# MODULE DESCRIPTION FORM

| Module Information | | | |
|---|---|---|---|
| **Module Title** | **COMPUTER1** | **Module Delivery** | |
| **Module Type** | Basic learning activities | ☐ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | UOM1031 | | |
| **ECTS Credits** | **3** | | |
| **SWL (hr/sem)** | **75** | | |
| **Module Level** | **1** | **Semester of Delivery** | 1 |
| **Administering Department** | SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986 | **College** | **AGFO1964** |
| **Module Leader** | Alla Mohamed Abdullah<br>Omar Dheyaa Mohammed<br>Asmaa Mohammed Adil<br>Moyassar Mohammed Aziz<br>**Nofal Issa Mohamed**<br>sumyia khalaf Badawi<br>Firas Kadhim Dawoo Aljuboori<br>Khaled Anwer Khaled ALKHALED<br>Talal Saeed Hameed<br>Muzahim Saeed Al-Bek | **e-mail** | ala.mohammed58@uomosul.edu.iq<br>dr.omaralmallah@uomosul.edu.iq<br>asmaama@uomosul.edu.iq<br>moyassar_aziz@uomosul.edu.iq<br>nofelemh@uomosul.edu.iq<br>dr.sumyia_khalf@uomosul.edu.iq<br>firasaljuboori@uomosul.edu.iq<br>khalid.anwar31@uomosul.edu.iq<br>stalal1982@uomosul.edu.iq<br>muzahim_saeed@uomosul.edu.iq |
| **Module Leader's Acad. Title** | **Professor**<br>**Assistant Professor** | **Module Leader's Qualification** | Ph.D.<br>**MSc.** |
| **Module Tutor** | N.A. | **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 | |
|---|---|
| **Module Objectives** | **1. Introducing students to the basics of computers, including computer components, operating systems, and essential software, as well as providing.**<br>**2. Teaching students how to collect and analyze data using Excel or statistical analysis software, creating documents with word processors, and developing presentations.**<br>**3. Enhancing students' online research skills and how to use electronic resources for scientific research.**<br>**4. Utilizing computer tools to enhance communication and collaboration skills among students, such as using e-mail and online learning platforms.** |
| **Module Learning Outcomes** | **LO#1:** Identify and explain the components of a computer and their basic functions.<br>**LO#2:** Analyze agricultural data using Excel and present findings through well-organized documents and presentations.<br>**LO#3:** Evaluate the credibility of online sources when conducting scientific research.<br>**LO#4:** Students should be able to use computer tools to enhance communication with peers, such as e-mail and online learning platforms. |
| **Indicative Contents** | Indicative content includes the following.<br>An introduction to the computer and its components, with basic operating systems and their interfaces, will be covered. [SSWL=9 hrs]<br>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]<br>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]<br>Total hrs = 47 = SSWL - (Exam hrs) = 47 - 2 = 45 hr (Time table hrs x 15 weeks) |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | • **Practical Sessions**: 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.<br>• **Project-Based Learning**: 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.<br>• **Blended Learning**: 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.<br>• **Discussion and Peer Learning**: 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. |

| Student Workload (SWL) | | | |
|---|---|---|---|
| **Structured SWL (h/sem)** | 47 | **Structured SWL (h/w)** | 3 |
| **Unstructured SWL (h/sem)** | 28 | **Unstructured SWL (h/w)** | 1.87 |
| **Total SWL (h/sem)** | 75 | | |

| Module Evaluation | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 3 | 10% (10) | 1,2, 3 | LO #1 |
| | **Assignments** | 2 | 10% (10) | 5 and 11 | LO #1, #2 |
| | **Projects / Lab.** | 2 | 10% (10) | 6 and 12 | LO #1, #2 |
| | **Report** | 1 | 10% (10) | 14 | LO #3, #4 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | LO #1, #2 |
| | **Final Exam** | 2hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Lab. Syllabus) | |
|---|---|
| | **Material Covered** |
| **Week 1** | Lab 1: **Introduction to Computer**: 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. |
| **Week 2** | Lab 2: **Computer Components**: Computer Portions, Hardware Parts, Memory Types, Basic CPU Components, Computer Ports, Personal Computer, Personal Computer (Features and Types). |
| **Week 3** | Lab 3: **Operating System and Graphical User Interface GUI**: 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. |
| **Week 4** | Lab 4: **Word Processing**: Word Processing Basics; Opening and Closing of documents; Text creation and Manipulation; Formatting of text; Table handling: Spell check, language setting, and thesaurus. |
| **Week 5** | Lab 5: **Editing Documents**: Editing an agricultural project idea using Word, using all the program's commands and instructions, and with practical application. . |
| **Week 6** | Lab 6: **Getting Started with Excel**: Formatting a Worksheet, Working with Formulas and Functions, Working with Charts.. |

| Delivery Plan (Weekly Lab. Syllabus) | |
|---|---|
| | **Material Covered** |
| **Week 7** | **Midterm Exam** |
| **Week** 8 | Lab 8: **Spread Sheet**: Basics of Spreadsheet; Manipulation of cells, Formulas and Functions; Editing of Spread Sheet, printing of Spread Sheet. |
| **Week** 9 | Lab 9: **Excel Program in Statistical Analysis:** Collecting Agricultural Data, Organizing Data in Excel, Basic Functions in Statistical Analysis, Creating Graphs and Charts, How to Read Statistical Results, Understandably Presenting Results. |
| **Week** 10 | Lab 10: Practical Example of Analyzing Agricultural Data Using Excel. |
| **Week** 11 | Lab 11: **Presentation Software**: Basics of presentation software; Creating Presentation; Preparation and Presentation of Slides; Slide Show; Taking printouts of presentation/ handouts. |
| **Week** 12 | Lab 12: Create a presentation of an agricultural project idea using PowerPoint, all the program's commands and instructions, and with practical application. |
| **Week** 13 | Lab 13: **Introduction to Internet and web browsers**: 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 Address. |
| **Week** 14 | Lab 14: **Communication and E-mails**: Basics of electronic mail, getting an e-mail account, sending and receiving e-mails, accessing sent e-mails, using e-mails, and document collaboration. |
| **Week** 15 | Lab 15: **Computer Troubleshooting**: 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<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | اساسيات الحاسوب وتطبيقاته المكتبية، وزارة التعليم العالي والبحث العلمي، 2013. | Yes |
| **Recommended Texts** | N.A. | - |
| **Websites** | ▪ https://www.dawliatraining.com/training-packages-single/1025<br>▪ https://edu.gcfglobal.org/en/tr_ar-misc/what-is-a-computer-/1/<br>https://www.edraak.org/programs/course-v1:Edraak+ICDL1+2019SP/ | |

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

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

أ.م.د. عمار حاكم محمد
رئيس اللجنة العلمية

أ.د. صهود حسين علي
رئيس القسم

MODULE DESCRIPTION FORM

| Module Information | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **DEMOCRACY and HUMAN RIGHTS** | | | **Module Delivery** | |
| **Module Type** | **Basic learning activities** | | | ☒ **Theory**<br>☐ **Lecture**<br>☐ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **UOM1040** | | | | |
| **ECTS Credits** | **2** | | | | |
| **SWL (hr/sem)** | **50** | | | | |
| **Module Level** | 1 | | **Semester of Delivery** | | 1 |
| **Administering Department** | SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986 | | **College** | AGFO1964 | |
| **Module Leader** | Alla Mohamed Abdullah<br>Omar Dheyaa Mohammed<br>Asmaa Mohammed Adil<br>Moyassar Mohammed Aziz<br>**Nofal Issa Mohamed**<br>sumyia khalaf Badawi<br>Firas Kadhim Dawoo Aljuboori<br>Khaled Anwer Khaled ALKHALED<br>Talal Saeed Hameed<br>Muzahim Saeed Al-Bek | | **e-mail** | ala.mohammed58@uomosul.edu.iq<br>dr.omaralmallah@uomosul.edu.iq<br>asmaama@uomosul.edu.iq<br>moyassar_aziz@uomosul.edu.iq<br>nofelemh@uomosul.edu.iq<br>dr.sumyia_khalf@uomosul.edu.iq<br>firasaljuboori@uomosul.edu.iq<br>khalid.anwar31@uomosul.edu.iq<br>stalal1982@uomosul.edu.iq`<br>muzahim_saeed@uomosul.edu.iq | |
| **Module Leader's Acad. Title** | **Professor**<br>**Assistant Professor** | | **Module Leader's Qualification** | | Ph.D.<br>M.Sc. |
| **Module Tutor** | N.A. | | **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 | |
|---|---|
| **Module Objectives** | 1- Enabling the student to understand and comprehend what is related to human rights, their types, and rights in the heavenly religions.<br>2- Enabling the student to recognize the types of human rights and human rights according to the Iraqi Constitution in 2005.<br>3- Enabling the student to recognize the types and types of governments.<br>4- Enabling the student to learn about democratic and dictatorial governments and the concept of freedom and the rights of others. |
| **Module Learning Outcomes LOs** | The student should be able to:<br>LO#1: Understands everything related to human rights, his rights in divine religions, and the concept of democracy.<br>LO#2: Familiar with the types of general human rights and human rights according to the Iraqi Constitution of 2005.<br>LO#3: Bears the national responsibility to respect human rights, opinion, and the other opinions of the nation's partners.<br>LO#4: Respects the freedoms and rights of others. |
| **Indicative Contents** | Indicative content includes the following.<br>Theoretical<br>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.<br>Total hrs = 32 = SSWL - (Exam hrs) = 32-2 = 30 hrs (Time table hrs x 15 weeks)ي |

| Learning and Teaching Strategies | |
|---|---|
| **Strategies** | 1. Interactive lecture, Brainstorming<br>2. Dialogue and discussion<br>3. Assigning reports<br>4. Quizzes<br>5. Assigning group work to reveal leadership skill |

| 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 |
| **Week 12** | Indirect democracy |
| **Week 13** | Types of ballots |
| **Week 14** | Procedures preliminary elections |
| **Week 15** | Types of election |
| **Week 16** | **Preparatory week before the final Exam** |

| **Learning and Teaching Resources** | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Human rights, written by: Hafez Alwan Hammadi Al-Dulaimi. 2010 | Yes |
| **Recommended Texts** | 1. Universal human rights between theory and practice, written by Jack Donnelly.<br>2. Human Rights, Children and Democracy, written by: Maher Saleh Allawi Al-Jubouri and others.<br>3. Human Rights and Public Freedoms, written by: Ramez Muhammad Ammar.<br>4. The Genesis of Human Rights, written by: Lynn Hunt, translated by: Fayqa Girgis Hanna.<br>5. The Philosophy of Human Rights, written by Ansam Amer Al-Sudani.<br>6. The Concept of Contemporary Democracy, written by: Ali Khalifa Al Kuwari.<br>7. Democracy, written by Charles Tilly, translated by: Muhammad Fadel.<br>8. Rooted Democracy and the Problem of Implementation, written by: Muhammad Al-Ahmari.<br>9. Parliamentary Governments, written by: John Stuart Mill, translated by: Emile Al-Ghouri.<br>10. Electoral Systems, written by: a group of authors. | No |

| | | |
|---|---|---|
| | 11. The Genesis of Human Rights, written by: Lynn Hunt, translated by: .Fayqa Girgis Hanna<br>12. .The Philosophy of Human Rights, written by Ansam Amer Al-Sudani<br>13. Human Rights in the Western Religious Heritage and Islam, written by: Muhammad Jalaa Idris and Amal Muhammad Abd al-Rahman Rabie. | |
| **Websites** | 1- The United Nations.<br>2- Office of the High Commissioner, United Nations High Commissioner for Human Rights.<br>3- Amnesty International.<br>4- UNICEF.<br>5- International Committee of the Red Cross. | |

