

## MODULE DESCRIPTION FORM

| Module Information                                |                                                         |                                                                                                                                                                                                                                          |                                |             |
|---------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------|
| <b>Module Title</b>                               | <b>AGRICULTURAL ENGINEERING TECHNIQUES<br/>TRANSFER</b> | <b>Module Delivery</b>                                                                                                                                                                                                                   |                                |             |
| <b>Module Type</b>                                | <b>Core learning activity</b>                           | <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 |                                |             |
| <b>Module Code</b>                                | <b>AET1040</b>                                          |                                                                                                                                                                                                                                          |                                |             |
| <b>ECTS Credits</b>                               | <b>5</b>                                                |                                                                                                                                                                                                                                          |                                |             |
| <b>SWL (hr/sem)</b>                               | <b>125</b>                                              |                                                                                                                                                                                                                                          |                                |             |
| <b>Module Level</b>                               | <b>1</b>                                                | <b>Semester of Delivery</b>                                                                                                                                                                                                              |                                | <b>1</b>    |
| <b>Administering<br/>Department</b>               | <b>AGME1986</b>                                         | <b>College</b>                                                                                                                                                                                                                           | <b>AGFO1964</b>                |             |
| <b>Module Leader</b>                              | <b>Nofal Issa Mohamed</b>                               | <b>e-mail</b>                                                                                                                                                                                                                            | <b>nofelemh@uomosul.edu.iq</b> |             |
| <b>Module Leader's<br/>Acad. Title</b>            | <b>Assistant Professor</b>                              | <b>Module Leader's Qualification</b>                                                                                                                                                                                                     |                                | <b>MSc.</b> |
| <b>Module Tutor</b>                               |                                                         | <b>e-mail</b>                                                                                                                                                                                                                            |                                |             |
| <b>Peer Reviewer<br/>Name</b>                     |                                                         | <b>e-mail</b>                                                                                                                                                                                                                            |                                |             |
| <b>Scientific<br/>Committee<br/>Approval Date</b> | 15/10/2024                                              | <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>            | <p>1- Developing farm management among rural individuals</p> <p>2- Developing a sense of responsibility towards the family and the rural community</p> <p>3- Promoting positive attitudes of rural people towards agriculture, love of work, and use of modern technologies</p> <p>4- Improving the marketing aspects of rural producers using modern technologies.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Module Learning Outcomes LOs</b> | <p>The student should be able to:</p> <p>LO#1: Know the general concepts of transferring agricultural engineering technologies.</p> <p>LO#2: Determines appropriate means to mobilize farmers in their love of work, development, and selection of agricultural engineering technologies.</p> <p>LO#3: Suggest appropriate technologies for agricultural engineering projects.</p> <p>LO#4: Bear ethical responsibilities in the areas of transferring agricultural engineering technologies.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Indicative Contents</b>          | <p>Indicative content includes the following.</p> <p><u>Theoretical</u></p> <p>Developing the correct management skills to transfer and adopt agricultural technologies in the precise specialty and identifying appropriate means to guide the rural community to adopt modern and specialized technologies in the field of agricultural engineering, as well as identifying the types of technologies and how to employ them to develop work in the field of agricultural engineering sciences and methods of transferring them to society to reach high production and quality.</p> <p><u>Practical application</u></p> <p>The most important modern technologies in the field of agricultural engineering will be addressed, the most important reasons for their lack of spread will be discussed, and solutions will be put forward for adopting these technologies.</p> <p>Total hrs = 63 = SSWL - (Exam hrs) = 63-3= 60 (Time table hrs x 15 weeks)</p> |

| Learning and Teaching Strategies |                                                                                                                                                                                                                                                                |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies                       | <ol style="list-style-type: none"> <li>1. Interactive lecture, Brainstorming</li> <li>2. Dialogue and discussion</li> <li>3. Assigning reports</li> <li>4. Quizzes</li> <li>5. Show examples for writing scientific reports in the correct formats.</li> </ol> |

| Student Workload (SWL)   |     |                        |   |
|--------------------------|-----|------------------------|---|
| Structured SWL (h/sem)   | 63  | Structured SWL (h/w)   | 4 |
| Unstructured SWL (h/sem) | 62  | Unstructured SWL (h/w) | 4 |
| Total SWL (h/sem)        | 125 |                        |   |

| Module Evaluation    |                     |             |                |             |                           |
|----------------------|---------------------|-------------|----------------|-------------|---------------------------|
|                      |                     | Time/Number | Weight (Marks) | Week Due    | Relevant Learning Outcome |
| Formative assessment | Quizzes             | 2           | 10% (10)       | 4 and 11    | LO#1 and LO#2             |
|                      | Assignments         | 2           | 10% (10)       | 2 and 13    | LO#1 and LO#3             |
|                      | Projects/ Practical | 3           | 10% (10)       | 4, 8 and 12 | All                       |
|                      | Report              | 1           | 10% (10)       | 14          | LO#1, LO#2 and LO#4       |
| Summative            | Midterm Exam        | 3hr         | 10% (10)       | 7           | LO#1, LO#2 and LO#3       |

|                         |                   |     |                  |    |     |
|-------------------------|-------------------|-----|------------------|----|-----|
| <b>assessment</b>       | <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>                          | Introduction to agricultural extension and technology transfer             |
| <b>Week 2</b>                          | Elements of technology transfer and adoption process                       |
| <b>Week 3</b>                          | Factors that determine adoption rates and adopter categories               |
| <b>Week 4</b>                          | Opinion leaders and agents of change                                       |
| <b>Week 5</b>                          | Analyze farmers' needs                                                     |
| <b>Week 6</b>                          | Guidance methods (training and education methods)                          |
| <b>Week 7</b>                          | Mid-term Exam                                                              |
| <b>Week 8</b>                          | Transfer of agricultural technologies: concept and methods                 |
| <b>Week 9</b>                          | Challenges facing the transfer of agricultural technologies                |
| <b>Week 10</b>                         | Using communication and media in agricultural extension                    |
| <b>Week 11</b>                         | Innovating and adapting to modern agricultural techniques                  |
| <b>Week 12</b>                         | Evaluation and follow-up of extension and technology transfer programs     |
| <b>Week 13</b>                         | Cooperation between agricultural extension workers and the local community |
| <b>Week 14</b>                         | Applications of smart technologies in agricultural extension               |
| <b>Week 15</b>                         | Tools for measuring effectiveness in technology transfer and extension     |
| <b>Week 16</b>                         | <b>Preparatory week before the final Exam</b>                              |

## Delivery Plan (Weekly Practical Syllabus)

**Reviewing modern technology and discussing the most important means of transferring and adopting it by farmers, as well as the obstacles and treatments that ensure adoption:**

|         | Material Covered                                                                                                                     |
|---------|--------------------------------------------------------------------------------------------------------------------------------------|
| Week 1  | <b>Vertical Farming:</b> A technique that uses vertical spaces to grow crops, increasing productivity and reducing land use.         |
| Week 2  | <b>Smart Irrigation:</b> Advanced irrigation systems that rely on sensors to monitor soil moisture and distribute water efficiently. |
| Week 3  | <b>Precision Agriculture:</b> The use of technology to analyze agricultural data and improve crop management.                        |
| Week 4  | <b>Greenhouses:</b> Creating protected environments to enhance crop growth and shield them from harsh weather conditions.            |
| Week 5  | <b>Hydroponics:</b> Growing plants in a water solution instead of soil, which reduces water use.                                     |
| Week 6  | <b>Genetic Engineering:</b> The use of genetic engineering to develop disease-resistant and drought-tolerant crops.                  |
| Week 7  | <b>Mobile Applications:</b> Tools that help farmers manage their farms, such as tracking crops and weather.                          |
| Week 8  | <b>Agricultural Robots:</b> The use of robots to perform tasks such as planting and harvesting.                                      |
| Week 9  | <b>Remote Sensing Technology:</b> Used to monitor crop health and track changes in the agricultural environment.                     |
| Week 10 | <b>Biological Control:</b> The use of living organisms to control pests and diseases instead of chemical pesticides.                 |
| Week 11 | <b>Artificial Intelligence (AI):</b> The application of AI technologies to analyze agricultural data and improve production.         |
| Week 12 | <b>Nanotechnology:</b> The use of nanomaterials to improve soil quality and enhance fertilizer effectiveness.                        |
| Week 13 | <b>Geographic Information Systems (GIS):</b> Used to analyze geographic data and improve agricultural land planning.                 |
| Week 14 | <b>Organic Farming:</b> Agricultural techniques that rely on the use of natural materials instead of                                 |

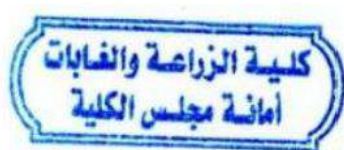
|                |                                                                                     |
|----------------|-------------------------------------------------------------------------------------|
|                | chemicals.                                                                          |
| <b>Week 15</b> | <b>Drones:</b> Used for monitoring crops, collecting data, and spraying pesticides. |

| <b>Learning and Teaching Resources</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                  |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|                                        | <b>Text</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Available in the Library?</b> |
| <b>Required Texts</b>                  | N.A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -                                |
| <b>Recommended Texts</b>               | <ul style="list-style-type: none"> <li>- Al-Tanoubi, Muhammad Muhammad Omar (d) (1998), Agricultural Guidance Reference, Arab Renaissance House for Printing and Publishing, Beirut.</li> <li>- Ghadeeb, Ali Ahmed. The size and importance of the problems of transferring agricultural technologies from the point of view of agricultural employees and farmers of irrigated areas in Nineveh Governorate. Doctoral thesis, College of Agriculture and Forestry - University of Mosul, 2006</li> <li>- Al-Jubouri, Khattab Abdullah Muhammad (2006), The adoption rate of yellow maize farmers for modern agricultural technologies and its relationship to some variables in the Hawija District in Kirkuk Governorate, Master's thesis, College of Agriculture and Forestry, University of Mosul</li> </ul> | Yes                              |
| <b>Websites</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                  |

## 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                 |                           |                               |                                                                                                                                                                                                                                          |
|------------------------------------|---------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Title                       | AGRICULTURE CAREER ETHICS |                               | Module Delivery                                                                                                                                                                                                                          |
| Module Type                        | Basic learning activities |                               | <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 checked="" type="checkbox"/> Seminar |
| Module Code                        | ACE1020                   |                               |                                                                                                                                                                                                                                          |
| ECTS Credits                       | 5                         |                               |                                                                                                                                                                                                                                          |
| SWL (hr/sem)                       | 125                       |                               |                                                                                                                                                                                                                                          |
| Module Level                       | 1                         | Semester of Delivery          | 1                                                                                                                                                                                                                                        |
| Administering Department           | AGME1986                  | College                       | AGFO1964                                                                                                                                                                                                                                 |
| Module Leader                      | Nofal Issa Mohamed        | e-mail                        | nofelemh@uomosul.edu.iq                                                                                                                                                                                                                  |
| Module Leader's Acad. Title        | Assistant Professor       | Module Leader's Qualification | M.Sc.                                                                                                                                                                                                                                    |
| Module Tutor                       |                           | e-mail                        | :                                                                                                                                                                                                                                        |
| Peer Reviewer Name                 | /                         | e-mail                        |                                                                                                                                                                                                                                          |
| Scientific Committee Approval Date | 15/10/2024                | 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>                               | <p>1- Teaching ethics and ethical concepts to the agricultural engineer.</p> <p>2- Teaching the ethical rules of professional ethics and clarifying the ethics of agricultural engineering.</p>                                                                                                                                                                                                                                   |
| <b>Module Learning Outcomes LOs</b>                    | <p>The student should be able to:</p> <p>LO#1: Know general concepts of morality and moral philosophies.</p> <p>LO#2: Learn the concept of occupational ethics and ethical rules in the agricultural engineering profession.</p> <p>LO#3: Respect the laws and regulations related to agricultural engineering projects.</p> <p>LO#4: Bear ethical responsibilities in the fields of the agricultural engineering profession.</p> |
| <b>Indicative Contents</b>                             | <p>Indicative content includes the following.</p> <p><u>Theoretical</u></p> <p>Ethical and professional ethics, which are moral philosophies, ethical rules in agricultural engineering.</p> <p>It includes distributing titles on agricultural professional ethics to students to give seminars on them.</p> <p>Total hrs = 63 = SSWL - (Exam hrs) = 63-3 = 60 hrs (Time table hrs x 15 weeks)</p>                               |

| Learning and Teaching Strategies |                                                                                                                             |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b>                | <ol style="list-style-type: none"> <li>1. Interactive lecture, Brainstorming</li> <li>2. Dialogue and discussion</li> </ol> |

|  |                                                                                                                                                                                             |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 3. Assigning reports<br>4. Quizzes<br>5. Presentation of examples of professional, ethical cases in the field of scientific specialization by students and received in discussion seminars. |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Student Workload (SWL)   |     |                        |   |
|--------------------------|-----|------------------------|---|
| Structured SWL (h/sem)   | 62  | Structured SWL (h/w)   | 4 |
| Unstructured SWL (h/sem) | 63  | Unstructured SWL (h/w) | 4 |
| Total SWL (h/sem)        | 125 |                        |   |

| Module Evaluation    |              |             |                  |          |                           |
|----------------------|--------------|-------------|------------------|----------|---------------------------|
|                      |              | Time/Number | Weight (Marks)   | Week Due | Relevant Learning Outcome |
| Formative assessment | Quizzes      | 2           | 10% (10)         | 4 and 11 | LO#1 and LO#2             |
|                      | Assignments  | 2           | 10% (10)         | 2 and 13 | LO#1 and LO#3             |
|                      | Seminar      | 1           | 10% (10)         | All      | All                       |
|                      | Report       | 1           | 10% (10)         | 14       | LO#1, LO#2 and LO#4       |
| Summative assessment | Midterm Exam | 2hr         | 10% (10)         | 7        | LO#1, LO#2 and LO#3       |
|                      | Final Exam   | 2hr         | 50% (50)         | 16       | All                       |
| Total assessment     |              |             | 100% (100 Marks) |          |                           |

| Delivery Plan (Weekly Syllabus) |                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------|
|                                 | Material Covered                                                                   |
| Week 1                          | Introduction to professional ethics and its importance in agricultural engineering |

|                |                                                                                                    |
|----------------|----------------------------------------------------------------------------------------------------|
|                |                                                                                                    |
| <b>Week 2</b>  | Basic ethical theories in the profession Integrity and scientific honesty in agricultural research |
| <b>Week 3</b>  | The agricultural engineer's commitment to environmental responsibility                             |
| <b>Week 4</b>  | Professional interaction with society and the public                                               |
| <b>Week 5</b>  | Positively dealing with conflicts of interest                                                      |
| <b>Week 6</b>  | Ethics of agricultural experiments and research                                                    |
| <b>Week 7</b>  | Mid-term Exam                                                                                      |
| <b>Week 8</b>  | Ethics of agricultural experiments and research                                                    |
| <b>Week 9</b>  | Confidentiality and data protection                                                                |
| <b>Week 10</b> | Compliance with laws and instructions in agricultural engineering                                  |
| <b>Week 11</b> | Cooperation and teamwork in agricultural projects                                                  |
| <b>Week 12</b> | Combating professional corruption in agricultural engineering                                      |
| <b>Week 13</b> | Continuous learning and self-development in an ethical context                                     |
| <b>Week 14</b> | Assessing commitment to professional ethics: strategies and tools                                  |
| <b>Week 15</b> | Ethics of innovation in agricultural engineering                                                   |
| <b>Week 16</b> | <b>Preparatory week before the final Exam</b>                                                      |

