|  |  |  |  |
| --- | --- | --- | --- |
| Date: | Examination No.: | Version: | Start: |
| **Module Name - Code** | Engineering Mechanics-I - 1101 | | |
| **Module Language:** | English | | |
| **Responsible:** | DR. Salahuddin A. Ahmed | | |
| **Lecture (s):** | DR. Salahuddin A. Ahmed | | |
| **College:** | College of Engineering – Salahaddin University | | |
| **Duration:** | 15 week – 1 semester | | |
| **Course outcomes:** | This course is to introduce the basic principles of engineering mechanics with emphasis on their analysis and application to practical engineering problems. After learning this course, you should have the ability to:   1. Solve for the resultants of any force systems. 2. Determine equivalent force systems. 3. Solve the problems associated with equilibrium of particles and equilibrium of rigid bodies. | | |
| **Course Content:** | Basic Concepts:  This chapter provides a historical background and an introduction to many of the fundamental concepts in engineering mechanics.  Force System:  A force can be defined as the action of one body on another body which changes or tends to change the motion of the body acted on. When several forces act in a given situation, they are called a system of forces. Force system can be classified according to the arrangement and plane as follows:  Collinear, Concurrent Coplanar, Parallel Coplanar, Non-concurrent, Non-parallel Coplanar, Concurrent, Non-coplanar, Parallel, Non-coplanar, Non-concurrent, Non-parallel, Non-coplanar.  Equilibrium of particles  Force System Resultants  Simplification of a Force and Couple System  Simplification of a Force and Couple System  Distributed Loading  Equilibrium of Rigid Body  Truss | | |
| **Literature:** | 1. R.C. Hibbeler, “Engineering Mechanics, Statics”, 12th edition in SI units, 2010.  2. J.L. Meriam, L.G. Kraige, “Engineering Mechanics, Statics”, 6th edition, 2006.  3. Pytel. Kiusalaas. “Engineering Mechanics, Statics”, 2nd edition, in SI units, 2001.  4. F.P. Beer, E.R. Johnston, E.R. Eisenberg, “Vector Mechanics for engineers, Statics”, 8th edition in SI units, 2007.  5. K.L. Kumar, “Engineering Mechanics”, 3rd revised edition, 2006.  6. Dietmar Gross, Werner Hauger, Jorg Schroder, Wolfgang A.Wall, Nimal Rajapakse “Engineering Mechanics, Statics”, 2009.  7. R.K. Bansal, “Engineering Mechanics”, 1st edition, 2009. | | |
| **Type of Teaching:** | 3 hrs in lectures  1 hr exercises. | | |
| **Pre-requisites:** | Background in physics and mathematics is recommended | | |
| **Frequency:** | Yearly in fall semester | | |
| **Requirements for credit points:** | For the award of credit points it is necessary to pass the module exam. Written 120 min, quizzes, homework, seminars.  **Student's attendance is required in all classes**. | | |
| **Credit point:** | 5 | | |
| **Grade Distribution:** | There will be a mid-term exam on December, class room activities, quizzes, home works and final course exam on January. The final grade will be calculated according the following criteria:   * Mid-term exam -----------------20 % * Activities --------------------------20 % * Final Exam ---------------------------60 % | | |
| **Work load:** | The workload is 150h. It is the result of 60h attendance and 90h self studies. | | |