COURSE SYLLABUS AND COURSE REQUIREMENTS
ACADEMIC YEAR 2022/23 SEMESTER 1

Course title	*Introduction to Engineering Mathematics*
Course Code	MSB071AN-Gy-01, SZE093AN-GY-01
Hours/Week: le/pr/lab	*2 practices*
Credits	2
Degree Programme	Civil-, Electrical- Computer science engineering BSc
Study Mode	*full-time class*
Requirements	course grade
Teaching Period	2022/23 Semester 1
Prerequisites	-
Department(s)	Engineering Mathematics
Course Director	Ildikó Perjésiné Hámori PhD, associate professor
Teaching Staff	*Ágnes Lieberné Éliás, lecturer*
Hours/Week: le/pr/lab	*0/2/0*

COURSE DESCRIPTION

A short description of the course (max. 10 sentences).
Neptun: Instruction/Subjects/Subject Details/Basic data/Subject description

This practical course aims to give students a solid mathematics basis by covering the following topics: sets of numbers (natural, integer, rational, real numbers); vectors and operations with vectors, scalar and vector products and their applications; sets and operations with sets;, solving linear equation systems definition of functions. Presentation of elementary functions; polynomials; rational functions; algebraic functions, trigonometric and logarithmic functions. Progressions of real numbers

Students learn the basics of mathematics enabling them to interpret and understand engineering mathematics and through solving elementary tasks they deepen their basic theoretical knowledge in the field of engineering.

SYLLABUS

Neptun: Instruction/Subjects/Subject Details/Syllabus

1. GOALS AND OBJECTIVES

Goals, student learning outcome.
Neptun: Instruction/Subjects/Subject Details/Syllabus/Goal of Instruction

Upon completion of this course the student should be able to: **interpret,** and **put into practice**

- **a.** operations with real numbers,
- **b.** operations with vectors
- **c.** elementary, trigonometric, exponential, logarithmic functions and their properties
- **d.** progressions

2. COURSE CONTENT

Neptun: Instruction/Subjects/Subject Details/Syllabus/Subject content

	TOPICS
PRACTICE	**a.** operations with vectors, **b.** elementary functions in one variable, **c.** sequences of real numbers **d.** differential calculus of functions

DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

PRACTICE, LABORATORY PRACTICE

week	**Topic**	**Compulsory reading; page number (from … to …)**	**Required tasks (assignments, tests, etc.)**	**Completion date, due date**
1.	Introduction to the Course, practicing			8th week
2.	Orientation test			
3.	Operations on the Real Numbers, (polynomials, factoring, algebraic fractions, rational expressions, exponents and radicals, logarithm)	[1.] 2-11, 779-795	Midterm 1	8th week
4.	Vectors (operations with vectors, absolute value, scalar product, vector product, applications)	ppt	Midterm 1	8th week
5.	Linear and Quadratic Equations, Inequalities	[1.] 21-27, 40-48, 54-58, 228-245	Midterm 1	8th week
6.	Solving System of Equations, Arithmetic and Geometric Progressions	[520-5291.]	Midterm 1	8th week
7.	Elementary Functions (graphs of functions, properties of functions, transformations)	[1.]80-98, 129-139	Midterm 1	8th week
8.	Midterm 1			
9.	AUTUMN BREAK			
10.	Exponential and Logarithmic Functions (composite function, inverse function)	[1.]274-303, 110-128	Midterm 2	14th week
11.	Trigonometric functions (operations with trigonometric expressions)	[1.]350-368	Midterm 2	14th week
12.	Evaluation of Special Products, the binomial theorem. Algebraic Manipulations for Resolution of the Derivative of Power Functions,	[1.]185-209	Midterm 2	14th week
13.	The derivative of irrational base functions (power, root, exponential, trigonometric) is given by primary algebraic manipulations.	ppt	Midterm 2	14th week
14.	Midterm 2		Midterm 2	14th week
15.	Retake			14th week

3. ASSESSMENT AND EVALUATION

(Neptun: Instruction/Subjects/Subject Details/Syllabus/Examination and Evaluation System)

ATTENDANCE

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.

Method for monitoring attendance *(e.g.: attendance sheet / online test/ register, etc.)*

Attendance sheet

ASSESSMENT

Cells of the appropriate type of requirement is to be filled out (course-units resulting in mid-term grade or examination). Cells of the other type can be deleted.

Course resulting in mid-term grade *(PTE TVSz 40§(3))*

Mid-term assessments, performance evaluation and their ratio in the final grade *(The samples in the table to be deleted.)*

Type	Assessment	Ratio in the final grade
Midterm1	*50 point*	*50 %*
Midterm2	*50 point*	*50 %*

Opportunity and procedure for re-takes (PTE TVSz 47§(4))

The specific regulations for improving grades and resitting tests must be read and applied according to the general Code of Studies and Examinations. E.g.: all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

If the student misses one or both tests they can be retaken in the first week of the exam period (17th December 2022). The same applies to improving previous grades.

Grade calculation as a percentage

based on the aggregate performance according to the following table

The lower limit given at each grade belongs to that grade.

Course grade	Performance in %
excellent (5)	85 % …
good (4)	70 % ... 85 %
satisfactory (3)	55 % ... 70 %
pass (2)	40 % ... 55 %
fail (1)	below 40 %

The lower limit given at each grade belongs to that grade.

4. SPECIFIED LITERATURE

In order of relevance. (In Neptun ES: Instruction/Subject/Subject details/Syllabus/Literature)

COMPULSORY READING AND AVAILABILITY

[1.] Demana, Waits, Foley, Kennedy (8th edition) : Precalculus: graphical, numerical, algebraic

[2.] Stitz, Seager (2013): Precalculus