**Delivery Plan (Weekly Seminar. Syllabus)**

|         | Material Covered                                                                             |
|---------|----------------------------------------------------------------------------------------------|
| Week 1  | Pesticide use and its impact on the health of farmers and consumers                          |
| Week 2  | Crop price manipulation: the ethics of trade in agriculture                                  |
| Week 3  | Agricultural labour exploitation: workers' rights and working conditions                     |
| Week 4  | The impact of industrial agriculture on biodiversity: is there ethics?                       |
| Week 5  | Unsustainable agricultural practices: responsibility to future generations                   |
| Week 6  | Marketing genetically modified products: transparency and ethics                             |
| Week 7  | Water management in agriculture: the right to water and fair distribution                    |
| Week 8  | Climate change and agriculture: ethical challenges for farmers                               |
| Week 9  | Agriculture in protected areas: a balance between protection and production                  |
| Week 10 | Agricultural research ethics: the limits of experiments on living organisms                  |
| Week 11 | Unfair distribution of support allocated to farmers and its impact on small projects         |
| Week 12 | The impact of agriculture on local communities: benefits versus risks and ethical challenges |
| Week 13 | Ethics in Cash Crop (traded as international trade) Farming and its impact on Food Security  |
| Week 14 | Modern technologies in agriculture: are we prepared to bear their ethical consequences       |
| Week 15 | Organic agriculture: ethical challenges in promotion and practice                            |

### Learning and Teaching Resources

|                   | Text                                | Available in the Library? |
|-------------------|-------------------------------------|---------------------------|
| Required Texts    | N.A.                                | -                         |
| Recommended Texts | <a href="#">Professional Ethics</a> | Yes                       |
| Websites          |                                     |                           |

### 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  |
|                                    |                         |                     |          |                                       |

**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                        |                           |                                                                                                                                                                                                                               |                                                                      |
|-------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| <b>Module Title</b>                       | <b>COMPUTER1</b>          | <b>Module Delivery</b>                                                                                                                                                                                                        |                                                                      |
| <b>Module Type</b>                        | Basic learning activities | <input 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 |                                                                      |
| <b>Module Code</b>                        | UOM1031                   |                                                                                                                                                                                                                               |                                                                      |
| <b>ECTS Credits</b>                       | 3                         |                                                                                                                                                                                                                               |                                                                      |
| <b>SWL (hr/sem)</b>                       | 75                        |                                                                                                                                                                                                                               |                                                                      |
| <b>Module Level</b>                       | 1                         |                                                                                                                                                                                                                               |                                                                      |
| <b>Administering Department</b>           | AGME1986                  | <b>College</b>                                                                                                                                                                                                                | AGFO1964                                                             |
| <b>Module Leader</b>                      | Nofal Issa Mohamed        | e-mail                                                                                                                                                                                                                        | <a href="mailto:nofelemh@uomosul.edu.iq">nofelemh@uomosul.edu.iq</a> |
| <b>Module Leader's Acad. Title</b>        | Assistant Professor       | <b>Module Leader's Qualification</b>                                                                                                                                                                                          |                                                                      |
|                                           |                           | MSc.                                                                                                                                                                                                                          |                                                                      |
| <b>Module Tutor</b>                       |                           | e-mail                                                                                                                                                                                                                        |                                                                      |
| <b>Peer Reviewer Name</b>                 | N.A.                      | e-mail                                                                                                                                                                                                                        | N.A.                                                                 |
| <b>Scientific Committee Approval Date</b> | 15/10/2024                | 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                                      | <ol style="list-style-type: none"> <li>1. Introducing students to the basics of computers, including computer components, operating systems, and essential software, as well as providing.</li> <li>2. Teaching students how to collect and analyze data using Excel or statistical analysis software, creating documents with word processors, and developing presentations.</li> <li>3. Enhancing students' online research skills and how to use electronic resources for scientific research.</li> <li>4. Utilizing computer tools to enhance communication and collaboration skills among students, such as using e-mail and online learning platforms.</li> </ol>                    |
| Module Learning Outcomes                               | <p><b>LO#1:</b> Identify and explain the components of a computer and their basic functions.</p> <p><b>LO#2:</b> Analyze agricultural data using Excel and present findings through well-organized documents and presentations.</p> <p><b>LO#3:</b> Evaluate the credibility of online sources when conducting scientific research.</p> <p><b>LO#4:</b> Students should be able to use computer tools to enhance communication with peers, such as e-mail and online learning platforms.</p>                                                                                                                                                                                               |
| Indicative Contents                                    | <p>Indicative content includes the following.</p> <p>An introduction to the computer and its components, with basic operating systems and their interfaces, will be covered. [SSWL=9 hrs]</p> <p>Focus on the practical use of software for data analysis (Excel), presentations (PowerPoint), and basic troubleshooting techniques to resolve common computer issues. [SSWL=24 hrs]</p> <p>The semester also includes an introduction to the Internet, web browsers, networks, and the basics of e-mail, as well as methods for discovering computer errors and ways to fix them. [SSWL=9 hrs]</p> <p>Total hrs = 47 = SSWL - (Exam hrs) = 47 - 2 = 45 hr (Time table hrs x 15 weeks)</p> |

### Learning and Teaching Strategies

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b> | <ul style="list-style-type: none"> <li>• <b>Practical Sessions:</b> Provide students with regular lab sessions where they can apply theoretical knowledge directly. Practical exercises such as creating documents, analyzing data using Excel, and troubleshooting common computer problems will enhance skill retention and understanding.</li> <li>• <b>Project-Based Learning:</b> Assign group projects where students must apply the tools learned (e.g., Excel, Word, PowerPoint) to solve real-world agricultural problems. For instance, they can analyze agricultural data and present their findings. This promotes collaboration, critical thinking, and problem-solving.</li> <li>• <b>Blended Learning:</b> Combine in-person teaching with online resources and platforms. Use e-learning tools, such as video tutorials, quizzes, and discussion forums, to provide additional support outside class. Students can learn at their own pace while reinforcing what they learn in the classroom.</li> <li>• <b>Discussion and Peer Learning:</b> Incorporate group discussions and peer review activities. For example, after a practical session, encourage students to present their solutions or projects to the class and give each other feedback. This fosters engagement, critical thinking, and communication skills.</li> </ul> |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Student Workload (SWL)

|                                 |    |                               |      |
|---------------------------------|----|-------------------------------|------|
| <b>Structured SWL (h/sem)</b>   | 47 | <b>Structured SWL (h/w)</b>   | 3    |
| <b>Unstructured SWL (h/sem)</b> | 28 | <b>Unstructured SWL (h/w)</b> | 1.87 |
| <b>Total SWL (h/sem)</b>        | 75 |                               |      |

### Module Evaluation

|                             |                        | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|-----------------------------|------------------------|-------------|----------------|----------|---------------------------|
| <b>Formative assessment</b> | <b>Quizzes</b>         | 3           | 10% (10)       | 1,2, 3   | LO #1                     |
|                             | <b>Assignments</b>     | 2           | 10% (10)       | 5 and 11 | LO #1, #2                 |
|                             | <b>Projects / Lab.</b> | 2           | 10% (10)       | 6 and 12 | LO #1, #2                 |

|                             |                     |     |                  |    |           |
|-----------------------------|---------------------|-----|------------------|----|-----------|
|                             | <b>Report</b>       | 1   | 10% (10)         | 14 | LO #3, #4 |
| <b>Summative assessment</b> | <b>Midterm Exam</b> | 2hr | 10% (10)         | 7  | LO #1, #2 |
|                             | <b>Final Exam</b>   | 2hr | 50% (50)         | 16 | All       |
| <b>Total assessment</b>     |                     |     | 100% (100 Marks) |    |           |

| <b>Delivery Plan (Weekly Lab. Syllabus)</b> |                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             | <b>Material Covered</b>                                                                                                                                                                                                                                                                                                               |
| <b>Week 1</b>                               | Lab 1: <b>Introduction to Computer:</b> Concepts of Hardware and Software with their components; Concept of Computing, Data, and Information; Applications of Information Electronics and Communication Technology (IECT); Connecting input-output devices and peripherals to CPU.                                                    |
| <b>Week 2</b>                               | Lab 2: <b>Computer Components:</b> Computer Portions, Hardware Parts, Memory Types, Basic CPU Components, Computer Ports, Personal Computer, Personal Computer (Features and Types).                                                                                                                                                  |
| <b>Week 3</b>                               | Lab 3: <b>Operating System and Graphical User Interface GUI:</b> Operating System, Basics of Common Operating Systems, The User Interface, Using Mouse Techniques; Use of Common icons, Status Bar, Using Menu and Menu-selection, Concept of Folders and Directories, Opening and closing of different Windows; Creating Short cuts. |
| <b>Week 4</b>                               | Lab 4: <b>Word Processing:</b> Word Processing Basics; Opening and Closing of documents; Text creation and Manipulation; Formatting of text; Table handling: Spell check, language setting, and thesaurus.                                                                                                                            |
| <b>Week 5</b>                               | Lab 5: <b>Editing Documents:</b> Editing an agricultural project idea using Word, using all the program's commands and instructions, and with practical application.                                                                                                                                                                  |
| <b>Week 6</b>                               | Lab 6: <b>Getting Started with Excel:</b> Formatting a Worksheet, Working with Formulas and Functions, Working with Charts.                                                                                                                                                                                                           |
| <b>Week 7</b>                               | <b>Midterm Exam</b>                                                                                                                                                                                                                                                                                                                   |
| <b>Week 8</b>                               | Lab 8: <b>Spread Sheet:</b> Basics of Spreadsheet; Manipulation of cells, Formulas and Functions; Editing of Spread Sheet, printing of Spread Sheet.                                                                                                                                                                                  |

| Delivery Plan (Weekly Lab. Syllabus) |                                                                                                                                                                                                                                                                         |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | Material Covered                                                                                                                                                                                                                                                        |
| <b>Week 9</b>                        | Lab 9: <b>Excel Program in Statistical Analysis:</b> Collecting Agricultural Data, Organizing Data in Excel, Basic Functions in Statistical Analysis, Creating Graphs and Charts, How to Read Statistical Results, Understandably Presenting Results.                   |
| <b>Week 10</b>                       | Lab 10: Practical Example of Analyzing Agricultural Data Using Excel.                                                                                                                                                                                                   |
| <b>Week 11</b>                       | Lab 11: <b>Presentation Software:</b> Basics of presentation software; Creating Presentation; Preparation and Presentation of Slides; Slide Show; Taking printouts of presentation/ handouts.                                                                           |
| <b>Week 12</b>                       | Lab 12: Create a presentation of an agricultural project idea using PowerPoint, all the program's commands and instructions, and with practical application.                                                                                                            |
| <b>Week 13</b>                       | Lab 13: <b>Introduction to Internet and web browsers:</b> Basic computer networks, LAN, WAN, Concept of Internet and its applications, connecting to the Internet, world wide web, web browsing software, search engines, understanding URL, Domain name, IP AddressIP. |
| <b>Week 14</b>                       | Lab 14: <b>Communication and E-mails:</b> Basics of electronic mail, getting an e-mail account, sending and receiving e-mails, accessing sent e-mails, using e-mails, and document collaboration.                                                                       |
| <b>Week 15</b>                       | Lab 15: <b>Computer Troubleshooting:</b> Identifying and solving common hardware and software problems that computer users encounter. Basic troubleshooting techniques and tools for diagnosing and resolving issues.                                                   |

| Learning and Teaching Resources |                                                                                                                                                                                           |                           |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                                                                                                                      | Available in the Library? |
| <b>Required Texts</b>           | اساسيات الحاسوب وتطبيقاته المكتبية، وزارة التعليم العالي والبحث العلمي، 2013.                                                                                                             | Yes                       |
| <b>Recommended Texts</b>        | N.A.                                                                                                                                                                                      | -                         |
| <b>Websites</b>                 | <ul style="list-style-type: none"> <li><a href="https://www.dawliatraining.com/training-packages-single/1025">https://www.dawliatraining.com/training-packages-single/1025</a></li> </ul> |                           |

- [https://edu.gcfglobal.org/en/tr\\_ar-misc/what-is-a-computer-1/](https://edu.gcfglobal.org/en/tr_ar-misc/what-is-a-computer-1/)  
<https://www.edraak.org/programs/course-v1:Edraak+ICDL1+2019SP/>

### 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 is 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                       | DEMOCRACY and HUMAN RIGHTS |                               | Module Delivery                                                                                                                                                                                                               |
| Module Type                        | Basic learning activities  |                               | <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                        | UOM1040                    |                               |                                                                                                                                                                                                                               |
| ECTS Credits                       | 2                          |                               |                                                                                                                                                                                                                               |
| SWL (hr/sem)                       | 50                         |                               |                                                                                                                                                                                                                               |
| Module Level                       | 1                          | Semester of Delivery          |                                                                                                                                                                                                                               |
| Administering Department           | <div>AGME1986</div>        | College                       | AGFO1964                                                                                                                                                                                                                      |
| Module Leader                      | Nofal Issa Mohamed         | e-mail                        | nofelemh@uomosul.edu.iq                                                                                                                                                                                                       |
| Module Leader's Acad. Title        | Assistant Professor        | Module Leader's Qualification | M.Sc.                                                                                                                                                                                                                         |
| Module Tutor                       |                            | e-mail                        |                                                                                                                                                                                                                               |
| Peer Reviewer Name                 |                            | e-mail                        |                                                                                                                                                                                                                               |
| Scientific Committee Approval Date | 15/10/2024                 | 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>                               | <p>1- Enabling the student to understand and comprehend what is related to human rights, their types, and rights in the heavenly religions.</p> <p>2- Enabling the student to recognize the types of human rights and human rights according to the Iraqi Constitution in 2005.</p> <p>3- Enabling the student to recognize the types and types of governments.</p> <p>4- Enabling the student to learn about democratic and dictatorial governments and the concept of freedom and the rights of others.</p>                                                                                                    |
| <b>Module Learning Outcomes LOs</b>                    | <p>The student should be able to:</p> <p>LO#1: Understands everything related to human rights, his rights in divine religions, and the concept of democracy.</p> <p>LO#2: Familiar with the types of general human rights and human rights according to the Iraqi Constitution of 2005.</p> <p>LO#3: Bears the national responsibility to respect human rights, opinion, and the other opinions of the nation's partners.</p> <p>LO#4: Respects the freedoms and rights of others.</p>                                                                                                                           |
| <b>Indicative Contents</b>                             | <p>Indicative content includes the following.</p> <p><u>Theoretical</u></p> <p>Enriching the student with knowledge related to human rights and their types, and their relationship to peaceful coexistence with the nation's partners, and the concept of human rights and divine religions, as well as introducing the student to the concept of governments and their types, and making him familiar with the concept of individual freedom, democracy, and human rights in accordance with the Iraqi constitution.</p> <p>Total hrs = 32 = SSWL - (Exam hrs) = 32-2 = 30 hrs (Time table hrs x 15 weeks)</p> |

| Learning and Teaching Strategies |                                                                                                                                                                                                                                            |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b>                | <ol style="list-style-type: none"> <li>1. Interactive lecture, Brainstorming</li> <li>2. Dialogue and discussion</li> <li>3. Assigning reports</li> <li>4. Quizzes</li> <li>5. Assigning group work to reveal leadership skills</li> </ol> |

| Student Workload (SWL)   |    |                        |   |
|--------------------------|----|------------------------|---|
| Structured SWL (h/sem)   | 32 | Structured SWL (h/w)   | 2 |
| Unstructured SWL (h/sem) | 18 | Unstructured SWL (h/w) | 2 |
| Total SWL (h/sem)        | 50 |                        |   |

