

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

| Module Information                 |                                      |                      |                                                                                                                                                                                                                                          |                              |
|------------------------------------|--------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| معلومات المادة الدراسية            |                                      |                      |                                                                                                                                                                                                                                          |                              |
| Module Title                       | Professional Ethics                  |                      | Module Delivery                                                                                                                                                                                                                          |                              |
| Module Type                        | Support or related learning activity |                      | <input checked="" type="checkbox"/> Theory<br><input type="checkbox"/> Lecture<br><input type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input checked="" type="checkbox"/> Seminar |                              |
| Module Code                        | CET4105                              |                      |                                                                                                                                                                                                                                          |                              |
| ECTS Credits                       | 3                                    |                      |                                                                                                                                                                                                                                          |                              |
| SWL (hr/sem)                       | 90                                   |                      |                                                                                                                                                                                                                                          |                              |
| Module Level                       | 4                                    | Semester of Delivery |                                                                                                                                                                                                                                          | 7                            |
| Administering Department           | CET                                  | College              | EETC                                                                                                                                                                                                                                     |                              |
| Module Leader                      | Hussam fahmi aajami                  |                      | e-mail                                                                                                                                                                                                                                   | hussam_fahmi@mtu.edu.iq      |
| Module Leader's Acad. Title        | Asst. Lecturer                       |                      | Module Leader's Qualification                                                                                                                                                                                                            | M.Sc.                        |
| Module Tutor                       | Abdulah Abdulrazak                   |                      | e-mail                                                                                                                                                                                                                                   | abdallaabdalrazak@mtu.edu.iq |
| Peer Reviewer Name                 | Dr. Osama Abbas Hussein              |                      | e-mail                                                                                                                                                                                                                                   | osama.abbas@mtu.edu.iq       |
| Scientific Committee Approval Date | 13/06/2023                           |                      | Version Number                                                                                                                                                                                                                           | 1.0                          |

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

| <b>Module Aims, Learning Outcomes and Indicative Contents</b><br><b>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <b>Module Aims</b><br><b>أهداف المادة الدراسية</b>                                                                               | <p>The module aims to:</p> <ol style="list-style-type: none"> <li>1. To develop an understanding of the fundamental concepts and principles of engineering ethics.</li> <li>2. To explore ethical theories and frameworks relevant to engineering practice and decision-making.</li> <li>3. To familiarize students with codes of ethics and professional conduct in the engineering field.</li> <li>4. To cultivate ethical decision-making skills and the ability to analyze and resolve ethical dilemmas in engineering.</li> <li>5. To promote awareness of social, environmental, and global dimensions of engineering ethics and their impact on professional practice.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Module Learning Outcomes</b><br><b>مخرجات التعلم للمادة الدراسية</b>                                                          | <p>By the end of the module, students should be able to:</p> <ol style="list-style-type: none"> <li>1. Demonstrate a comprehensive understanding of the principles and importance of engineering ethics in professional practice.</li> <li>2. Apply ethical theories, frameworks, and decision-making models to analyze and resolve ethical dilemmas in engineering.</li> <li>3. Evaluate the social, environmental, and global impact of engineering decisions and recognize the ethical responsibilities of engineers in these contexts.</li> <li>4. Comprehend the professional obligations and responsibilities of engineers, including codes of ethics and professional conduct.</li> <li>5. Reflect on personal ethical development, demonstrate ethical awareness, and engage in lifelong learning in the field of engineering ethics.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Indicative Contents</b><br><b>المحتويات الإرشادية</b>                                                                         | <ol style="list-style-type: none"> <li>1. Introduction to Engineering Ethics: [18 hrs.] <ul style="list-style-type: none"> <li>• Definition and importance of engineering ethics.</li> <li>• Ethical theories and frameworks in engineering.</li> <li>• Codes of ethics and professional conduct.</li> </ul> </li> <li>2. Ethical Decision-Making: [18 hrs.] <ul style="list-style-type: none"> <li>• Steps in ethical decision-making.</li> <li>• Utilitarianism and consequentialist ethics.</li> <li>• Deontological ethics and duty-based approaches.</li> </ul> </li> <li>3. Professional Responsibility and Accountability: [18 hrs.] <ul style="list-style-type: none"> <li>• Professionalism and professional identity.</li> <li>• Professional obligations and responsibilities.</li> <li>• Ethical and legal aspects of professional practice.</li> </ul> </li> <li>4. Social and Environmental Impact of Engineering: [18 hrs.] <ul style="list-style-type: none"> <li>• Engineering and sustainability.</li> <li>• Environmental ethics and considerations.</li> <li>• Social responsibility and stakeholder engagement.</li> </ul> </li> <li>5. Ethical Issues in Research and Innovation: [18 hrs.] <ul style="list-style-type: none"> <li>• Research integrity and responsible conduct of research.</li> <li>• Intellectual property rights and plagiarism.</li> <li>• Ethical considerations in technological innovation.</li> </ul> </li> </ol> |
| <b>Learning and Teaching Strategies</b><br><b>استراتيجيات التعلم والتعليم</b>                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Strategies</b>                                                                                                                | <p>The learning and teaching strategies for the module on Computer Principles and operating systems can include:</p> <ol style="list-style-type: none"> <li>1. Lectures and Presentations: The instructor delivers lectures and presentations to provide theoretical knowledge and concepts related</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|  | <p>to engineering ethics. This helps students understand the fundamental principles and frameworks.</p> <ol style="list-style-type: none"><li>2. Case Studies and Discussions: Engaging students in analyzing real-world case studies allows them to apply ethical theories and decision-making models to practical situations. Discussions and group activities encourage critical thinking and ethical reasoning.</li><li>3. Ethical Dilemma Analysis: Presenting students with ethical dilemmas specific to engineering contexts enables them to identify and evaluate conflicting values and potential courses of action. This fosters ethical decision-making skills and ethical awareness.</li><li>4. Guest Speakers and Expert Sessions: Inviting guest speakers, such as experienced professionals or ethics experts, to share their insights and experiences enriches the learning process. These sessions provide practical perspectives and real-world examples.</li><li>5. Group Projects and Presentations: Assigning group projects related to engineering ethics encourages collaboration, research, and application of ethical principles. Students can explore specific topics, develop solutions, and present their findings, fostering critical thinking and communication skills.</li><li>6. Ethics Workshops and Debates: Organizing workshops and debates focused on ethical topics in engineering allows students to actively engage in discussions, explore different viewpoints, and develop their argumentation skills.</li><li>7. Ethical Reflection and Self-Assessment: Providing opportunities for students to reflect on their personal values, ethical beliefs, and professional aspirations promotes self-awareness and encourages students to align their actions with ethical principles.</li><li>8. Online Resources and Learning Platforms: Utilizing online resources, such as interactive modules, online discussions, and ethical case repositories, enhances accessibility to additional learning materials and facilitates self-paced learning.</li><li>9. Assessment Methods: Assessing students through assignments, quizzes, exams, and presentations ensures their understanding of ethical theories, decision-making models, and their ability to apply them in practical scenarios.</li><li>10. Field Visits and Industry Engagements: Organizing visits to engineering organizations or engaging with industry professionals allows students to observe ethical practices in real-world settings and understand the challenges and responsibilities faced by engineers.</li></ol> |
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**Student Workload (SWL)**

