

Faculty of Mechanical Engineering / MECHANICAL ENGINEERING / STATICS

Course:	STATICS			
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exercises+Laboratory)
252	Mandatory	1	5	2+2+0
Programs	MECHANICAL ENGINEERING			
Prerequisites	There are no prerequisites for applying the course			
Aims	In this subject, the balance of mechanical objects is studied. The concept and types of forces are studied, the concept of moment of force is introduced. The balance of various types of supports and various types of loads is studied.			
Learning outcomes	After passing the exam, students will be able to: 1. Define the problem of static equilibrium of a mechanical system 2. Analyze the problem of static balance of a mechanical system 3. Solve the equations of static balance of the mechanical system 4. Analyze the solution of static balance of a mechanical system			
Lecturer / Teaching assistant	Prof. Olivera Jovanovic, PhD			
Methodology	Lectures, exercises, homework, colloquiums			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Elements of algebra, trigonometry and vectors			
I week exercises	Elements of algebra, trigonometry and vectors			
II week lectures	Elements of algebra, trigonometry and vectors			
II week exercises	Elements of algebra, trigonometry and vectors			
III week lectures	Basic terms and definitions			
III week exercises	Basic terms and definitions			
IV week lectures	Interface system of forces (Statics of a point). 1st homework			
IV week exercises	Interface system of forces (Statics of a point). 1st homework			
V week lectures	Moment of force for a point. Moment of force for the axis. Varignons theorem			
V week exercises	Moment of force for a point. Moment of force for the axis. Varignons theorem			
VI week lectures	Coupling forces. Force reduction in a point			
VI week exercises	Coupling forces. Force reduction in a point			
VII week lectures	Principal vector and principal moment. Basic theorem of statics. Equilibrium conditions under the action of an arbitrary system of forces. 2nd homework			
VII week exercises	Principal vector and principal moment. Basic theorem of statics. Equilibrium conditions under the action of an arbitrary system of forces. 2nd homework			
VIII week lectures	Equilibrium conditions in special cases			
VIII week exercises	Equilibrium conditions in special cases			
IX week lectures	1st colloquium			
IX week exercises	1st colloquium			
X week lectures	Friction of sliding, friction of rolling, friction of rope on cylindrical surface			
X week exercises	Friction of sliding, friction of rolling, friction of rope on cylindrical surface			
XI week lectures	Center of gravity. Methods for center of gravity determination. 3rd homework			
XI week exercises	Center of gravity. Methods for center of gravity determination. 3rd homework			
XII week lectures	Carriers. Internal and external forces. Static diagrams			
XII week exercises	Carriers. Internal and external forces. Static diagrams			
XIII week lectures	Carriers. Examples: Gerber beam and frame			
XIII week exercises	Carriers. Examples: Gerber beam and frame			

XIV week lectures	Grid. 4th homework					
XIV week exercises	Grid. 4th homework					
XV week lectures	2nd colloquium					
XV week exercises	2nd colloquium					
Student workload	Weekly 5 credits x 40/30 = 6 hours and 40 minutes Structure: 2 hours of lectures, 2 hours of exercises, 2 hours and 40 minutes of independent work, including consultations During the semester Lessons and final exam: (6 hours 40 minutes) x 16 = 106 hours 40 minutes Necessary preparations before the beginning of the semester (administration, registration, certification): 2 x (6 hours 40 minutes) = 13 hours 20 minutes Total workload for the course: 5 x 30 = 150 hours Additional work: 30 hours for exam preparation in the make-up exam period, including taking the make-up exam (remaining time from the first two items to the total load for the course 180 hours) Load structure: 106 hours 40 minutes (Teaching) + 13 hours 20 minutes (Preparation) + 30 hours (Additional work)					
Per week			Per semester			
5 credits x 40/30=6 hours and 40 minuts 2 sat(a) theoretical classes 0 sat(a) practical classes 2 excercises 2 hour(s) i 40 minuts of independent work, including consultations			Classes and final exam: 6 hour(s) i 40 minuts x 16 =106 hour(s) i 40 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 6 hour(s) i 40 minuts x 2 =13 hour(s) i 20 minuts Total workload for the subject: 5 x 30=150 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 30 hour(s) i 0 minuts Workload structure: 106 hour(s) i 40 minuts (courses), 13 hour(s) i 20 minuts (preparation), 30 hour(s) i 0 minuts (additional work)			
Student obligations			Students are required to attend classes regularly, do and submit assigned homework and do both colloquiums			
Consultations			Wednesday and Thursday 10-11 AM			
Literature			R.C. Hibbeler, Engineering Mechanics - Statics			
Examination methods			4 homeworks 4 x 4 = 16 class attendance 4 2 colloquiums 2 x 30 = 60 final exam 20 The colloquiums are written and consist of calculation tasks. The final exam is oral and includes theoretical questions. A passing grade is obtained if at least 50 points are accumulated cumulatively.			
Special remarks			For all information, students can contact the professor			
Comment						
Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points