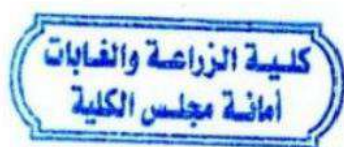
| Module Evaluation    |                 |             |                  |          |                           |
|----------------------|-----------------|-------------|------------------|----------|---------------------------|
|                      |                 | Time/Number | Weight (Marks)   | Week Due | Relevant Learning Outcome |
| Formative assessment | Quizzes         | 2           | 10% (10)         | 4 and 11 | LO#1 and LO#2             |
|                      | Assignments     | 2           | 20% (20)         | 2 and 13 | LO#1 and LO#3             |
|                      | Projects / Lab. | -           | -                | -        | -                         |
|                      | Report          | 1           | 10% (10)         | 14       | LO#1, LO#2 and LO#4       |
| Summative assessment | Midterm Exam    | 3hr         | 10% (10)         | 7        | LO#1, LO#2 and LO#3       |
|                      | Final Exam      | 3hr         | 50% (50)         | 16       | All                       |
| Total assessment     |                 |             | 100% (100 Marks) |          |                           |

| Delivery Plan (Weekly Syllabus) |                                                                                                |
|---------------------------------|------------------------------------------------------------------------------------------------|
|                                 | Material Covered                                                                               |
| Week 1                          | History of human rights                                                                        |
| Week 2                          | Human rights in heavenly religions                                                             |
| Week 3                          | Forms of human rights                                                                          |
| Week 4                          | New or modern human rights                                                                     |
| Week 5                          | Human rights in international governmental organizations                                       |
| Week 6                          | Human rights in non-governmental organizations, human rights in the Iraqi constitution in 2005 |
| Week 7                          | Mid-term Exam                                                                                  |
| Week 8                          | Types of governments                                                                           |
| Week 9                          | Democratic government                                                                          |
| Week 10                         | Characteristics of democracy                                                                   |
| Week 11                         | Pictures of democratic government                                                              |

|                |                                               |
|----------------|-----------------------------------------------|
|                |                                               |
| <b>Week 12</b> | Indirect democracy                            |
| <b>Week 13</b> | Types of ballots                              |
| <b>Week 14</b> | Procedures preliminary elections              |
| <b>Week 15</b> | Types of election                             |
| <b>Week 16</b> | <b>Preparatory week before the final Exam</b> |

| Learning and Teaching Resources |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Available in the Library? |
| <b>Required Texts</b>           | Human rights, written by: Hafez Alwan Hammadi Al-Dulaimi. 2010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes                       |
| <b>Recommended Texts</b>        | <ol style="list-style-type: none"> <li>1. Universal human rights between theory and practice, written by Jack Donnelly.</li> <li>2. Human Rights, Children and Democracy, written by: Maher Saleh Allawi Al-Jubouri and others.</li> <li>3. Human Rights and Public Freedoms, written by: Ramez Muhammad Ammar.</li> <li>4. The Genesis of Human Rights, written by: Lynn Hunt, translated by: Fayqa Girgis Hanna.</li> <li>5. The Philosophy of Human Rights, written by: Ansam Amer Al-Sudani.</li> <li>6. The Concept of Contemporary Democracy, written by: Ali Khalifa Al Kuwari.</li> <li>7. Democracy, written by Charles Tilly, translated by: Muhammad Fadel.</li> <li>8. Rooted Democracy and the Problem of Implementation, written by: Muhammad Al-Ahmari.</li> <li>9. Parliamentary Governments, written by: John Stuart Mill, translated by: Emile Al-Ghour.</li> <li>10. Electoral Systems, written by: a group of authors.</li> <li>11. The Genesis of Human Rights, written by: Lynn Hunt, translated by: .Fayqa Girgis Hanna</li> <li>12. .The Philosophy of Human Rights, written by Ansam Amer Al-Sudani</li> <li>13. Human Rights in the Western Religious Heritage and Islam, written by: Muhammad Jalaa Idris and Amal Muhammad Abd al-Rahman Rabie.</li> </ol> | No                        |
| <b>Websites</b>                 | <ol style="list-style-type: none"> <li>1- The United Nations.</li> <li>2- Office of the High Commissioner, United Nations High Commissioner for Human Rights.</li> <li>3- Amnesty International.</li> <li>4- UNICEF.</li> <li>5- International Committee of the Red Cross.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                           |

| Grading Scheme<br>مخطط الدرجات                                                                                                                                                                                                                                                                                                                                                              |                         |                     |          |                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                                       | Grade                   | التقدير             | Marks %  | Definition                            |
| <b>Success Group<br/>(50 - 100)</b>                                                                                                                                                                                                                                                                                                                                                         | <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<br/>(0 – 49)</b>                                                                                                                                                                                                                                                                                                                                                              | <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> |                         |                     |          |                                       |



## MODULE DESCRIPTION FORM

| Module Information                        |                            |                                                                                                                                                                                                                                          |                         |
|-------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Module Title</b>                       | <b>ENGINEERING DRAWING</b> | <b>Module Delivery</b>                                                                                                                                                                                                                   |                         |
| <b>Module Type</b>                        | S                          | <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 |                         |
| <b>Module Code</b>                        | END1030                    |                                                                                                                                                                                                                                          |                         |
| <b>ECTS Credits</b>                       | 6                          |                                                                                                                                                                                                                                          |                         |
| <b>SWL (hr/sem)</b>                       | 150                        |                                                                                                                                                                                                                                          |                         |
| <b>Module Level</b>                       | I                          |                                                                                                                                                                                                                                          |                         |
| <b>Administering Department</b>           | AGME1986                   | <b>College</b>                                                                                                                                                                                                                           | AGFO1964                |
| <b>Module Leader</b>                      | Nofal Issa Mohamed         | <b>e-mail</b>                                                                                                                                                                                                                            | nofelemh@uomosul.edu.iq |
| <b>Module Leader's Acad. Title</b>        | Assistant Professor        | <b>Module Leader's Qualification</b>                                                                                                                                                                                                     | M.Sc.                   |
| <b>Module Tutor</b>                       |                            | <b>e-mail</b>                                                                                                                                                                                                                            |                         |
| <b>Peer Reviewer Name</b>                 |                            | <b>e-mail</b>                                                                                                                                                                                                                            |                         |
| <b>Scientific Committee Approval Date</b> | 15/10/2024                 | <b>Version Number</b>                                                                                                                                                                                                                    | 1.0                     |

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

| Module Aims, Learning Outcomes and Indicative Contents |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Objectives                                      | <ol style="list-style-type: none"> <li>1. To develop the Agricultural student's ability to imagine projections and their models.</li> <li>2. Exercising hand movement in engineering drawing to complete quick sketches.</li> <li>3. This course deals with the theory of Orthographic Projection and the basic subject of isometric drawing.</li> <li>4. To teach students engineering drawings using the AutoCAD program, which includes both theoretical lectures and labs.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Module Learning Outcomes                               | <p><b>LO#1:</b> Absorbing all the engineering characteristics of an object or a product in a clear manner.</p> <p><b>LO#2:</b> Know the tools used in engineering drawing and how to use them correctly,</p> <p><b>LO#3:</b> Understand and apply the basics of engineering processes.</p> <p><b>LO#4:</b> Conclude projections and isometrics for each geometric figure and recognize its dimensions.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Indicative Contents                                    | <p>Indicative content includes the following.</p> <p><b>Part A: Engineering Drawing Basics and Tools</b></p> <ul style="list-style-type: none"> <li>• Introduction and Definition of Engineering Drawing • Engineering Drawing Tools and Their Uses • Explanation of Sheet Dimensions, Information Table, and Letter Writing. • Types of Lines and Basic Geometric Operations: Introduction to different types of lines (continuous, dashed, center lines) and their specific uses in drawings. Performing basic geometric operations such as measuring, dividing, and marking. • Arcs and Tangents: Defining and drawing arcs and tangents in engineering drawings, including field applications. [20 hrs.]</li> <li>• Classwork: Practical Applications of Previous Topics Hands-on practice applying learned techniques (lines, arcs, sheet setup) [4 hrs.]</li> </ul> <p><b>Part B: Engineering Projections and Operations:</b></p> <ul style="list-style-type: none"> <li>• Engineering Projections: Understanding projection techniques, especially orthographic projections. Learning how to project an object's views from different angles. • Mid-term Exam: Assessment covering the topics learned in Part A and initial projection skills. • Deducing the Third Projection Based on Two Projections: Skill development in visualizing and drawing the third</li> </ul> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>projection when given two views of an object. [12 hrs.]</p> <ul style="list-style-type: none"> <li>• Classwork: Practical Applications of Deducing the Third Projection: Applying concepts learned in projection drawing. [4 hrs.]</li> </ul> <p><b>Part C: Advanced Drawing Techniques and CAD Software</b></p> <ul style="list-style-type: none"> <li>• Drawing Engineering Perspective (Isometric): Introduction to isometric drawing techniques. Drawing objects in isometric view for accurate 3D representation. • Review of Isometric Engineering Perspective: Revisiting the principles of isometric drawing and its application in technical drawings. Understanding the connection between isometric drawings and orthographic projections. [8 hrs.]</li> <li>• Introduction to Computer-Aided Drawing (CAD): Overview of computer-aided drawing, emphasizing its importance in modern engineering. Introduction to software tools like AutoCAD and SolidWorks, including their hardware components and versions. • AutoCAD Interface and Main Commands: Learning the basic interface of AutoCAD, including the drawing and modification toolbar. Explanation of key commands and their uses. • Drawing Simple Geometric Shapes Using AutoCAD: Hands-on practice with AutoCAD to draw basic geometric shapes. [12 hrs]</li> </ul> <p>Total hrs = 63 = SSWL - (Exam hrs) = 63 - 3 = 60 hr (Time table hrs x 15 weeks)</p> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Learning and Teaching Strategies |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies                       | <ol style="list-style-type: none"> <li>1. Lecture-based Teaching: <ul style="list-style-type: none"> <li>• Explaining concepts and demonstrating tools, techniques, and software in real time allows students to observe the process before applying it.</li> </ul> </li> <li>2. Hands-on Practice: <ul style="list-style-type: none"> <li>• <b>Lab Sessions:</b> Providing practical sessions where students use drawing tools and software like AutoCAD or SolidWorks to develop their skills.</li> <li>• <b>Guided Exercises:</b> Offering step-by-step instructions to complete tasks such as drawing isometric views or projections.</li> </ul> </li> <li>3. Interactive Class Discussions: <ul style="list-style-type: none"> <li>• <b>Question and Answer Sessions:</b> Actively engage students in discussions where they can ask questions and clarify doubts about topics like projection techniques or CAD tools.</li> </ul> </li> <li>4. Assessment and Evaluation: <ul style="list-style-type: none"> <li>• <b>Project-based Assessments:</b> Assigning projects requiring students to apply the concepts they've learned, like creating detailed engineering drawings using manual and software-based techniques.</li> </ul> </li> </ol> |

| Student Workload (SWL)   |     |                        |     |
|--------------------------|-----|------------------------|-----|
| Structured SWL (h/sem)   | 63  | Structured SWL (h/w)   | 4   |
| Unstructured SWL (h/sem) | 87  | Unstructured SWL (h/w) | 5.8 |
| Total SWL (h/sem)        | 150 |                        |     |

| Module Evaluation    |                 |             |                  |            |                           |
|----------------------|-----------------|-------------|------------------|------------|---------------------------|
| As                   |                 | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| Formative assessment | Quizzes         | 1           | 10% (10)         | 7          |                           |
|                      | Assignments     | 10          | 20% (20)         | 3 to 14    |                           |
|                      | Projects / Lab. | 1           | 5% (5)           | Continuous | All                       |
|                      | Reports         | 1           | 5% (5)           | ----       | -----                     |
| Summative assessment | Midterm Exam    | 2hr         | 10% (10)         | 7          | LO #1, #2                 |
|                      | Final Exam      | 3hr         | 50% (50)         | 16         | All                       |
| Total assessment     |                 |             | 100% (100 Marks) |            |                           |

| Delivery Plan (Weekly, Syllabus) |                                                                                             |
|----------------------------------|---------------------------------------------------------------------------------------------|
|                                  | Material Covered                                                                            |
| Week 1                           | Introduction and definition of engineering drawing                                          |
| Week 2                           | Engineering drawing tools and their uses, knowing types of pens used, Drawing board layout. |

| Delivery Plan (Weekly, Syllabus) |                                                                                                                                                                                           |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  | Material Covered                                                                                                                                                                          |
| <b>Week 3</b>                    | Explanation of sheet dimensions, information table, and letter writing                                                                                                                    |
| <b>Week 4</b>                    | Types of lines, their applications, and basic geometric operations                                                                                                                        |
| <b>Week 5</b>                    | Arcs and tangents                                                                                                                                                                         |
| <b>Week 6</b>                    | Classwork: Practical applications of previous topics                                                                                                                                      |
| <b>Week 7</b>                    | Engineering projections                                                                                                                                                                   |
| <b>Week 8</b>                    | Mid-term Exam                                                                                                                                                                             |
| <b>Week 9</b>                    | Deducing the third projection based on the other two                                                                                                                                      |
| <b>Week 10</b>                   | Classwork: Practical applications of deducing the third projection                                                                                                                        |
| <b>Week 11</b>                   | Drawing engineering perspective (isometric)                                                                                                                                               |
| <b>Week 12</b>                   | Review of isometric engineering perspective and its relation to deducing the third projection                                                                                             |
| <b>Week 13</b>                   | Introduction to the importance of computer-aided drawing and the types of software used for engineering drawing, such as AutoCAD and SolidWorks, including their components and versions. |
| <b>Week 14</b>                   | Introduction to the AutoCAD interface and main commands: (Drawing toolbar and its uses, modification toolbar and its uses).                                                               |
| <b>Week 15</b>                   | Drawing simple geometric shapes using AutoCAD.                                                                                                                                            |

| Delivery Plan (Weekly, Syllabus) |                                        |
|----------------------------------|----------------------------------------|
|                                  | Material Covered                       |
| Week 16                          | Preparatory week before the Final Exam |

| Delivery Plan (Weekly Practical Syllabus) |                                                                                                                           |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|                                           | Material Covered                                                                                                          |
| Week 1                                    | Familiarization with different drawing tools, including pens, and setting up the drawing board layout.                    |
| Week 2                                    | Practice drawing sheets according to standard dimensions, setting up an information table, and writing technical letters. |
| Week 3                                    | Identify different line types and execute basic geometric operations (e.g., drawing straight lines, circles).             |
| Week 4                                    | Practice drawing arcs and tangents using drawing tools .                                                                  |
| Week 5                                    | Consolidate skills by applying learned techniques (lines, arcs, tangents) in a project or assignment.                     |
| Week 6                                    | Start drawing orthographic projections of simple objects, projecting different views.                                     |
| Week 7                                    | Assessment based on skills acquired in previous weeks, focusing on projections, lines, and geometric operations.          |
| Week 8                                    | Visualize and draw the third projection based on two given views.                                                         |
| Week 9                                    | Work on exercises that reinforce the ability to deduce the third projection, applying this to different objects.          |

|                |                                                                                                                                           |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|                |                                                                                                                                           |
| <b>Week 10</b> | Learn to draw isometric projections, emphasizing proper axis alignment and scaling.                                                       |
| <b>Week 11</b> | Review and reinforce isometric drawing techniques and their connection to orthographic projections.                                       |
| <b>Week 12</b> | Introduction to AutoCAD and SolidWorks; learning the basic interface, including drawing and modification toolbars.                        |
| <b>Week 13</b> | Practice using the AutoCAD interface, focusing on drawing commands (e.g., lines, circles) and modification commands (e.g., trim, extend). |
| <b>Week 14</b> | Create simple geometric drawings using AutoCAD, including 2D shapes like squares, rectangles, and circles.                                |
| <b>Week 15</b> | Work on exercises that reinforce the ability to Create simple geometric drawings using AutoCAD.                                           |

#### Learning and Teaching Resources

|                          | Text                                                      | Available in the Library? |
|--------------------------|-----------------------------------------------------------|---------------------------|
| <b>Required Texts</b>    | الرسم الهندسي لطلبة كليات الزراعة، د. ناطق صبري حسن، 1990 | Yes                       |
| <b>Recommended Texts</b> | Textbook of Engineering Drawing k. Venkata Reddy, 2008    | -                         |
| <b>Websites</b>          | -                                                         |                           |

