|
| المنهاج الاسبوعي النظري         |                                                                                       |
|                                 | Material Covered                                                                      |
| Week 1                          | Definition of crimes                                                                  |
| Week 2                          | Types of crimes                                                                       |
| Week 3                          | International crimes and social crimes                                                |
| Week 4                          | Mass grave crimes and psychological crimes                                            |
| Week 5                          | Crimes of the Ba'ath regime according to the Iraqi Supreme Criminal Court Law of ٢٠٠٥ |
| Week 6                          | Decisions issued by the Supreme Criminal Court                                        |
| Week 7                          | exam                                                                                  |
| Week 8                          | human rights violations                                                               |
| Week 9                          | Violations of Iraqi laws                                                              |
| Week 10                         | draining the marshes                                                                  |
| Week 11                         | Genocide graves events                                                                |
| Week 12                         | Baath regime prisons and detention centers                                            |
| Week 13                         | Destruction of cities and villages                                                    |
| Week 14                         | The Baath regime's position on religion                                               |
| Week 15                         | final exam                                                                            |

| Learning and Teaching Resources |
|---------------------------------|
| مصادر التعلم والتدريس           |

|                   | Text                                                                                                       | Available in the Library? |
|-------------------|------------------------------------------------------------------------------------------------------------|---------------------------|
| Required Texts    | Diamond L. & M. F. Plattner, eds., (2009), Democracy. A Reader, Baltimore, Johns Hopkins University Press. | Yes                       |
| Recommended Texts | مفهوم الجرائم                                                                                              |                           |
| Websites          | <a href="http://ghrorg-learning.blogspot.com">http://ghrorg-learning.blogspot.com</a>                      |                           |

| Grading Scheme<br>مخطط الدرجات                                                                                                                                                                                                                                                                                                                                                |                  |                     |          |                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                         | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100)                                                                                                                                                                                                                                                                                                                                                   | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                               | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                               | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                               | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                               | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)                                                                                                                                                                                                                                                                                                                                                        | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                               | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
| Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above. |                  |                     |          |                                       |

### MODULE DESCRIPTION FORM

| Module Information<br>معلومات المادة الدراسية |                            |                 |
|-----------------------------------------------|----------------------------|-----------------|
| Module Title                                  | Democracy and Human Rights | Module Delivery |
| Module Type                                   | Basic                      | ☑ Theory        |
| Module Code                                   | UOB104                     |                 |



|                                    |                        |                    |                                                                                                                                                                                                 |                                                                                  |       |
|------------------------------------|------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-------|
| ECTS Credits                       | 2                      |                    | <input type="checkbox"/> Lecture<br><br><input type="checkbox"/> Lab<br><br><input type="checkbox"/> Tutorial<br><br><input type="checkbox"/> Practical<br><br><input type="checkbox"/> Seminar |                                                                                  |       |
| SWL (hr/sem)                       | 50                     |                    |                                                                                                                                                                                                 |                                                                                  |       |
| Module Level                       |                        | UGx11 1            | Semester of Delivery                                                                                                                                                                            |                                                                                  | ١     |
| Administering Department           |                        | Food sciences      | College                                                                                                                                                                                         | Agriculture                                                                      |       |
| Module Leader                      |                        |                    | e-mail                                                                                                                                                                                          |                                                                                  |       |
| Module Leader’s Acad. Title        |                        | Assistant Teacher. | Module Leader’s Qualification                                                                                                                                                                   |                                                                                  | M.SC. |
| Module Tutor                       | Hussein Zughair Jassim |                    | e-mail                                                                                                                                                                                          | <a href="mailto:hussein.zghair@uomisan.edu.iq">hussein.zghair@uomisan.edu.iq</a> |       |
| Peer Reviewer Name                 |                        |                    | e-mail                                                                                                                                                                                          |                                                                                  |       |
| Scientific Committee Approval Date |                        |                    | Version Number                                                                                                                                                                                  |                                                                                  |       |

| Relation with other Modules       |      |          |  |
|-----------------------------------|------|----------|--|
| العلاقة مع المواد الدراسية الأخرى |      |          |  |
| Prerequisite module               | None | Semester |  |
| Co-requisites module              | None | Semester |  |

| Module Aims, Learning Outcomes and Indicative Contents    |                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Objectives<br>أهداف المادة الدراسية                | Teaching students the basics of human rights and their laws.1<br>. Identify the most important rights and the most important problems and challenges they face ٢.<br>. Identify and understand concepts related to our freedoms, including individual rights and personal freedoms 3.<br>Developing the ability to think critically about issues related to individual freedoms and rights 4. |
| Module Learning Outcomes<br>مخرجات التعلم للمادة الدراسية | . The student should know the concept of rights, their laws and applications-1<br>he student should know how to participate in spreading rights and their applications through real, practical work 2.<br>The ability to use rights as a means for peaceful coexistence among the components of society 3-<br>The ability to share these rights with others. 4- .                             |

|                                                       |                                                                                                                                                                                                                                                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                       | <p>The ability to analyze and define the concept of freedom and distinguish between different types of freedoms ١-5</p> <p>Interacting with freedom issues at the national and international levels and influencing the formation of public opinion. -6</p> |
| <p>Indicative Contents</p> <p>المحتويات الإرشادية</p> | <p>Fundamental and non-fundamental rights and freedoms</p> <p>Civil rights and liberties</p> <p>political rights</p> <p>Human Rights and International Humanitarian Law</p>                                                                                 |

| <p>Learning and Teaching Strategies</p> <p>استراتيجيات التعلم والتعليم</p> |                                                                                                                                         |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Strategies                                                                 | <p>Participate in classroom preparation. ١</p> <p>Question and answer method in the classroom -2</p> <p>Duties -3</p> <p>Reports -4</p> |

| <p>Student Workload (SWL)</p> <p>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا</p> |    |                                          |   |
|------------------------------------------------------------------------------|----|------------------------------------------|---|
| Structured SWL (h/sem)                                                       | 32 | Structured SWL (h/w)                     | ٣ |
| الحمل الدراسي المنتظم للطالب خلال الفصل                                      |    | الحمل الدراسي المنتظم للطالب أسبوعيا     |   |
| Unstructured SWL (h/sem)                                                     | ١8 | Unstructured SWL (h/w)                   | 1 |
| الحمل الدراسي غير المنتظم للطالب خلال الفصل                                  |    | الحمل الدراسي غير المنتظم للطالب أسبوعيا |   |
| Total SWL (h/sem)                                                            | ٥٠ |                                          |   |
| الحمل الدراسي الكلي للطالب خلال الفصل                                        |    |                                          |   |

