College of Engineering

Department of Civil Engineering

GE 201 Statics

Credit and Contact hours	3/ 3(Lectures), 1 (Tutorials), 0 (Laboratory)
Required, or Elective	Required for a BSCE degree
Course Description	Force systems; vector analysis, moments and couples in 2D and 3D. Equilibrium of force systems. Analysis of structures; plane trusses and frames. Distributed force system; centroids of simple and composite bodies. Area moments of inertia. Analysis of beams. Friction.
Prerequisites or Co-requisites	Integral Calculus (Math 106) and Vectors & Matrices (Math 107)
Course Learning Outcomes	Students completing this course successfully will be able to

Course Learning Outcomes	***Related Student Outcomes (SO)***
CLO1. Analyze 2D and 3D force system and calculate moment about any point/axis in a 2D and 3D structures	**SO1**
CLO2. Evaluate forces in the members of the trusses, beams, and pin-connected frame structures	**SO1**
CLO3. Evaluate centroid and moment of inertia of various engineering sections and Identify their importance in engineering analysis.	**SO1**
CLO4. Determine Shear force and moment for simple determinate beams	**SO1**
CLO5. Analyze and solve friction-related equilibrium problems.	**SO1**

Student Outcomes related to this Course	**SO1**. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics, [ABET 1] and using modern engineering tools.

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<tr><td>Topics Covered</td><td>
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<tr><th>List of Topics</th><th>Related CLOs</th></tr>
<tr><td>1. Introduction</td><td>CLO1</td></tr>
<tr><td>2. Force Systems: 2D and 3D</td><td>CLO1</td></tr>
<tr><td>3. Equilibrium, and free-body diagram</td><td>CLO2</td></tr>
<tr><td>4. Analysis of trusses and frames</td><td>CLO2</td></tr>
<tr><td>5. Distribution of forces, centroids and composite bodies</td><td>CLO3</td></tr>
<tr><td>6. Area moment of inertias</td><td>CLO3</td></tr>
<tr><td>7. Shear force and moment for simple determinate beams</td><td>CLO4</td></tr>
<tr><td>8. Friction</td><td>CLO5</td></tr>
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<tr><td>Textbook(s) and Other Required Material</td><td>J. L. Meriam and L. G. Kraige. Engineering Mechanics, Vol. 1, Statics, 7th Edition, SI Version, John Wiley & Sons.</td></tr>
<tr><td>Grading System</td><td>Two Mid-term Exams 50 %
Quizzes and assignments 10%
Final Exam: 40%</td></tr>
<tr><td>Instructors</td><td>Prof. Nadeem A. Siddiqui (2A89), email; nadeem@ksu.edu.sa
Prof. Iqbal Khan (2A83); email: miqbal@ksu.edu.sa
Dr. Ahmet Tuken (2A90), email; atuken@ksu.edu.sa
Dr. Ali Alqarni (2A25), email; aalqarni@ksu.edu.sa</td></tr>
<tr><td>Date of Review</td><td>November, 2020</td></tr>
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