#### Grading Scheme

مخطط الدرجات

| 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 |

|                                |                  |                     |         |                                          |
|--------------------------------|------------------|---------------------|---------|------------------------------------------|
|                                | 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              |
| <b>Fail Group<br/>(0 – 49)</b> | <b>FX – Fail</b> | راسب (قيد المعالجة) | (45-49) | More work is 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                        |                           |                                      |                                                                                                                                                                                                                               |
|-------------------------------------------|---------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Title</b>                       | <b>ENGLISH LANGUAGE 1</b> |                                      | <b>Module Delivery</b>                                                                                                                                                                                                        |
| <b>Module Type</b>                        | Basic learning activities |                                      | <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 |
| <b>Module Code</b>                        | <b>UOM1021</b>            |                                      |                                                                                                                                                                                                                               |
| <b>ECTS Credits</b>                       | <b>2</b>                  |                                      |                                                                                                                                                                                                                               |
| <b>SWL (hr/sem)</b>                       | <b>50</b>                 |                                      |                                                                                                                                                                                                                               |
| <b>Module Level</b>                       | 1                         | <b>Semester of Delivery</b>          |                                                                                                                                                                                                                               |
| <b>Administering Department</b>           | AGME1986                  | <b>College</b>                       | AGFO1964                                                                                                                                                                                                                      |
| <b>Module Leader</b>                      | Nofal Issa Mohamed        | <b>e-mail</b>                        | nofelemh@uomosul.edu.iq                                                                                                                                                                                                       |
| <b>Module Leader's Acad. Title</b>        | Assistant Professor       | <b>Module Leader's Qualification</b> | M.Sc.                                                                                                                                                                                                                         |
| <b>Module Tutor</b>                       |                           | <b>e-mail</b>                        |                                                                                                                                                                                                                               |
| <b>Peer Reviewer Name</b>                 | N.A.                      | <b>e-mail</b>                        | N.A.                                                                                                                                                                                                                          |
| <b>Scientific Committee Approval Date</b> | 15/10/2024                | <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>            | 1- To going on studying the English language in special the scientific language.<br>2- Widening student mind about scientific and literature English vocabularies.<br>3- Helping the students to think and write in English the scientific reports.                                                                                                                                                                               |
| <b>Module Learning Outcomes LOs</b> | The student should be able to:<br>LO#1: Gets to know simple sentences, Present Simple, Past simple and Future.<br>LO #2: Gets to know formation of negative sentences and questions in the present and past tense.<br>LO#3: Expresses in writing the active and passive forms in writing scientific reports.<br>LO#4: He chooses appropriate punctuation marks when writing scientific texts in his specialty.                    |
| <b>Indicative Contents</b>          | Indicative content includes the following.<br><u>Theoretical</u><br>Enriching the student with knowledge related to the parts and types of speech, parsing marks and their tools, knowledge of punctuation tools, and choosing the appropriate style and verbs for preparing scientific reports in the specialty in a correct scientific manner.<br><br>Total hrs = 32 = SSWL - (Exam hrs) = 32-2= 30 (Time table hrs x 15 weeks) |

### Learning and Teaching Strategies

|                   |                                                                                                                                                                                      |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b> | 1. Interactive lecture, Brainstorming<br>2. Dialogue and discussion<br>3. Assigning reports<br>4. Quizzes<br>5. Show examples for writing scientific reports in the correct formats. |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Student Workload (SWL)   |    |                        |   |
|--------------------------|----|------------------------|---|
| Structured SWL (h/sem)   | 32 | Structured SWL (h/w)   | 2 |
| Unstructured SWL (h/sem) | 18 | Unstructured SWL (h/w) | 2 |
| Total SWL (h/sem)        | 50 |                        |   |

| Module Evaluation    |                 |             |                  |          |                           |
|----------------------|-----------------|-------------|------------------|----------|---------------------------|
|                      |                 | Time/Number | Weight (Marks)   | Week Due | Relevant Learning Outcome |
| Formative assessment | Quizzes         | 2           | 10% (10)         | 4 and 11 | LO#1 and LO#2             |
|                      | Assignments     | 2           | 20% (10)         | 2 and 13 | LO#1 and LO#31            |
|                      | Projects / Lab. | -           | -                | -        | -                         |
|                      | Report          | 1           | 10% (10)         | 14       | LO#1, LO#2 and LO#4       |
| Summative assessment | Midterm Exam    | 2hr         | 10% (10)         | 7        | LO#1, LO#2 and LO#3       |
|                      | Final Exam      | 2hr         | 50% (50)         | 16       | All                       |
| Total assessment     |                 |             | 100% (100 Marks) |          |                           |

| Delivery Plan (Weekly Syllabus) |                                                  |
|---------------------------------|--------------------------------------------------|
|                                 | Material Covered                                 |
| Week 1                          | A Paragraph on agricultural engineering sciences |
| Week 2                          | A Paragraph on agricultural engineering sciences |

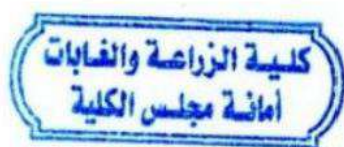
|                |                                                                         |
|----------------|-------------------------------------------------------------------------|
| <b>Week 3</b>  | Present Simple: affirmative sentences                                   |
| <b>Week 4</b>  | Present Simple: 3rd person singular ('s)                                |
| <b>Week 5</b>  | Present Simple: negation and yes\no question                            |
| <b>Week 6</b>  | Present Simple: wh-questions                                            |
| <b>Week 7</b>  | Mid-term Exam                                                           |
| <b>Week 8</b>  | Review the Present Simple                                               |
| <b>Week 9</b>  | Past Simple: affirmative sentences                                      |
| <b>Week 10</b> | Past simple: irregular verbs inflections                                |
| <b>Week 11</b> | Past Simple: negation and yes\no question                               |
| <b>Week 12</b> | Past Simple: wh-questions                                               |
| <b>Week 13</b> | Synonyms and Antonyms                                                   |
| <b>Week 14</b> | Reviewing the passage, Present and Past Tenses, and Synonyms + Antonyms |
| <b>Week 15</b> | Writing in the active and passive voice in scientific reports           |
| <b>Week 16</b> | <b>Preparatory week before the final Exam</b>                           |

| <b>Learning and Teaching Resources</b> |                                           |                                  |
|----------------------------------------|-------------------------------------------|----------------------------------|
|                                        | <b>Text</b>                               | <b>Available in the Library?</b> |
| <b>Required Texts</b>                  | New Headway Plus/Beginner part1           | Yes                              |
| <b>Recommended Texts</b>               | Rapid Review of English Grammar 2020–2021 | No                               |
| <b>Websites</b>                        |                                           |                                  |

## Grading Scheme

| Group                                     | Grade                   | التقدير             | Marks %  | Definition                            |
|-------------------------------------------|-------------------------|---------------------|----------|---------------------------------------|
| <b>Success Group</b><br><b>(50 - 100)</b> | <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><b>(0 – 49)</b>      | <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  |
|                                           |                         |                     |          |                                       |

**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                       | Mathematics                          | Module Delivery                                                                                                                                                                                                                          |                         |
| Module Type                        | Support or related learning activity | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input checked="" type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |                         |
| Module Code                        | MAT1010                              |                                                                                                                                                                                                                                          |                         |
| ECTS Credits                       | 7                                    |                                                                                                                                                                                                                                          |                         |
| SWL (hr/sem)                       | 175                                  |                                                                                                                                                                                                                                          |                         |
| Module Level                       | 1                                    |                                                                                                                                                                                                                                          |                         |
| Administering Department           | AGME1986                             | College                                                                                                                                                                                                                                  | AGFO1964                |
| Module Leader                      | Nofal Issa Mohamed                   | e-mail                                                                                                                                                                                                                                   | nofelemh@uomosul.edu.iq |
| Module Leader's Acad. Title        | Assistant Professor                  | Module Leader's Qualification                                                                                                                                                                                                            |                         |
|                                    |                                      | MSc.                                                                                                                                                                                                                                     |                         |
| Module Tutor                       |                                      | e-mail                                                                                                                                                                                                                                   |                         |
| Peer Reviewer Name                 | N.A.                                 | e-mail                                                                                                                                                                                                                                   | N.A.                    |
| Scientific Committee Approval Date | 15/10/2024                           | 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>- To enable students to acquire proficiency in performing differential calculus operations.</li> <li>- In the field of calculus, the fundamental methodologies used to examine and describe functions are limits, derivatives, and integrals.</li> <li>- Students will use these tools to address application problems across a wide range of disciplines, including physics, biology, business, and economics.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Module Learning Outcomes                               | <p>LO#1: The student uses understanding and of the basic concepts of engineering mathematics.</p> <p>LO#2: The student can develop his mental abilities when solving exercises.</p> <p>LO#3: The student can make connections with information mental abilities when solving exercises to reach a solution and benefit from it in other transactions.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Indicative Contents                                    | <p>Indicative content includes the following.</p> <p>Theory and Tutorial:</p> <p>The focus will be on logarithms - the natural logarithm [SSWL=4 hrs], and applications and solutions will be taken for problems in the exponential function - the trigonometric function - trigonometric facts - complex angles [SSWL=4 hrs], and then the focus will be on differential calculus - derivative laws - derivatives from higher orders such as the equation of the straight line (tangent and perpendicular) and the derivative of trigonometric functions and the derivative of exponential functions - derivatives of logarithmic functions with applications on the derivative (velocity and acceleration) and applications on the derivative (points of inflection) and in hours [SSWL=24 hrs], then moving on to integration calculations - integration laws - definite integration and focusing on integration methods - integration by algebraic substitution - integration by parts and integration methods - integration by partial fractions and in hours [SSWL=12 hrs], then the focus will be on important applied aspects such as finding the area under the curve - the approximate method - by integration calculations and finding the area between two curves With applications of volume of a rotating body and numerical integration Trapezoidal rule and number of hours [SSWL=16 hrs].</p> <p>Total hrs = 63 = SSWL - (Exam hrs) = 63 - 3 = 60 hr (Time table hrs x 15 weeks)</p> |

| Learning and Teaching Strategies |                                                                                                   |
|----------------------------------|---------------------------------------------------------------------------------------------------|
| Strategies                       | Quizzes,<br>Homework,<br>Discussion and solving exercises within the lecture, student interaction |

| Student Workload (SWL)   |     |                        |   |
|--------------------------|-----|------------------------|---|
| Structured SWL (h/sem)   | 63  | Structured SWL (h/w)   | 4 |
| Unstructured SWL (h/sem) | 112 | Unstructured SWL (h/w) | 2 |
| Total SWL (h/sem)        | 175 |                        |   |

| Module Evaluation    |              |             |                  |            |                           |
|----------------------|--------------|-------------|------------------|------------|---------------------------|
|                      |              | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| Formative assessment | Quizzes      | 2           | 10% (10)         | 6 and 9    | LO #1, #2                 |
|                      | Assignments  | 2           | 10% (10)         | 3 and 10   | All                       |
|                      | Tutorial     | 1           | 10% (10)         | Continuous | All                       |
|                      | Report       | 1           | 10% (10)         | 12         | All                       |
| Summative assessment | Midterm Exam | 2hr         | 10% (10)         | 7          | All                       |
|                      | Final Exam   | 3hr         | 50% (50)         | 16         | All                       |
| Total assessment     |              |             | 100% (100 Marks) |            |                           |

| Delivery Plan (Weekly Theory Syllabus) |                                                                                             |
|----------------------------------------|---------------------------------------------------------------------------------------------|
|                                        | Material Covered                                                                            |
| Week 1                                 | Logarithms and natural logarithms                                                           |
| Week 2                                 | The exponential function - the trigonometric function - trigonometric facts compound angles |
| Week 3                                 | Differential Calculus - Laws of Derivatives - Higher Order Derivatives                      |
| Week 4                                 | Equation of a straight line (tangent and normal)                                            |
| Week 5                                 | Derivative of trigonometric functions                                                       |
| Week 6                                 | Derivative of exponential functions - derivative of logarithmic functions                   |

|         |                                                                                            |
|---------|--------------------------------------------------------------------------------------------|
|         |                                                                                            |
| Week 7  |                                                                                            |
| Week 8  | Applications on the derivative (speed and acceleration)                                    |
| Week 9  | Applications to the derivative (inflection points)                                         |
| Week 10 | Introduction to integration calculations - laws of integration - definite integration      |
| Week 11 | Integration methods - integration by algebraic substitution - integration by Part.         |
| Week 12 | Integration methods - integration with partial fractions                                   |
| Week 13 | Finding the area under the curve - the approximate method - using integration Calculations |
| Week 14 | Find the area under the curve                                                              |
| Week 15 | Volume of solid revolution and Numerical integration                                       |
| Week 16 | Preparatory week before the final Exam                                                     |

| Delivery Plan (Weekly Tutorial Syllabus) |                                                                                                                                                |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          | Material Covered                                                                                                                               |
| Week 1                                   | Solving exercises and mathematical applications in logarithms and natural logarithms                                                           |
| Week 2                                   | Solving exercises and mathematical applications in the exponential function - the trigonometric function - trigonometric facts compound angles |
| Week 3                                   | Solving exercises and mathematical applications in differential Calculus - Laws of Derivatives - Higher Order Derivatives                      |
| Week 4                                   | Solving exercises and mathematical applications in equation of a straight line (tangent and normal)                                            |
| Week 5                                   | Solving exercises and mathematical applications in derivative of trigonometric functions                                                       |
| Week 6                                   | Solving exercises and mathematical applications in derivative of exponential functions - derivative of logarithmic functions                   |
| Week 7                                   |                                                                                                                                                |
| Week 8                                   | Solving exercises and mathematical applications in applications on the derivative (speed and acceleration)                                     |
| Week 9                                   | Solving exercises and mathematical applications in applications to the derivative (inflection points)                                          |
| Week 10                                  | Introduction to integration calculations - laws of integration - definite integration                                                          |
| Week 11                                  | Solving exercises and mathematical applications in integration methods - integration by algebraic                                              |

|         |                                                                                                                                               |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------|
|         | substitution - integration by Part.                                                                                                           |
| Week 12 | Solving exercises and mathematical applications in integration methods - integration with partial fractions                                   |
| Week 13 | Solving exercises and mathematical applications in finding the area under the curve - the approximate method - using integration Calculations |
| Week 14 | Solving exercises and mathematical applications in find the area under the curve                                                              |
| Week 15 | Solving exercises and mathematical applications in volume of solid revolution and Numerical integration                                       |
| Week 16 | Preparatory week before the final Exam                                                                                                        |

| Learning and Teaching Resources |                                                                                               |                           |
|---------------------------------|-----------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                          | Available in the Library? |
| Required Texts                  | Mathematics for Machine Learning author M. P. Deisenroth, A. A. Faisal and C. S. Ong          | No                        |
| Recommended Texts               | Mathematical Handbook of Formulas and Table<br>1300 Math Formulas                             | No                        |
| Websites                        | <a href="https://mathblog.com/mathematics-books/">https://mathblog.com/mathematics-books/</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                        |                                 |                                      |                                                                                                                                                                                                                                                     |
|-------------------------------------------|---------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Title</b>                       | <b>Agricultural Informatics</b> |                                      | <b>Module Delivery</b>                                                                                                                                                                                                                              |
| <b>Module Type</b>                        | Core learning activity          |                                      | <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 checked="" type="checkbox"/> Seminar |
| <b>Module Code</b>                        | <b>AGI1080</b>                  |                                      |                                                                                                                                                                                                                                                     |
| <b>ECTS Credits</b>                       | <b>5</b>                        |                                      |                                                                                                                                                                                                                                                     |
| <b>SWL (hr/sem)</b>                       | <b>125</b>                      |                                      |                                                                                                                                                                                                                                                     |
| <b>Module Level</b>                       | 1                               | <b>Semester of Delivery</b>          |                                                                                                                                                                                                                                                     |
| <b>Administering Department</b>           | AGME1986                        | <b>College</b>                       | AGFO1964                                                                                                                                                                                                                                            |
| <b>Module Leader</b>                      | Nofal Issa Mohamed              | <b>e-mail</b>                        | <a href="mailto:nofelemh@uomosul.edu.iq">nofelemh@uomosul.edu.iq</a>                                                                                                                                                                                |
| <b>Module Leader's Acad. Title</b>        | Assistant Professor             | <b>Module Leader's Qualification</b> | MSc.                                                                                                                                                                                                                                                |
| <b>Module Tutor</b>                       |                                 | <b>e-mail</b>                        |                                                                                                                                                                                                                                                     |
| <b>Peer Reviewer Name</b>                 |                                 | <b>e-mail</b>                        |                                                                                                                                                                                                                                                     |
| <b>Scientific Committee Approval Date</b> | 15/10/2024                      | <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>                               | This Module introduces students to the principles and applications of informatics in agriculture. Students will learn to utilize information technology, data analysis, and decision-support systems to enhance agricultural productivity while ensuring sustainable practices. |