| <p>Module Evaluation</p> <p>تقييم المادة الدراسية</p> |         |             |                |          |                           |
|-------------------------------------------------------|---------|-------------|----------------|----------|---------------------------|
| As                                                    |         | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
| Formative assessment                                  | Quizzes | 2           | 10% (10)       | 5 and 10 | LO #1, #2 and #10, #11    |

|                         |                        |     |                     |                |                      |
|-------------------------|------------------------|-----|---------------------|----------------|----------------------|
|                         | Assignments            | 2   | 10% (10)            | 2 and 12       | LO #3, #4 and #6, #7 |
|                         | Projects / <b>Lab.</b> | 1   | 10% (10)            | Continuou<br>s | All                  |
|                         | Report                 | 1   | 10% (10)            | 13             | LO #5, #8 and #10    |
| Summative<br>assessment | Midterm Exam           | 2hr | 10% (10)            | 7              | LO #1 - #7           |
|                         | Final Exam             | 3hr | 50% (50)            | 16             | All                  |
| Total assessment        |                        |     | 100% (100<br>Marks) |                |                      |

| Delivery Plan (Weekly Syllabus) |                                                                                                                                          |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| المنهاج الاسبوعي النظري         |                                                                                                                                          |
| Week                            | Material Covered                                                                                                                         |
| Week 1                          | Definition of rights                                                                                                                     |
| Week 2                          | Types of human rights                                                                                                                    |
| Week 3                          | ndamental and non-fundamental rights                                                                                                     |
| Week 4                          | Civil and political rights                                                                                                               |
| Week 5                          | Economic, social and cultural rights, individual rights and collective rights                                                            |
| Week 6                          | New Rights Sect Human Rights and International Humanitarian Law The Relationship Between Human Rights and International Humanitarian Law |
| Week 7                          | exam                                                                                                                                     |
| Week 8                          | What is the concept of freedoms? The term freedom and public freedoms                                                                    |
| Week 9                          | The evolution of the concept of public freedoms                                                                                          |
| Week 10                         | Forms and types of public freedoms                                                                                                       |
| Week 11                         | The legal system of public freedoms                                                                                                      |
| Week 12                         | Regulation of public freedoms by public authorities                                                                                      |
| Week 13                         | Guarantees of public freedoms                                                                                                            |
| Week 14                         | Freedoms in modern political thought                                                                                                     |

|         |            |
|---------|------------|
| Week 15 | final exam |
|---------|------------|

| Learning and Teaching Resources<br>مصادر التعلم والتدريس |                                                                                                            |                           |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------|
|                                                          | Text                                                                                                       | Available in the Library? |
| Required Texts                                           | Diamond L. & M. F. Plattner, eds., (2009), Democracy. A Reader, Baltimore, Johns Hopkins University Press. | Yes                       |
| Recommended Texts                                        | مفهوم الحريات العامة وحقوق الانسان، اطارها التاريخي والفكري<br>والفلسفي، وضماناتها الأساسية                |                           |
| Websites                                                 | <a href="http://ghrorg-learning.blogspot.com">http://ghrorg-learning.blogspot.com</a>                      |                           |

| Grading Scheme<br>مخطط الدرجات |                  |                     |          |                                       |
|--------------------------------|------------------|---------------------|----------|---------------------------------------|
| Group                          | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100)    | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)         | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
|                                |                  |                     |          |                                       |

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

## MODULE DESCRIPTION FORM

| Module Information<br>معلومات المادة الدراسية |                       |                                                                                                                                                                                                                                                     |                               |                                                                              |
|-----------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------|
| Module Title                                  | Biochemistry          | Module Delivery                                                                                                                                                                                                                                     |                               |                                                                              |
| Module Type                                   | Core                  | <input checked="" type="checkbox"/> Theory<br><input checked="" type="checkbox"/> Lecture<br><input checked="" type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |                               |                                                                              |
| Module Code                                   | DAIR240               |                                                                                                                                                                                                                                                     |                               |                                                                              |
|                                               |                       |                                                                                                                                                                                                                                                     |                               |                                                                              |
| SWL (hr/sem)                                  | 75                    |                                                                                                                                                                                                                                                     |                               |                                                                              |
| Module Level                                  |                       | ٢U                                                                                                                                                                                                                                                  | Semester of Delivery          |                                                                              |
| Administering Department                      |                       | Food science                                                                                                                                                                                                                                        | College                       | Agriculture                                                                  |
| Module Leader                                 | Abdulridha Ati Jaafar |                                                                                                                                                                                                                                                     | e-mail                        | <a href="mailto:ridha84@uomisan.edu.iq">ridha84@uomisan.edu.iq</a>           |
| Module Leader's Acad. Title                   |                       | lecturer                                                                                                                                                                                                                                            | Module Leader's Qualification |                                                                              |
| Module Tutor                                  |                       | Sadeq Fenjan Hasnawi                                                                                                                                                                                                                                | e-mail                        | <a href="mailto:sadiq.fanjan@uomisan.edu.iq">sadiq.fanjan@uomisan.edu.iq</a> |
| Peer Reviewer Name                            |                       | Name                                                                                                                                                                                                                                                | e-mail                        | E-mail                                                                       |
| Scientific Committee Approval Date            |                       |                                                                                                                                                                                                                                                     | Version Number                | 1.0                                                                          |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخرى |      |          |  |
|------------------------------------------------------------------|------|----------|--|
| Prerequisite module                                              | None | Semester |  |
| Co-requisites module                                             | None | Semester |  |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Objectives<br>أهداف المادة الدراسية                                                                         | <p style="text-align: right;">the following can be reached:-</p> <ul style="list-style-type: none"> <li>Introducing students to the basics of biochemistry</li> <li>Developing students' theoretical and practical skills regarding the cell and carbohydrates in their various parts</li> <li>Developing students' skills to distinguish between monosaccharides, disaccharides, and polysaccharides, as well as aldehydes and ketones</li> <li>Introducing students to proteins and lipids and their various parts</li> </ul> |
| Module Learning Outcomes<br>مخرجات التعلم للمادة الدراسية                                                          | <p style="text-align: right;">The graduate of the department is awarded a degree (Bachelor of Food Sciences)</p> <p style="text-align: right;">And acquires the following skills:</p> <p>2- The ability to know Biochemistry</p> <p style="text-align: right;">2- The ability to know and bear responsibility.</p> <p style="text-align: right;">3- The ability to communicate.</p> <p style="text-align: right;">4- The ability to use skills in food sciences.</p>                                                            |

