

Course Description Template

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| 1. Module Name: | |
| Hydraulic Structures I | |
| 2. Module Code: | |
| WCV-41-07 | |
| 3. Semester / Year: | |
| FIRST semester / 2024-2025 | |
| 4. Date of Preparation of this Description: | |
| 15/9/2024 | |
| 5. Available Attendance Formats: | |
| In-person only | |
| 6. Total Credit Hours / Total Units: Total units 2 | |
| Total hours 48 (30 theoretical + 15 practical) | |
| 7. Name of the Course Coordinator (if there are multiple names): | |
| Assist lecturer Wurood Hussein Qhban Email: wurood.hussien@uowa.edu.iq | |
| 8. Module Objectives: | |
| <ul style="list-style-type: none"> Identify and understand the basic terms and concepts related to hydraulics and hydraulic structures, such as pressure and discharge, etc. Understand the process of designing and constructing hydraulic structures, including material selection, dimensions, capacities, and determining suitable locations for hydraulic projects. Evaluate the performance of hydraulic structures and examine the factors that may affect their efficiency and sustainability. Assess the costs and benefits of hydraulic projects and examine the economic aspects of their implementation. Develop the ability to think analytically and solve problems related to hydraulics and hydraulic structures. Achieving these objectives contributes to qualifying students or professionals to understand and apply the principles and techniques of | Module Objectives |

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| hydraulics in practical projects. | | | | | |
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| 9. Teaching and Learning Strategy | | | | | |
| <input checked="" type="checkbox"/> Presentations <input checked="" type="checkbox"/> Paper lectures and scientific resources <input checked="" type="checkbox"/> Practical lectures at work sites | | | | | Strategy: |
| 10. Module Structure | | | | | |
| Assessment Method | Learning Method | Unit or Topic Name | Required Learning Outcomes | Hours | Week |
| <input type="checkbox"/> Exams <input type="checkbox"/> Assignments <input type="checkbox"/> Reports <input type="checkbox"/> Exams + Participation | In-person | Hydraulic Structures | Introduction to Hydraulic Structures | 2 | 2-1 |
| | | | Seepage under Hydraulic Structures -Bligh's Creep Theory -Lane's Weighted Creep Theory -Khosla's Theory -thickness of floor- | 8 | 7-3 |
| | | | The Regulators -Type of regulator -The hydraulic design of regulator | 4 | 9-7 |
| | | | Hydraulic Jump | 2 | 10 |
| | | | Drop structure -Vertical drop -Inclined drop -Piped drop | 4 | 12-10 |
| | | | Stilling Basins -Advantages, Froud , Types | 4 | 14-12 |
| | | | Protection of approaches for concrete floors -Downstream Protection. -up stream Protection. | 4 | 16-14 |
| 11. Module Evaluation | | | | | |
| <input checked="" type="checkbox"/> 10 points (Daily preparation, daily and oral exams, homework, and classroom activities) <input checked="" type="checkbox"/> 30 points (Monthly exams) <input checked="" type="checkbox"/> 60 points (Final exam) | | | | | |
| 12. Learning and Teaching Resources. | | | | | |
| San Tosh, Kumar Garg,1998: Irrigation Engineering and Hydraulic Structures. | | | | Required Textbooks (if applicable) | |

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| Chow.V.T.1960: Open Channel Hydraulic. Mcgraw-Hill, New York | Main References (Sources) |
| | Recommended Supporting Books and References (current journals, reports, etc.) |
| | Electronic References, Websites |

