



Меѓународен Универзитет Визион - International Vision University  
 Universiteti Ndërkombëtar Vizion - Uluslararası Vizyon Üniversitesi

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### SYLLABUS

COURSE NAME	COURSECODE	SEMESTER	COURSE LOAD	ECTS
BASIC PRINCIPLES OF STATICS	ARC-1005	1	150	5

<b>Prerequisite(s)</b>	None
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<b>Course Language</b>	Macedonian, Turkish, English
<b>Course Type</b>	Required
<b>Course Level</b>	First Cycle
<b>Course Lecturer</b>	
<b>Course Assistants</b>	
<b>Classroom</b>	
<b>Extra-Curricular Office Hours and Location</b>	<b>Meeting:</b> <b>Consultancy:</b>

<b>Course Objectives</b>	Determination of internal force distribution due to external loads in isostatic systems, stress controls in carrier system elements and transfer of sizing techniques to the student
<b>Course Learning Outcomes</b>	1 In addition to the development and diversity of carrier systems; to have knowledge about load types and bearing types 2 To calculate internal forces (normal force, cutting force) and moments (bending moment, torsion moment) consisting of external effects and to draw diagrams 3 To calculate the basic geometric characteristics of sections for use in sizing reinforced concrete, steel and wood carrier systems 4 Perch, crunchy material; learn about stress emissions, superior and weak properties of materials, stress emissions due to internal forces and moments 5 To learn about the sizing principles of the carrier system elements and the investigations required for sizing
<b>Course Contents</b>	Development of carrier systems in the past, Static Force, moment, loads, free body diagram, section effects in isostatic systems, calculation and drawing of T,M,N diagrams Strength Stresses, positive and negative aspects, conveyor system materials, perch and crunchy behavior Center of gravity, moments of inertia, inertial radiuses, static moment and strength moment concepts; Stresses consisting of normal force, cutting force, bending and torsional moment Sizing of carrier system elements for simple and compound section effects

**WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES**

<b>Week</b>	<b>Subjects</b>	<b>Related Preparation</b>
1	Introduction, development and diversity of carrier systems from past to present, free body diagrams and exercises	Related Chapters of Course Sources
2	Force, moment, build loads (vertical and lateral loads), balance equations, exercises	Related Chapters of Course Sources
3	Unfounded reactions and exercises, Homework 1	Related Chapters of Course Sources
4	Section effects, adjustments, Homework 2	Related Chapters of Course Sources
5	Section effects and diagrams, exercises, Homework 3	Related Chapters of Course Sources
6	History, development of lattice systems, calculation methods of rod forces in plane lattice systems, exercises, Homework 4	Related Chapters of Course Sources
7	Midterm Exam	Related Chapters of Course Sources
8	Introduction to strength, center of gravity in section, moment of inertia, inertial radius calculation, exercises	Related Chapters of Course Sources
9	Calculation of inertia moment, inertial radius, static moment concepts in reinforced concrete, steel, wood carrier system element insects, Homework 5	Related Chapters of Course Sources
10	Moment of inertia, moment of strength, radius of inertia	Related Chapters of Course Sources
11	Stretching types, positive and negative aspects and material behavior	Related Chapters of Course Sources
12	Normal force (N), pull and pressure bars, stability problem, exercises, Homework 6	Related Chapters of Course Sources
13	Tensile controls consisting of cutting force (T) and bending moment (M), table control, exercises, Homework 7	Related Chapters of Course Sources
14	Compound bending (M+N) state, exercises, Homework 8, Quiz 2 N	Related Chapters of Course Sources
15	Final Exam	Related Chapters of Course Sources

**ECTS / WORKLOAD TABLE**

Presentation / Seminar			
Hours for off-the-classroom study (Pre-study, practice)	14	3	42
Midterm Exam	1	12	12
Final examination	1	14	14
<b>Total Work Load</b>			
<b>ECTS</b>			<b>6</b>

**GENERAL PRINCIPLE RELATED WITH COURSE**

Dear students,

In order to be included, learn and achieve full success that you deserve in the courses you need to come well prepared by reading the basic and secondary textbooks. We are expecting from you carefully to obey to the course hours, not to interrupt the lessons unless is very indispensable, to be an active participant on the courses, easily to communicate with the other professor and classmates, and to be interactive by participating to the class discussions. In case of unethical behavior both in courses or on exams, will be acting in framework of the relevant regulations. The attendance of the students will be checked in the beginning, in the middle or at the end of the lessons. Throughout the semester the students who attend to all lectures will be given 15 activity-attendance points in addition to their exam grades.

**SOURCES**

<b>COMPULSORY LITERATURE</b>		
No	Name of the book	Author's Name, Publishing House, Publication Year
1	Принципи на статиката	Тромбева Гаврилооска, А., Самарџиоска, Т. Универзитет „Св. Кирил и Методиј“ во Скопје, 2016
2	Statik & Ders Notları	Bahar Özdemir ,Zamanin Ruhü Yayincilik 2018
	Vector mechanics for engineers: Statics	Beer, F., Johnston, E., R, The McGraw-Hill Companies, 1996

<b>ADDITIONAL LITERATURE</b>		
No	Name of the book	Author's Name, Publishing House, Publication Year
1	Statik	Ahmet Refah Torun, Karahan Kitabevi 2018
2		
3		

## EVALUATION SYSTEM

<b>Underlying the Assessment Studies</b>	<b>NUMBER</b>	<b>PERCENTAGE OF GRADE</b>
Attendance/Participation	15	%10
Project / Event	1	%20
Mid-Term Exam	1	%35
Final Exam	1	%35
<b>TOTAL</b>	<b>17</b>	<b>%100</b>

## ETHICAL CODE OF THE UNIVERSITY

In case of the students are cheating or attempt to cheat on exams, and in the case of not to reference the sources used in seminar studies, assignments, projects and presentations, in accordance to the legislations of the Ministry of Education and Science of Republic of Macedonia and International Vision University, will be applied the relevant disciplinary rules. International Vision University students are expected never to attempt to this kind of behavior.