**Grading Scheme**
مخطط الدرجات

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

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قسم علوم الغابات

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رئيس اللجنة العلمية

أ.د. صهود حسين علي
رئيس القسم

# MODULE DESCRIPTION FORM

| Module Information | | | | | |
|---|---|---|---|---|---|
| **Module Title** | ENGLISH LANGUAGE | | | **Module Delivery** | |
| **Module Type** | **Basic learning activities** | | | ☒Theory<br>☒Lecture<br>☐ Lab<br>☒Tutorial<br>☐ Practical<br>☐Seminar | |
| **Module Code** | UOM1021 | | | | |
| **ECTS Credits** | 2 | | | | |
| **SWL (hr/sem)** | 50 | | | | |
| **Module Level** | 1 | **Semester of Delivery** | | 1 | |
| **Administering Department** | SSWR1969 | **College** | AGFO1964 | | |
| **Module Leader** | Khaled Anwer Khaled ALKHALED<br>Omar Nabhan Abdulqader | **e-mail** | khalid.anwar31@uomosul.edu.iq | | |
| **Module Leader's Acad. Title** | Lecturer | **Module Leader's Qualification** | | Ph.D. | |
| **Module Tutor** | N.A. | **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** | Basic learning | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

## Module Aims, Learning Outcomes and Indicative Contents

| | |
|---|---|
| **Module Objectives** | To make the students able to speak English and to communicate with others . Also, to enable the students and improve reading skills ,write and grammar in English language in academic and scientific ways ) |
| **Module Learning Outcomes LOs** | The student should be able to:<br>LO#1: pronouncing words and letters correctly<br>LO#2: improve and develop English language for daily use<br>LO#3: develop reading skills<br>LO#4: improve grammar and improve writing skills |
| **Indicative Contents** | |

| **Learning and Teaching Strategies** | |
|---|---|
| **Strategies** | 1. Interactive lecture, Brainstorming<br>2. Dialogue and discussion<br>3. Assigning reports and Homeworks<br>4. Quizzes |

| **Student Workload (SWL)** | | | |
|---|---|---|---|
| **Structured SWL (h/sem)** | 32 | **Structured SWL (h/w)** | 2 |
| **Unstructured SWL (h/sem)** | 18 | **Unstructured SWL (h/w)** | 1.2 |
| **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 | |
| | **Assignments** | 2 | 10% (10) | 2 and 13 | |
| | **Homework** | 4 | 10% (10) | 4, 8 and 12 | All |
| | **Report** | 1 | 10% (10) | 14 | |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | |
| | **Final Exam** | 2hr | 50% (50) | 16 | |
| **Total assessment** | | | 100% (100 Marks) | | |

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

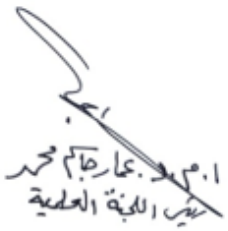
| | **Material Covered** |
|---|---|

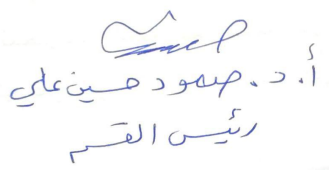
| | |
|---|---|
| **Week 1** | Nouns , types of Nouns , countable and uncountable nouns |
| **Week 2** | Verbs and auxiliary verbs |
| **Week 3** | Present simple |
| **Week 4** | Every day English numbers, times, In train station |
| **Week 5** | Past simple |
| **Week 6** | Adjectives |
| **Week 7** | Negative and positive |
| **Week 8** | Reading/ using water for agricultural |
| **Week 9** | Question word (how , what , why,when ,where …) |
| **Week 10** | Adverb of frequency |
| **Week 11** | Linking words So, because and but |
| **Week 12** | Every day English in cloth shop ,direction , months and date |
| **Week 13** | Pronoun |
| **Week 14** | Reading / What do English people eat |
| **Week 15** | Pronunciation |
| **Week 16** | Preparatory week before the final Exam |

| **Learning and Teaching Resources** | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | New Headway plus<br>John and Liz Soars | Yes |
| **Recommended Texts** | Essential Grammar in use<br>Raymond Murphy | Yes |
| **Websites** | https://www.bbc.co.uk/learningenglish/<br>https://learnenglish.britishcouncil.org/ | |

| Grading Scheme<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks %** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | **privilege** | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | **Very Good** | 80 - 89 | Above average with some errors |
| | **C -** Good | **Good** | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | **Average** | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | **Acceptable** | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | **Fail (in process)** | (45-49) | More work required but credit awarded |
| | **F –** 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 | | | |
|---|---|---|---|
| **Module Title** | **Mathematics** | **Module Delivery** | |
| **Module Type** | **Support or related learning activity** | ☒ Theory<br>☐ Lecture<br>☐ Lab<br>☒ Tutorial<br>☐ Practical<br>☐ Seminar | |
| **Module Code** | **MAT1010** | | |
| **ECTS Credits** | **7** | | |
| **SWL (hr/sem)** | **175** | | |
| **Module Level** | **1** | **Semester of Delivery** | **1** |
| **Administering Department** | **SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986** | **College** | **AGFO1964** |
| **Module Leader** | Alla Mohamed Abdullah<br>Omar Dheyaa Mohammed<br>Asmaa Mohammed Adil<br>Moyassar Mohammed Aziz<br>**Nofal Issa Mohamed**<br>sumyia khalaf Badawi<br>Firas Kadhim Dawoo Aljuboori<br>Khaled Anwer Khaled ALKHALED<br>Talal Saeed Hameed<br>Muzahim Saeed Al-Bek | **e-mail** | ala.mohammed58@uomosul.edu.iq<br>dr.omaralmallah@uomosul.edu.iq<br>asmaama@uomosul.edu.iq<br>moyassar_aziz@uomosul.edu.iq<br>nofelemh@uomosul.edu.iq<br>dr.sumyia_khalf@uomosul.edu.iq<br>firasaljuboori@uomosul.edu.iq<br>khalid.anwar31@uomosul.edu.iq<br>stalal1982@uomosul.edu.iq<br>muzahim_saeed@uomosul.edu.iq |
| **Module Leader's Acad. Title** | **Professor**<br>**Assistant Professor** | **Module Leader's Qualification** | Ph.D.<br>**MSc.** |
| **Module Tutor** | **N.A.** | **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 | |
|---|---|
| **Module Objectives** | - **-To enable students to acquire proficiency in performing differential calculus operations.**<br>- **In the field of calculus, the fundamental methodologies used to examine and describe functions are limits, derivatives, and integrals.**<br>- **Students will use these tools to address application problems across a wide range of disciplines, including physics, biology, business, and economics.**<br>**-** |
| **Module Learning Outcomes** | **LO#1: The student uses understanding and of the basic concepts of engineering mathematics.**<br>**LO#2: The student can develop his mental abilities when solving exercises.**<br>**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.** |
| **Indicative Contents** | **Indicative content includes the following.**<br>**Theory and Tutorial:**<br>**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].**<br>**Total hrs = 63 = SSWL - (Exam hrs) = 63 - 3 = 60 hr (Time table hrs x 15 weeks)** |

| 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<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | 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)<br>المنهاج الاسبوعي النظري | |
|---|---|
| | 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<br>Trapezoidal rule |
| 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** | **Midterm exam** |
| **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 Trapezoidal rule** |
| **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** | **https://mathblog.com/mathematics-books/** | |

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

أ.د. صهود حسين علي
رئيس القسم

أ.م.د. عمار جاسم محمد
ممثل اللجنة العلمية

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

# MODULE DESCRIPTION FORM

| Module Information | | | | |
|---|---|---|---|---|
| **Module Title** | **ENGINEERING DRAWING** | **Module Delivery** | | |
| **Module Type** | S | ☒ **Theory**<br>☐ **Lecture**<br>☐ **Lab**<br>☐ **Tutorial**<br>☒ **Practical**<br>☐ **Seminar** | | |
| **Module Code** | END1030 | | | |
| **ECTS Credits** | 6 | | | |
| **SWL (hr/sem)** | 150 | | | |
| **Module Level** | **I** | **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** | **MSc.** | |
| **Module Tutor** | N.A. | **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 | |
|---|---|
| **Module Objectives** أهداف المادة الدراسية | 1. To develop the Agricultural student's ability to imagine projections and their models.<br>2. Exercising hand movement in engineering drawing to complete quick sketches.<br>3. This course deals with the theory of Orthographic Projection and the basic subject of isometric drawing.<br>4. To teach students engineering drawings using the AutoCAD program, which includes both theoretical lectures and labs. |

| | |
|---|---|
| **Module Learning Outcomes** مخرجات التعلم للمادة الدراسية | **LO#1:** Absorbing all the engineering characteristics of an object or a product in a clear manner.<br>**LO#2:** Know the tools used in engineering drawing and how to use them correctly,<br>**LO#3:** Understand and apply the basics of engineering processes.<br>**LO#4:** Conclude projections and isometrics for each geometric figure and recognize its dimensions. |
| **Indicative Contents** المحتويات الإرشادية | Indicative content includes the following.<br>**Part A: Engineering Drawing Basics and Tools**<br>• 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.]<br>• Classwork: Practical Applications of Previous Topics Hands-on practice applying learned techniques (lines, arcs, sheet setup) [4 hrs.]<br>**Part B: Engineering Projections and Operations:**<br>• 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 projection when given two views of an object. [12 hrs.]<br>• Classwork: Practical Applications of Deducing the Third Projection: Applying concepts learned in projection drawing. [4 hrs.]<br>**Part C: Advanced Drawing Techniques and CAD Software**<br>• 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.]<br>• 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] |

| | |
|---|---|
| | |

| Learning and Teaching Strategies | |
|---|---|
| **Strategies** | **1. Lecture-based Teaching:**<br>• Explaining concepts and demonstrating tools, techniques, and software in real time allows students to observe the process before applying it.<br>**2. Hands-on Practice:**<br>• **Lab Sessions:** Providing practical sessions where students use drawing tools and software like AutoCAD or SolidWorks to develop their skills.<br>• **Guided Exercises:** Offering step-by-step instructions to complete tasks such as drawing isometric views or projections.<br>**3. Interactive Class Discussions:**<br>• **Question and Answer Sessions:** Actively engage students in discussions where they can ask questions and clarify doubts about topics like projection techniques or CAD tools.<br>**4. Assessment and Evaluation:**<br>• **Project-based Assessments:** Assigning projects requiring students to apply the concepts they've learned, like creating detailed engineering drawings using manual and software-based techniques. |

| Student Workload (SWL) | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 63 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 4 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 87 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 5.8 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | **150** | | |