الحمل الدراسي للطلاب محسوب لـ ١٥ اسبوعا

|                                                                                |    |                                                                           |     |
|--------------------------------------------------------------------------------|----|---------------------------------------------------------------------------|-----|
| <b>Structured SWL (h/sem)</b><br>الحمل الدراسي المنتظم للطلاب خلال الفصل       | 45 | <b>Structured SWL (h/w)</b><br>الحمل الدراسي المنتظم للطلاب أسبوعيا       | 3.2 |
| <b>Unstructured SWL (h/sem)</b><br>الحمل الدراسي غير المنتظم للطلاب خلال الفصل | 45 | <b>Unstructured SWL (h/w)</b><br>الحمل الدراسي غير المنتظم للطلاب أسبوعيا | 3.2 |
| <b>Total SWL (h/sem)</b><br>الحمل الدراسي الكلي للطلاب خلال الفصل              | 90 |                                                                           |     |

**Module Evaluation**

تقييم المادة الدراسية

|                             |                        | Time/Number | Weight (Marks)   | Week Due | Relevant Learning Outcome |
|-----------------------------|------------------------|-------------|------------------|----------|---------------------------|
| <b>Formative assessment</b> | <b>Quizzes</b>         | 2           | 10% (10)         | 5, 10    | LO #1, 2, 8 and 9         |
|                             | <b>Assignments</b>     | 2           | 10% (10)         | 2, 12    | LO # 3, 4, 6 and 7        |
|                             | <b>Projects / Lab.</b> |             |                  |          |                           |
|                             | <b>Report</b>          | 1           | 10% (10)         | 14       | LO # 1-14                 |
| <b>Summative assessment</b> | <b>Midterm Exam</b>    | 2 hours     | 20% (10)         | 7        | LO # 1-7                  |
|                             | <b>Final Exam</b>      | 3 hours     | 50% (50)         | 16       | All                       |
| <b>Total assessment</b>     |                        |             | 100% (100 Marks) |          |                           |

