

<b>Department of Civil Engineering</b>			
<b>Statics (61110)</b>			
<b>Total Credits</b>	<b>3</b>		
<b>major compulsory</b>			
<b>Prerequisites</b>	P1 : Calculus I (21101) P2 : General Physics I (22101)		
<b>Course Contents</b>			
This course introduces the students to the fundamental concepts of vectors, equilibrium of force system for particles and rigid bodies. It also looks at the application of principles of statics to structures, axial force, shear and bending moments, friction, centroid, and moment of inertia.			
<b>Intended Learning Outcomes (ILO's)</b>		<b>Student Outcomes (SO's)</b>	<b>Contribution</b>
1	Apply knowledge of mathematics, science and engineering to calculate components and resultants of forces.	A	30 %
2	Apply knowledge of mathematics, science and engineering to solve problems of static equilibrium for rigid bodies including frictional forces.	A	20 %
3	Identify, formulate and solve engineering problems to analyze trusses, frames and beams and draw shear force and bending moment diagram.	E	30 %
4	Ability to calculate internal force, centroids and moments of inertia for areas and bodies.	E	20 %
<b>Textbook and/ or References</b>			
1.Meriam, JL &Kraige, LG, Engineering Mechanics: Statics, sixth ed., SI version, John Wiley &Sons, 2003 2.Hibbeler, RC, Engineering Mechanics: Statics, 11th ed., Prentice-Hall, 2007			
<b>Assessment Criteria</b>		<b>Percent (%)</b>	
First Exam		20 %	
Second Exam		20 %	
Quizzes		10 %	
Final Exam		50 %	
<b>Course Plan</b>			
<b>Week</b>	<b>Topic</b>		
1	Introduction to statics: Basic Concepts of Mechanics, Scalars & Vectors		
2 & 3	Force Systems: Two Dimensional Force Systems		
4	Force Systems: Three Dimensional Force Systems		
5 & 6	Equilibrium: Two & Three Dimensional Equilibrium		
7	1st Midterm Exam		
8 & 9	Analysis of Structures: Plane Trusses & Frames		
10, 11 & 12	Distributed Forces: Centre of Gravity & Centroid, Shear Force & Bending Moment Diagrams.		
13	2nd Midterm Exam		
14	Moment of Inertia		
15	Friction		
16	Final Exam		