| Module Evaluation | | | | | |
|---|---|---|---|---|---|
| **As** | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 1 | 10% (10) | 7 | LO#1,Lo#2Lo#3,LO#4 |
| | **Assignments-class** | 5 | 10% (10) | 3, 5, 8, 10, 12 | LO#1,Lo#2Lo#3,LO#4 |
| | **Assignments-homework** | 5 | 10% (10) | 2, 4, 6, 9, 13 | LO#1,Lo#2Lo#3,LO#4 |
| | **Reports** | 1 | 10% | 14 | LO#1,Lo#2Lo#3,LO#4 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | LO#1,Lo#2Lo#3,LO#4 |
| | **Final Exam** | 3hr | 50% (50) | 16 | LO#1,Lo#2Lo#3,LO#4 |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly, Syllabus) | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction and definition of engineering drawing<br>مقدمة وتعريف الرسم الهندسي |
| **Week 2** | Engineering drawing tools and their uses, knowing types of pens used, Drawing board layout.<br>ادوات الرسم الهندسي واستخداماتها، معرفة أنواع الأقلام المستخدمة، وتخطيط لوحة الرسم |
| **Week 3** | Explanation of sheet dimensions, information table, and letter writing<br>شرح أبعاد الورقة، جدول المعلومات، وكتابة الحروف والأرقام العربية والاجنبية |
| **Week 4** | Types of lines, their applications, and basic geometric operations<br>أنواع الخطوط، كيفية رسمها، والاشكال الهندسية الأساسية |
| **Week 5** | Arcs and tangents<br>الأقواس والمماسات |
| **Week 6** | Classwork: Practical applications of previous topics<br>تطبيقات عملية على المواضيع السابقة |
| **Week 7** | Engineering projections<br>المساقط الهندسية واستخداماتها |
| **Week** 8 | Mid-term Exam<br>امتحان نصفي |

| Delivery Plan (Weekly, Syllabus)<br>المنهاج الاسبوعي | |
|---|---|
| | **Material Covered** |
| **Week** 9 | Deducing the third projection based on the other two<br>استنتاج المسقط الثالث بدلالة المسقطين الاخرين |
| **Week** 10 | Classwork: Practical applications of deducing the third projection<br>تطبيق استنتاج المسقط الثالث بدلالة المسقطين الاخرين |
| **Week** 11 | Drawing engineering perspective (isometric)<br>رسم المنظور الهندسي (الايزومتري) |
| **Week** 12 | Review of isometric engineering perspective and its relation to deducing the third projection<br>إعادة لموضوع المنظور الهندسي الايزومتري وعلاقته بموضوع استنتاج المسقط الثالث |
| **Week** 13 | 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.<br>مقدمة عن أهمية برامج الرسم بالحاسبة وما هي البرامج المستخدمة، امثلة عليها (AutoCAD ، SolidWorks) |
| **Week** 14 | Introduction to the AutoCAD interface and main commands: (Drawing toolbar and its uses, modification toolbar and its uses).<br>مقدمة عن برنامج AutoCAD ، شرح اشرطة الرسم والتعديل |
| **Week** 15 | Drawing simple geometric shapes using AutoCAD.<br>رسم اشكال بسيطة بواسطة البرنامج |
| **Week 16** | **Preparatory week before the Final Exam**<br>التهيئة للامتحان النهائي |

| Delivery Plan (Weekly Practical Syllabus)<br>المنهاج الاسبوعي للتطبيق العملي | |
|---|---|
| | **Material Covered** |
| **Week 1** | Familiarization with different drawing tools, including pens, and setting up the drawing board layout.<br>التعرف على أدوات الرسم المختلفة، بما في ذلك الأقلام، وتخطيط لوحة الرسم. |
| **Week 2** | Practice drawing sheets according to standard dimensions, setting up an information table, and writing technical letters.<br>ممارسة الرسم على الالواح وتعلم تثبيت الابعاد القياسية، وإنشاء جدول معلومات، وكتابة الحروف والارقام. |
| **Week 3** | Identify different line types and execute basic geometric operations (e.g., drawing straight lines, circles).<br>رسم أنواع الخطوط المختلفة وتنفيذ العمليات الهندسية الأساسية (مثل رسم الخطوط المستقيمة والدوائر). |
| **Week 4** | Practice drawing arcs and tangents using drawing tools .<br>ممارسة رسم الأقواس والمماسات باستخدام أدوات الرسم. |
| **Week 5** | Consolidate skills by applying learned techniques (lines, arcs, tangents) in a project or assignment.<br>تكرار التطبيق لرسم (الخطوط، الأقواس، المماسات) في مشروع صفي. |
| **Week 6** | Start drawing orthographic projections of simple objects, projecting different views.<br>رسم المساقط العمودية للأجسام البسيطة، وإسقاط الاشكال المختلفة. |
| **Week 7** | Assessment based on skills acquired in previous weeks, focusing on projections, lines, and geometric operations.<br>تقييم المهارات المكتسبة في الأسابيع السابقة، مع التركيز على المساقط، الخطوط، والاشكال الهندسية. |
| **Week 8** | Visualize and draw the third projection based on two given views.<br>رسم المسقط الثالث بناءً على مسقطين |
| **Week 9** | Work on exercises that reinforce the ability to deduce the third projection, applying this to different objects. |

| | |
|---|---|
| | العمل على تمارين تعزز القدرة على استنتاج المسقط الثالث، وتطبيق ذلك على اشكال مختلفة. |
| **Week 10** | Learn to draw isometric projections, emphasizing proper axis alignment and scaling.<br>رسم المساقط الإيزومترية، مع التركيز على محاذاة المحاور بشكل صحيح ومقياس الرسم |
| **Week 11** | Review and reinforce isometric drawing techniques and their connection to orthographic projections.<br>مراجعة وتعزيز تقنيات الرسم الإيزومتري وعلاقتها بالإسقاطات العمودية. |
| **Week 12** | Introduction to AutoCAD and SolidWorks; learning the basic interface, including drawing and modification toolbars.<br>مقدمة عن AutoCAD و SolidWorks؛ تعلم الواجهة الأساسية، بما في ذلك أشرطة أدوات الرسم والتعديل. |
| **Week 13** | Practice using the AutoCAD interface, focusing on drawing commands (e.g., lines, circles) and modification commands (e.g., trim, extend).<br>ممارسة استخدام واجهة AutoCAD، مع التركيز على أوامر الرسم وأوامر التعديل. |
| **Week 14** | Create simple geometric drawings using AutoCAD, including 2D shapes like squares, rectangles, and circles.<br>إنشاء رسومات هندسية بسيطة باستخدام AutoCAD، بما في ذلك الأشكال الثنائية الأبعاد مثل المربعات والمستطيلات والدوائر. |
| **Week 15** | Work on exercises that reinforce the ability to Create simple geometric drawings using AutoCAD.<br>العمل على تمارين تعزز القدرة على إنشاء رسومات هندسية بسيطة باستخدام AutoCAD. |

| **Learning and Teaching Resources**<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | الرسم الهندسي لطلبة كليات الزراعة، د. ناطق صبري حسن، 1990 | Yes |
| **Recommended Texts** | Textbook of Engineering Drawing k. Venkata Reddy, 2008 | - |
| **Websites** | - | |

| **Grading Scheme**<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks %** | **Definition** |
| **Success Group (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 (0 – 49)** | **FX –** Fail | راسب (قيد المعالجة) | (45-49) | More work is required but credit awarded |
| | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

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

# MODULE DESCRIPTION FORM

| Module Information | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **AGRICULTURE CAREER ETHICS** | | | **Module Delivery** | |
| **Module Type** | **Basic learning activities** | | | ☒ **Theory**<br>☐ **Lecture**<br>☐ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☒ **Seminar** | |
| **Module Code** | **ACE1020** | | | | |
| **ECTS Credits** | 5 | | | | |
| **SWL (hr/sem)** | 125 | | | | |
| **Module Level** | 1 | | **Semester of Delivery** | | 1 |
| **Administering Department** | SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986 | | **College** | AGFO1964 | |
| **Module Leader** | **Tariq Zaid Ibrahim** | | **e-mail** | dr.tariqazzawwy@uomosul.edu.iq | |
| **Module Leader's Acad. Title** | **Assistant Professor** | | **Module Leader's Qualification** | | Ph.D. |
| **Module Tutor** | N.A. | | **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<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Objectives**<br>أهداف المادة الدراسية | 1- Teaching ethics and ethical concepts to the agricultural engineer.<br>2- Teaching the ethical rules of professional ethics and clarifying the ethics of agricultural engineering. |
| **Module Learning Outcomes LOs**<br><br>مخرجات التعلم للمادة الدراسية | The student should be able to:<br>LO#1: Know general concepts of morality and moral philosophies.<br>LO#2: Learn the concept of occupational ethics and ethical rules in the agricultural engineering profession.<br>LO#3: Respects the laws and regulations related to agricultural engineering projects.<br>LO#4: Bear ethical responsibilities in the fields of the agricultural engineering profession.<br>سيكون الطالب قادرا على:<br>LO#1 معرفة المفاهيم العامة للأخلاق والفلسفات الأخلاقية.<br>LO#2 التعرف على مفهوم الأخلاقيات المهنية والقواعد الأخلاقية في مهنة الهندسة الزراعية.<br>LO#3 يحترم القوانين والانظمة الخاصة بمشاريع الهندسة الزراعية.<br>LO#4 يتحمل الطالب المسؤوليات الاخلاقية في مجالات مهنة الهندسة الزراعية. |
| **Indicative Contents**<br>المحتويات الإرشادية | Indicative content includes the following.<br>Theoretical<br>Ethical and professional ethics, which are moral philosophies, ethical rules in agricultural engineering.<br>It includes distributing titles on agricultural professional ethics to students to give seminars on them.<br>يتضمن المحتوى الإرشادي ما يلي:<br>نظري<br>الأخلاقيات والأخلاقية المهنية، وهي فلسفات وقواعد أخلاقية في الهندسة الزراعية.<br>وتتضمن توزيع عناوين خاصة بالاخلاقيات المهنية الزراعية على الطلبة لالقاء حلقات دراسية حولها.<br>Total hrs = 63 = SSWL - (Exam hrs) = 63-3 = 60 hrs (Time table hrs x 15 weeks) |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | 1. Interactive lecture, Brainstorming<br>2. Dialogue and discussion<br>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.<br>1 .محاضرة تفاعلية، العصف الذهني<br>2 .الحوار والمناقشة<br>3 .تعيين التقارير<br>4 .الاختبارات<br>5 .عرض نماذج لحالات أخلاقية مهنية في مجال الاختصاص العلمي من قبل الطلبة وتلقى بحلقات دراسية للمناقشة. |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 62 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 4 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 63 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | **125** | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **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#30 |
| | **Final Exam** | 2hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to professional ethics and its importance in agricultural engineering<br>مقدمة عن أخلاقيات المهنة وأهميتها في الهندسة الزراعية |
| **Week 2** | Basic ethical theories in the profession Integrity and scientific honesty in agricultural research<br>نظريات أخلاقية أساسية في المهنة |
| **Week 3** | The agricultural engineer's commitment to environmental responsibility<br>النزاهة والأمانة العلمية في البحث الزراعي |
| **Week 4** | Professional interaction with society and the public<br>التزام المهندس الزراعي بالمسؤولية البيئية |
| **Week 5** | Positively dealing with conflicts of interest<br>التفاعل المهني مع المجتمع والجمهور |
| **Week 6** | Ethics of agricultural experiments and research<br>التعامل الايجابي مع تعارض المصالح |
| **Week 7** | Mid-term Exam |
| **Week 8** | Ethics of agricultural experiments and research<br>أخلاقيات التجارب والأبحاث الزراعية |
| **Week 9** | Confidentiality and data protection<br>السرية وحماية البيانات |
| **Week 10** | Compliance with laws and instructions in agricultural engineering |