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Learning Outcomes LOs</b> | <p>The student should be able to:</p> <p>LO#1. Understand the Role of IT in Agriculture and Forestry</p> <p>LO#2. Identify Key Digital Technologies for Modern Farming and Forestry</p> <p>LO#3. Recognize Foundational Concepts in Data Security and E-Commerce</p> <p>Explore Future Innovations in Agricultural Informatics -</p>                                                                                                                                                                                                                                                                                                             |
| <b>Indicative Contents</b>          | <p>The Agricultural Informatics module links information technology with agriculture, emphasizing modern tools such as IoT, GIS, AI, and big data to improve productivity and sustainability. It encompasses data management, precision farming, remote sensing, and decision support systems. Students acquire hands-on experience with GIS mapping, IoT configurations, and AI models, preparing them to address challenges like resource efficiency, climate adaptation, and food security through innovative, data-driven approaches. This module equips graduates to deploy advanced solutions in agriculture for a sustainable future.</p> |

| <b>Learning and Teaching Strategies</b> |                                                                                                                                                                                                                                                                |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b>                       | <ol style="list-style-type: none"> <li>1. Interactive lecture, Brainstorming</li> <li>2. Dialogue and discussion</li> <li>3. Assigning reports</li> <li>4. Quizzes</li> <li>5. Show examples for writing scientific reports in the correct formats.</li> </ol> |

| <b>Student Workload (SWL)</b>   |     |                               |   |
|---------------------------------|-----|-------------------------------|---|
| <b>Structured SWL (h/sem)</b>   | 63  | <b>Structured SWL (h/w)</b>   | 4 |
| <b>Unstructured SWL (h/sem)</b> | 62  | <b>Unstructured SWL (h/w)</b> | 4 |
| <b>Total SWL (h/sem)</b>        | 125 |                               |   |

| <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)              | 4,11            | LO#1, LO#3                       |
|                             | <b>Assignments</b>       | 2                  | 10% (10)              | 9,13            | LO#2, LO#4                       |
|                             | <b>Projects/ Seminar</b> | 1                  | 10% (10)              | All             | All                              |
|                             | <b>Report</b>            | 1                  | 10% (10)              | 15              | All                              |
| <b>Summative assessment</b> | <b>Midterm Exam</b>      | 2hr                | 10% (10)              | 8               | LO#1, LO#2                       |
|                             | <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>                          | Introduction to Agricultural Informatics    |
| <b>Week 2</b>                          | Agricultural Data Management Systems (ADMS) |

### Delivery Plan (Weekly Syllabus)

|                | Material Covered                                                      |
|----------------|-----------------------------------------------------------------------|
| <b>Week 3</b>  | Internet of Things (IoT) in Agriculture                               |
| <b>Week 4</b>  | Machine Learning and Artificial Intelligence in Agriculture           |
| <b>Week 5</b>  | Decision Support Systems (DSS) in Agriculture                         |
| <b>Week 6</b>  | Using Drones in Agriculture                                           |
| <b>Week 7</b>  | Data Analysis in Agriculture                                          |
| <b>Week 8</b>  | <b>Mid-term Exam</b>                                                  |
| <b>Week 9</b>  | Blockchain Technology and Food Traceability                           |
| <b>Week 10</b> | Mobile Applications in Agricultural Extension                         |
| <b>Week 11</b> | Forest Monitoring and Desertification Control Using Remote Sensing    |
| <b>Week 12</b> | Agricultural Machinery Management and Robotics: Self-Driving Tractors |
| <b>Week 13</b> | E-Commerce in the Agricultural Sector                                 |
| <b>Week 14</b> | Data Security and Protection in Smart Agriculture                     |
| <b>Week 15</b> | The Future of Agricultural Informatics: Prospects and Innovations     |
| <b>Week 16</b> | <b>Preparatory week before the final Exam</b>                         |

### Delivery Plan (Weekly Projects Syllabus)

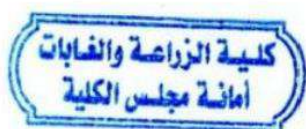
|                | Material Covered                                                                                                                                      |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Week 1</b>  | Discussion on Agricultural Informatics Applications in Iraq.                                                                                          |
| <b>Week 2</b>  | Designing a Simple Database for a Virtual Farm                                                                                                        |
| <b>Week 3</b>  | Using Spreadsheets for Yield Analysis                                                                                                                 |
| <b>Week 4</b>  | Automated Pest and Disease Detection Using AI Algorithms                                                                                              |
| <b>Week 5</b>  | Setting up a Simple Soil Monitoring Device Using Local Tools and Creating a Simple Irrigation DSS Model Using Excel                                   |
| <b>Week 6</b>  | Aerial Drone Surveys and Spectral Image Analysis                                                                                                      |
| <b>Week 7</b>  | Simulating GPS Use for Agricultural Mapping and Creating a Local Agricultural Map Using GIS                                                           |
| <b>Week 8</b>  | Simulating Crop Tracking from Farm to Market                                                                                                          |
| <b>Week 9</b>  | Prototyping a Mobile Application for Agricultural Extension                                                                                           |
| <b>Week 10</b> | Designing a Simple Prototype of a Manual Robot                                                                                                        |
| <b>Week 11</b> | Building a Small Greenhouse Using Local Materials                                                                                                     |
| <b>Week 12</b> | Developing an E-Commerce Marketing Plan for an Agricultural Product                                                                                   |
| <b>Week 13</b> | Applications of Data Security in Smart Farming                                                                                                        |
| <b>Week 14</b> | The Future and Innovations in Agricultural Informatics                                                                                                |
| <b>Week 15</b> | Final Project Presentations that present practical projects addressing local agricultural challenges focusing on feasible technology-based solutions. |

### Learning and Teaching Resources

|                       | Text                                                                                                                                                                                                          | Available in the Library? |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Required Texts</b> | <ul style="list-style-type: none"> <li>Choudhury, A., Biswas, A., Prateek, M., &amp; Chakraborty, A. (2021). Agricultural Informatics: Automation Using IoT and Machine Learning. Wiley-Scrivener.</li> </ul> | No                        |

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Recommended Texts</b> | <ul style="list-style-type: none"> <li>• Pierce, F. J., &amp; Zhang, Q. (2016). Agricultural Automation: Fundamentals and Practices. CRC Press.</li> <li>• Shamtsyan, M., Pasetti, M., &amp; Beskopylny, A. (2021). Robotics, Machinery and Engineering Technology for Precision Agriculture. Springer.</li> <li>• Li, D. (2016). Computer and Computing Technologies in Agriculture: Proceedings of CCTA. Springer.</li> <li>• Satapathy, S., Mishra, D., Vargas, A. R., &amp; El-Bendary, N. (2022). Innovation in Agriculture with IoT and AI. Springer.</li> <li>• Singh, R., Gehlot, A., Singh, B., &amp; Choudhury, S. (2022). Internet of Things (IoT) Enabled Automation in Agriculture. CRC Press.</li> <li>• Boote, K. J. (Ed.). (2021). Advances in Crop Modelling for Sustainable Agriculture. CAB International.</li> </ul> |  |
| <b>Websites</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |

| <b>Grading Scheme</b>                                                                                                                                                                                                                                                                                                                                                                       |                         |                   |                |                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|----------------|---------------------------------------|
| <b>Group</b>                                                                                                                                                                                                                                                                                                                                                                                | <b>Grade</b>            | <b>Grade</b>      | <b>Marks %</b> | <b>Definition</b>                     |
| <b>Success Group<br/>(50 - 100)</b>                                                                                                                                                                                                                                                                                                                                                         | <b>A - Excellent</b>    | Excellent         | 90 - 100       | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>B - Very Good</b>    | Very Good         | 80 - 89        | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>C - Good</b>         | Good              | 70 - 79        | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>D - Satisfactory</b> | Average           | 60 - 69        | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>E - Sufficient</b>   | Acceptable        | 50 - 59        | Work meets minimum criteria           |
| <b>Fail Group<br/>(0 – 49)</b>                                                                                                                                                                                                                                                                                                                                                              | <b>FX – Fail</b>        | Fail (in process) | (45-49)        | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>F – Fail</b>         | Fail              | (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                        |                                              |                     |                             |                                                                                                                                                                                                                               |                                                                      |
|-------------------------------------------|----------------------------------------------|---------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| <b>Module Title</b>                       | <b>AGRICULTURAL MARKETING<br/>TECHNIQUES</b> |                     |                             | <b>Module Delivery</b>                                                                                                                                                                                                        |                                                                      |
| <b>Module Type</b>                        | <b>Core learning activity</b>                |                     |                             | <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 |                                                                      |
| <b>Module Code</b>                        | AMT1100                                      |                     |                             |                                                                                                                                                                                                                               |                                                                      |
| <b>ECTS Credits</b>                       | 5                                            |                     |                             |                                                                                                                                                                                                                               |                                                                      |
| <b>SWL (hr/sem)</b>                       | 125                                          |                     |                             |                                                                                                                                                                                                                               |                                                                      |
| <b>Module Level</b>                       | 1                                            |                     | <b>Semester of Delivery</b> |                                                                                                                                                                                                                               |                                                                      |
| <b>Administering Department</b>           |                                              |                     |                             | <b>College</b>                                                                                                                                                                                                                | AGFO1964                                                             |
|                                           |                                              | AGME1986            |                             |                                                                                                                                                                                                                               |                                                                      |
| <b>Module Leader</b>                      | Nofal Issa Mohamed                           |                     |                             | <b>e-mail</b>                                                                                                                                                                                                                 | <a href="mailto:nofelemh@uomosul.edu.iq">nofelemh@uomosul.edu.iq</a> |
| <b>Module Leader's Acad. Title</b>        |                                              | Assistant Professor |                             | <b>Module Leader's Qualification</b>                                                                                                                                                                                          |                                                                      |
|                                           |                                              |                     |                             | MSc.                                                                                                                                                                                                                          |                                                                      |
| <b>Module Tutor</b>                       |                                              |                     |                             | <b>e-mail</b>                                                                                                                                                                                                                 |                                                                      |
| <b>Peer Reviewer Name</b>                 |                                              | N.A.                |                             | <b>e-mail</b>                                                                                                                                                                                                                 | N.A.                                                                 |
| <b>Scientific Committee Approval Date</b> |                                              | 15/10/2024          |                             | <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> | <ol style="list-style-type: none"> <li>1. The student gains a basic understanding of the food marketing system in the country.</li> <li>2. The student describes the agricultural marketing chain.</li> <li>3. The student identifies various economic principles and how they relate to agricultural marketing.</li> <li>4. The student discusses consumer demand and the impact of marketing on consumer demand.</li> <li>5. The student discusses specialty products and value-added products.</li> <li>6. The student understands the importance of agricultural cooperatives.</li> <li>7. The student describes the structure of agricultural marketing.</li> <li>8. The student develops a marketing plan for an agricultural product</li> </ol> |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Learning Outcomes</b> | <p>The student should be able to:</p> <p>LO#1: Explain the basic marketing functions of buying, selling, transportation, storage, financing, standardization, pricing, and risk bearing.</p> <p>LO#2: Apply economic principles to the marketing of agricultural products.</p> <p>LO#3: Identify alternatives in the marketing of agricultural commodities/products.</p> <p>LO#4: Study the structure of agricultural markets.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Indicative Contents</b>      | <p>Indicative content includes the following.</p> <p><u>Part A - Circuit Theory</u></p> <p>Developing the correct management skills for agricultural marketing in the precise specialization and determining the appropriate means for marketing agricultural products in the fastest time, highest marketing efficiency and lowest costs, and working to transport agricultural commodities through good and fast transportation methods to ensure transportation in the fastest times because agricultural crops are susceptible to rapid spoilage if they are not transported and stored in storage methods. Various types, and work on packing agricultural products in glass, cardboard, plastic or wooden boxes. The most important modern means of shopping will be discussed, such as electronic marketing via the Internet. Students will also be taught how to shop practically by visiting wholesale marketing places and teaching students how a merchant or broker works in shopping.</p> <p>Total hrs = 32 = SSWL - (Exam hrs) = 32 - 2 = 30 hr (Time table hrs x 15 weeks)</p> |

## Learning and Teaching Strategies

|                   |                                                                                                                                                                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b> | <ol style="list-style-type: none"> <li>1. Interactive lecture, Brainstorming</li> <li>2. Dialogue and discussion</li> <li>3. Assigning reports</li> <li>4. Quizzes</li> <li>5. Show examples for writing scientific reports in the correct formats.</li> </ol> |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| <b>Student Workload (SWL)</b>   |     |                                         |   |
|---------------------------------|-----|-----------------------------------------|---|
| <b>Structured SWL (h/sem)</b>   | 32  | <b>Structured SWL (h/w)<sup>1</sup></b> | 2 |
| <b>Unstructured SWL (h/sem)</b> | 93  | <b>Unstructured SWL (h/w)</b>           | 6 |
| <b>Total SWL (h/sem)</b>        | 125 |                                         |   |

| <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>             | 3                  | 15% (15)              | 4,6,9           | LO#2, LO#4                       |
|                             | <b>Home Assignments</b>    | 2                  | 10% (10)              | 2 and 12        | LO#1, LO#4                       |
|                             | <b>Collage Assignments</b> | 1                  | 5% (5)                | 10 and 11       | LO#3                             |
|                             | <b>Report</b>              | 1                  | 10% (10)              | 13              | LO#4                             |
| <b>Summative assessment</b> | <b>Midterm Exam</b>        | 2hr                | 10% (10)              | 7               | LO#1, LO#2                       |
|                             | <b>Final Exam</b>          | 2hr                | 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>                          | Introductions and Course Overview; Types of Markets, Role of Agriculture Marketing in economic development. |
| <b>Week 2</b>                          | Agricultural Marketing system, Marketing system productivity.                                               |
| <b>Week 3</b>                          | Analysis of Agricultural Marketing system and approaches.                                                   |
| <b>Week 4</b>                          | Market organizations.                                                                                       |
| <b>Week 5</b>                          | Marketing tools.                                                                                            |
| <b>Week 6</b>                          | Market Efficiency and Margins and costs.                                                                    |
| <b>Week 7</b>                          | <b>Midterm Exam.</b>                                                                                        |
| <b>Week 8</b>                          | Agricultural Marketing in Iraq.                                                                             |
| <b>Week 9</b>                          | Agricultural Marketing problems and solutions.                                                              |
| <b>Week 10</b>                         | Role of Private and public sector in agricultural marketing.                                                |
| <b>Week 11</b>                         | Government Marketing services, Agricultural Marketing information system.                                   |
| <b>Week 12</b>                         | Agricultural Extension services, Marketing legislation, Agricultural prices, Agricultural price policy in   |

|                |                                                                                     |
|----------------|-------------------------------------------------------------------------------------|
|                | Iraq, Agricultural wholesale markets.                                               |
| <b>Week 13</b> | Development and Characteristics of Wholesales Markets, Commodity Marketing in Iraq. |
| <b>Week 14</b> | International Agricultural Marketing.                                               |
| <b>Week 15</b> | Methods of exporting, Export process, WTO and its implementation in Iraq.           |
| <b>Week 16</b> | Preparing the student for the final exam.                                           |

