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|  | Ministry of Higher Education and  Scientific Research - Iraq  University of Baghdad  College of Engineering  Department of Electrical Engineering |  |

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

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| **Module Information**  **معلومات المادة الدراسية** | | | | | | | |
| **Module Title** | Irrigation and Drainage Networks | | | | **Module Delivery** | | |
| **Module Type** | core | | | | * **Theory** * **Lecture** * **Tutorial** | | |
| **Module Code** | wrin 307 | | | |
| **ECTS Credits** | 3 | | | |
| **SWL (hr/sem)** | 75 | | | |
| **Module Level** | | UGx11 3 | **Semester of Delivery** | | | |  |
| **Administering Department** | |  | **College** |  | | | |
| **Module Leader** | Ameen Mohammed Saleh | | **e-mail** | ameen.mohammed@coeng.uobaghdad.edu.iq | | | |
| **Module Leader’s Acad. Title** | |  | **Module Leader’s Qualification** | | | |  |
| **Module Tutor** | None | | **e-mail** | None | | | |
| **Peer Reviewer Name** | | Assist.Lec. Fatima Sadoon | **e-mail** | f.mushab@coeng.uobaghdad.edu.iq | | | |
| **Review Committee Approval** | | 1 /6/2023 | **Version Number** | | | 1 | |

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| **Relation With Other Modules**  **العلاقة مع المواد الدراسية الأخرى** | | | |
| **Prerequisite module** | land reclamation, soil conservation | **Semester** |  |
| **Co-requisites module** | On-Farm Irrigation Systems | **Semester** |  |
| **Module Aims, Learning Outcomes and Indicative Contents**  **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية** | | | |
| **Module Aims**  **أهداف المادة الدراسية** | 1- Types of irrigation and drainage networks, components, and functions.  2- Enable the student to layout of irrigation and drainage networks.  3- Enable the student to calculation of discharge for canals and drains.  4- Enable the student to design of water course and farm channel (slope)  5- Enable the student to design of collector drain and main collector drain (slope).  6- Enable the student to determine the water level in irrigation canals and slopes.  7- Enable the student to determine the water Level in drains and slopes.  8- The student will be introduced to the design of canals cross section and drains.  9- Introduce the design by empirical method, and best hydraulic section method.  10- Regime canal.  11- Enable the student to draw the longitudinal section and synoptic diagram.  12- The student will be introduced to the basic information for Canal lining. | | |
| **Module Learning Outcomes**  **مخرجات التعلم للمادة الدراسية** | The student will be able to:  1- Understand and define irrigation and drainage networks.  2- Layout of irrigation and drainage networks.  3- Calculation of discharge for canals and drains.  4- Design of water course and farm channel (slope)  5- Design of collector drain and main collector drain (slope).  6- Determine the water level in irrigation canals and slopes.  7- Determine the water Level in drains and slopes.  8- Design requires the use of steady uniform flow equation such as Manning’s and Chezy’s formula.  9- Design by empirical methods  10- Design by best hydraulic section methods.  11- Design by Regime canals.  12- Draw the longitudinal section and synoptic diagram.  13- Understand the canal lining. | | |
| **Indicative Contents**  **المحتويات الإرشادية** | Types of irrigation and drainage networks, components, and functions.  Enable the student to layout of irrigation and drainage networks.  Enable the student to calculation of discharge for canals and drains.  Enable the student to design of water course and farm channel (slope)  Enable the student to design of collector drain and main collector drain (slope).  Enable the student to determine the water level in irrigation canals and slopes.  Enable the student to determine the water Level in drains and slopes.  The student will be introduced to the design of canals cross section and drains.  Introduce the design by empirical method, and best hydraulic section method.  Regime canal.  Enable the student to draw the longitudinal section and synoptic diagram.  The student will be introduced to the basic information for Canal lining. | | |
| **Learning and Teaching Strategies**  **استراتيجيات التعلم والتعليم** | | | |
| **Strategies** | The main strategy that will be adopted in delivering this module is to encourage students’ participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. | | |

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| **Student Workload (SWL)**  **الحمل الدراسي للطالب** | | | |
| **Structured SWL (h/sem)**  **الحمل الدراسي المنتظم للطالب خلال الفصل** | 45 | **Structured SWL (h/w)**  **الحمل الدراسي المنتظم للطالب أسبوعيا** | 3 |
| **Unstructured SWL (h/sem)**  **الحمل الدراسي غير المنتظم للطالب خلال الفصل** | 30 | **Unstructured SWL (h/w)**  **الحمل الدراسي غير المنتظم للطالب أسبوعيا** | 2 |
| **Total SWL (h/sem)**  **الحمل الدراسي الكلي للطالب خلال الفصل** | 75 | | |

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| **Module Evaluation**  **تقييم المادة الدراسية** | | | | | |
| **As** | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | (5 %) | 4,10 | LO #1 and 2 |
| **Assignments** | 2 | (25%) | 8,14 | LO # 3 and 4 |
| **Summative assessment** | **Midterm Exam** |  |  |  | LO # 1 and 4 |
| **Final Exam** | 2.5hr | (70%) | 16 | all |
| **Total assessment** | | | 100% (100 Marks) |  |  |

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| **Delivery Plan (Weekly Syllabus)**  **المنهاج الاسبوعي النظري** | |
| **Week** | **Material Covered** |
| **Week 1** | Irrigation units, irrigation and drainage network, comparison between them |
| **Week 2** | Names and numbering of irrigation networks |
| **Week 3** | Calculation of discharge in canals |
| **Week 4** | Drainage coefficient |
| **Week 5** | calculation of discharge in drains |
| **Week 6** | Water levels in canals |
| **Week 7** | Water levels in drains |
| **Week 8** | Longitudinal profiles in canals |
| **Week 9** | Longitudinal profiles in drains |
| **Week 10** | Exam |
| **Week 11** | Typical cross sections in canals |
| **Week 12** | Typical cross sections in drains |
| **Week 13** | Regime canals |
| **Week 14** | Exam |
| **Week 15** | Canal lining |
| **Week 16** | **Final Exam** |

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| **Learning and Teaching Resources**  **مصادر التعلم والتدريس** | | |
|  | **Text** | **Available in the Library?** |
| **Required Texts** | Design Manual for irrigation and Drainage / Pencol 1983.  هندسة نظم الري الحقلي / د. احمد يوسف حاجم / جامعة الموصل-كلية الهندسة/1992  هندسة الري والبزل / د. شارل شكري / جامعة بغداد-كلية الهندسة/1981 | Yes |

**APPENDIX:**

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| **GRADING SCHEME**  **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 | **مقبول بقرار** | (45-49) | More work required but credit awarded |
| **F –** Fail | **راسب** | (0-44) | Considerable amount of work required |
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| Note: | |  |  | |
| NB 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. | | | | |