| <b>Delivery Plan (Weekly Syllabus)</b><br>المنهاج الاسبوعي النظري |                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                   | <b>Material Covered</b>                                                                                                                                                                                                                                                                  |
| <b>Week 1</b>                                                     | Introduction to Engineering Ethics <ul style="list-style-type: none"> <li>• Definition and importance of engineering ethics.</li> <li>• Ethical theories and frameworks in engineering.</li> <li>• Codes of ethics and professional conduct.</li> </ul>                                  |
| <b>Week 2</b>                                                     | Ethical Decision-Making Models <ul style="list-style-type: none"> <li>• Steps in ethical decision-making.</li> <li>• Utilitarianism and consequentialist ethics.</li> <li>• Deontological ethics and duty-based approaches.</li> </ul>                                                   |
| <b>Week 3</b>                                                     | Professional Responsibility and Accountability <ul style="list-style-type: none"> <li>• Professionalism and professional identity.</li> <li>• Professional obligations and responsibilities.</li> <li>• Ethical and legal aspects of professional practice.</li> </ul>                   |
| <b>Week 4</b>                                                     | Social and Environmental Impact of Engineering <ul style="list-style-type: none"> <li>• Engineering and sustainability.</li> <li>• Environmental ethics and considerations.</li> <li>• Social responsibility and stakeholder engagement.</li> </ul>                                      |
| <b>Week 5</b>                                                     | Conflicts of Interest and Ethical Dilemmas <ul style="list-style-type: none"> <li>• Identification and resolution of conflicts of interest.</li> <li>• Ethical dilemmas in engineering practice.</li> <li>• Balancing competing ethical considerations.</li> </ul>                       |
| <b>Week 6</b>                                                     | Ethical Issues in Research and Innovation <ul style="list-style-type: none"> <li>• Research integrity and responsible conduct of research.</li> <li>• Intellectual property rights and plagiarism.</li> <li>• Ethical considerations in technological innovation.</li> </ul>             |
| <b>Week 7</b>                                                     | Engineering and Public Safety <ul style="list-style-type: none"> <li>• Risk assessment and management in engineering.</li> <li>• Safety standards and regulations.</li> <li>• Whistleblowing and professional accountability.</li> </ul>                                                 |
| <b>Week 8</b>                                                     | Ethical Leadership and Professional Integrity <ul style="list-style-type: none"> <li>• Ethical leadership in engineering organizations.</li> <li>• Integrity and ethical behavior in the workplace.</li> <li>• Ethical implications of professional relationships.</li> </ul>            |
| <b>Week 9</b>                                                     | Global and Cultural Perspectives in Engineering Ethics <ul style="list-style-type: none"> <li>• Cultural relativism and ethical relativism.</li> <li>• Cross-cultural communication and ethical challenges.</li> <li>• Global engineering ethics and international standards.</li> </ul> |
| <b>Week 10</b>                                                    | Ethical Issues in Emerging Technologies <ul style="list-style-type: none"> <li>• Ethical considerations in artificial intelligence.</li> <li>• Biomedical ethics and emerging medical technologies.</li> <li>• Ethical challenges in nanotechnology and genetic engineering.</li> </ul>  |
| <b>Week 11</b>                                                    | Ethical Responsibilities to Clients and Customers <ul style="list-style-type: none"> <li>• Professional obligations to clients and customers.</li> <li>• Confidentiality and privacy in engineering practice.</li> <li>• Fair competition and avoiding conflicts of interest.</li> </ul> |
| <b>Week 12</b>                                                    | Ethical Responsibilities to Colleagues and Society <ul style="list-style-type: none"> <li>• Respect for colleagues and teamwork ethics.</li> </ul>                                                                                                                                       |

|                |                                                                                                                                                                                                                                                                                         |
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|                | <ul style="list-style-type: none"> <li>Ethical implications of social media and online interactions.</li> <li>Public engagement and outreach in engineering.</li> </ul>                                                                                                                 |
| <b>Week 13</b> | Ethical Issues in Engineering Management <ul style="list-style-type: none"> <li>Ethical challenges in project management.</li> <li>Ethical responsibilities of engineering managers.</li> <li>Corporate social responsibility and ethical business practices.</li> </ul>                |
| <b>Week 14</b> | Professional Development and Ethical Awareness <ul style="list-style-type: none"> <li>Lifelong learning and ethical competence.</li> <li>Continuing education and professional ethics.</li> <li>Ethical challenges in a rapidly changing technological landscape.</li> </ul>            |
| <b>Week 15</b> | Case Studies and Ethical Reflection <ul style="list-style-type: none"> <li>Analysis of real-world engineering ethics case studies.</li> <li>Ethical reflection and self-assessment.</li> <li>Final project or examination on engineering ethics principles and applications.</li> </ul> |
| <b>Week 16</b> | Preparatory week before the final Exam                                                                                                                                                                                                                                                  |

### Learning and Teaching Resources

مصادر التعلم والتدريس

|                          | Text                                                                                                                                                                    | Available in the Library? |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Required Texts</b>    | C. E. C. E. Harris Jr., M. S. Pritchard, and M. J. Rabins, "Engineering Ethics: Concepts and Cases," Cengage Learning, 2018. [Online]. Available: ISBN: 978-1305500846. | Yes                       |
| <b>Recommended Texts</b> | M. W. Martin and R. Schinzinger, "Ethics in Engineering," McGraw-Hill Education, 2016. [Online]. Available: ISBN: 978-0078112481.                                       | No                        |
| <b>Websites</b>          | The Collage E-Library                                                                                                                                                   |                           |

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