| Learning and Teaching Resources |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Available in the Library? |
| <b>Required Texts</b>           | Principles of Agricultural Marketing, Abu Saeed Al-Duwaihji, Al-Hamid Publishing House, 2001, Amman.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                       |
| <b>Recommended Texts</b>        | <p>— Ali Faleh Al-Zaib, “Marketing Management - A Strategic Applied Perspective,” Dar Al-Yazouri Scientific, 2019.</p> <p>- Ali Faleh Al-Zouaib, “Marketing Communications: An Applied Methodological Approach,” 9th Edition, Dar Al-Masiriya for Publishing and Distribution, Amman-Jordan, 2191</p> <p>– Issa Hammoud Al-Hassan, “Commercial Promotion of Goods and Services,” 9th edition, Zahran Publishing and Distribution House, Oman, .2191</p> <p>- Ghassan Qasim Daoud Al-Almi, “Marketing Management New Ideas and Directions,” 9th edition, Safaa Publishing House. Distribution, Amman</p> | No                        |
| <b>Websites</b>                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                           |

| Grading Scheme                                                                                                                                                                                                                                                                                                                                                                              |                         |                   |          |                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                                       | Grade                   | Grade             | Marks %  | Definition                            |
| <b>Success Group</b><br><b>(50 - 100)</b>                                                                                                                                                                                                                                                                                                                                                   | <b>A</b> - Excellent    | Excellent         | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>B</b> - Very Good    | Very Good         | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>C</b> – Good         | Good              | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>D</b> - Satisfactory | Average           | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>E</b> - Sufficient   | Acceptable        | 50 - 59  | Work meets minimum criteria           |
| <b>Fail Group</b><br><b>(0 – 49)</b>                                                                                                                                                                                                                                                                                                                                                        | <b>FX</b> – Fail        | Fail (in process) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>F</b> – Fail         | Fail              | (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                        |                                                                                                       |                            |                             |                                                                                                                                                                                                                                          |             |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>Module Title</b>                       | <b>AGRICULTURAL STATISTICS</b>                                                                        |                            |                             | <b>Module Delivery</b>                                                                                                                                                                                                                   |             |
| <b>Module Type</b>                        | <b>Core learning activity</b>                                                                         |                            |                             | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input checked="" type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |             |
| <b>Module Code</b>                        | <b>AGS1060</b>                                                                                        |                            |                             |                                                                                                                                                                                                                                          |             |
| <b>ECTS Credits</b>                       | <b>5</b>                                                                                              |                            |                             |                                                                                                                                                                                                                                          |             |
| <b>SWL (hr/sem)</b>                       | <b>125</b>                                                                                            |                            |                             |                                                                                                                                                                                                                                          |             |
| <b>Module Level</b>                       | 1                                                                                                     |                            | <b>Semester of Delivery</b> |                                                                                                                                                                                                                                          |             |
| <b>Administering Department</b>           | <div style="border: 1px solid black; padding: 2px; display: inline-block; color: red;">AGME1986</div> |                            | <b>College</b>              | AGFO1964                                                                                                                                                                                                                                 |             |
| <b>Module Leader</b>                      | <div style="background-color: yellow; padding: 2px; display: inline-block;">Nofal Issa Mohamed</div>  |                            | <b>e-mail</b>               | <a href="mailto:nofelemh@uomosul.edu.iq" style="color: blue; text-decoration: underline;">nofelemh@uomosul.edu.iq</a>                                                                                                                    |             |
| <b>Module Leader's Acad. Title</b>        |                                                                                                       | <b>Assistant Professor</b> |                             | <b>Module Leader's Qualification</b>                                                                                                                                                                                                     | <b>MSc.</b> |
| <b>Module Tutor</b>                       |                                                                                                       |                            | <b>e-mail</b>               |                                                                                                                                                                                                                                          |             |
| <b>Peer Reviewer Name</b>                 |                                                                                                       |                            | <b>e-mail</b>               |                                                                                                                                                                                                                                          |             |
| <b>Scientific Committee Approval Date</b> | 15/10/2024                                                                                            |                            | <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>        | <p>1– Knows statistics and its types, and differentiates between descriptive statistics and inferential or inferential statistics</p> <p>2– Explains what descriptive variables are, and recognizes the difference between a sample and a population</p> <p>3– Organizes and draws a frequency distribution table and identifies its parts</p> <p>4– Organizes a relative frequency distribution table and ascending and descending summation</p> <p>5– Finds the arithmetic mean – and recognizes the properties of the arithmetic mean</p> <p>6– Works on how to find the range, mean deviation, variance, and standard deviation</p> |
| <b>Module Learning Outcomes</b> | <p>LO#1: Is able to compile and classify data, and present it with tables and graphics</p> <p>LO#2: Is able to calculate descriptive statistics of numerical data.</p> <p>LO#3: Can build hypothesis and test the hypothesis, and can make a statistical deduction.</p> <p>LO#4: Can build relation between the data using statistics and make interpretations on them in order to make decisions.</p>                                                                                                                                                                                                                                  |
| <b>Indicative Contents</b>      | <p>Enriching the student with knowledge regarding the conduct and benefit of the agricultural statistical process, and learning how to measure the measurement of centering, mediation and correlation and how to employ them in the field of agricultural engineering sciences and techniques for implementing integration correctly to reach quantity and quality</p> <p>Total hrs = 125= SSWL - (Exam hrs) = 125-3= 122(Time table hrs x 15 weeks)</p>                                                                                                                                                                               |

| <b>Learning and Teaching Strategies</b> |                                                                                                                                                                                                                                                                |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b>                       | <ol style="list-style-type: none"> <li>1. Interactive lecture, Brainstorming</li> <li>2. Dialogue and discussion</li> <li>3. Assigning reports</li> <li>4. Quizzes</li> <li>5. Show examples for writing scientific reports in the correct formats.</li> </ol> |

| <b>Student Workload (SWL)</b> |    |                             |   |
|-------------------------------|----|-----------------------------|---|
| <b>Structured SWL (h/sem)</b> | 78 | <b>Structured SWL (h/w)</b> | 5 |

|                          |     |                        |   |
|--------------------------|-----|------------------------|---|
| Unstructured SWL (h/sem) | 47  | Unstructured SWL (h/w) | 3 |
| Total SWL (h/sem)        | 125 |                        |   |

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

| Delivery Plan (Weekly Syllabus) |                                                                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | Material Covered                                                                                                                                  |
| Week 1                          | Introduction to the nature of statistics and the most important sections of statistics - the nature of data and statistical symbols               |
| Week 2                          | The nature of statistical data - the difference between quantitative and descriptive variables, with examples of each type                        |
| Week 3                          | The difference between society and sample with mathematical examples                                                                              |
| Week 4                          | Tabular and Graphing - Frequency Distribution Table - How to Create Classes and Find Class Length                                                 |
| Week 5                          | Clustered Distributions - Descending Cumulative Frequency Distribution Table - Frequency Curve - Graph of Cumulative Frequency Distribution Table |
| Week 6                          | Measures of mediation and centering - arithmetic mean - geometric mean                                                                            |
| Week 7                          | Measures of centering and centering - harmonic mean - squared mean - median - mode                                                                |
| Week 8                          | Measures of dispersion or variation - range - mean deviation - variance and standard deviation                                                    |
| Week 9                          | Measures of dispersion or variation - the most important properties of variation or standard                                                      |

|                |                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------|
|                | deviation - standard error - standard score                                                      |
| <b>Week 10</b> | Principles of probability theory - factorial - permutations - combinations - random experiment   |
| <b>Week 11</b> | Discrete Probability Distributions - Binomial Distribution - Properties of Binomial Distribution |
| <b>Week 12</b> | Hypothesis Testing - Statistical Hypothesis - Null Hypothesis - Alternative Hypothesis           |
| <b>Week 13</b> | Types of Error - General Steps in Hypothesis Testing                                             |
| <b>Week 14</b> | T-test - Z-test                                                                                  |
| <b>Week 15</b> | Simple Correlation and Regression - Correlation Coefficient                                      |
| <b>Week 16</b> | <b>Preparatory week before the final Exam</b>                                                    |

| <b>Delivery Plan (Weekly Syllabus)</b> |                                              |
|----------------------------------------|----------------------------------------------|
|                                        | <b>Material Covered</b>                      |
| <b>Week 1</b>                          | The nature of statistical data               |
| <b>Week 2</b>                          | The nature of statistical data               |
| <b>Week 3</b>                          | Statistical symbol                           |
| <b>Week 4</b>                          | Graphical representation and display of data |
| <b>Week 5</b>                          | Graphical representation and display of data |
| <b>Week 6</b>                          | Measures of central tendency and centering   |
| <b>Week 7</b>                          | Measures of central tendency and centering   |
| <b>Week 8</b>                          | Measure of dispersion or difference          |
| <b>Week 9</b>                          | Measure of dispersion or difference          |
| <b>Week 10</b>                         | Midterm exam                                 |
| <b>Week 11</b>                         | Probability theory                           |
| <b>Week 12</b>                         | Statistical test                             |
| <b>Week 13</b>                         | Statistical test                             |

|                |                                               |
|----------------|-----------------------------------------------|
| <b>Week 14</b> | Correlation coefficient data analysis         |
| <b>Week 15</b> | <b>Preparatory week before the final Exam</b> |

| <b>Learning and Teaching Resources</b> |                                                                                                                                                                                                                             |                                  |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|                                        | <b>Text</b>                                                                                                                                                                                                                 | <b>Available in the Library?</b> |
| <b>Required Texts</b>                  | Introduction to Statistics - Principles of Statistics                                                                                                                                                                       | Yes                              |
| <b>Recommended Texts</b>               | Statistics and Statistical Methods Book                                                                                                                                                                                     | No                               |
| <b>Websites</b>                        | <a href="https://www.udemy.com/course/bmwqjwxb/?srsltid=AfmBOooesbV6jEmBd_tAQSa288D_QY0Hc1yK1i3seCLaNtYAT4ckpyn">https://www.udemy.com/course/bmwqjwxb/?srsltid=AfmBOooesbV6jEmBd_tAQSa288D_QY0Hc1yK1i3seCLaNtYAT4ckpyn</a> |                                  |

| <b>Grading Scheme</b>               |                         |                     |                |                                       |
|-------------------------------------|-------------------------|---------------------|----------------|---------------------------------------|
| <b>Group</b>                        | <b>Grade</b>            | <b>Assessment</b>   | <b>Marks %</b> | <b>Definition</b>                     |
| <b>Success Group<br/>(50 - 100)</b> | <b>A - Excellent</b>    | Excellent           | 90 - 100       | Outstanding Performance               |
|                                     | <b>B - Very Good</b>    | Very Good           | 80 - 89        | Above average with some errors        |
|                                     | <b>C - Good</b>         | Good                | 70 - 79        | Sound work with notable errors        |
|                                     | <b>D - Satisfactory</b> | Average             | 60 - 69        | Fair but with major shortcomings      |
|                                     | <b>E - Sufficient</b>   | Accepted            | 50 - 59        | Work meets minimum criteria           |
| <b>Fail Group<br/>(0 – 49)</b>      | <b>FX – Fail</b>        | Failed (in process) | (45-49)        | More work required but credit awarded |
|                                     | <b>F – Fail</b>         | Failed              | (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

| <b>Module Information</b><br>معلومات المادة الدراسية |                           |                     |                      |                                                                                                                                                                                                                               |          |
|------------------------------------------------------|---------------------------|---------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Module Title                                         | ARABIC LANGUAGE 1         |                     |                      | Module Delivery                                                                                                                                                                                                               |          |
| Module Type                                          | Basic learning activities |                     |                      | <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                                          | UOM1011                   |                     |                      |                                                                                                                                                                                                                               |          |
| ECTS Credits                                         | 2                         |                     |                      |                                                                                                                                                                                                                               |          |
| SWL (hr/sem)                                         | 50                        |                     |                      |                                                                                                                                                                                                                               |          |
| Module Level                                         |                           | 1                   | Semester of Delivery |                                                                                                                                                                                                                               | 2        |
| Administering Department                             |                           | AGME1986            |                      | College                                                                                                                                                                                                                       | AGFO1964 |
| Module Leader                                        | Nofal Issa Mohamed        |                     | e-mail               | nofelemh@uomosul.edu.iq                                                                                                                                                                                                       |          |
| Module Leader's Acad. Title                          |                           | Assistant Professor |                      | Module Leader's Qualification                                                                                                                                                                                                 |          |
|                                                      |                           |                     |                      | MSc.                                                                                                                                                                                                                          |          |
| Module Tutor                                         |                           |                     |                      | e-mail                                                                                                                                                                                                                        | N.A.     |
| Peer Reviewer Name                                   | N.A.                      |                     |                      | e-mail                                                                                                                                                                                                                        | N.A.     |
| Scientific Committee Approval Date                   |                           | 15/10/2024          |                      | Version Number                                                                                                                                                                                                                | 1.0      |

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

## Module Aims, Learning Outcomes and Indicative Contents

### أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b> | <ol style="list-style-type: none"> <li>1. Introducing students to the basics of the Arabic language. Also breaking the barrier of shyness and increasing their confidence inside and outside the classroom.</li> <li>2. Engaging them in short discussions where they can write or express themselves orally.</li> <li>3. Improving their reading, writing, listening and speaking skills as students, and strengthening students' literary ability to appreciate the styles of the language and realize its beauty .</li> </ol> |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Learning Outcomes</b> | <p>The student should be able to:</p> <p>LO#1: Create a full awareness of the correct use of Arabic grammar in writing and speaking.</p> <p>LO#2: Students will improve their ability to speak Arabic in terms of fluency and comprehension.</p> <p>LO#3: Students will review the grammatical forms of Arabic and use these forms in specific communicative contexts, which include: classroom activities, homework, reading texts, and writing.</p> <p>LO#4: Students will enhance their ability to write short paragraphs and summaries .using a process approach</p>                                                                                                                       |
| <b>Indicative Contents</b>      | <p>Indicative content includes the following.</p> <p>Theoretical</p> <p>Introduction to communication in general and the Arabic language in particular, with an introduction to word categories (parts of speech) in Arabic {4 hours}. Explanation of each part of speech in Arabic such as nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions and conjunctions {16 hours}. Basic skills in learning Arabic: reading and writing are gradually introduced over the past weeks {6 hours}. The last part is dedicated to some error correction and feedback sessions {4 hours}.</p> <p>-Total hrs = 32 = SSWL - (Exam hrs) = 32 - 2 = 30 hr (Time table hrs x 15 weeks)</p> |