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | 5- The ability to intertwine with other disciplines to serve them                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Indicative Contents<br>المحتويات الإرشادية | <p>The guiding content includes the following.</p> <ul style="list-style-type: none"> <li>•Instructions for students and workers on equipment related to laboratory Biochemistry</li> <li>•Getting to know some of the devices related to laboratory Biochemistry</li> <li>•Opening the door for discussion and questions with students</li> <li>•Conducting visits to Biochemistry laboratories</li> <li>• Conducting experiments related to the science of Biochemistry</li> </ul> |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم |                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies                                                      | <p>1- Presenting the curriculum using images and illustrations that facilitate students' understanding of the material.</p> <p>2- Training students to conduct laboratory tests in a way that develops their skills in this area.</p> <p>3- Conducting discussions and dialogues with students , which in turn enhances students' self-confidence.</p> |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا       |     |                                                                    |   |
|-------------------------------------------------------------------------|-----|--------------------------------------------------------------------|---|
| Structured SWL (h/sem)<br>الحمل الدراسي المنتظم للطالب خلال الفصل       | 109 | Structured SWL (h/w)<br>الحمل الدراسي المنتظم للطالب أسبوعيا       | 7 |
| Unstructured SWL (h/sem)<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 91  | Unstructured SWL (h/w)<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 6 |
| Total SWL (h/sem)<br>الحمل الدراسي الكلي للطالب خلال الفصل              | 200 |                                                                    |   |

| Module Evaluation<br>تقييم المادة الدراسية |                 |             |                  |                |                           |
|--------------------------------------------|-----------------|-------------|------------------|----------------|---------------------------|
|                                            |                 | Time/Number | Weight (Marks)   | Week Due       | Relevant Learning Outcome |
| Formative assessment                       | Quizzes         | 2           | 10% (10)         | 5 and 10       | LO #1, #2 and #10, #11    |
|                                            | Assignments     | 2           | 10% (10)         | 2 and 12       | LO #3, #4 and #6, #7      |
|                                            | Projects / Lab. | 1           | 10% (10)         | Continuou<br>s | All                       |
|                                            | Report          | 1           | 10% (10)         | 13             | LO #5, #8 and #10         |
| Summative assessment                       | Midterm Exam    | 2hr         | 10% (10)         | 7              | LO #1 - #7                |
|                                            | Final Exam      | 3hr         | 50% (50)         | 16             | All                       |
| Total assessment                           |                 |             | 100% (100 Marks) |                |                           |

| Delivery Plan (Weekly Syllabus) |                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------|
| المنهاج الاسبوعي النظري         |                                                                                    |
|                                 | Material Covered                                                                   |
| Week 1                          | Introducing students to the cell and the important parts it consists of.           |
| Week 2                          | <i>Introducing students to carbohydrates and their different types.</i>            |
| Week 3                          | Introducing students to the most important monosaccharides.                        |
| Week 4                          | Introducing students to polysaccharides.                                           |
| Week 5                          | First month exam                                                                   |
| Week 6                          | Introducing students to amino acids.                                               |
| Week 7                          | Introducing students to the essential and non-essential amino acids.               |
| Week 8                          | Introducing students to proteins and their importance.                             |
| Week 9                          | Introducing students to the structure, composition, and types of proteins.         |
| Week 10                         | Introducing students to saturated and unsaturated fatty acids and their reactions. |
| Week 11                         | Introducing students to simple lipids, their structure, and types.                 |
| Week 12                         | Introducing students to complex and derived lipids.                                |
| Week 13                         | Introducing students to the importance of nucleic acids.                           |
| Week 14                         | Introducing students to the types and structure of nucleic acids.                  |
| Week 15                         | Introducing students to enzymes and the factors affecting them.                    |

| Delivery Plan (Weekly Lab. Syllabus) |                                                     |
|--------------------------------------|-----------------------------------------------------|
| المنهاج الاسبوعي للمختبر             |                                                     |
|                                      | Material Covered                                    |
| Week 1                               | Introduction - The Cell                             |
| Week 2                               | Carbohydrates - Definition - Divisions              |
| Week 3                               | Monosaccharides                                     |
| Week 4                               | Polysaccharides                                     |
| Week 5                               | Lab 5: First month exam                             |
| Week 6                               | Introduction to Amino Acids - Divisions - Reactions |
| Week 7                               | Divisions of Amino Acids and Their Reactions        |
| Week 8                               | Proteins - Structure - Structure - Divisions        |
| Week 9                               | Structure, Structure, and Divisions of Proteins     |

|         |                                                                 |
|---------|-----------------------------------------------------------------|
| Week 10 | Fatty Acids - Divisions - Reactions                             |
| Week 11 | Simple Lipids - Structure - Divisions                           |
| Week 12 | Compound and Derived Lipids - Structure - Divisions             |
| Week 13 | Nucleic Acids                                                   |
| Week 14 | The Importance of Nucleic Acids, Their Divisions, and Structure |
| Week 15 | Enzymes, Their Properties, and Factors Affecting Them           |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس |                                                                                                                                         |                           |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                                          | Text                                                                                                                                    | Available in the Library? |
| Required Texts                                           | Hassan, Ali Mohammed and Shehab, Saad Khalil. Agricultural Biochemistry. University of Baghdad. Iraq. Biochemistry Dr. Sami Al-Muzaffar | Yes                       |
| Recommended Texts                                        | Fundamentals of Biochemistry Dr. Jassim Jandal<br>Introduction to Biochemistry Dr. Khawla Ahmed                                         | Yes                       |
| Websites                                                 | <a href="https://www.scribd.com/document/491738379">https://www.scribd.com/document/491738379</a>                                       |                           |

| Grading Scheme<br>مخطط الدرجات                                                                                                                                                                                                                                                                                                                                                |                  |                     |          |                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                         | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100)                                                                                                                                                                                                                                                                                                                                                   | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                               | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                               | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                               | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                               | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)                                                                                                                                                                                                                                                                                                                                                        | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                               | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
| Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above. |                  |                     |          |                                       |