| | |
|---|---|
| | الالتزام بالقوانين والتعليمات في الهندسة الزراعية |
| **Week 11** | Cooperation and teamwork in agricultural projects<br>التعاون والعمل الجماعي في المشاريع الزراعية |
| **Week 12** | Combating professional corruption in agricultural engineering<br>مكافحة الفساد المهني في الهندسة الزراعية |
| **Week 13** | Continuous learning and self-development in an ethical context<br>التعلم المستمر والتطوير الذاتي في السياق الأخلاقي |
| **Week 14** | Assessing commitment to professional ethics: strategies and tools<br>تقييم الالتزام بالأخلاقيات المهنية: استراتيجيات وأدوات |
| **Week 15** | Ethics of innovation in agricultural engineering<br>أخلاقيات الابتكار في الهندسة الزراعية |
| **Week 16** | **Preparatory week before the final Exam** |

| **Delivery Plan (Weekly Seminar. Syllabus)**<br>المنهاج الاسبوعي للحلقات الدراسية | |
|---|---|
| | **Material Covered** |
| **Week 1** | **Pesticide use and its impact on the health of farmers and consumers**<br>**استخدام المبيدات الحشرية وتأثيرها على صحة المزارعين والمستهلكين** |
| **Week 2** | **Crop price manipulation: the ethics of trade in agriculture**<br>**التلاعب في أسعار المحاصيل: أخلاقيات التجارة في الزراعة** |
| **Week 3** | **Agricultural labour exploitation: workers' rights and working conditions**<br>**استغلال العمالة الزراعية: حقوق العمال وظروف العمل** |
| **Week 4** | **The impact of industrial agriculture on biodiversity: is there ethics?**<br>**تأثير الزراعة الصناعية على التنوع البيولوجي: هل من أخلاقيات؟** |
| **Week 5** | **Unsustainable agricultural practices: responsibility to future generations**<br>**الممارسات الزراعية غير المستدامة: المسؤولية تجاه الأجيال القادمة** |
| **Week 6** | **Marketing genetically modified products: transparency and ethics**<br>**تسويق المنتجات المعدلة وراثيًا: الشفافية والأخلاقيات** |
| **Week 7** | **Water management in agriculture: the right to water and fair distribution**<br>**إدارة المياه في الزراعة: الحق في الماء والتوزيع العادل** |
| **Week 8** | **Climate change and agriculture: ethical challenges for farmers**<br>**التغير المناخي والزراعة: التحديات الأخلاقية للمزارعين** |
| **Week 9** | **Agriculture in protected areas: a balance between protection and production**<br>**الزراعة في المناطق المحمية: توازن بين الحماية والإنتاج** |
| **Week 10** | **Agricultural research ethics: the limits of experiments on living organisms**<br>**أخلاقيات البحث الزراعي: حدود التجارب على الكائنات الحية** |
| **Week 11** | **Corruption in the distribution of government support to farmers: its impact on small farms**<br>**الفساد في توزيع الدعم الحكومي للمزارعين: تأثيره على المزارع الصغيرة** |
| **Week 12** | **Agriculture's impact on local communities: ethical benefits and risks**<br>**تأثير الزراعة على المجتمعات المحلية: منافع ومخاطر أخلاقية** |
| **Week 13** | **Ethics in cash crop farming and its impact on food security**<br>**الأخلاقيات في زراعة المحاصيل النقدية وتأثيرها على الأمن الغذائي** |
| **Week 14** | **Modern technologies in agriculture: are we prepared to bear their ethical consequences**<br>**التقنيات الحديثة في الزراعة: هل نحن مستعدون لتحمل تبعاتها الأخلاقية** |
| **Week 15** | **Organic agriculture: ethical challenges in promotion and practice**<br>**الزراعة العضوية: التحديات الأخلاقية في الترويج والممارسات** |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | N.A. | - |
| **Recommended Texts** | N.A. | - |
| **Websites** | chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://ioar.mtu.edu.iq/wp-content/uploads/2023/12/a5la8yat-mhna.pdf<br>chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://itm.mtu.edu.iq/wp-content/uploads/2024/04/%D8%A7%D8%AE%D9%84%D8%A7%D9%82%D9%8A%D8%A7%D8%AA-%D8%A7%D9%84%D9%85%D9%87%D9%86%D8%A9-%D8%A7%D9%84%D9%85%D8%B1%D8%AD%D9%84%D8%A9-%D8%A7%D9%84%D8%AB%D8%A7%D9%86%D9%8A%D8%A9.pdf | |

| Grading Scheme<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks %** | **Definition** |
| **Success Group (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 (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.

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

أ.م.د. عمار جاسم محمد
ممثل اللجنة العلمية

أ.د. محمود حسين علي
رئيس القسم

# MODULE DESCRIPTION FORM

| Module Information | | | |
|---|---|---|---|
| **Module Title** | **AGRICULTRAL ENGINEERING TECHNIQUES TRANSFER** | **Module Delivery** | |
| **Module Type** | **Core learning activity** | ☒Theory<br>☐ Lecture<br>☐ Lab<br>☐Tutorial<br>☒Practical<br>☐Seminar | |
| **Module Code** | **AET1040** | | |
| **ECTS Credits** | **5** | | |
| **SWL (hr/sem)** | **125** | | |
| **Module Level** | 1 | **Semester of Delivery** | 1 |
| **Administering Department** | SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986 | **College** | **AGFO1964** |
| **Module Leader** | Alla Mohamed Abdullah<br>Omar Dheyaa Mohammed<br>Asmaa Mohammed Adil<br>Moyassar Mohammed Aziz<br>**Nofal Issa Mohamed**<br>sumyia khalaf Badawi<br>Firas Kadhim Dawoo Aljuboori<br>Khaled Anwer Khaled ALKHALED<br>Talal Saeed Hameed<br>Muzahim Saeed Al-Bek | **e-mail** | ala.mohammed58@uomosul.edu.iq<br>dr.omaralmallah@uomosul.edu.iq<br>asmaama@uomosul.edu.iq<br>moyassar_aziz@uomosul.edu.iq<br>nofelemh@uomosul.edu.iq<br>dr.sumyia_khalf@uomosul.edu.iq<br>firasaljuboori@uomosul.edu.iq<br>khalid.anwar31@uomosul.edu.iq<br>stalal1982@uomosul.edu.iq`<br>muzahim_saeed@uomosul.edu.iq |
| **Module Leader's Acad. Title** | **Professor**<br>**Assistant Professor** | **Module Leader's Qualification** | Ph.D.<br>**MSc.** |
| **Module Tutor** | N.A. | **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 | |
|---|---|
| **Module Objectives** | 1- Developing farm management among rural individuals<br>2- Developing a sense of responsibility towards the family and the rural community<br>3- Promoting positive attitudes of rural people towards agriculture, love of work, and use of modern technologies<br>4- Improving the marketing aspects of rural producers using modern technologies. |
| **Module Learning Outcomes LOs** | The student should be able to:<br>LO#1: Know the general concepts of transferring agricultural engineering technologies.<br>LO#2: Determines appropriate means to mobilize farmers in their love of work, development, and selection of agricultural engineering technologies.<br>LO#3: Suggest appropriate technologies for agricultural engineering projects.<br>LO#4: Bear ethical responsibilities in the areas of transferring agricultural engineering technologies. |
| **Indicative Contents** | Indicative content includes the following.<br>Theoretical<br>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.<br>Practical application<br>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.<br><br>Total hrs = 63 = SSWL - (Exam hrs) = 63-3= 60 (Time table hrs x 15 weeks) |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | 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)** | 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 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)
المنهاج الاسبوعي النظري

| | **Material Covered** |
|---|---|
| **Week 1** | Introduction to agricultural extension and technology transfer |
| **Week 2** | Elements of technology transfer and adoption process |
| **Week 3** | Factors that determine adoption rates and adopter categories |
| **Week 4** | Opinion leaders and agents of change |
| **Week 5** | Analyze farmers' needs |
| **Week 6** | Guidance methods (training and education methods) |

| | |
|---|---|
| **Week 7** | Mid-term Exam |
| **Week 8** | Transfer of agricultural technologies: concept and methods |
| **Week 9** | Challenges facing the transfer of agricultural technologies |
| **Week 10** | Using communication and media in agricultural extension |
| **Week 11** | Innovating and adapting to modern agricultural techniques |
| **Week 12** | Evaluation and follow-up of extension and technology transfer programs |
| **Week 13** | Cooperation between agricultural extension workers and the local community |
| **Week 14** | Applications of smart technologies in agricultural extension |
| **Week 15** | Tools for measuring effectiveness in technology transfer and extension |
| **Week 16** | **Preparatory week before the final Exam** |

## 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** | **Vertical Farming**: A technique that uses vertical spaces to grow crops, increasing productivity and reducing land use. |
| **Week 2** | **Smart Irrigation**: Advanced irrigation systems that rely on sensors to monitor soil moisture and distribute water efficiently. |
| **Week 3** | **Precision Agriculture**: The use of technology to analyze agricultural data and improve crop management. ا. |
| **Week 4** | **Greenhouses**: Creating protected environments to enhance crop growth and shield them from harsh weather conditions. |
| **Week 5** | **Hydroponics**: Growing plants in a water solution instead of soil, which reduces water use. |
| **Week 6** | **Genetic Engineering**: The use of genetic engineering to develop disease-resistant and drought-tolerant crops. . |
| **Week 7** | **Mobile Applications**: Tools that help farmers manage their farms, such as tracking crops and weather. |

| | |
|---|---|
| **Week 8** | **Agricultural Robots**: The use of robots to perform tasks such as planting and harvesting. |
| **Week 9** | **Remote Sensing Technology**: Used to monitor crop health and track changes in the agricultural environment. |
| **Week 10** | **Biological Control**: The use of living organisms to control pests and diseases instead of chemical pesticides. ال |
| **Week 11** | **Artificial Intelligence (AI)**: The application of AI technologies to analyze agricultural data and improve production. |
| **Week 12** | **Nanotechnology**: The use of nanomaterials to improve soil quality and enhance fertilizer effectiveness. |
| **Week 13** | **Geographic Information Systems (GIS)**: Used to analyze geographic data and improve agricultural land planning. |
| **Week 14** | **Organic Farming**: Agricultural techniques that rely on the use of natural materials instead of chemicals. |
| **Week 15** | **Drones**: Used for monitoring crops, collecting data, and spraying pesticides. |

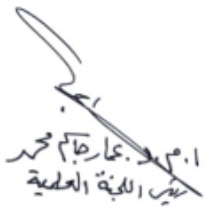
## Learning and Teaching Resources

| | Text | Available in the Library? |
|---|---|---|
| **Required Texts** | N.A. | - |
| **Recommended Texts** | - Al-Tanoubi, Muhammad Muhammad Omar (d) (1998), Agricultural Guidance Reference, Arab Renaissance House for Printing and Publishing, Beirut.<br>- 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<br>- 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 | Yes |
| **Websites** | | |