## Learning and Teaching Strategies

|                   |                                                                                                                                                                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b> | <ol style="list-style-type: none"> <li>1. Interactive lecture, Brainstorming</li> <li>2. Dialogue and discussion</li> <li>3. Assigning reports</li> <li>4. Quizzes</li> <li>5. Show examples for writing scientific reports in the correct formats.</li> </ol> |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Student Workload (SWL)

|                                 |    |                                                                     |   |
|---------------------------------|----|---------------------------------------------------------------------|---|
| <b>Structured SWL (h/sem)</b>   | 32 | <b>Structured SWL (h/w)</b><br>الحمل الدراسي المنتظم للطالب أسبوعيا | 2 |
| <b>Unstructured SWL (h/sem)</b> | 18 | <b>Unstructured SWL (h/w)</b>                                       | 1 |

|                          |    |  |  |
|--------------------------|----|--|--|
|                          |    |  |  |
| <b>Total SWL (h/sem)</b> | 50 |  |  |

| Module Evaluation    |                     |             |                  |           |                           |
|----------------------|---------------------|-------------|------------------|-----------|---------------------------|
|                      |                     | Time/Number | Weight (Marks)   | Week Due  | Relevant Learning Outcome |
| Formative assessment | Quizzes             | 3           | 15% (15)         | 4,6,9     | LO#1, LO#3                |
|                      | Home Assignments    | 2           | 10% (10)         | 2 and 12  | LO#1, LO#4                |
|                      | Collage Assignments | 2           | 5% (5)           | 10 and 11 | LO#2                      |
|                      | Report              | 1           | 10% (10)         | 13        | LO#4                      |
| Summative assessment | Midterm Exam        | 2hr         | 10% (10)         | 7         | LO#1                      |
|                      | Final Exam          | 2hr         | 50% (50)         | 16        | All                       |
| Total assessment     |                     |             | 100% (100 Marks) |           |                           |

| Delivery Plan (Weekly Syllabus) |                                                                                           |
|---------------------------------|-------------------------------------------------------------------------------------------|
|                                 | Material Covered                                                                          |
| <b>Week 1</b>                   | Speech and its parts                                                                      |
| <b>Week 2</b>                   | Punctuation marks                                                                         |
| <b>Week 3</b>                   | Subject and predicate                                                                     |
| <b>Week 4</b>                   | An and its sisters                                                                        |
| <b>Week 5</b>                   | Kan and its sisters                                                                       |
| <b>Week 6</b>                   | Rules for writing numbers                                                                 |
| <b>Week 7</b>                   | Exam                                                                                      |
| <b>Week 8</b>                   | Surat Al-Fajr                                                                             |
| <b>Week 9</b>                   | Its importance and explanation in addition to rhetorical, grammatical and semantic images |
| <b>Week 10</b>                  | The medial hamza and the extreme hamza                                                    |
| <b>Week 11</b>                  | The difference between the letter Ḍād and the letter Ḍād                                  |

|                |                                                        |
|----------------|--------------------------------------------------------|
| <b>Week 12</b> | Literature Nazik Al-Malaika with her collections       |
| <b>Week 13</b> | Prose styles Al-Jahiz and Abu Hayyan Al-Tawhidi        |
| <b>Week 14</b> | The difference between the open taa and the closed taa |
| <b>Week 15</b> | Say and do not say                                     |
| <b>Week 16</b> | Preparing the student for the final exam.              |

| Learning and Teaching Resources |                                                                        |                           |
|---------------------------------|------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                   | Available in the Library? |
| <b>Required Texts</b>           | Bin Dhiril, Adnan, "Language and Style: A Study," Second Edition, 2006 | No                        |
| <b>Recommended Texts</b>        | Bahri, Saeed Hassan, "The Basis of Arabic Linguistics" 2000            | No                        |
| <b>Websites</b>                 | -                                                                      |                           |

| Grading Scheme                                                                                                                                                                                                                                                                                                                                                                       |                         |                   |          |                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                                | Grade                   | Appreciation      | Marks %  | Definition                            |
| <b>Success Group<br/>(50 - 100)</b>                                                                                                                                                                                                                                                                                                                                                  | <b>A</b> - Excellent    | Excellent         | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                      | <b>B</b> - Very Good    | Very Good         | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                      | <b>C</b> – Good         | Good              | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                      | <b>D</b> - Satisfactory | Average           | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                      | <b>E</b> - Sufficient   | Acceptable        | 50 - 59  | Work meets minimum criteria           |
| <b>Fail Group<br/>(0 – 49)</b>                                                                                                                                                                                                                                                                                                                                                       | <b>FX</b> – Fail        | Fail (in process) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                      | <b>F</b> – Fail         | Fail              | (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>BIODIVERSITY</b>    |                               | Module Delivery                                                                                                                                                                                                                          |
| Module Type                        | Core learning activity |                               | <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>BIO1070</b>         |                               |                                                                                                                                                                                                                                          |
| ECTS Credits                       | 5                      |                               |                                                                                                                                                                                                                                          |
| SWL (hr/sem)                       | <b>125</b>             |                               |                                                                                                                                                                                                                                          |
| Module Level                       | 1                      | Semester of Delivery          |                                                                                                                                                                                                                                          |
| Administering Department           | AGME1986               | College                       | AGFO1964                                                                                                                                                                                                                                 |
| Module Leader                      | Nofal Issa Mohamed     | e-mail                        | <a href="mailto:nofelemh@uomosul.edu.iq">nofelemh@uomosul.edu.iq</a>                                                                                                                                                                     |
| Module Leader's Acad. Title        | Assistant Professor    | Module Leader's Qualification | MSc.                                                                                                                                                                                                                                     |
| Module Tutor                       |                        | e-mail                        |                                                                                                                                                                                                                                          |
| Peer Reviewer Name                 |                        | e-mail                        |                                                                                                                                                                                                                                          |
| Scientific Committee Approval Date | 15/10/2024             | 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 Aims, Learning Outcomes and Indicative Contents |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Objectives                                      | <ol style="list-style-type: none"> <li>1. Enable students to appreciate the importance of biodiversity conservation in addressing environmental challenges and climate change.</li> <li>2. Provide students with fundamental concepts of biological diversity and the role of living organisms in ecosystems.</li> </ol>                                                                                                                                                                                               |
| Module Learning Outcomes LOs                           | <p>The student should be able to:</p> <p>LO#1: Identify classifications of living organisms and patterns of biological diversity in various environments.</p> <p>LO#2: Understand the evolutionary and genetic mechanisms that contribute to the emergence of biodiversity over time.</p> <p>LO#3: Evaluate threats to biodiversity and analyze the impact of human activities on ecosystems.</p> <p>LO#4: Propose suitable strategies for biodiversity conservation and the sustainable use of natural resources.</p> |
| Indicative Contents                                    | <p>Indicative content includes the following.</p> <p><u>Theoretical</u></p> <p>The course covers fundamental concepts of biological diversity and taxonomic classifications, extending to ecosystem studies and methods for species and habitat conservation, with a focus on current threats and future challenges.</p> <p>Total hrs = 125 = SSWL - (Exam hrs) = 63-3 = 60 hrs (Time table hrs x 15 weeks)</p>                                                                                                        |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم |                                                                                                                                                                                                                         |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies                                                      | <ol style="list-style-type: none"> <li>1. (Interactive Lectures)</li> <li>2. (Project-Based Learning)</li> <li>3. (Case Studies)</li> <li>4. (Field Trips)</li> <li>5. (Group Discussions and Presentations)</li> </ol> |

| Student Workload (SWL)   |     |                        |   |
|--------------------------|-----|------------------------|---|
| Structured SWL (h/sem)   | 63  | Structured SWL (h/w)   | 4 |
| Unstructured SWL (h/sem) | 62  | Unstructured SWL (h/w) | 4 |
| Total SWL (h/sem)        | 125 |                        |   |

| Module Evaluation |
|-------------------|
|-------------------|

|                             |                     | Time/Number | Weight (Marks)   | Week Due | Relevant Learning Outcome |
|-----------------------------|---------------------|-------------|------------------|----------|---------------------------|
| <b>Formative assessment</b> | <b>Quizzes</b>      | 2           | 10% (10)         | 4 and 11 | LO#1 and LO#2             |
|                             | <b>Assignments</b>  | 2           | 10% (10)         | 2 and 13 | LO#1 and LO#3             |
|                             | <b>Seminar</b>      | 1           | 10% (10)         | All      | All                       |
|                             | <b>Report</b>       | 1           | 10% (10)         | 14       | LO#1, LO#2 and LO#4       |
| <b>Summative assessment</b> | <b>Midterm Exam</b> | 2hr         | 10% (10)         | 7        | LO#1, LO#2 and LO#3       |
|                             | <b>Final Exam</b>   | 3hr         | 50% (50)         | 16       | All                       |
| <b>Total assessment</b>     |                     |             | 100% (100 Marks) |          |                           |

### Delivery Plan (Weekly Syllabus)

|                | Material Covered                                 |
|----------------|--------------------------------------------------|
| <b>Week 1</b>  | Introduction to Biological Diversity             |
| <b>Week 2</b>  | Taxonomy and Scientific Nomenclature             |
| <b>Week 3</b>  | Genetic Diversity and Evolution                  |
| <b>Week 4</b>  | Ecological Diversity and Ecosystems              |
| <b>Week 5</b>  | Measuring Biodiversity and Its Indicators        |
| <b>Week 6</b>  | Factors Affecting Biological Diversity           |
| <b>Week 7</b>  | Mid-term Exam                                    |
| <b>Week 8</b>  | Environmental and Economic Value of Biodiversity |
| <b>Week 9</b>  | Current Threats to Biodiversity                  |
| <b>Week 10</b> | Species Extinction and Conservation Strategies   |
| <b>Week 11</b> | Biodiversity in Aquatic Ecosystems               |
| <b>Week 12</b> | Biodiversity in Terrestrial Ecosystems           |
| <b>Week 13</b> | Climate Change and Its Impact on Biodiversity    |
| <b>Week 14</b> | Biodiversity and Sustainable Development         |
| <b>Week 15</b> | Natural Resource Management and Sustainable Use  |
| <b>Week 16</b> | Future Directions in Biodiversity Enhancement    |

### Delivery Plan (Weekly Laboratory Syllabus)

|                | Material Covered                                                            |
|----------------|-----------------------------------------------------------------------------|
| <b>Week 1</b>  | Future Directions in Biodiversity Enhancement                               |
| <b>Week 2</b>  | Collection and Classification of Plant and Animal Samples                   |
| <b>Week 3</b>  | Practical Applications of Scientific Nomenclature in the Lab                |
| <b>Week 4</b>  | Genetic Diversity Measurements and DNA Analysis Techniques                  |
| <b>Week 5</b>  | Field Survey of Ecosystems (Forest or Agricultural)                         |
| <b>Week 6</b>  | Biodiversity Assessment in Soil and Water Samples                           |
| <b>Week 7</b>  | Monitoring Environmental Threats (e.g., Pollution and Biological Invasions) |
| <b>Week 8</b>  | Community Analysis of Biotic Assemblages (Community Analysis)               |
| <b>Week 9</b>  | In-situ and Ex-situ Conservation Techniques (In-situ & Ex-situ)             |
| <b>Week 10</b> | Studying the Impact of Climate Change on Biotic Communities                 |

|                |                                                                        |
|----------------|------------------------------------------------------------------------|
| <b>Week 11</b> | Field Visit to High-Biodiversity Areas                                 |
| <b>Week 12</b> | Data Documentation and Analysis Using Statistical Software             |
| <b>Week 13</b> | Designing Models for Biodiversity Conservation and Sustainable Use     |
| <b>Week 14</b> | Developing Management Plans for Species Protection                     |
| <b>Week 15</b> | Presentation and Discussion of Research Findings and Practical Reports |

### Learning and Teaching Resources

|                          | Text                                                                                                                                                    | Available in the Library? |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Required Texts</b>    | Gaston, K. (2010) Chapter 2: Biodiversity. In N.S. Sodhi & P. R. Ehrlich, Conservation Biology for All (pp. 27 - 43). Society for Conservation Biology. | -                         |
| <b>Recommended Texts</b> |                                                                                                                                                         | -                         |
| <b>Websites</b>          |                                                                                                                                                         |                           |

### Grading Scheme

#### مخطط الدرجات

| Group                               | Grade                   | التقدير             | Marks %  | Definition                            |
|-------------------------------------|-------------------------|---------------------|----------|---------------------------------------|
| <b>Success Group<br/>(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<br/>(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                       | BIOSAFETY and SECURITY    |                               | Module Delivery                                                                                                                                                                                                                          |
| Module Type                        | Support learning activity |                               | <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                        | BSS1050                   |                               |                                                                                                                                                                                                                                          |
| ECTS Credits                       | 3                         |                               |                                                                                                                                                                                                                                          |
| SWL (hr/sem)                       | 75                        |                               |                                                                                                                                                                                                                                          |
| Module Level                       | 1                         | Semester of Delivery          |                                                                                                                                                                                                                                          |
| Administering Department           | AGME1986                  | College                       | AGFO1964                                                                                                                                                                                                                                 |
| Module Leader                      | Nofal Issa Mohamed        | e-mail                        | <a href="mailto:nofelemh@uomosul.edu.iq">nofelemh@uomosul.edu.iq</a>                                                                                                                                                                     |
| Module Leader's Acad. Title        | Assistant Professor       | Module Leader's Qualification | MSc.                                                                                                                                                                                                                                     |
| Module Tutor                       |                           | e-mail                        |                                                                                                                                                                                                                                          |
| Peer Reviewer Name                 |                           | e-mail                        |                                                                                                                                                                                                                                          |
| Scientific Committee Approval Date | 15/10/2024                | Version Number                | 1.0                                                                                                                                                                                                                                      |

| Relation with other Modules |         |          |   |
|-----------------------------|---------|----------|---|
| Prerequisite module         | ACE1020 | Semester | 1 |
| Co-requisites module        | None    | Semester |   |

| Module Aims, Learning Outcomes and Indicative Contents   |
|----------------------------------------------------------|
| أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية |
|                                                          |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Objectives</b>                                                                                           | <ol style="list-style-type: none"> <li>1. Equip students with fundamental knowledge of biosafety and biosecurity principles and their practical application in agricultural, forestry, and food-related settings.</li> <li>2. Enable students to develop the skills necessary to identify, assess, and manage biological hazards, ensuring the protection of human health, the environment, and food products.</li> </ol>                                                                                                                                                                                        |
| <b>Module Learning Outcomes LOs</b>                                                                                | <p>The student should be able to:</p> <p>LO#1: Identify common biological hazards in agriculture, forestry, and food sectors, and assess their level of risk.</p> <p>LO#2: Apply biosafety and biosecurity principles and practices in accordance with recognized international standards and levels.</p> <p>LO#3: Design and implement prevention and control programs for biological hazards in laboratories and agricultural/food production facilities.</p> <p>LO#4: Adhere to ethical and legal considerations when handling biological materials, ensuring public health and environmental protection.</p> |
| <b>Indicative Contents</b>                                                                                         | <p>Indicative content includes the following.</p> <p><u>Theoretical</u></p> <p>The course covers the concepts of biosafety and biosecurity, risk assessment, regulations, and safe laboratory techniques, with practical training on using personal protective equipment, sterilization, and waste disposal. It also enhances understanding of emergency response and designing biosecurity protocols in agricultural and food sectors, aiming to ensure worker safety and protect products and the environment.</p> <p>Total hrs = 75 = SSWL - (Exam hrs) = 47-2 = 28 hrs (Time table hrs x 15 weeks)</p>       |

| Learning and Teaching Strategies |                                                                                                                                                                                                                                             |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b>                | <ol style="list-style-type: none"> <li>1. (Interactive Lectures)</li> <li>2. (Project-Based Learning)</li> <li>3. (Case Studies)</li> <li>4. (Workshops and Hands-On Training)</li> <li>5. (Group Discussions and Presentations)</li> </ol> |

| Student Workload (SWL)   |    |                        |   |
|--------------------------|----|------------------------|---|
| Structured SWL (h/sem)   | 47 | Structured SWL (h/w)   | 3 |
| Unstructured SWL (h/sem) | 28 | Unstructured SWL (h/w) | 2 |
| Total SWL (h/sem)        | 75 |                        |   |

| Module Evaluation |         |             |                |          |                           |
|-------------------|---------|-------------|----------------|----------|---------------------------|
|                   |         | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
| Formative         | Quizzes | 2           | 10% (10)       | 4 and 11 | LO#1 and LO#2             |

|                             |                            |     |                  |          |                     |
|-----------------------------|----------------------------|-----|------------------|----------|---------------------|
| <b>assessment</b>           | <b>Home Assignments</b>    | 2   | 10% (10)         | 2 and 13 | LO#1 and LO#3       |
|                             | <b>College Assignments</b> | 2   | 10% (10)         | All      | All                 |
|                             | <b>Report</b>              | 1   | 10% (10)         | 14       | LO#1, LO#2 and LO#4 |
| <b>Summative assessment</b> | <b>Midterm Exam</b>        | 2hr | 10% (10)         | 7        | LO#1, LO#2 and LO#3 |
|                             | <b>Final Exam</b>          | 2hr | 50% (50)         | 16       | All                 |
| <b>Total assessment</b>     |                            |     | 100% (100 Marks) |          |                     |