Course Description Form for Food Hygiene, Department of Food Science



|                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Health Food                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| symbol The decision:                                                                                                                                                                                                                                                                                                                                                         | .2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| FOSA238                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Chapter/ The year: Annual                                                                                                                                                                                                                                                                                                                                                    | .3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Second Spring TermPhase II - 2024-2025                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Date of preparation of this description                                                                                                                                                                                                                                                                                                                                      | .4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1/18/2025                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Available forms of attendance:                                                                                                                                                                                                                                                                                                                                               | .5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| My presence                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Number of study hoursTotal/Number of units (total):                                                                                                                                                                                                                                                                                                                          | .6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2 My theory 3 Practical 3.5/ Unit                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Name Responsible The decision Academic ) If More From Name He mentions(                                                                                                                                                                                                                                                                                                      | .7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| M. Shabib Munshid Jassim shabib.mandesh@uomisan.edu.iq<br>MDr. Mustafa Adnan Eidan                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Goals The decision                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| .8                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>practical</p> <ul style="list-style-type: none"> <li>- The student learns the meaning of food health and safety. - The student is able to examine microbial evidence in food.</li> <li>- Can detect botulism bacteria - Identifies colon bacteria that cause intestinal infections - Identifies the cause of staphylococcal poisoning and its pathogenic types</li> </ul> | <p>Theoretical</p> <ul style="list-style-type: none"> <li>- Enabling the student to understand and comprehend what is related to microbial, chemical, physical and radioactive food contaminants. and food.</li> <li>Causative For allergies</li> <li>- Enabling the student to know the most important ways to protect humans from chemical and microbiological food pollutants.</li> <li>-Enabling the student to become familiar with the most important sources of food contamination.-Enabling the student to detect different types of food spoilage.</li> </ul> |
| Strategies Education and Learning                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| .9                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>practical</p> <ul style="list-style-type: none"> <li>- Lecture Interactive</li> <li>- The nerve mental</li> <li>- Dialogue and discussion</li> <li>- Assigning reports</li> </ul>                                                                                                                                                                                         | <p>Theoretical</p> <ul style="list-style-type: none"> <li>- Interactive lecture - Brainstorming</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                                       |                                                                                           |
|---------------------------------------|-------------------------------------------------------------------------------------------|
| - Conducting monthly and daily exams. | - Dialogue and discussion -<br>Assigning reports<br>- Conducting monthly and daily exams. |
|---------------------------------------|-------------------------------------------------------------------------------------------|

| .10<br>structure The<br>decision                           |                                                                                                 |                                              |                                                                                                                                                                                                                               |                |      |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------|
| Method<br>Evaluation                                       | Method<br>Learning                                                                              | Name Unit or<br>Subject                      | Outputs Learning Required                                                                                                                                                                                                     | hours          | week |
| Short<br>exams,<br>homework<br>assignments,<br>Discussions | Theoretical<br>Auditory<br>methods,<br>writing on<br>the board,<br>direct<br>dialogue<br>method | My theory<br>Food Hygiene and<br>Food Safety | My theory<br>:b1 Explains the concept of<br>health to the student<br>Food, food safety, and the<br>difference between healthy<br>food and safe food                                                                           | 2 My<br>theory | 1    |
| Short<br>exams,<br>homework<br>assignments,<br>Discussions | Practical<br>assignment of<br>tasks<br>and<br>reports                                           | Practical<br>The concept of food<br>hygiene  | Practical<br>:a1 The<br>student learns<br>the<br>importance<br>of food<br>safety.                                                                                                                                             | 3<br>Practical |      |
| Short<br>exams,<br>homework<br>assignments,<br>Discussions | Theoretical<br>Auditory<br>methods,<br>writing on<br>the board,<br>direct<br>dialogue<br>method | My theory<br>foodborne diseases              | My theory<br>C1 Explain to the student<br>the most important<br>foodborne diseases based on<br>the chemical composition of<br>the food and the difference<br>in contaminants depending<br>on the type of food.<br>Nutritional | 2 My<br>theory | 2    |
| Short<br>exams,                                            | Practical<br>assignment of                                                                      | Practical<br>Microbial evidence              | Practical<br>:e1The<br>student<br>judges the                                                                                                                                                                                  | 3<br>Practical |      |

|                                                |                                                                                   |                                                               |                                                                                                     |             |   |
|------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------|---|
| homework assignments, Discussions              | tasks and reports                                                                 |                                                               | healthiness of food through microbial evidence.                                                     |             |   |
| Short exams, homework assignments, Discussions | Theoretical Auditory methods, writing on the blackboard<br>Direct dialogue method | Human pathogens                                               | My theory :b2 The student is familiar with the factors affecting the spread of pathogens to humans. | 2 My theory | 3 |
| Short exams, homework assignments, Discussions | Practical assignment of tasks and reports                                         | My work<br>Total bacterial count                              | Practical b1: The student can know the total number of bacteria.                                    | 3 Practical |   |
| Short exams, homework assignments, Discussions | Theoretical Auditory methods, writing on the board, direct dialogue method        | My theory<br>Conditions that help microbes grow in food       | My theory :a1 The student learns about the mechanisms that help microbes grow in food.              | 2 My theory | 4 |
| Short exams, homework assignments, Discussions | Practical assignment of tasks and reports                                         | Practical isolation of bacteria<br>Bacillus From food samples | Practical :b2 The student learns about bacterial toxins. How to diagnose it?                        | 3 Practical |   |

|             |  |  |  |  |  |
|-------------|--|--|--|--|--|
| Discussions |  |  |  |  |  |
|-------------|--|--|--|--|--|