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


أ.د. محمود حسين علي
رئيس القسم



نموذج وصف المادة الدراسية

| معلومات المادة الدراسية | | | | |
|---|---|---|---|---|
| اسم المادة الدراسية | اللغة العربية | | طريقة الالقاء | |
| نوع المادة الدراسية | أنشطة تعلم أساسية | | ☒ نظري<br>☐ محاضرة<br>☐ مختبرية<br>☐ تدريسية<br>☐ عملية<br>☐ سمنار | |
| رمز المادة الدراسية | | | | |
| الساعات المعتمدة | ساعتان | | | |
| العمل المستقل للطلاب (ساعة/أسبوع) | ساعة | | | |
| مستوى المادة الدراسية | UGx111 | الفصل الدراسي الذي يتم فيه تسلم المادة الدراسية | | 1 |
| إدارة القسم | SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986 | الكلية | AGFO1964 | |
| مسؤول المادة الدراسية | أ.د.الاء محمد عبدالله<br>أ.د.عمر ضياء محمد<br>أ.د.اسماء محمد عادل<br>أ.م.د.ميسر محمد عزيز<br>أ.م.نوفل عيسى محيميد<br>أ.د.سمية خلف بديوي<br>أ.م.د.فرس كاظم داود الجبوري<br>أ.م.د.خالد انور خالد الخالد<br>أ.م.د.طلال سعيد حميد<br>أ.د.مزاحم سعيد البك | البريد الالكتروني | ala.mohammed58@uomosul.edu.iq<br>dr.omaralmallah@uomosul.edu.iq<br>asmaama@uomosul.edu.iq<br>moyassar_aziz@uomosul.edu.iq<br>nofelemh@uomosul.edu.iq<br>dr.sumyia_khalf@uomosul.edu.iq<br>firasaljuboori@uomosul.edu.iq<br>khalid.anwar31@uomosul.edu.iq<br>stalal1982@uomosul.edu.iq`<br>muzahim_saeed@uomosul.edu.iq | |
| العنوان الأكاديمي لمسؤول الماد الدراسية | أُستاذ<br>أُستاذ مساعد | المؤهل الأكاديمي لمسؤول المادة الدراسية | | ماجستير |
| مدرس المادة الدراسية | م. سوسن أمين خضر | البريد الالكتروني | sausan.24arp69@student.uomosul.edu.iq | |
| اسم المحكم | | البريد الالكتروني | | |
| تاريخ موافقة اللجنة العلمية | | رقم النسخة | | |

| العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| المادة الدراسية المطلوبة سابقاً | لا يوجد | الفصل الدراسي | |
| المادة الدراسية المطلوبة | لا يوجد | الفصل الدراسي | |

| أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| 1- تمكين الطلبة من التعبير بالفصحى.<br>2- تطوير الطلبة في الجوانب النحوية والصرفية.<br>3- حث الطلبة على الاستماع والقراءة والتعبير.<br>4- توجيه الطلبة على المصادر القيمة التي تساعدهم في اتساع مداركهم المعرفية.<br>5- تعزيز حب اللغة العربية من خلال أنشطة تفاعلية.<br>6- ربط المواضيع بحياة الطالب اليومية لتقريبه من الواقع . | أهداف المادة الدراسية |
| سيكون الطالب قادرا على:<br>LO#1: تجنب الأخطاء الأملائية والنحوية ( من كتابة الأعداد ونطقها حسب القواعد وكتابة الهمزة الوصل والقطع التفريق بين التاء المربوطة والمفتوحة.<br>LO#2: سيفرق بين علامات الأعراب الأصلية والفرعية.<br>LO#3: سيمتلك مفاتيح الإعراب.<br>LO#4: سيتجنب الكثير من الأخطاء عند الكلام أو الكتابة. | مخرجات التعلم للمادة الدراسية |
| يتضمن المحتوى الإرشادي ما يلي:<br>نظري | المحتويات الإرشادية |

| استراتيجيات التعلم والتعليم | |
|---|---|
| 1 .محاضرة تفاعلية، العصف الذهني<br>2 .الحوار والمناقشة<br>3 .تعيين التقارير<br>4 .الاختبارات<br>5 .تكليف بالعمل الجماعي للكشف عن المهارات القيادية | الاستراتيجيات |

| الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا | | | |
|---|---|---|---|
| 2 | الحمل الدراسي المنتظم للطالب أسبوعيا | 32 | الحمل الدراسي المنتظم للطالب خلال الفصل |
| 2 | الحمل الدراسي غير المنتظم للطالب أسبوعيا | 18 | الحمل الدراسي غير المنتظم للطالب خلال الفصل |
| | **50** | | الحمل الدراسي الكلي للطالب خلال الفصل |

| تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | الوقت / العدد | الدرجة | حسب الاسبوع | مخرجات التعلم |
| التقويم البنائي | اختبارات فجائية | 2 | 10% (10) | 4 and 11 | LO#1 and LO#2 |
| | الواجبات | 2 | 20% (20) | 2 and 13 | LO#1 and LO#3 |
| | مشاريع مختبرية | - | - | - | - |
| | تقارير | 1 | 10% (10) | 14 | LO#1, LO#2 and LO#4 |
| التقويم الختامي | امتحانات نصف فصلية | 3hr | 10% (10) | 7 | LO#1, LO#2 and LO#3 |
| | امتحانات نهائية | 3hr | 50% (50) | 16 | All |
| مجموع التقييمات | | | 100% (100 Marks) | | |

| المنهاج الاسبوعي النظري | |
|---|---|
| المادة المقررة | |
| أقسام الكلام | الاسبوع الأول |
| علامات الإعراب الفرعية والأصيلة | الاسبوع الثاني |
| بناء الأفعال وأقسامها وجزم مضارعها ونصبه | الاسبوع الثالث |
| الأعداد في العربية | الاسبوع الرابع |
| المثلثات اللغوية | الاسبوع الخامس |
| أصوات الحيوانات | الاسبوع السادس |
| كتابة الهمزة في العربية | الاسبوع السابع |
| التاء المربوطة والمفتوحة | الاسبوع الثامن |
| الفرق بين الضاد والظاء | الاسبوع التاسع |
| علامات الترقيم | الاسبوع العاشر |
| أغلاط شائعة | الاسبوع الحادي عشر |
| الأخطاء النحوية | الاسبوع الثاني عشر |
| تصويب بعض الأخطاء الشائعة | الاسبوع الثالث عشر |
| بيان سبب هذه الأخطاء | الأسبوع الرابع عشر |
| أمثلة عن الأخطاء | الاسبوع الخامس عشر |
| أخطاء تتعلق بالأمور الصرفية | الأسبوع السادس عشر |

| مصادر التعلم والتدريس | | |
|---|---|---|
| هل متوفر في المكتبة؟ | النص | |
| نعم | | النصوص المطلوبة |
| كلا | .1<br>.2<br>.3<br>.4 | النصوص الموصى بها |
| | -1 . | المواقع على الشبكة العنكبوتية |

| مخطط الدرجات | | | |
|---|---|---|---|
| التعريف | الدرجة% | التقدير | الفئة |
| ●أداء ممتاز | 100-90 | امتياز | فئة النجاح (50 – 100) |
| ● جيد جداً مع بعض الأخطاء | 89-80 | جيد جدا | |
| ● عمل جيد مع أخطاء ملحوظة | 79-70 | جيد | |
| ● عمل متوسط ولكن مع نواقص كبيرة | 69-60 | متوسط | |
| ● العمل يفي بالحد الأدنى من المعايير | 59-50 | مقبول | |
| ● يحتاج إلى مزيد من العمل لكن تم منح الائتمان | (49-45) | راسب (قيد المعالجة) | فئة الرسوب (صفر – 49) |
| ● يتطلب قدراً كبيراً من العمل | (44-0) | راسب | |
| | | | |

**ملاحظة :**يتم تقريب الدرجات التي تحتوي على كسور عشرية أعلى أو أقل من 0.5 إلى أقرب درجة كاملة (على سبيل المثال، درجة 54.5 سيتم تقريبها إلى 55، بينما درجة 54.4 سيتم تقريبها إلى 54). لدى الجامعة سياسة عدم التسامح مع "الرسوب القريب من النجاح"، لذا فإن التعديل الوحيد الذي سيتم على الدرجات التي يمنحها المُقيّم الأصلي هو التقريب التلقائي المشار إليه أعلاه.

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

أ.م.د. عمار جاسم محمد
رئيس اللجنة العلمية

أ.د. صهود حسين علي
رئيس القسم

# MODULE DESCRIPTION FORM

| Module Information | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **BIOSAFETY and SECURITY** | | | **Module Delivery** | |
| **Module Type** | **Basic learning activities** | | | ☒ **Theory**<br>☒ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **BSS1050** | | | | |
| **ECTS Credits** | **3** | | | | |
| **SWL (hr/sem)** | **125** | | | | |
| **Module Level** | 2 | | **Semester of Delivery** | 1 | |
| **Administering Department** | Type Dept. Code | | **College** | Agriculture and forestry college | |
| **Module Leader** | Dr. Mohammed Ayad Harbawi | | **e-mail** | @uomosul.edu.iq | |
| **Module Leader's Acad. Title** | Master | | **Module Leader's Qualification** | Teacher | |
| **Module Tutor** | **Osama hosam fadle** | | **e-mail** | E-mail: harbawee79@uomosul.edu.iq | |
| **Peer Reviewer Name** | Ahmed samer Ghanen | | **e-mail** | E-mail: ahmedaltaay1986@uomosul.edu.iq | |
| **Scientific Committee Approval Date** | 01/02/2025 | | **Version Number** | 1.0 | |

| Relation with other Modules | | | |
|---|---|---|---|
| **Prerequisite module** | **SOIL MICROBIOLOGY** | **Semester** | 1 |
| **Co-requisites module** | **BIODIVERSITY** | **Semester** | 2 |

| Module Aims, Learning Outcomes and Indicative Contents | |
|---|---|
| **Module Objectives** | 1. Equip students with fundamental knowledge of biosafety and biosecurity principles and their practical application in agricultural, forestry, and food-related settings. |

| | |
|---|---|
| | 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. |
| **Module Learning Outcomes** | Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks.<br>1- Interactive lecture<br>2- Brainstorming<br>3- Dialogue and discussion<br>4- Field Training<br>5- Practical exercises<br>6- Field project<br>7- Interactive lectures<br>8-Brainstorming<br>9- Self-education<br>The student should be able to:<br>LO#1: Identify common biological hazards in agriculture, forestry, and food sectors, and assess their level of risk.<br>LO#1: Apply biosafety and biosecurity principles and practices in accordance with recognized international standards and levels.<br>LO#1: Design and implement prevention and control programs for biological hazards in laboratories and agricultural/food production facilities.<br>LO#1: Adhere to ethical and legal considerations when handling biological materials, ensuring public health and environmental protection. |
| **Indicative Contents** | Indicative content includes the following.<br>Theoretical<br>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.<br><br>Total hrs = 75 = SSWL - (Exam hrs) = 47-2 = 28 hrs (Time table hrs x 15 weeks) |
| **EE#DS** | Indicative content includes the following:<br>Introduction to Soil Physics<br>• Soil as a natural resource. [SSWL=30 hrs]<br>Soil Survey and classification - [SSWL=20 hrs]<br>Revision problem classes [SSWL=6 hrs]<br>Fundamentals [SSWL=44 hrs]<br>Total hrs = 105 = SSWL - (Exam hrs) = 109 - 4 = 105 hr (Time table hrs x 15 weeks) |

## Learning and Teaching Strategies

| استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | - 1. (Interactive Lectures)<br>2. (Project-Based Learning)<br>3. (Case Studies)<br>4. (Workshops and Hands-On Training)<br>5. (Group Discussions and Presentations) |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا | | | |
|---|---|---|---|
| **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) | 5 and 10 | LO #1, #2 and #10, #11 |
| | **Assignments** | 2 | 10% (10) | 2 and 12 | LO #3, #4 and #6, #7 |
| | **Projects / Lab.** | 1 | 10% (10) | Continuous | All |
| | **Report** | 1 | 10% (10) | 13 | LO #5, #8 and #10 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | LO #1 - #7 |
| | **Final Exam** | 3hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| **Delivery Plan (Weekly Syllabus)** | |
|---|---|
| | **Material Covered** |
| **Week 1** | **Introduction to 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** |

