GE 201
Statics

Department of Civil Engineering
King Saud University

Course Description: GE 201 Statics (Required for a BSCE degree)	Force systems; vector analysis, moments and couples in 2D and 3D. Equilibrium of force systems. Analysis of structures; plan trusses and frames. Distributed force system; centroids and composite bodies. Area moments of inertia. Analysis of beams. Friction. 3 (3,1, 0)
Prerequisite	MATH 106 and MATH 107, Prerequisite by Topics: 1. Knowledge of mathematics and physics. 2. Understanding calculus including, integration and matrices. 3. Determining the area properties of various cross sections.
Course Learning Outcomes	Students completing this course successfully will be able to 1. **Analyze 2D and 3D force system and calculate moment about any point/axis in a 2D and 3D structures** 2. **Analyze truss, beam, and frame structures using equilibrium equations** 3. **Locate centroid of regular and composite cross sections** 4. **Evaluate area moment of inertia of engineering cross sections about different axes.** 5. **Analyze and solve friction related equilibrium problems**
Topics Covered	1. Introduction (2 hrs) 2. Force Systems: 2D and 3D (15 hrs) 3. Equilibrium, system isolation (4 hrs) 4. Analysis of trusses and frames (8 hrs) 5. Distribution of forces, centroids and composite bodies (4 hrs) 6. Area moment of inertias (4 hrs) 7. Shear force and moment diagrams for simple determinate beams (3 hrs) 8. Friction (2 hrs)
Class/ tutorial Schedule	Class is held three times per week in 100-minute lecture sessions. There is also a 100-minute weekly tutorial associated with this course.
Contribution of Course to Meeting the Professional Component	Students learn the analysis process to be involved in designing various engineering components used in professional engineering.
Relationship of Course to Program Outcomes	1. Students apply algebra, elementary calculus, and engineering science 2. Students are able to identify and formulate an engineering problem and to develop a solution. 3. Students recognize the importance of analysis in designing various engineering components. 4. Students are encouraged to submit accurate analysis in an efficient and professional way. 5. Students recognize the importance of reading and understanding technical contents in English in order to achieve life–long learning and be able to carryout their responsibilities. 6. Students recognize the importance of working in multi-disciplinary teams.

Textbook(s) and/or Other Required Material	Engineering Mechanics, Volume 1, **Statics**, 7th Edition, SI units Version by J. L. Meriam and L. G. Kraige
Date	Summer Semester 1437-38 (2016-17)
Instructors	*Dr. Ali H. Altheeb* – Coordinator (Office: 2A63). aaltheeb@kse.edu.sa *Dr. Fahed Alrshoudi* (Office: 2A69). falrshoudi@ksu.edu.sa *Prof. Mohammad Jamal AlShannag* (Office: 2A31). mjshanag@ksu.edu.sa

Grade Distribution

Mid-term Exams	50%
Tutorial & Homework	10%
Final Exam	40%

Class Quizzes and Tutorial:

Quizzes will be conducted from time to time in both lecture and tutorial classes.

Tutorial marks will be based on attendance, quiz and homework.

Mid Term Exams:

First Mid-Term	**Wednesday** Week 4	**26 July 2017** (3 Thul-Qi'dah 1438H)	**7:00 – 8:30 pm**
Second Mid-Term	**Wednesday** Week 6	**9 August 2017** (17 Thul-Qi'dah 1438H)	**7:00 – 8:30 pm**