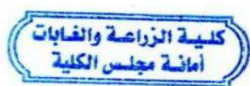
| <b>Delivery Plan (Weekly Syllabus)</b><br>المناهج الاسبوعي النظري |                                                                         |
|-------------------------------------------------------------------|-------------------------------------------------------------------------|
|                                                                   | <b>Material Covered</b>                                                 |
| Week 1                                                            | Introduction to Biosafety and Biosecurity                               |
| Week 2                                                            | Types of Biological Hazards in the Agricultural and Food Sectors        |
| Week 3                                                            | Risk Assessment and Management                                          |
| Week 4                                                            | Biosafety Levels and International Standards                            |
| Week 5                                                            | Personal Protective Equipment (PPE) and Safe Work Practices             |
| Week 6                                                            | Sterilization, Disinfection, and Biological Waste Disposal              |
| Week 7                                                            | Mid-term Exam                                                           |
| Week 8                                                            | Safe Storage, Handling, and Transport of Biological Materials           |
| Week 9                                                            | Good Laboratory Practices (GLP) and Quality Standards                   |
| Week 10                                                           | Biosecurity in Agriculture and Protection of Plant and Animal Resources |
| Week 11                                                           | Emergencies and Rapid Response to Biological Incidents                  |
| Week 12                                                           | Local and International Regulations on Biosafety and Biosecurity        |
| Week 13                                                           | Ethical Considerations and Dual-Use of Biological Technologies          |
| Week 14                                                           | Case Studies and Practical Applications in Biosafety and Biosecurity    |
| Week 15                                                           | Workshops and Simulations for Biosafety Protocol Design                 |
| Week 16                                                           | Comprehensive Review and Final Assessment                               |

| <b>Delivery Plan (Weekly Syllabus)</b> |                                                                         |
|----------------------------------------|-------------------------------------------------------------------------|
|                                        | <b>Material Covered</b>                                                 |
| <b>Week 1</b>                          | Introduction to Biosafety and Biosecurity                               |
| <b>Week 2</b>                          | Types of Biological Hazards in the Agricultural and Food Sectors        |
| <b>Week 3</b>                          | Risk Assessment and Management                                          |
| <b>Week 4</b>                          | Biosafety Levels and International Standards                            |
| <b>Week 5</b>                          | Personal Protective Equipment (PPE) and Safe Work Practices             |
| <b>Week 6</b>                          | Sterilization, Disinfection, and Biological Waste Disposal              |
| <b>Week 7</b>                          | Safe Storage, Handling, and Transport of Biological Materials           |
| <b>Week 8</b>                          | Good Laboratory Practices (GLP) and Quality Standards                   |
| <b>Week 9</b>                          | Biosecurity in Agriculture and Protection of Plant and Animal Resources |
| <b>Week 10</b>                         | Emergencies and Rapid Response to Biological Incident                   |
| <b>Week 11</b>                         | Local and International Regulations on Biosafety and Biosecurity        |
| <b>Week 12</b>                         | Ethical Considerations and Dual-Use of Biological Technologies          |
| <b>Week 13</b>                         | Case Studies and Practical Applications in Biosafety and Biosecurity    |
| <b>Week 14</b>                         | Workshops and Simulations for Biosafety Protocol Design                 |
| <b>Week 15</b>                         | Comprehensive Review and Final Assessment                               |

| Learning and Teaching Resources |                                                                                                                                                                                                             |                           |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                                                                                                                                        | Available in the Library? |
| <b>Required Texts</b>           | Basics of Biological and Occupational Safety in Laboratories and Scientific Institutions / Ministry of Higher Education - University of Kufa / College of Agriculture - Department of Food Sciences.        | -                         |
| <b>Recommended Texts</b>        | Biosafety and Biosecurity Training and Education Materials/Biorisk Management Guide May 2020 - This guide was issued in cooperation with the Ministry of Higher Education and the Iraqi Ministry of Health. | -                         |
| <b>Websites</b>                 |                                                                                                                                                                                                             |                           |

| Grading Scheme<br>مخطط الدرجات      |                         |                   |          |                                       |
|-------------------------------------|-------------------------|-------------------|----------|---------------------------------------|
| Group                               | Grade                   | Grade             | Marks %  | Definition                            |
| <b>Success Group<br/>(50 - 100)</b> | <b>A</b> - Excellent    | Excellent         | 90 - 100 | Outstanding Performance               |
|                                     | <b>B</b> - Very Good    | Very Good         | 80 - 89  | Above average with some errors        |
|                                     | <b>C</b> - Good         | Good              | 70 - 79  | Sound work with notable errors        |
|                                     | <b>D</b> - Satisfactory | Average           | 60 - 69  | Fair but with major shortcomings      |
|                                     | <b>E</b> - Sufficient   | Acceptable        | 50 - 59  | Work meets minimum criteria           |
| <b>Fail Group<br/>(0 – 49)</b>      | <b>FX</b> – Fail        | Fail (in process) | (45-49)  | More work required but credit awarded |
|                                     | <b>F</b> – Fail         | Fail              | (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                        |                               |                                      |                                                                                                                                                                                                                                          |
|-------------------------------------------|-------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module Title</b>                       | <b>SUSTANIBLE DEVELOPMENT</b> |                                      | <b>Module Delivery</b>                                                                                                                                                                                                                   |
| <b>Module Type</b>                        | Core learning activity        |                                      | <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 checked="" type="checkbox"/> Seminar |
| <b>Module Code</b>                        | <b>SUD1090</b>                |                                      |                                                                                                                                                                                                                                          |
| <b>ECTS Credits</b>                       | 5                             |                                      |                                                                                                                                                                                                                                          |
| <b>SWL (hr/sem)</b>                       | <b>125</b>                    |                                      |                                                                                                                                                                                                                                          |
| <b>Module Level</b>                       | 1                             | <b>Semester of Delivery</b>          |                                                                                                                                                                                                                                          |
| <b>Administering Department</b>           | <b>AGME1986</b>               | <b>College</b>                       | AGFO1964                                                                                                                                                                                                                                 |
| <b>Module Leader</b>                      | <b>Nofal Issa Mohamed</b>     | <b>e-mail</b>                        | <a href="mailto:nofelemh@uomosul.edu.iq">nofelemh@uomosul.edu.iq</a>                                                                                                                                                                     |
| <b>Module Leader's Acad. Title</b>        | <b>Assistant Professor</b>    | <b>Module Leader's Qualification</b> | <b>MSc.</b>                                                                                                                                                                                                                              |
| <b>Module Tutor</b>                       |                               | <b>e-mail</b>                        |                                                                                                                                                                                                                                          |
| <b>Peer Reviewer Name</b>                 |                               | <b>e-mail</b>                        |                                                                                                                                                                                                                                          |
| <b>Scientific Committee Approval Date</b> | 15/10/2024                    | <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>                               | 1. Understand the concept of sustainable development and its various dimensions. |                 |  |

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | <p>2. Analyze the impact of environmental and social changes on achieving sustainability.</p> <p>3. Study the role of government policies and innovation in supporting sustainable development.</p> <p>4. Raise awareness of the importance of achieving social justice within the goals of sustainability.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Module Learning Outcomes</b> | <p>LO#1: How sustainability considerations can actually be embedded within an individual's and community's day to day activities and decision-making processes.</p> <p>LO#2: How existing sustainable development tools and methods can be adjusted/fine-tuned accordingly, and how to design sustainability performance metric to assess the impact on community's sustainable development.</p> <p>LO#3: How to design feedback systems that can readjust the pathways of processes and procedures to ensure success in implementing sustainable development initiatives.</p> <p>LO#4: How to empower communities set sustainability targets using appropriate metrics.</p>                                                                                                                                                                                                                                                                                  |
| <b>Indicative Contents</b>      | <p>The theoretical and cognitive foundation of the concept of sustainable development will be developed and an experiential understanding of emerging global challenges for sustainable environmental and community governance systems will be gained through theoretical lectures in the fifteen weeks. By focusing on seminars related to sustainable development and simulating successful country experiences, the capacity of communities and students will be enhanced and their research role and development in establishing the necessary information links and feedback loops within the system will be raised to allow system actors to have a sound understanding of developing sustainable solutions. This will enable visualization of the different factors that affect sustainability and proposing an action plan for building sustainable communities.</p> <p>Total hrs = 62 = SSWL - (Exam hrs) = 62-2= 60 (Time table hrs x 15 weeks)</p> |

### Learning and Teaching Strategies

|                   |                                                                                                                                                                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b> | <ol style="list-style-type: none"> <li>1. Interactive lecture, Brainstorming</li> <li>2. Dialogue and discussion</li> <li>3. Assigning reports</li> <li>4. Quizzes</li> <li>5. Show examples for writing scientific reports in the correct formats.</li> </ol> |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Student Workload (SWL)

|                                 |    |                               |   |
|---------------------------------|----|-------------------------------|---|
| <b>Structured SWL (h/sem)</b>   | 62 | <b>Structured SWL (h/w)</b>   | 4 |
| <b>Unstructured SWL (h/sem)</b> | 63 | <b>Unstructured SWL (h/w)</b> | 4 |

|                      |                     |             |                  |            |                           |
|----------------------|---------------------|-------------|------------------|------------|---------------------------|
| Total SWL (h/sem)    |                     | 125         |                  |            |                           |
| Module Evaluation    |                     |             |                  |            |                           |
|                      |                     | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| Formative assessment | Quizzes             | 3           | 15% (15)         | 3, 9 ,11   | LO#1, LO#2, LO#3 and LO#4 |
|                      | Collage Assignments | 2           | 10% (10)         | 2 and 12   | LO#1 and LO#3             |
|                      | Projects            | 1           | 10% (10)         | Continuous | All                       |
|                      | Report              | 1           | 5% (5)           | 14         | LO#4                      |
| Summative assessment | Midterm Exam        | 2hr         | 10% (10)         | 7          | LO#1, LO#2                |
|                      | Final Exam          | 2hr         | 50% (50)         | 16         | All                       |
| Total assessment     |                     |             | 100% (100 Marks) |            |                           |

|                                               |                                                                           |
|-----------------------------------------------|---------------------------------------------------------------------------|
| <b>Delivery Plan (Weekly Theory Syllabus)</b> |                                                                           |
|                                               | <b>Material Covered</b>                                                   |
| <b>Week 1</b>                                 | Introduction to Sustainable Development                                   |
| <b>Week 2</b>                                 | Economic, Social, and Environmental Dimensions of Sustainable Development |
| <b>Week 3</b>                                 | History and Evolution of the Concept of Sustainable Development           |
| <b>Week 4</b>                                 | (Sustainable Development Goals (SDGs                                      |
| <b>Week 5</b>                                 | Sustainability in Natural Resource Management                             |
| <b>Week 6</b>                                 | Climate Change and Its Impact on Sustainable Development                  |
| <b>Week 7</b>                                 | Midterm Exam                                                              |
| <b>Week 8</b>                                 | The Role of Education and Awareness in Achieving Sustainable Development  |
| <b>Week 9</b>                                 | Renewable Energy and Sustainability                                       |
| <b>Week 10</b>                                | Sustainability in the Agricultural and Food Sector                        |
| <b>Week 11</b>                                | Government Policies and Their Role in Achieving Sustainable Development   |
| <b>Week 12</b>                                | Innovation and Technology in Supporting Sustainability                    |
| <b>Week 13</b>                                | Social Justice and Equality in Sustainable Development                    |
| <b>Week 14</b>                                | Global Challenges Facing Sustainable Development                          |
| <b>Week 15</b>                                | The Future of Sustainable Development                                     |
| <b>Week 16</b>                                | <b>Preparatory week before the final Exam</b>                             |

|                                                 |                                                                                                                                      |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Delivery Plan (Weekly Seminars Syllabus)</b> |                                                                                                                                      |
| <b>Week</b>                                     | <b>Material Covered</b>                                                                                                              |
| <b>Week 1</b>                                   | <ul style="list-style-type: none"> <li>Analysis of environmental challenges and opportunities in sustainable development.</li> </ul> |
| <b>Week 2</b>                                   | <ul style="list-style-type: none"> <li>Analyzing the role of technology in supporting sustainability.</li> </ul>                     |

|                |                                                                                                                                                                                                                                           |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Week 3</b>  | <ul style="list-style-type: none"> <li>Workshop on sustainability applications in local projects.</li> </ul>                                                                                                                              |
| <b>Week 4</b>  | <ul style="list-style-type: none"> <li>Netherlands: Circular farming in the dairy sector, reusing animal waste for energy and bioplastics, using bioreactor technology integrated with IoT sensors</li> </ul>                             |
| <b>Week 5</b>  | <ul style="list-style-type: none"> <li>Smart Pastures project in Mongolia, rotational grazing systems based on satellite monitoring, to restore 15% of degraded pastures annually</li> </ul>                                              |
| <b>Week 6</b>  | <ul style="list-style-type: none"> <li>Intensive Rice Project in Madagascar, implementing SRI (System of Rice Intensification) to increase production by 50% while saving water in a geography: highland areas in Antananarivo</li> </ul> |
| <b>Week 7</b>  | <ul style="list-style-type: none"> <li>Smart Sustainable Farms in Ethiopia, integrating conservation agriculture with drought early warning systems: to increase crop resilience by 40% in Tigray regions.</li> </ul>                     |
| <b>Week 8</b>  | <ul style="list-style-type: none"> <li>Brazil: Low Carbon Agriculture Model (ABC Program), reducing methane emissions by 38% through integrated livestock waste management</li> </ul>                                                     |
| <b>Week 9</b>  | <ul style="list-style-type: none"> <li>China: Loess Plateau Rehabilitation, largest ecological restoration project (35,000 km<sup>2</sup>), using terraced terraces + water harvesting + selective afforestation.</li> </ul>              |
| <b>Week 10</b> | <ul style="list-style-type: none"> <li>Jordan: “Water Rationing” project, micro-drip irrigation technology with big data analysis, by reducing water consumption by 70% in vegetable cultivation.</li> </ul>                              |
| <b>Week 11</b> | <ul style="list-style-type: none"> <li>Zambia: Conservation agriculture with FAO, zero tillage + permanent mulch + crop rotation, to increase maize production by 120% in 5 years</li> </ul>                                              |
| <b>Week 12</b> | <ul style="list-style-type: none"> <li>“Palm Oasis” project in Morocco, combating desertification through solar drip irrigation systems.</li> </ul>                                                                                       |
| <b>Week 13</b> | <ul style="list-style-type: none"> <li>African Drylands Program (Senegal), cultivation of salt-resistant sorghum with fog harvesting, to reduce rural youth migration by 55%</li> </ul>                                                   |
| <b>Week 14</b> | <ul style="list-style-type: none"> <li>“Integrated Farming” project in the Niger Delta, fish farming with rice cultivation in the same water body, to increase income by 300% while improving biological fertility</li> </ul>             |
| <b>Week 15</b> | Project presentations and discussions on feasibility and conclusions.                                                                                                                                                                     |

| Learning and Teaching Resources |                                                                                                                                  |                           |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                                 | Text                                                                                                                             | Available in the Library? |
| <b>Required Texts</b>           | Omar bin Akhdar Khalfawi "Sustainable Development"                                                                               | no                        |
| <b>Recommended Texts</b>        | Abdullah bin Abdulrahman Al-Baridi "Sustainable Development: An Integrated Approach to Sustainability Concepts and Applications" |                           |
| <b>Websites</b>                 |                                                                                                                                  |                           |

| Grading Scheme                                                                                                                                                                                                                                                                                                                                                                              |                         |                   |          |                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                                       | Grade                   | Grade             | Marks %  | Definition                            |
| <b>Success Group</b><br><b>(50 - 100)</b>                                                                                                                                                                                                                                                                                                                                                   | <b>A</b> - Excellent    | Excellent         | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>B</b> - Very Good    | Very Good         | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>C</b> - Good         | Good              | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>D</b> - Satisfactory | Average           | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>E</b> - Sufficient   | Acceptable        | 50 - 59  | Work meets minimum criteria           |
| <b>Fail Group</b><br><b>(0 – 49)</b>                                                                                                                                                                                                                                                                                                                                                        | <b>FX</b> – Fail        | Fail (in process) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                             | <b>F</b> – Fail         | Fail              | (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> |                         |                   |          |                                       |