|                                                |                                                                                    |                                                                          |                                                                                                                   |             |   |
|------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------|---|
| Short exams, homework assignments, Discussions | My theory<br>Auditory methods, writing on the blackboard<br>Direct dialogue method | My theory<br>The most common diseases transmitted to humans through food | My theory<br>:c2 Explain to the student the changes and conditions that help microbes grow in food.               | 2 My theory | 5 |
| Short exams, homework assignments, Discussions | Practical assignment of tasks and reports                                          | Practical<br>Food poisoning and its types                                | Practical<br>:a2 The student is able to diagnose the microbial content. Healthy and spoiled food samples          | 3 Practical |   |
| Short exams, homework assignments, Discussions | My theory<br>Auditory methods, writing on the blackboard<br>Direct dialogue method | My theory<br>Hazard Analysis and Critical Control Points (HACCP) system  | My theory<br>c3: Suggest to the student an appropriate method for diagnosing the most common foodborne illnesses. | 2 My theory | 6 |
| Short exams, homework assignments              | Practical assignment of tasks and reports                                          | Practical<br>Isolation and cultivation of bacteria<br>Clostridium        | Practical<br>:b3 The student can isolate bacteriaclostridiumProviding anaerobic conditions for them               | 3 Practical |   |

|                                                           |                                                                                                     |                                                                          |                                                                                                                                                                                              |                 |   |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---|
| ents,<br>Discussion                                       |                                                                                                     |                                                                          |                                                                                                                                                                                              |                 |   |
| Short<br>exams,<br>homework<br>assignments,<br>Discussion | My theory<br>Auditory<br>methods,<br>writing on<br>the blackboard<br>, dialogue<br>method<br>Direct | My theory<br>Control of<br>chemical and<br>microbiological<br>pollutants | My theory<br>:c4 The student is familiar<br>with the most important<br>factors in controlling food<br>contamination through the<br>Hazard Analysis and<br>Critical Control Points<br>system. | 2 My<br>theory  | 7 |
| Short<br>exams,<br>homework<br>assignments,<br>Discussion | Practical<br>assignment of<br>tasks<br>and<br>reports                                               | Practical<br>A scientific visit<br>to a food factory                     | Practical<br>:b4 A scientific visit to<br>learn about manufacturing<br>processes and the<br>possibility of avoiding<br>pollution<br>In it                                                    | 3 Practi<br>cal |   |
| Short<br>exams,<br>homework<br>assignments,<br>Discussion | My theory<br>Auditory<br>methods,<br>writing on<br>the board,<br>direct<br>dialogue<br>method       | My theory<br>Types of<br>food hazards<br>and how to<br>control them      | My theory<br>:a2 The student learns the<br>most important methods of<br>controlling chemical,<br>physical and<br>microbiological pollutants.                                                 | 2 My<br>theory  | 8 |
| Short<br>exams,<br>homework<br>assignments,<br>Discussion | The<br>process<br>of<br>assigning<br>tasks<br>and reports                                           | Practical<br>The intestinal<br>family                                    | Practical<br>:a3 The student can isolate<br>coliform bacteria<br>From<br>different<br>food<br>sources                                                                                        | 3 Practi<br>cal |   |

|                                                |                                                                          |                                                                |                                                                                                                                                               |             |   |
|------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---|
| Short exams, homework assignments, Discussions | My theory Auditory methods, writing on the board, direct dialogue method | My theory Formation of the HACCP system team                   | My theory :b3 The student judges the efficiency of food manufacturing and preservation methods by knowing the types of hazards. In food and how to control it | 2 My theory | 9 |
| Short exams, homework assignments, Discussions | Practical assignment of tasks and reports                                | Practical Isolation bacteria E.coli                            | Practical :b3 It can isolate and identify colon bacteria from different foods.                                                                                | 3 Practical |   |
| Short exams, homework assignments, Discussions | My theory Auditory methods, writing on the board, direct dialogue method | My theory Chemical food contaminants                           | My theory :a3 The student learns the most important factors that must be taken into consideration when forming a computer team.                               | 2 My theory |   |
| Short exams, homework assignments, Discussions | Practical assignment of tasks and reports                                | Practical Isolation bacteria Samples from Salmonella Food      | Practical :b6 It can isolate and diagnose bacteria<br><br>And her ability salmonella<br><br>On the events of the disease                                      | 3 Practical |   |
| Short exams, homework assignments, Discussions | My theory Auditory methods, writing on the board, direct dialogue method | My theory Types of heavy metals that cause poisoning in humans | My theory :b4 The student masters the method of controlling chemical pollutants and contamination with food additives.                                        | 2 My theory |   |
| Short exams, homework                          | The process of assigning                                                 | Practical Distinguish between bacteria Shigella And            | Practical :b7 The student will be able to distinguish between bacterial species and examine food to                                                           | 3 Practical |   |

|                                                                |                                                                                               |                                                                       |                                                                                                  |                |  |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------|--|
| assignment<br>s,<br>Discussions                                | tasks<br>and reports                                                                          | Salmonella                                                            | ensure it is free of these<br>pathogenic species.                                                |                |  |
| Short<br>exams,<br>homework<br>assignment<br>s,<br>Discussions | My theory<br>Auditory<br>methods,<br>writing on<br>the board,<br>direct<br>dialogue<br>method | My theory<br>Contamination by<br>food additives                       | My theory<br>E1 The student identifies<br>the types of heavy metals<br>that are toxic to humans. | 2 My<br>theory |  |
| Short<br>exams,<br>homework<br>assignment<br>s,<br>Discussions | Practic<br>al<br>assign<br>ment of<br>tasks<br>and<br>reports                                 | Practical<br>Isolation and<br>diagnosis<br>Staphylococcus<br>bacteria | Practical<br>:a4 The student<br>can isolate the<br>bacterial<br>species.<br>From food samples    | 3<br>Practical |  |

