Course Description Form

|  |
| --- |
| 1. Course Name |
| Fiber Optic |
| 2. Course Code |
| WBM-31- 07 |
| 3. Semester/Year |
| Quarterly |
| 4. Date of preparation of this description |
| 19/3/2024 |
| 5. Available attendance forms |
| Weekly (theoretical) |
| 6. Number of credit hours (total) / total number of units |
| 60 Theoretical Hours / 3 Units |
| 7. Course Administrator Name |
| Name: Eng. Ali Mohamed Abdel SadaEmail: ali.mohammed@uowa.edu.iq |
| 8. Course Objectives |
| Course Objectives: | The topic of optical fibers aims to introduce the student to the communication system that depends on the optical cable and to identify the methods of manufacturing optical fibers and the materials manufactured from them, in addition to studying light and identifying its properties of refraction, reflection and scattering, as well as differentiating between types of communication and studying the losses that occur in light and also identifying the applications of optical cable in biomedicine |
| 9. Teaching and learning strategies |
| 1- Enable the student to understand optical communication in a simplified manner2- Introduce the student to the recognition of the optical cable3- Identify the structure and installation of the cable and its types4- Application and simulation of optical communication systems with programs |
| 10. Course Structure |
| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|  |  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1+2+3 | 6 | Optical Cable | Introduction to optical communications and optical fibers, their installation and manufacturing methods | Lectures presented in PDF format | Daily tests + homework + monthly tests |
| 4+5 | 4 | Light | Light characteristics and speed. | Lectures presented in PDF format | Daily tests + homework + monthly tests |
| 6+7 | 4 | Total regression | What is a perfect reflection, how does it happen, and the equations of reflection? | Lectures presented in PDF format | Daily tests + homework + monthly tests |
| 8+9 | 4 | Scattering | Types of scattering, its causes and mathematical equations. | Lectures presented in PDF format | Daily tests + homework + monthly tests |
| 10+11 | 4 | Refraction | How refraction occurs, its causes and examples of refraction | Lectures presented in PDF format | Daily tests + homework + monthly tests |
| 12+13 | 4 | Losses in light | Calculating losses and knowing the types of losses and their mathematical equations and examples | Theoretical + Practical | Daily tests + homework + monthly tests |
| 14+15 | 4 | Medical Optical Cable Applications | Identify and study the most important applications of optical cable in life medicine | Theoretical + Practical | Daily tests + homework + monthly tests |

|  |
| --- |
| 11. Course Evaluation |
| 1- Daily exams with practical and scientific questions.2- Participation grades for difficult competition questions among students.3. Setting grades for environmental duties and reports assigned to them.4- Semester exams for the curriculum in addition to the mid-year exam and the final exam. |
| 12. Teaching and Teaching Resources |
| Required textbooks | 1. Optical fiber communications principles and practice |
| Main references |         College library for additional curriculum resources.         View scientific websites to see the latest developments in the subject |
| Recommended books and references | All sober scientific journals related to optical communications |