**King Saud University**

**College of Science**

**Chemistry Department**

**COURSE SYLLABUS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code & Number** | | **CHEM 333** | |
| **Course Title** | | **Industrial chemistry (2-2)** | |
| **Course Description** | | Industrial chemistry deals with commercial production of chemicals and related products from natural raw materials and their derivatives. This course focuses on the study of the fundamental concept and principles of classification of the chemical industry, raw materials, chemical processes, unit operations and unit processes. Learn how to construct the flow diagrams, material and energy balances, size reduction and size enlargement processes. Explain the magnetic and electrostatic separation, froth flotation, fractional distillation of mineral ores, and refining. Deep understanding of ammonia and Portland cement manufacturing and extractive metallurgy of iron, aluminum and copper and occurrence and extraction of petroleum fractional distillation, catalytic cracking and catalytic reforming during petroleum processing. In addition study the principals and types of batteries, manufacture of lead acid battery and lithium ion battery, charging and discharging of battery and energy storage devices. | |
| **Methods of Instruction** | | Lectures- Power point presentations, handouts, guide notes, seat work. | |
| **Required Textbook**  **And Reference Books** | | Industrial Chemistry by Helen Njeri NJENGA, African Virtual university  Handout provided by the lecturer. | |
| **Proposed Websites** | | - Chemical industry: From Wikipedia, the free encyclopedia http://en.wikipedia.org/Chemical\_industry | |
| **Grading Scheme** | | Homework, presentation, attendance 20%  Midterm Exams (1) 40%  Final Exam (Theory) 40%  Total 100% | |