|                                                             |                                                                                                                         |                                                                          |                                                                                                                                                                                                                                                                     |              |             |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Short exams,<br>homework<br>assignments<br>,<br>Discussions | My<br>theory<br><br>Audito<br>ry<br>metho<br>ds,<br>writing<br>on the<br>board,<br>direct<br>dialog<br>ue<br>metho<br>d | My<br>theory<br><br>The most dangerous food<br>additives to human health | My theory<br><br>:a4 The student<br>learns about the<br>danger of adding<br>nitrates and<br>nitrites to<br>canned meat, the<br>danger of adding<br>potassium<br>permanganate to<br>sterilize<br>vegetables,The<br>danger of adding<br>sodium benzoate<br>to pickles | 13<br>theory | 2<br>M<br>y |
| Short<br>exams,<br>homework<br>assignments,d<br>discussis   | Practical<br>assignment<br>of tasks and<br>reports                                                                      | Practical<br><br>Staphylococcusbacteriai s<br>o l a t i o n              | Practical<br><br>:b8It can<br>diagnose<br>bacteriastaphylo<br>coccus With<br>special<br>confirmatory<br>tests                                                                                                                                                       | 3 Practical  |             |
| Short exams,<br>homework<br>assignmes,<br>discussis         | My<br>theory<br><br>Audito<br>ry<br>metho<br>ds,<br>writing<br>on the<br>board,<br>direct<br>dialog<br>ue<br>metho<br>d | My theory<br><br>Chemical pesticide<br>poisoning                         | My theory<br><br>:a5 The student<br>is aware of the<br>effect of<br>chemical<br>pesticides<br>present in food<br>on the<br>occurrence of<br>kidney failure in<br>humans.                                                                                            | 14<br>theory | 2<br>M<br>y |
| Short<br>exams,hom<br>ework<br>assignnts,<br>Discussions    | The<br>proce<br>ss of<br>assign<br>ing<br>tasks<br>and reports                                                          | Practical<br><br>Mycotoxin production                                    | Practical<br><br>:a5 The<br>student can<br>prepare and<br>store the<br>mushroom<br>boards.                                                                                                                                                                          | 3 Practical  |             |



|                                                        |                                                                                        |                                                                                                                                                                                |                                                                                                                                     |                    |           |
|--------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|
|                                                        |                                                                                        |                                                                                                                                                                                |                                                                                                                                     |                    |           |
| <p>Short exams, homework assignments , Discussions</p> | <p>My theory</p> <p>Auditory methods, writing on the board, direct dialogue method</p> | <p>My theory</p> <p>Field visit to several research laboratories and quality control laboratories and submitting a report on the project. Student on a visit The mentioned</p> | <p>My theory</p> <p>:b5 The student is able to submit a comprehensive report on the scientific visits that have been conducted.</p> | <p>2 My theory</p> | <p>15</p> |
| <p>Short exams, homework assignments , Discussions</p> | <p>Practical assignment of tasks and reports</p>                                       | <p>Practical</p> <p>Laboratory production and testing of mycotoxins</p>                                                                                                        | <p>Practical</p> <p>:b9 The student can conduct a toxin production experiment.</p> <p>Instinct and its observation</p>              | <p>3 Practical</p> |           |

|          |        |                                                                                                                                                             |                                                                                   |  |                        |
|----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|------------------------|
| Relative | degree |                                                                                                                                                             |                                                                                   |  |                        |
| weight%  | 2.5    | Evaluation dateweek<br>Fourth week Fifth week Sixth week Fourteenth week Fifteenth week<br>Sixteenth week Eleventh week Final semester exams Fifteenth week |                                                                                   |  |                        |
| 2.5      | 2.5    | 11 Evaluation The decision                                                                                                                                  |                                                                                   |  |                        |
| 2.5      | 2      | Evaluation methods                                                                                                                                          |                                                                                   |  |                        |
| 2        | 2      | 1 Report 1                                                                                                                                                  |                                                                                   |  |                        |
| 2        | 1      | 2 Report 2                                                                                                                                                  |                                                                                   |  |                        |
| 1        | 7.5    | 3                                                                                                                                                           | short test(1) Quiz 4 Short test (2) Quiz 5 Short test (3) Quiz 6 Midterm test (1) |  |                        |
| 7.5      | 7.5    | 7                                                                                                                                                           | midterm exam(2)8                                                                  |  | Final theoretical exam |
| 7.5      | 40     | 9                                                                                                                                                           | Practical field project                                                           |  |                        |
| 40       | 5      |                                                                                                                                                             |                                                                                   |  |                        |

|      |      |                                     |                                |    |
|------|------|-------------------------------------|--------------------------------|----|
| 2    | 2    | The third and fifth weeks           | Field evaluation               | 10 |
| 1    | 1    | First week                          | A short practical test(1) Quiz | 11 |
| 0.5  | 0.5  | The fourth week                     | A short practical test(2) Quiz | 12 |
| 1    | 1    | Fourteenth week                     | A short practical test(3) Quiz | 13 |
| 5.5  | 5.5  | Weeks6And8And9And10 And11And12And13 | Direct fees and homework       | 14 |
| 20   | 20   | Final semester exams                | Final practical exam           | 15 |
| 100% | 100% | 100                                 | Total                          |    |

### Course Description Form

|                                                                       |
|-----------------------------------------------------------------------|
| 1. Course Name: Physical Chemistry                                    |
|                                                                       |
| 2. Course Code: DAAE319                                               |
|                                                                       |
| 3. Semester / Year: 2024-2025 Second Phase - Spring (Second) Semester |
|                                                                       |

