

COURSE SYLLABUS SEMESTER

Name of Course	MECHANICS II. (DYNAMICS)
Course Code	MSB257AN-EA-00, MSB257AN-GY-01
Allotment of Hours per Week	1 lecture, 2 practice
Number of Credits	4
Program	Civil Engineering BSc
Evaluation	EXAM
Semester	Spring 2020/2021
Prerequisites	Mechanics I. (Statics)
Department	Department of Civil Engineering
Instructor	Dr Adél Len

INTRODUCTION, GENERAL COURSE DESCRIPTION

Introduction into the fundamentals of the dynamics - kinematics and kinetics of a particle and of the rigid body, collisions.

LEARNING OBJECTIVES

Methodology: The aim of the course is to introduce the students into the following themes: kinematics and kinetics of a particle, constrained motion, kinematics and kinetics of rigid bodies, work and power theorems, energy and conservation of energy, centric collisions.

Schedule:

Lecture 1	Introduction into Dynamics
Lecture 2	Kinematics of a particle 1
Lecture 3	Kinematics of a particle 2
Lecture 4	Kinematics of the rigid body 1
Lecture 5	Kinematics of the rigid body 2
Lecture 6	Instantaneous and finite motions
Lecture 7	Rigid body in plane motion
Lecture 8	Students questions, consultation
9	<i>Midterm exam</i>
Lecture 10	Kinetics of a particle 1
Lecture 10	Kinetics of a particle 2
Lecture 11	Kinetics of rigid body
Lecture 13	Collisions, Maxwell diagram
Lecture 14	Students questions, consultation

Practice

The practical classes have the objective to solve practical tasks, exercises related to the theoretical lecture.

ATTENDANCE AND GRADING**Attendance:**

Attending is required all classes, and will impact the grade (max. 10%). Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

Grading:

Accumulated knowledge is tested in one midterm exam (topic: Kinematics) and a final exam (topic: Kinetics and Collisions), both containing theoretical questions and exercises. Both exams have to reach the minimum acceptable level (51% of the maximum points). Failed or skipped midterm exams can be repeated once (first week of the exam period). The final exam can be repeated twice in the exam period. Registering for the final exam is only possible with the completed midterm exam.

Offered exam grade:

Evaluation in percent	Numeric grade
85%-100%	5
74%-84%	4
63%-73%	3
51%-62%	2
0-50%	1

READINGS AND REFERENCE MATERIALS

- J.L. Meriam, L.G. Kraige: Engineering Mechanics, Dynamics. John Wiley and Sons. 2003
- Beer, F.P., Johnston, E. R.: Vector Mechanics for Engineers. Dynamics, McGraw-Hill, 2004
- Tongue, B.H., Sheppard, S.D.: Dynamics. Analysis and Design of Systems in Motion, John Wiley and Sons, 2005
- William T. Thomson: Theory of Vibration with application, Chapman & Hall