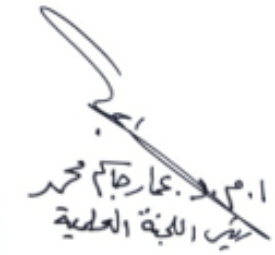
| **Delivery Plan (Weekly Seminar. Syllabus)** | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to Biosafety and Biosecurity |
| **Week 2** | Types of Biological Hazards in the Agricultural and Food Sectors |
| **Week 3** | Risk Assessment and Management |
| **Week 4** | Biosafety Levels and International Standards |
| **Week 5** | Personal Protective Equipment (PPE) and Safe Work Practices |
| **Week 6** | Sterilization, Disinfection, and Biological Waste Disposal |
| **Week 7** | Safe Storage, Handling, and Transport of Biological Materials |
| **Week 8** | Good Laboratory Practices (GLP) and Quality Standards |
| **Week 9** | Biosecurity in Agriculture and Protection of Plant and Animal Resources |

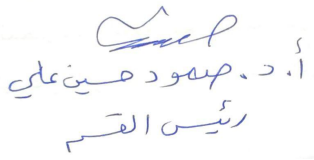
| | |
|---|---|
| **Week 10** | Emergencies and Rapid Response to Biological Incidents |
| **Week 11** | Local and International Regulations on Biosafety and Biosecurity |
| **Week 12** | Ethical Considerations and Dual-Use of Biological Technologies |
| **Week 13** | Case Studies and Practical Applications in Biosafety and Biosecurity |
| **Week 14** | Workshops and Simulations for Biosafety Protocol Design |
| **Week 15** | Comprehensive Review and Final Assessment |

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

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | | Yes |
| **Recommended Texts** | اللجنة الجامعية المركزية للسلامة والامن الكيمياوي والاشعاعي والنووي ومنع الانتشار CBRN | No |
| **Websites** | Chromeextension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.uoanbar.edu.iq/eStoreImages/Bank/4661.pdf | |

# MODULE DESCRIPTION FORM

| Module Information | | | | | |
|---|---|---|---|---|---|
| **Module Title** | AGRICULTURAL STATISTICS | | | **Module Delivery** | |
| **Module Type** | **Basic learning activities** | | | ☒Theory<br>☒Lecture<br>☐Lab<br>☒ L Tutorial<br>☐Practical<br>☐Seminar | |
| **Module Code** | **AGS1060** | | | | |
| **ECTS Credits** | **5** | | | | |
| **SWL (hr/sem)** | **125** | | | | |
| **Module Level** | 1 | | **Semester of Delivery** | 2 | |
| **Administering Department** | SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986 | | **College** | AGFO1964 | |
| **Module Leader** | Alla Mohamed Abdullah<br>Omar Dheyaa Mohammed<br>Asmaa Mohammed Adil<br>Moyassar Mohammed Aziz<br>**Nofal Issa Mohamed**<br>sumyia khalaf Badawi<br>Firas Kadhim Dawoo Aljuboori<br>Khaled Anwer Khaled ALKHALED<br>Talal Saeed Hameed<br>Muzahim Saeed Al-Bek | | **e-mail** | ala.mohammed58@uomosul.edu.iq<br>dr.omaralmallah@uomosul.edu.iq<br>asmaama@uomosul.edu.iq<br>moyassar_aziz@uomosul.edu.iq<br>nofelemh@uomosul.edu.iq<br>dr.sumyia_khalf@uomosul.edu.iq<br>firasaljuboori@uomosul.edu.iq<br>khalid.anwar31@uomosul.edu.iq<br>stalal1982@uomosul.edu.iq`<br>muzahim_saeed@uomosul.edu.iq | |
| **Module Leader's Acad. Title** | Lecturer | | **Module Leader's Qualification** | Ph.D. | |
| **Module Tutor** | Omar Nabhan Abdulqader | | **e-mail** | umarn79@uomosul.edu.iq | |
| **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** | 1- Knows statistics and its types, and differentiates between descriptive statistics and inferential or inferential statistics |

| | |
|---|---|
| | 2- Explains what descriptive variables are, and recognizes the difference between a sample and a population<br>3- Organizes and draws a frequency distribution table and identifies its parts<br>4- Organizes a relative frequency distribution table and ascending and descending summation<br>5-Finds the arithmetic mean - and recognizes the properties of the arithmetic mean<br>6- Works on how to find the range, mean deviation, variance, and standard deviation |
| **Module Learning Outcomes** | 1- Knows statistics and its types, and differentiates between descriptive statistics and inferential or inferential statistics<br>2- Explains what descriptive variables are, and identifies the difference between a sample and a community<br>3- Organizes and draws a frequency distribution table and identifies its parts<br>4- Organizes a relative frequency distribution table and ascending and descending summation<br>5- Finds the arithmetic mean - and identifies the properties of the arithmetic mean<br>6- Works on how to find the range, mean deviation, variance and standard deviation<br>7- Expresses the components of discrete probability distributions<br>8- Recognizes the statistical hypothesis, the null hypothesis and the alternative hypothesis - Compares the types of error<br>9- T-TEST<br>10- Determine correlation coefficient and kind of relationship among variables<br>11- Determine simple regression analysis |
| **Indicative Contents** | 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. Determine correlation coefficient for data and simple regression analysis for scientific data .<br><br>Total hrs = 125 = SSWL - (Exam hrs) = 125-3= 122 (Time table hrs x 15 weeks) |

| **Learning and Teaching Strategies** | |
|---|---|
| **Strategies** | 1. Interactive lecture, Brainstorming<br>2. Dialogue and discussion<br>3. Assigning reports |

| | |
|---|---|
| | 4. Quizzes<br>5. Show examples for writing scientific reports in the correct formats. |

| Student Workload (SWL) | | | |
|---|---|---|---|
| **Structured SWL (h/sem)** | 78 | **Structured SWL (h/w)** | 5 |
| **Unstructured SWL (h/sem)** | 47 | **Unstructured SWL (h/w)** | 6 |
| **Total SWL (h/sem)** | 125 | | |

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

| Delivery Plan (Weekly Syllabus) | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to the nature of statistics science |
| **Week 2** | The nature of statistical data - the difference between quantitative and descriptive variables |
| **Week 3** | The difference between society and sample with mathematical examples |
| **Week 4** | Tabular and Graphing and represent the data |
| **Week 5** | Frequency Distribution |
| **Week 6** | Measures of mediation and centering - arithmetic mean - geometric mean |
| **Week 7** | harmonic mean - squared mean - median - mode |
| **Week 8** | Measures of dispersion or variation - range - mean deviation - variance ,standard deviation and coefficient of variation and standard error |
| **Week 9** | Elementary probability theory |
| **Week 10** | Mid-term exam |

| | |
|---|---|
| **Week 11** | Continuous probability distributions (Normal distribution ) |
| **Week 12** | Discrete probability distributions |
| **Week 13** | Correlation coefficient |
| **Week 14** | Simple regression analysis |
| **Week 15** | Multiple regression analysis |
| **Week 16** | **Preparatory week before the final Exam** |

| **Delivery Plan (Weekly Syllabus)** | |
|---|---|
| | **Material Covered** |
| **Week 1** | The natural of statistical data |
| **Week 2** | The natural of statistical data |
| **Week 3** | Statistical symbol |
| **Week 4** | Graphical represent and display of data |
| **Week 5** | Graphical represent and display of data |
| **Week 6** | Measures of mediation and centering |
| **Week 7** | Measures of mediation and centering |
| **Week 8** | Measure of dispersion or different |
| **Week 9** | Measure of dispersion or different |
| **Week 10** | Midterm exam |
| **Week 11** | Probability theory |
| **Week 12** | Statistical test |
| **Week 13** | Statistical test |
| **Week 14** | Correlation coefficient data analysis |
| **Week 15** | **Preparatory week before the final Exam** |

| **Learning and Teaching Resources** | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | المدخل الى علم الإحصاء - مبادى علم الإحصاء | Yes |
| **Recommended Texts** | كتاب علم الإحصاء وأساليب علم الاحصاء | No |
| **Websites** | https://www.udemy.com/course/bmwqjwxb/?srsltid=AfmBOooesbV6jEmBd_tAQSa288D_ _QY0Hc1yK1i3seCLaNtYAT4ckpyn | |

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

أ.د. عمار حاكم محمد
رئيس اللجنة العلمية

أ.د. صهود حسين علي
رئيس القسم

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

# MODULE DESCRIPTION FORM

| Module Information | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **BIODIVERSITY** | | | **Module Delivery** | |
| **Module Type** | **Basic learning activities** | | | ☒ **Theory**<br>☒ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **BIO1070** | | | | |
| **ECTS Credits** | **5** | | | | |
| **SWL (hr/sem)** | **125** | | | | |
| **Module Level** | 4 | | **Semester of Delivery** | 2 | |
| **Administering Department** | Type Dept. Code | | **College** | Agriculture and forestry college | |
| **Module Leader** | Dr. Mohammed Ayad Harbawi | | **e-mail** | Harbawee79@uomosul.edu.iq | |
| **Module Leader's Acad. Title** | Master | | **Module Leader's Qualification** | Teacher | |
| **Module Tutor** | Dr. hesham saad aldeen<br>**Dr.Rand Abdalhadi Ghazal** | | **e-mail** | E-mail: harbawee79@uomosul.edu.iq | |
| **Peer Reviewer Name** | Ms. Osama Hosam Fadle<br>Ms. Alyaa abdulateef | | **e-mail** | E-mail: osamahosam70@uomosul.edu.iq | |
| **Scientific Committee Approval Date** | 01/02/2025 | | **Version Number** | 1.0 | |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | **SOIL MICROBIOLOGY** | **Semester** | 1 |
| **Co-requisites module** | **BIOSAFETY and SECURITY** | **Semester** | 2 |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Objectives**<br>أهداف المادة الدراسية | 1. Enable students to appreciate the importance of biodiversity conservation in addressing environmental challenges and climate change.<br>2. Provide students with fundamental concepts of biological diversity and the role of living organisms in ecosystems. |

| | |
|---|---|
| **Module Learning Outcomes**<br><br>مخرجات التعلم للمادة الدراسية | Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks.<br>1- Interactive lecture<br>2- Brainstorming<br>3- Dialogue and discussion<br>4- Field Training<br>5- Practical exercises<br>6- Field project<br>7- Interactive lectures<br>8-Brainstorming<br>9- Self-education<br>The student should be able to:<br>LO#1: Identify classifications of living organisms and patterns of biological diversity in various environments.<br>LO#2: Understand the evolutionary and genetic mechanisms that contribute to the emergence of biodiversity over time.<br>LO#3: Evaluate threats to biodiversity and analyze the impact of human activities on ecosystems.<br>LO#4: Propose suitable strategies for biodiversity conservation and the sustainable use of natural resources. |
| **EE#DS** | Indicative content includes the following:<br>Introduction to Soil Physics<br>• Soil as a natural resource. [SSWL=30 hrs]<br>Soil Survey and classification - [SSWL=20 hrs]<br>Revision problem classes [SSWL=6 hrs]<br>Fundamentals [SSWL=44 hrs]<br>Total hrs = 105 = SSWL - (Exam hrs) = 109 - 4 = 105 hr (Time table hrs x 15 weeks) |