| 4. Description Preparation Date: 1/10/2024                             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                                                                            |                                                                     |
|------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 5. Forms of Attendance: Weekly                                         |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                                                                            |                                                                     |
| 6. Number of Studying Hours (Total) / Number of Units (Total) 75 hours |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                                                                            |                                                                     |
| 7. Course Administrator's Name (mention all, if more than one name)    |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                                                                            |                                                                     |
| Name: Dr. Yahya Ajib Oudeh                                             |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Email: Yahya.ajjb@uomisan.edu.iq                                                            |                                                                                            |                                                                     |
| 8. Course Objectives                                                   |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                                                                            |                                                                     |
| Course Objectives                                                      |                          | <ul style="list-style-type: none"> <li>•The course focuses on defining the basic terms and concepts in physical chemistry, addressing the general gas law, studying thermodynamics and vapor pressure of liquids, and understanding ideal solutions and the general properties of solutions.</li> <li>•Providing a general understanding of physical chemistry and introducing students to the importance of studying this subject as an applied science.</li> <li>•Enriching students with knowledge related to physical chemistry, laws, theoretical and practical foundations, and modern and ancient methods for interpreting the laws of physics and utilizing them in the field of food science.</li> <li>•Introducing students to the concept of physical chemistry, the concept of solutions and their composition. It also teaches students how to handle and mix solutions, as well as calculation methods. It teaches students the basics of solutions, methods for preparing them, calculation methods, and general gas laws.</li> <li>•The practical aspect focuses on linking theoretical information with practical experiments related to food testing, such as measuring the refractive index, measuring light intensity, viscosity, etc., i.e., the most important tests performed in food laboratories.</li> </ul> |                                                                                             |                                                                                            |                                                                     |
| 9. Teaching and Learning Strategies                                    |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                                                                            |                                                                     |
| Strategies                                                             |                          | <ul style="list-style-type: none"> <li>•Explanation and clarification</li> <li>•Lecture method</li> <li>•Student groups</li> <li>•Practical lessons in chemistry labs</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                             |                                                                                            |                                                                     |
| 10. Course Structure                                                   |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                                                                            |                                                                     |
| Week                                                                   | Hours                    | Required Learning Outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Unit or subject name                                                                        | Learning method                                                                            | Evaluation method                                                   |
| 1                                                                      | 2 Theory,<br>3 Practical | Introducing students to physical chemistry, properties and states of matter, chemical bonds and their types.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Introduction to Physical Chemistry - States of Matter - Derivation of the Universal Gas Law | Using the lecture method using the blackboard to explain chemical structures and reactions | Semester Exam, Daily Exam, Student Performance Evaluation, Homework |
| 2                                                                      | 2 Theory,<br>3 Practical | Introducing students to Boyle's Law and Charles's Law – the three values of the gas constant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Boyle's Law and Charles's Law - The Three Values of the Gas Constant                        | Using the lecture method using the blackboard to explain chemical structures and           |                                                                     |

|    |                          |                                                                                                  |                                                                                                             |                                                                                            |                                                                     |
|----|--------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
|    |                          |                                                                                                  |                                                                                                             | reactions                                                                                  | Semester Exam, Daily Exam, Student Performance Evaluation, Homework |
| 3  | 2 Theory,<br>3 Practical | Introducing students to molecular pressure and physical and chemical properties.                 | Dalton's Law of Partial Pressure                                                                            | Using the lecture method using the blackboard to explain chemical structures and reactions |                                                                     |
| 4  | 2 Theory,<br>3 Practical | Introducing students to kinetic heat and thermodynamics.                                         | Thermodynamics - Energy in Biochemistry - The Three Thermodynamic Systems - The First Law of Thermodynamics | Using the lecture method using the blackboard to explain chemical structures and reactions |                                                                     |
| 5  | 2 Theory,<br>3 Practical | Introducing students to physical enthalpy and thermodynamics.                                    | Endothermal Content (Enthalpy) - The Second Law of Thermodynamics                                           | Using the lecture method using the blackboard to explain chemical structures and reactions |                                                                     |
| 6  | 2 Theory,<br>3 Practical | Introducing students to the physical and chemical properties of vapor and liquid.                | Liquid State - Vapor Pressure of a Liquid and Methods of Measuring It                                       | Using the lecture method using the blackboard to explain chemical structures and reactions |                                                                     |
| 7  | 2 Theory,<br>3 Practical | Monthly Exam                                                                                     | Monthly Exam                                                                                                | Monthly Exam                                                                               |                                                                     |
| 8  | 2 Theory,<br>3 Practical | Introducing students to vapor pressure and the physical properties of boiling point.             | Boiling Point and Its Relationship to Vapor Pressure                                                        | Using the lecture method using the blackboard to explain chemical structures and reactions |                                                                     |
| 9  | 2 Theory,<br>3 Practical | Introducing students to how to calculate and express concentrations of substances and solutions. | Methods of Expressing Solution Concentrations - Ideal Solutions                                             | Using the lecture method using the blackboard to explain chemical structures and reactions |                                                                     |
| 10 | 2                        | Introducing students to                                                                          | Raoult's Law -                                                                                              | Using the                                                                                  |                                                                     |

|    |                                |                                                                                                                                             |                                                                                                    |                                                                                            |
|----|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|    | Theory,<br>3<br>Practical      | the laws of non-ideal solutions.                                                                                                            | Non-Ideal Solutions with Positive and Negative Skewness                                            | lecture method using the blackboard to explain chemical structures and reactions           |
| 11 | 2<br>Theory,<br>3<br>Practical | Introducing students to the laws of non-ideal solutions and the physical properties of vapor pressure.                                      | Non-Ideal Solutions Containing Non-Volatile Solids - Decrease in Vapor Pressure                    | Using the lecture method using the blackboard to explain chemical structures and reactions |
| 12 | 2<br>Theory,<br>3<br>Practical | Introducing students to boiling point, freezing point depression, osmotic pressure increase, and other properties.                          | Elevation of Boiling Point, Depression of Freezing Point, and Increase in Osmotic Pressure         | Using the lecture method using the blackboard to explain chemical structures and reactions |
| 13 | 2<br>Theory,<br>3<br>Practical | Introducing students to solutions of dissociated (ionized) substances and solutions of combined substances and methods for estimating them. | Solutions of Dissociated (Ionized) Substances - Solutions of Combined Substances                   | Using the lecture method using the blackboard to explain chemical structures and reactions |
| 14 | 2<br>Theory,<br>3<br>Practical | Introducing students to the physical and chemical properties of equilibrium and ionization states.                                          | Chemical Equilibrium and Its States - Law of Mass Action - Ionic Equilibrium - Ionization of Water | Using the lecture method using the blackboard to explain chemical structures and reactions |
| 15 | 2<br>Theory,<br>3<br>Practical | Introducing students to the chemical properties and reaction rates of solutions.                                                            | pH - Dissociation of Weak Acids - Buffered Solutions                                               | Using the lecture method using the blackboard to explain chemical structures and reactions |

#### 11. Course Evaluation

:Theoretical section (30) marks

.Written exam (25) marks + coursework, reports, and classroom activities (5) marks

:Practical section (20) marks

.Written exam (15) marks + coursework, reports, and classroom activities (5) marks

