جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة المستقبل
كلية العلوم
قسم التقنيات الاحيائية الطبية

# MODULE DESCRIPTION FORM
# نموذج وصف المادة الدراسية

## Module Information
معلومات المادة الدراسية

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|---|---|---|---|
| **Module Title** | Biosafety and risk management | **Module Delivery** | |
| **Module Type** | core | | ☒ **Theory** |
| **Module Code** | UMU0307034 | | ☒ **Lecture** |
| **ECTS Credits** | **5.00** | | ☐ **Lab** |
| **SWL (hr/sem)** | **125** | | ☒ **Tutorial** |
| | | | ☒ **Practical** |
| | | | ☒ **Seminar** |

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| **Module Level** | **UGx11 3** | **Semester of Delivery** | 1 |
| **Administering Department** | **MBT** | **College** | **BT** |
| **Module Leader** | Rasha Fajer | **e-mail** | E-mail: rasha.fajer@uomus.edumiq |
| **Module Leader's Acad. Title** | | **Module Leader's Qualification** | Msc. |
| **Module Tutor** | | e-mail | |
| **Peer Reviewer Name** | | e-mail | E-mail: |
| **Scientific Committee Approval Date** | | **Version Number** | 1.0 |

## Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

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| **Prerequisite module** | MBT-23010 | **Semester** | 3 |

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

## Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

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|---|---|
| **Module Objectives**<br>أهداف المادة الدراسية | 1- The goal of Biosafety and risk management Increasing the awareness of students studying in the Faculty of Biotechnology of the risks that they may be exposed to during their practice of practical and laboratory teachings within biological and chemical laboratories and field work units<br>2- Lectures provide the background to understand the basic principle of Biosafety and risk management<br>3- This course is designed to preventing potential risks that students in the field of biotechnology may be exposed to and preserving their safety from potential harms as a result.<br>4- Understand methods of Biosafety and risk management<br>5- Understand and assesse methods commonly used in biological and chemical laboratories and field work units.<br>6- Demonstrate ability to grow and main adherent and suspension cell cultures without contamination.<br>7- The most important updates and developments that can be introduced to the methods of biosafety and risk management used. |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | 1. Training students to use the facilities and equipment available in the college with high efficiency.<br>2. Dealing with solutions, chemicals and biological materials, and getting used to dealing with them smoothly and easily.<br>3. Learning to take the necessary precautions and measures when conducting biological and chemical experiments and tests.<br>4. Good behavior and good management of situations when cases of chemical and biological spills occur, and the ability to deal with biological and chemical risks. |
| **Indicative Contents**<br>المحتويات الإرشادية | 1- Production of a specialized scientific staffs with the ability to deal with equipment, laboratory equipment, biological and chemical materials and solutions.<br>2- Good and perfect use of scientific equipment and laboratory equipment, and the ability to maintain them when needed.<br>3- Training students on teamwork and team spirit in laboratory work.<br>4- Training students to deal with scientific devices and equipment in a technical and professional manner to increase their scientific technical skills and Knowledge. |

## Learning and Teaching Strategies

| استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | To encourage students to participate in exercises, answer questions, theoretical and practical reports, seminars, conduct collective and individual skill tests, and theoretical, laboratory and field brainstorming. At the same time refine and expand critical thinking skills. This will be achieved through quizzes, interactive tutorials, and by thinking about the type of simple experiments that include some sampling activities that are of interest to the students. |

## Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

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|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 64 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 4 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 61 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | | | |

## Module Evaluation

تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| Formative assessment | Quizzes | 3 | 10%(10) | 4,12, 15 | LO:(1,2,3) (7,8,9);(10,11) |
| | Assignments | 2 | 10%(10) | 7, 14 | LO: 4; 12 |
| | Projects / Lab. | 1 | 10%(10) | Continuous | LO:5,6 |
| | Report | 1 | 10%(10) | 13 | LO: (12,14) |
| Summative assessment | Midterm Exam | 2h | 10%(10) | 8 | LO: (15) |
| | Final Exam | 3h | 50%(50) | 16 | all |

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|---|---|---|---|
| **Total assessment** | 100% (100 Marks) | | |

| **Delivery Plan (Weekly Syllabus)**<br>المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | General laboratory features |
| **Week 2** | General laboratory safety guidelines |
| **Week 3** | Roles and responsibilities of institutes |
| **Week 4** | Pathogen hazard and bio- risk assessment and mangament. |
| **Week 5** | Labroatory design, Bio- chemical contamination, laboratory infication |
| **Week 6** | Biosafety cabinets |
| **Week 7** | Biohazrdous \ infectious waste and regulated medical waste |
| **Week 8** | Disinfection and sterilization. |
| **Week 9** | Personal protection equipment's. |
| **Week 10** | Good laboratory practice. |
| **Week 11** | Laboratory emergence. |
| **Week 12** | Spill procedures. |
| **Week 13** | Shipping of infectious substance. |
| **Week 14** | Occupational health and medical surveillance, bioaecurty. |
| **Week 15** | Bioethics and dual use research of concern. |
| **Week 16** | Preparatory week before the final Exam. |

| **Delivery Plan (Weekly Lab. Syllabus)**<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |

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| **Week 1** | Good knowledge of the specifications of a good laboratory through photography, videos and diagrams |
| **Week 2** | Types of protection systems in laboratories |
| **Week 3** | How to plan for the establishment of safety committees and how to choose the right people for that |
| **Week 4** | Practical tests field practice |
| **Week 5** | Classification of microorganism |
| **Week 6** | Risk assessment |
| **Week 7** | Procedures adopted to deal with chemical risk |
| **Week 8** | Practical tests field practice |
| **Week 9** | Procedures adopted to deal with biological risk |
| **Week 10** | Practical tests field practice |
| **Week 11** | Scientific trip |
| **Week 12** | Training for good laboratory practicing procedures |
| **Week 14** | Practical tests field practice |
| **Week 15** | Preparatory week before the final Exam. |

| **Learning and Teaching Resources**<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | 1- Training and educational material on biosafety and biosecurity, Preparation committee. 2020. by John Wiley and Sons, Inc. | No |
| **Recommended Texts** | 2. Advisory committee on dangerous pathogens ( 2005). Biological agent: managing the risk in labrotaries and health premises. Suffolk, UK: Health and safety and executive. | No |

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|---|---|---|
| **Websites** | Not-founded | |

| Grading Scheme<br>مخطط الدرجات | | | | |
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| **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 |
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**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.