| **Learning and Teaching Strategies**<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | - Interactive lecture<br>- Brainstorming<br>- Dialogue and discussion<br>- Field Training<br>- Practical exercises<br>- Field project<br>- Interactive lectures<br>- Brainstorming |

| 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) | 5 and 10 | LO #1, #2 and #10, #11 |
| | **Assignments** | 2 | 10% (10) | 2 and 12 | LO #3, #4 and #6, #7 |
| | **Projects / Lab.** | 1 | 10% (10) | Continuous | All |
| | **Report** | 1 | 10% (10) | 13 | LO #5, #8 and #10 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | LO #1 - #7 |
| | **Final Exam** | 3hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to Biological Diversity |
| **Week 2** | Taxonomy and Scientific Nomenclature |
| **Week 3** | Genetic Diversity and Evolution |
| **Week 4** | Ecological Diversity and Ecosystems |
| **Week 5** | Measuring Biodiversity and Its Indicators |
| **Week 6** | Factors Affecting Biological Diversity |
| **Week 7** | Mid-term Exam |
| **Week 8** | Environmental and Economic Value of Biodiversity |

| | |
|---|---|
| | |
| **Week 9** | Current Threats to Biodiversity |
| **Week 10** | Species Extinction and Conservation Strategies |
| **Week 11** | Biodiversity in Aquatic Ecosystems |
| **Week 12** | Biodiversity in Terrestrial Ecosystems |
| **Week 13** | Climate Change and Its Impact on Biodiversity |
| **Week 14** | Biodiversity and Sustainable Development |
| **Week 15** | Natural Resource Management and Sustainable Use |
| **Week 16** | Future Directions in Biodiversity Enhancement |

| **Delivery Plan (Weekly Seminar. Syllabus)**<br>المنهاج الاسبوعي للحلقات الدراسية | |
|---|---|
| | **Material Covered** |
| **Week 1** | Future Directions in Biodiversity Enhancement |
| **Week 2** | Collection and Classification of Plant and Animal Samples |
| **Week 3** | Practical Applications of Scientific Nomenclature in the Lab |
| **Week 4** | Genetic Diversity Measurements and DNA Analysis Techniques |
| **Week 5** | Field Survey of Ecosystems (Forest or Agricultural) |
| **Week 6** | Biodiversity Assessment in Soil and Water Samples |
| **Week 7** | Monitoring Environmental Threats (e.g., Pollution and Biological Invasions) |
| **Week 8** | Community Analysis of Biotic Assemblages<br>(Community Analysis) |
| **Week 9** | In-situ and Ex-situ Conservation Techniques<br>(In-situ & Ex-situ) |
| **Week 10** | Studying the Impact of Climate Change on Biotic Communities |
| **Week 11** | Field Visit to High-Biodiversity Areas |
| **Week 12** | Data Documentation and Analysis Using Statistical Software |
| **Week 13** | Designing Models for Biodiversity Conservation and Sustainable Use |
| **Week 14** | Developing Management Plans for Species Protection |
| **Week 15** | Presentation and Discussion of Research Findings and Practical Reports |

## Learning and Teaching Resources
مصادر التعلم والتدريس

| | Text | Available in the Library? |
|---|---|---|
| **Required Texts** | | Yes |
| **Recommended Texts** | | No |

## Grading Scheme
مخطط الدرجات

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

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

أ. د. صهود حسين علي
رئيس القسم

أ.م.د. عمار جاسم محمد
أمين اللجنة العلمية

# MODULE DESCRIPTION FORM

## Module Information

| | | | | |
|---|---|---|---|---|
| **Module Title** | **Agricultural Informatics** | | **Module Delivery** | |
| **Module Type** | **Core learning activity** | | ☒ **Theory**<br>☐ **Lecture**<br>☐ **Lab**<br>☐ **Tutorial**<br>☒ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **AGI1080** | | | |
| **ECTS Credits** | 5.00 | | | |
| **SWL (hr/sem)** | 125 | | | |
| **Module Level** | 1 | **Semester of Delivery** | | 1 |
| **Administering Department** | Soil and Water Sciences | **College** | Agriculture and Forestry | |
| **Module Leader** | Aman Adel Mawlood | **e-mail** | Aman_adel@uomosul.edu.iq | |
| **Module Leader's Acad. Title** | Professor | **Module Leader's Qualification** | | **Ph.D.**<br>**MSc.** |
| **Module Tutor** | Ahmed Samer – Ahmed Kheraldeen | **e-mail** | N.A. | |
| **Peer Reviewer Name** | N.A. | **e-mail** | N.A. | |
| **Scientific Committee Approval Date** | | **Version Number** | 1.0 | |

## Relation with other Modules

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

## Module Aims, Learning Outcomes and Indicative Contents

أ

| | |
|---|---|
| **Module Objectives** أ | 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. |
| **Module Learning Outcomes LOs** | - Understand the basic concepts of agricultural informatics and its role in sustainable agriculture.<br>- Identify key technologies such as IoT, GIS, remote sensing, and machine learning in agriculture.<br>- Explain the relevance of data-driven decision-making for improving agricultural operations.<br>- Apply data collection and analysis techniques to solve practical agricultural problems. |

| | |
|---|---|
| | - Use software tools like GIS platforms for mapping and analysis.<br>- Know how to design basic IoT systems for monitoring soil, water, and plant conditions.<br>- Work collaboratively on projects integrating informatics into real-world agricultural challenges. |
| **Indicative Contents** | The Agricultural Informatics module bridges Information technology and agriculture, focusing on modern tools like IoT, GIS, AI, and big data to optimize productivity and sustainability. It covers data management, precision farming, remote sensing, and decision support systems. Students gain hands-on experience with GIS mapping, IoT setups, and AI models, enabling them to address challenges like resource efficiency, climate adaptation, and food security through innovative, data-driven strategies. This Module prepares graduates to implement cutting-edge solutions in agriculture for a sustainable future. |

## Learning and Teaching Strategies

| | |
|---|---|
| **Strategies** | 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)** | | **Structured SWL (h/w)** | |
| **Unstructured SWL (h/sem)** | | **Unstructured SWL (h/w)** | |
| **Total SWL (h/sem)** | | | |

## Module Evaluation

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| **Formative assessment** | **Quizzes** | | 10% (10) | | |
| | **Assignments** | | 10% (10) | | |
| | **Projects/ Practical** | | 10% (10) | | |
| | **Report** | | 10% (10) | | |
| **Summative assessment** | **Midterm Exam** | 3hr | 10% (10) | | |
| | **Final Exam** | 3hr | 50% (50) | | |
| **Total assessment** | | | 100% (100 Marks) | | |

## Delivery Plan (Weekly Syllabus)

| | Material Covered |
|---|---|
| **Week 1** | Introduction to Agricultural Informatics |
| **Week 2** | Geographic Information Systems (GIS) in Agriculture |

| Delivery Plan (Weekly Syllabus) | |
|---|---|
| | **Material Covered** |
| **Week 3** | Internet of Things (IoT) in Smart Agriculture |
| **Week 4** | Machine Learning and Artificial Intelligence in Agriculture |
| **Week 5** | Remote Sensing in Agriculture |
| **Week 6** | Precision Agriculture – GPS and Drones |
| **Week 7** | Mid-term Exam |
| **Week 8** | Decision Support Systems (DSS) in Agriculture |
| **Week 9** | Data Analysis in Agriculture |
| **Week 10** | Big Data in Agriculture |
| **Week 11** | Sustainable Practices and Climate-Smart Agriculture |
| **Week 12** | Smart Greenhouses |
| **Week 13** | Livestock Informatics |
| **Week 14** | Blockchain Technology and Food Traceability |
| **Week 15** | The Future of Agricultural Informatics |
| **Week 16** | **Preparatory week before the final Exam** |

| Delivery Plan (Weekly Projects Syllabus) | |
|---|---|
| | **Material Covered** |
| **Week 1** | Discussion on Agricultural Informatics Applications in Iraq. |
| **Week 2** | Creating a Local Agricultural Map Using GIS |
| **Week 3** | Setting up a Simple Soil Monitoring Device Using Local Tools |
| **Week 4** | Using Spreadsheets for Yield Analysis |
| **Week 5** | Using Free Satellite Images for Land Analysis |
| **Week 6** | Simulating GPS Use for Agricultural Mapping |
| **Week 7** | Creating a Simple Irrigation DSS Model Using Excel |
| **Week 8** | Analyzing Agricultural Data Using Spreadsheet Software |
| **Week 9** | Discussion on Big Data in Agriculture |
| **Week 10** | Assessing Sustainability in a Local Agricultural System |
| **Week 11** | Designing a Simple Prototype of a Manual Robot |
| **Week 12** | Building a Small Greenhouse Using Local Materials |
| **Week 13** | Monitoring Livestock Health Using Simple Models |
| **Week 14** | Simulating Crop Tracking from Farm to Market |
| **Week 15** | Final Project Presentations, that present practical projects addressing local agricultural challenges focusing on feasible technology-based solutions. |

## Learning and Teaching Resources

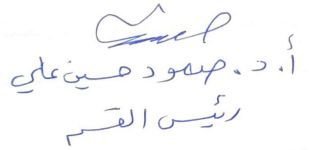
| | Text | Available in the Library? |
|---|---|---|
| **Required Texts** | • Choudhury, A., Biswas, A., Prateek, M., & Chakraborty, A. (2021). Agricultural Informatics: Automation Using IoT and Machine Learning. Wiley-Scrivener. | No |
| **Recommended Texts** | • Pierce, F. J., & Zhang, Q. (2016). Agricultural Automation: Fundamentals and Practices. CRC Press.<br>• Shamtsyan, M., Pasetti, M., & Beskopylny, A. (2021). Robotics, Machinery and Engineering Technology for Precision Agriculture. Springer.<br>• Li, D. (2016). Computer and Computing Technologies in Agriculture: Proceedings of CCTA. Springer. | |

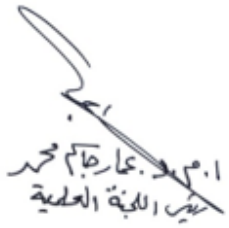
| | | |
|---|---|---|
| | • Satapathy, S., Mishra, D., Vargas, A. R., & El-Bendary, N. (2022). Innovation in Agriculture with IoT and AI. Springer.<br>• Singh, R., Gehlot, A., Singh, B., & Choudhury, S. (2022). Internet of Things (IoT) Enabled Automation in Agriculture. CRC Press.<br>• Boote, K. J. (Ed.). (2021). Advances in Crop Modelling for Sustainable Agriculture. CAB International. | |
| **Websites** | | |