#### 12. Learning and Teaching Resources

|                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Physical Chemistry P.W. Atkins Physical Chemistry. Farrington Roberta, A. Daniels Alberty. Fourth Edition 1975 Physical Chemistry. Gases and Thermodynamics. AlNiajmi F.A. Dawood</li> </ul> | <ul style="list-style-type: none"> <li>Physical Chemistry P.W. Atkins Physical Chemistry. Farrington Roberta, A. Daniels Alberty. Fourth Edition 1975 Physical Chemistry. Gases and Thermodynamics. AlNiajmi F.A. Dawood</li> </ul> |
| Main references (sources)                                                                                                                                                                                                           | Physical Chemistry: Theoretical Foundations and Applications (1986). Authored by Dr. Anis Abdul-Wahhab Al-Najjar<br><br>Physical Chemistry for the Life Sciences (1983). Translated by Dr. Mahdi Naji Al-Zakum                      |
| Recommended books and references (scientific journals, reports...)                                                                                                                                                                  |                                                                                                                                                                                                                                     |
| Electronic References, Websites                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |

### Course Description Form

|                                                                                                                                                                                                                                                                                                                                                   |                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Module Title                                                                                                                                                                                                                                                                                                                                      |                                                                                       |
| Food Factories Engineering                                                                                                                                                                                                                                                                                                                        |                                                                                       |
| Module Type                                                                                                                                                                                                                                                                                                                                       |                                                                                       |
| FAEN217                                                                                                                                                                                                                                                                                                                                           |                                                                                       |
| Semester/Year                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| ٢٠٢٥ - ٢٠٢٤(Spring semester)                                                                                                                                                                                                                                                                                                                      |                                                                                       |
| Scientific Committee Approval Date                                                                                                                                                                                                                                                                                                                |                                                                                       |
| 2024 -3-2                                                                                                                                                                                                                                                                                                                                         |                                                                                       |
| ٥- أشكال الحضور المتاحة                                                                                                                                                                                                                                                                                                                           |                                                                                       |
| حضور                                                                                                                                                                                                                                                                                                                                              |                                                                                       |
| ٦- عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                                           |                                                                                       |
| ٧٥ ساعة ( ٢ نظري + ٣ عملي ) * ١٥ أسبوع                                                                                                                                                                                                                                                                                                            |                                                                                       |
| ٧- اسم مسؤول المقرر الدراسي (إذا أكثر من أسم يذكر)                                                                                                                                                                                                                                                                                                |                                                                                       |
| الاسم:<br>م. د. صادق فنجان حسناوي<br>م. م. أنعام عبد الرضا حسين                                                                                                                                                                                                                                                                                   | الايميل: <a href="mailto:sadiq.fanjan@uomisan.edu.iq">sadiq.fanjan@uomisan.edu.iq</a> |
| ٨- أهداف المقرر                                                                                                                                                                                                                                                                                                                                   |                                                                                       |
| <ul style="list-style-type: none"> <li>Enabling the student to understand and comprehend the curriculum of laboratory engineering</li> <li>Developing the study skills of students</li> <li>Meeting the department's need for specialized staff in this course</li> <li>Responding to the requirements of the labor market and society</li> </ul> | Module Objectives<br>أهداف المادة الدراسية                                            |
| ٩- استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                                                                                    |                                                                                       |

|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                                                      |                                                      |                            |                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|
| 1- Displaying the courses using pictures and illustrations that facilitate the student's understanding of the material.<br>2- Training students to conduct laboratory tests in a way that develops students' skills in this field<br>3- Conducting discussions and dialogues with students, which in turn enhances the student's self-confidence. |                                                                                               |                                                      |                                                      |                            | Strategy            |
| ١٠- بنية المقرر                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                                                      |                                                      |                            |                     |
| Evaluation method<br>طريقة التقييم                                                                                                                                                                                                                                                                                                                | Learning method<br>طريقة التعلم                                                               | Unit or topic name<br>اسم الوحدة أو الموضوع          | Required learning outcomes<br>مخرجات التعلم المطلوبة | Number of hours<br>الساعات | The week<br>الاسبوع |
| Daily and monthly reports and exams                                                                                                                                                                                                                                                                                                               | Theoretical lectures<br>Practical lectures<br>Presentation methods<br>Discussion and dialogue | Manufacturing units and business units               | operation and processing units                       | ٥                          | ١                   |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Heat treatments                                      | Material and Energy Balance                          | ٥                          | ٢                   |
| Daily and monthly reports and exams                                                                                                                                                                                                                                                                                                               | Theoretical lectures<br>Practical lectures<br>Presentation methods<br>Discussion and dialogue | Use of electrical energy in food and dairy factories | Heat and its transfer and control                    | ٥                          | ٣                   |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Heat and its transfer and control                    | Heat and its transfer and control                    | ٥                          | ٤                   |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | First month exam                                     | Evaporation                                          | ٥                          | ٥                   |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Pumps                                                | First month exam                                     | ٥                          | ٦                   |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Refrigeration and freezing equipments                | Heating system                                       | ٥                          | ٧                   |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Refrigeration and freezing equipments                | Pasteurization and sterilization equipments          | ٥                          | ٨                   |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Food dehydration                                     | Refrigeration and freezing equipments                | ٥                          | ٩                   |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Second month exam                                    | Pumps                                                | ٥                          | ١٠                  |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Food separation                                      | Second month exam                                    | ٥                          | ١١                  |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Steam boiler                                         | Food dehydration                                     | ٥                          | ١٢                  |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Food Stirring and Mixing Units                       | Food separation                                      | ٥                          | ١٣                  |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                               | Size reduction units                                 | Grain cleaning and sorting                           | ٥                          | ١٤                  |
| Separation units in food factory                                                                                                                                                                                                                                                                                                                  | Heat exchangers                                                                               | ٥                                                    | ١٥                                                   |                            |                     |
| ١١- تقييم المقرر                                                                                                                                                                                                                                                                                                                                  |                                                                                               |                                                      |                                                      |                            |                     |
| توزيع الدرجة من ١٠٠ على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير .....الخ                                                                                                                                                                                                       |                                                                                               |                                                      |                                                      |                            |                     |
| ١٢- مصادر التعلم والتدريس                                                                                                                                                                                                                                                                                                                         |                                                                                               |                                                      |                                                      |                            |                     |

|                                     |                                                                      |
|-------------------------------------|----------------------------------------------------------------------|
| Food Factories Engineering AL- Dhan | الكتب المقررة المطلوبة (المنهجية ان وجدت)                            |
| Food processing technology,fellows  | الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية, التقارير....) |
|                                     | المراجع الالكترونية, مواقع الانترنت                                  |