

**Department of Mining, Petroleum and Metallurgical Engineering**

**Cairo University  
Faculty of Engineering**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Specifications** | | | | | | | | | | | | | | | | | |
| **Program(s) on which this course is given:** | | | | | | | Materials and Metallurgical Engineering | | | | | | | | | | |
| **Department offering the program:** | | | | | | | Department of Mining, Petroleum and Metallurgical Engineering | | | | | | | | | | |
| **Department offering the course:** | | | | | | | Department of Irrigation and Hydraulics | | | | | | | | | | |
| **Academic Level:** | | | | | | | 2nd Year | | | | | | | | | | |
| **Date** | | | | | | | 2014 | | | | | | | | | | |
| **Semester (based on final exam timing)** | | | | | | | Fall Spring | | | | | | | | | | |
| **A- Basic Information** | | | | | | | | | | | | | | | | | |
| **1. Title:** | **Fluid Mechanics** | | | | | | | | | **Code:** | | | **IHD201** | | | | |
| **2. Units/Credit hours per week:** | | Lectures | | | 4 | | | Tutorial | | | 0 | Practical | | **1** | | Total | 5 |
| **B- Professional Information** | | | | | | | | | | | | | | | | | |
| **1. Course description:** | | | | The aim of this course is: Establishing a good foundation fluid Mechanics for the student. | | | | | | | | | | | | | |
| **2. Intended Learning Outcomes of Course (ILOs):** | | | | **a) Knowledge and Understanding** | | | | | | | | | | | | | |
| 1. Concepts and theories of mathematics and sciences, appropriate to the discipline.  2. Engineering principles and Basic topics related with engineering generally and metals and alloys particularly including information and computer technology . | | | | | | | | | | | | | |
| **b) Intellectual Skills** | | | | | | | | | | | | | |
| 3. Select appropriate mathematical and computer-based methods for modeling and analyzing metallurgical problems.  4. Think in a creative and innovative way in problem solving and design considering quality assurance systems, codes of practice and standards, health and safety requirements, professional ethics and impacts of engineering solutions on society and environment.  5. Solve engineering problems, often on the basis of limited and possibly contradicting information appreciating the role of information technology in providing support for metallurgical engineers. | | | | | | | | | | | | | |
| **c) Professional and Practical Skills** | | | | | | | | | | | | | |
| 6. Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve metallurgical engineering problems. | | | | | | | | | | | | | |
| **d) General and Transferable Skills** | | | | | | | | | | | | | |
| 7. Communicate effectively | | | | | | | | | | | | | |
| **3. Contents** | | | | | | | | | | | | | | | | | |
| **Topic** | | | | | | **Total hours** | | | **Lectures hours** | | | | | | **Tutorial/ Practical hours** | | |
| Dimensions & Units | | | | | | 8 | | | 4 | | | | | | 2 | | |
| Hydrostatics | | | | | | 8 | | | 4 | | | | | | 4 | | |
| Buoyancy | | | | | | 8 | | | 4 | | | | | | 1 | | |
| Fluid kinematics | | | | | | 14 | | | 7 | | | | | | 4 | | |
| Momentum | | | | | | 6 | | | 3 | | | | | | 1 | | |
| Applications | | | | | | 12 | | | 6 | | | | | | 2 | | |
| **4. Teaching and Learning Methods** | | | | | | Lectures ( ) | | | Practical Training/ Laboratory ( ) | | | | | | Seminar/Workshop ( ) | | |
| Class Activity ( ) | | | Case Study ( ) | | | | | | Projects ( ) | | |
| E-learning ( ) | | | Assignments /Homework ( ) | | | | | | Other: | | |
| **5. Student Assessment Methods** | | | | | | | | | | | | | | | | | |
| * **Assessment Schedule** | | | | | | | | | **Week** | | | | | | | | |
| -Assessment 1; Class test | | | | | | | | |  | | | | | | | | |
| -Assessment 2; Project Assignment | | | | | | | | |  | | | | | | | | |
| -Assessment 3; Presentations | | | | | | | | |  | | | | | | | | |
| -Assessment 3; Midterm Exam | | | | | | | | |  | | | | | | | | |
| -Assessment 4; Final Exam | | | | | | | | |  | | | | | | | | |
| * **Weighting of Assessments** | | | | | | | | | | | | | | | | | |
| -Mid-Term Examination | | | | | | | | | 12.5% | | | | | | | | |
| -Final-term Examination | | | | | | | | | 70% | | | | | | | | |
| -Project | | | | | | | | | 5% | | | | | | | | |
| -Class Test | | | | | | | | | 12.5% | | | | | | | | |
| -Presentation | | | | | | | | |  | | | | | | | | |
| -Total | | | | | | | | | 100% | | | | | | | | |
| **6. List of References** | | | | | | | | | | | | | | | | | |
| * Course Notes | | | | | | | | | | | | | | | | | |
| * Essential Books (Text Books) | | | | | | | | | | | | | | | | | |
| * Suggested by the Academic Advisor * Fluid Mechanics (by Victor Streeter) | | | | | | | | | | | | | | | | | |
| * Recommended Books. | | | | | | | | | | | | | | | | | |
| * Suggested by the Academic Advisor | | | | | | | | | | | | | | | | | |
| * Periodicals, Web Sites, … etc: N/A | | | | | | | | | | | | | | | | | |
| **7. Facilities Required for Teaching and Learning** | | | | | | | | | | | | | | | | | |
| * Small group of students. | | | | | | | | | | | | | | | | | |
| * Up-to-date references in library. | | | | | | | | | | | | | | | | | |
| **Course Coordinator:** | | | **Prof. Dr. Emad Neseem** | | | | | | | | | | | | | | |
| **Head of Department:** | | | **Prof. Dr. El-Sayed El-Banna** | | | | | | | | | | | | | | |

