Alanya Alaaddin Keykubat University | Rafet Kayış Faculty of Engineering
Mechanical Engineering Department
2021-2022 Spring Semester
SYLLABUS

Code/Name	MEC 102/Statics
Type	Required
Credit/ECTS	6/6
Hour per Week	4 (4+0+0)
Level/Year	Undergraduate/1
Semester	Spring
Classroom	TBA
Content	The course covers the following topics; statics of particles: forces in plane, forces in space, equilibrium, moment of a force, moment of a couple, equivalent systems of forces on rigid bodies, equilibrium in two dimensions, equilibrium in three dimensions, distributed forces: centroids and center of gravity, analysis of structures: trusses, frames and machines, internal forces in beams and cables, friction, moments of inertia of areas, moments of inertia of masses, method of virtual work.
Prerequisites	None
Textbooks	***Primary*** Engineering Mechanics-Statics, J.L.Meriam, L.G.Kraige, Wiley, 5th Edition, 2003, ISBN: 0-471-26607-8 ***Supplementary*** - Vector Mechanics for Engineers-Statics, 10th Edition,, F.P.Beer, E.R.Jonston, D.F.Mazurek,, McGraw-Hill, Inc., 2013, ISBN 978-1-259-00792-2
Objectives	1) To provide definition of force and moment vectors and give necessary vector algebra 2) To explain the concept of equilibrium of particles and rigid bodies in plane and 3D space 3) To give information about support types and to give ability to calculate support reactions 4) To explain the equilibrium of structures and internal forces in trusses, and frames 5) To give information about distributed loads 6) To provide information on moment of inertia 7) To explain virtual work concept.
Course Outcomes	In this course you will be able to: CO1 Knowledge of static force systems, statical indeterminacy and the geometric properties of structural elements (centroid, moment of inertia). CO2 Ability to solve engineering problems related to equilibrium of stationary mechanical systems.

Weekly Schedule of Topics

W	Topic
1-3	General principles, Force Vectors, Equilibrium of a Particle
4-6	Force System Resultants, Equilibrium of a Rigid Body
7-8	Structural Analysis
9-10	Internal Forces
11-13	Friction, Center of Gravity and Centroid
14	Center of Mass, Mass moment of Inertia

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	1	3	1	2	2	0	3	2
CO2	3	3	3	1	3	1	2	2	0	3	3

* Contribution Level | 0: None | 1: Very Low | 2: Low | 3: Medium | 4: High | 5: Very High

Special Conditions	• Students work in groups for presentation and assignment. • The consequence of violation of the attendance rule is to receive a grade of **NA.**
Requirements	Basic knowledge of a dynamic analysis software
Evaluation	Midterm Exam 25% Quizzes 25% Final Exam 50% Total 100%
Course Policy	1. You must attend at least 70% of the sessions including add-drop period. 2. Be in the class on time. 3. English should always be used to communicate with one another. 4. Mobile phone should be switched off and put away during the class. 5. You cannot talk to your friends during class no matter what the subject is.
Cheating & Plagiarism	• Copying or letting someone to copy your work on exams, assignments, or reports is cheating. • Cutting and pasting text, figures and tables from the web sources or any other electronic source is plagiarism. • The consequence of academic dishonesty is to receive a grade of **F** for the course.

Instructor

Name/Surname	Bertan Beylergil	Email	bertan.beylergil@alanya.edu.tr
Room	233	Office Hours	TBA

Prepared by Bertan Beylergil on September 19, 2021