

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

**Cairo University  
Faculty of Engineering**

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| **Course Specifications** | | | | | | | | | | | | | | | | | |
| **Program(s) on which this course is given:** | | | | | | | Metallurgical Engineering | | | | | | | | | | |
| **Department offering the program:** | | | | | | | Mining, Petroleum and Metallurgical Engineering | | | | | | | | | | |
| **Department offering the course:** | | | | | | | Mining, Petroleum and Metallurgical Engineering | | | | | | | | | | |
| **Academic Level:** | | | | | | | 3 rd year | | | | | | | | | | |
| **Date** | | | | | | | 2014 | | | | | | | | | | |
| **Semester (based on final exam timing)** | | | | | | | Fall Spring | | | | | | | | | | |
| **A- Basic Information** | | | | | | | | | | | | | | | | | |
| **1. Title:** | Development of Industry | | | | | | | | | **Code:** | | | GEN 301 | | | | |
| **2. Units/Credit hours per week:** | | Lectures | | | 2 | | | Tutorial | | | 0 | Practical | | 0 | | Total | 2 |
| **B- Professional Information** | | | | | | | | | | | | | | | | | |
| **1. Course description:** | | | | Overall View of human activities in metal industry over the history of man Kind . | | | | | | | | | | | | | |
| **2. Intended Learning Outcomes of Course (ILOs):** | | | | **a) Knowledge and Understanding** | | | | | | | | | | | | | |
| 1. Extraction, purification and processing of metals and alloys. | | | | | | | | | | | | | |
| 2. Current engineering technologies and contemporary topics related to metallurgical engineering. | | | | | | | | | | | | | |
| **b) Intellectual Skills** | | | | | | | | | | | | | |
| 3. Think in a creative and innovative way in problem solving and design considering quality assurance systems, codes of practice and standards, health and safety. | | | | | | | | | | | | | |
| 4. Combine, exchange, and assess different ideas, views, knowledge from a range of sources in topics related to material processing, manufacturing development selection. | | | | | | | | | | | | | |
| 5. Judge engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact. | | | | | | | | | | | | | |
| **c) Professional and Practical Skills** | | | | | | | | | | | | | |
| 6. Prepare and present technical reports observing ethical aspects and using proper referencing and citation. | | | | | | | | | | | | | |
| **d) General and Transferable Skills** | | | | | | | | | | | | | |
| 7. Collaborate effectively within multidisciplinary team in stressful environment and within constraints and effectively manage tasks, time, and resources. | | | | | | | | | | | | | |
| 8. Search for information and engage in life-long self learning discipline. | | | | | | | | | | | | | |
| **3. Contents** | | | | | | | | | | | | | | | | | |
| **Topic** | | | | | | **Total hours** | | | **Lectures hours** | | | | | | **Tutorial/ Practical hours** | | |
| Bronze | | | | | | 3 | | |  | | | | | |  | | |
| Iron | | | | | | 3 | | |  | | | | | |  | | |
| Middle ages | | | | | | 3 | | |  | | | | | |  | | |
| Modern | | | | | | 6 | | |  | | | | | |  | | |
| Steel | | | | | | 4 | | |  | | | | | |  | | |
| Alloys | | | | | | 4 | | |  | | | | | |  | | |
| **4. Teaching and Learning Methods** | | | | | | Lectures (🗸) | | | Practical Training/ Laboratory ( ) | | | | | | Seminar/Workshop ( ) | | |
| Class Activity ( ) | | | Case Study ( ) | | | | | | Projects ( ) | | |
| E-learning ( ) | | | Assignments /Homework ( ) | | | | | | Other: - Report   * Internet search | | |
| **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 | | | | | | | | | 20 % | | | | | | | | |
| -Final-term Examination | | | | | | | | | 70 % | | | | | | | | |
| -Project | | | | | | | | |  | | | | | | | | |
| -Class Test | | | | | | | | |  | | | | | | | | |
| -Presentation | | | | | | | | |  | | | | | | | | |
| -Total | | | | | | | | | 100 % | | | | | | | | |
| **6. List of References** | | | | | | | | | | | | | | | | | |
| 6.1- Course Notes | | | | | | | | | | | | | | | | | |
| 6.2- Essential Books (Text Books) | | | | | | | | | | | | | | | | | |
| A History of Metals | | | | | | | | | | | | | | | | | |
| 6.3- Recommended Books | | | | | | | | | | | | | | | | | |
| Islamic Technology | | | | | | | | | | | | | | | | | |
| A History of Civilization. | | | | | | | | | | | | | | | | | |
| 6.4- Periodicals, Web Sites, … etc | | | | | | | | | | | | | | | | | |
| Materials World | | | | | | | | | | | | | | | | | |
| Archeometallurgy | | | | | | | | | | | | | | | | | |
| **7. Facilities Required for Teaching and Learning** | | | | | | | | | | | | | | | | | |
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| **Course Coordinator:** | | | Prof. Dr. Saad El- Raghy | | | | | | | | | | | | | | |
| **Head of Department:** | | | Prof. Dr. E.M. Elbanna | | | | | | | | | | | | | | |