## Grading Scheme
مخطط الدرجات

| Group | Grade | التقدير | Marks % | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A** - Excellent | **privilege** | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | **Very Good** | 80 - 89 | Above average with some errors |
| | **C** - Good | **Good** | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | **Average** | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | **Acceptable** | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | **Fail (in process)** | (45-49) | More work required but credit awarded |
| | **F** – 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 | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **SUSTANIBLE DEVELOPMENT** | | | **Module Delivery** | |
| **Module Type** | **Core learning activity** | | | ☒**Theory**<br>☐**Lecture**<br>☐**Lab**<br>☐**Tutorial**<br>☐**Practical**<br>☒**Seminar** | |
| **Module Code** | **SUD1090** | | | | |
| **ECTS Credits** | **2** | | | | |
| **SWL (hr/sem)** | **125** | | | | |
| **Module Level** | 2 | | **Semester of Delivery** | 1 | |
| **Administering Department** | AGEC1979 | | **College** | Agriculture and Forestry | |
| **Module Leader** | Aman Adel Mawlood | | **e-mail** | Aman_adel@uomosul.edu.iq | |
| **Module Leader's Acad. Title** | Professor | | **Module Leader's Qualification** | Ph.D. | |
| **Module Tutor** | Ahmed Samer – Ahmed Kheraldeen | | **e-mail** | N.A. | |
| **Peer Reviewer Name** | Assistant Professor - Professor | | **e-mail** | N.A. | |
| **Scientific Committee Approval Date** | 19/1/2025 | | **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** | 1. Understand the concept of sustainable development and its various dimensions.<br>2. Analyze the impact of environmental and social changes on achieving sustainability.<br>3. Study the role of government policies and innovation in supporting sustainable development.<br>.4Raise awareness of the importance of achieving social justice within the goals of sustainability. |
| **Module Learning Outcomes** | 1. Interpret the concepts and goals of sustainable development.<br>2. Assess the impact of climate and policies on resource sustainability.<br>3. Analyze the role of education and technology in achieving sustainable development.<br>.4Propose innovative strategies to enhance sustainability in various sectors. |
| **Indicative Contents** | 1. Introduction to the Sustainable Development Goals and Global Challenges. |

| | |
|---|---|
| | 2. Natural Resource Management and Climate Change.<br>3. Policies Supporting Sustainability in the Fields of Energy and Agriculture.<br>.4Innovation and Social Justice in Achieving a Sustainable Future.<br><br>Total hrs = 62 = SSWL - (Exam hrs) = 62-2= 60 (Time table hrs x 15 weeks) |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | 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)** | 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** | 3 | 15% (15) | 3, 9 ,11 | LO #1, #2 and #10, #11 |
| | **Assignments** | 2 | 10% (10) | 2 and 12 | LO #3, #4 and #6, #7 |
| | **Projects** | 1 | 10% (10) | Continuous | All |
| | **Report** | 1 | 5% (5) | 13 | LO #5, #8 and #10 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | LO #1 - #7 |
| | **Final Exam** | 3hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

## Delivery Plan (Weekly Theory Syllabus)

| | Material Covered |
|---|---|
| **Week 1** | Introduction to Sustainable Development |
| **Week 2** | Economic, Social, and Environmental Dimensions of Sustainable Development |
| **Week 3** | History and Evolution of the Concept of Sustainable Development |

| | |
|---|---|
| **Week 4** | Sustainable Development Goals (SDGs) |
| **Week 5** | Sustainability in Natural Resource Management |
| **Week 6** | Climate Change and Its Impact on Sustainable Development |
| **Week 7** | Midterm Exam |
| **Week 8** | The Role of Education and Awareness in Achieving Sustainable Development |
| **Week 9** | Renewable Energy and Sustainability |
| **Week 10** | Sustainability in the Agricultural and Food Sector |
| **Week 11** | Government Policies and Their Role in Achieving Sustainable Development |
| **Week 12** | Innovation and Technology in Supporting Sustainability |
| **Week 13** | Social Justice and Equality in Sustainable Development |
| **Week 14** | Global Challenges Facing Sustainable Development |
| **Week 15** | The Future of Sustainable Development |
| **Week 16** | **Preparatory week before the final Exam** |

| **Delivery Plan (Weekly practical Syllabus)** | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to sustainable development goals. |
| **Week 2** | Study of sustainable economic and social foundations. |
| **Week 3** | Workshop on sustainability applications in local projects. |
| **Week 4** | Analysis of environmental challenges and opportunities in sustainable development. |
| **Week 5** | Case study on sustainable resource management. |
| **Week 6** | Analyzing the role of technology in supporting sustainability. |
| **Week 7** | Midterm Exam |
| **Week 8** | Workshop on sustainable water and energy management. |
| **Week 9** | Discussing strategies for sustainable agriculture improvement. |
| **Week 10** | Evaluating eco-friendly development projects. |
| **Week 11** | Understanding sustainable practices in the construction sector. |
| **Week 12** | Case study on renewable energy usage. |
| **Week 13** | Practical: Developing a business model for a sustainable project. |
| **Week 14** | Discussion on sustainability challenges in developing communities. |
| **Week 15** | Project presentations and discussions on feasibility and conclusions |

| Learning and Teaching Resources | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | عمر بن اخضر خلفاوي " التنمية المستدامة" | no |
| **Recommended Texts** | عبدالله بن عبد الرحمن البريدي " التنمية المستدامة : مدخل تكاملي لمفاهيم الاستدامة وتطبيقاتها" | |
| **Websites** | | |

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

أ.د. صهود حسين علي
رئيس القسم

أ.م.د. عمار جاسم محمد
ممثل اللجنة العلمية

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الغابات

# MODULE DESCRIPTION FORM

| Module Information | | | |
|---|---|---|---|
| **Module Title** | **AGRICULTRAL ENGINEERING TECHNIQUES TRANSFER** | **Module Delivery** | |
| **Module Type** | **Core learning activity** | ☒Theory<br>☐ Lecture<br>☐ Lab<br>☐Tutorial<br>☒Practical<br>☐Seminar | |
| **Module Code** | **AET1040** | | |
| **ECTS Credits** | **5** | | |
| **SWL (hr/sem)** | **125** | | |
| **Module Level** | 1 | **Semester of Delivery** | 1 |
| **Administering Department** | SSWR1969, PLPR1966, HOLA1974, FORE1964, FOSC1965, FICR1973, ANPR1964, AGEC1979, AETT1979, AGME1986 | **College** | **AGFO1964** |
| **Module Leader** | Alla Mohamed Abdullah<br>Omar Dheyaa Mohammed<br>Asmaa Mohammed Adil<br>Moyassar Mohammed Aziz<br>**Nofal Issa Mohamed**<br>sumyia khalaf Badawi<br>Firas Kadhim Dawoo Aljuboori<br>Khaled Anwer Khaled ALKHALED<br>Talal Saeed Hameed<br>Muzahim Saeed Al-Bek | **e-mail** | ala.mohammed58@uomosul.edu.iq<br>dr.omaralmallah@uomosul.edu.iq<br>asmaama@uomosul.edu.iq<br>moyassar_aziz@uomosul.edu.iq<br>nofelemh@uomosul.edu.iq<br>dr.sumyia_khalf@uomosul.edu.iq<br>firasaljuboori@uomosul.edu.iq<br>khalid.anwar31@uomosul.edu.iq<br>stalal1982@uomosul.edu.iq`<br>muzahim_saeed@uomosul.edu.iq |
| **Module Leader's Acad. Title** | **Professor**<br>**Assistant Professor** | **Module Leader's Qualification** | Ph.D.<br>**MSc.** |
| **Module Tutor** | N.A. | **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 | |
|---|---|
| **Module Objectives** | 1- Developing farm management among rural individuals<br>2- Developing a sense of responsibility towards the family and the rural community<br>3- Promoting positive attitudes of rural people towards agriculture, love of work, and use of modern technologies<br>4- Improving the marketing aspects of rural producers using modern technologies. |
| **Module Learning Outcomes LOs** | The student should be able to:<br>LO#1: Know the general concepts of transferring agricultural engineering technologies.<br>LO#2: Determines appropriate means to mobilize farmers in their love of work, development, and selection of agricultural engineering technologies.<br>LO#3: Suggest appropriate technologies for agricultural engineering projects.<br>LO#4: Bear ethical responsibilities in the areas of transferring agricultural engineering technologies. |
| **Indicative Contents** | Indicative content includes the following.<br>Theoretical<br>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.<br>Practical application<br>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.<br><br>Total hrs = 63 = SSWL - (Exam hrs) = 63-3= 60 (Time table hrs x 15 weeks) |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | 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)** | 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 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)
المنهاج الاسبوعي النظري

| | **Material Covered** |
|---|---|
| **Week 1** | Introduction to agricultural extension and technology transfer |
| **Week 2** | Elements of technology transfer and adoption process |
| **Week 3** | Factors that determine adoption rates and adopter categories |
| **Week 4** | Opinion leaders and agents of change |
| **Week 5** | Analyze farmers' needs |
| **Week 6** | Guidance methods (training and education methods) |

| | |
|---|---|
| **Week 7** | Mid-term Exam |
| **Week 8** | Transfer of agricultural technologies: concept and methods |
| **Week 9** | Challenges facing the transfer of agricultural technologies |
| **Week 10** | Using communication and media in agricultural extension |
| **Week 11** | Innovating and adapting to modern agricultural techniques |
| **Week 12** | Evaluation and follow-up of extension and technology transfer programs |
| **Week 13** | Cooperation between agricultural extension workers and the local community |
| **Week 14** | Applications of smart technologies in agricultural extension |
| **Week 15** | Tools for measuring effectiveness in technology transfer and extension |
| **Week 16** | **Preparatory week before the final Exam** |

## 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** | **Vertical Farming**: A technique that uses vertical spaces to grow crops, increasing productivity and reducing land use. |
| **Week 2** | **Smart Irrigation**: Advanced irrigation systems that rely on sensors to monitor soil moisture and distribute water efficiently. |
| **Week 3** | **Precision Agriculture**: The use of technology to analyze agricultural data and improve crop management. ا. |
| **Week 4** | **Greenhouses**: Creating protected environments to enhance crop growth and shield them from harsh weather conditions. |
| **Week 5** | **Hydroponics**: Growing plants in a water solution instead of soil, which reduces water use. |
| **Week 6** | **Genetic Engineering**: The use of genetic engineering to develop disease-resistant and drought-tolerant crops. . |
| **Week 7** | **Mobile Applications**: Tools that help farmers manage their farms, such as tracking crops and weather. |

| | |
|---|---|
| **Week 8** | **Agricultural Robots**: The use of robots to perform tasks such as planting and harvesting. |
| **Week 9** | **Remote Sensing Technology**: Used to monitor crop health and track changes in the agricultural environment. |
| **Week 10** | **Biological Control**: The use of living organisms to control pests and diseases instead of chemical pesticides. ال |
| **Week 11** | **Artificial Intelligence (AI)**: The application of AI technologies to analyze agricultural data and improve production. |
| **Week 12** | **Nanotechnology**: The use of nanomaterials to improve soil quality and enhance fertilizer effectiveness. |
| **Week 13** | **Geographic Information Systems (GIS)**: Used to analyze geographic data and improve agricultural land planning. |
| **Week 14** | **Organic Farming**: Agricultural techniques that rely on the use of natural materials instead of chemicals. |
| **Week 15** | **Drones**: Used for monitoring crops, collecting data, and spraying pesticides. |

## Learning and Teaching Resources

| | Text | Available in the Library? |
|---|---|---|
| **Required Texts** | N.A. | - |
| **Recommended Texts** | - Al-Tanoubi, Muhammad Muhammad Omar (d) (1998), Agricultural Guidance Reference, Arab Renaissance House for Printing and Publishing, Beirut.<br>- 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<br>- 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 | Yes |
| **Websites** | | |

| Grading Scheme | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks %** | **Definition** |
| **Success Group (50 - 100)** | **A** - Excellent | **privilege** | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | **Very Good** | 80 - 89 | Above average with some errors |
| | **C** - Good | **Good** | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | **Average** | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | **Acceptable** | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | **Fail (in process)** | (45-49) | More work required but credit awarded |
| | **F** – Fail | **Fail** | (0-44) | Considerable amount of work required |
| | | | | |

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