<table>
<tr><td>COURSE NAME</td><td colspan="5">Linear Algebra I</td></tr>
<tr><td>Code</td><td>PMM832</td><td>Year of study</td><td colspan="3">1st year of undergraduate study</td></tr>
<tr><td>Course teacher</td><td>Gordan Radobolja</td><td>Credits (ECTS)</td><td colspan="3">8</td></tr>
<tr><td rowspan="2">Associate teachers</td><td rowspan="2"></td><td rowspan="2">Type of instruction (number of hours)</td><td>L</td><td>S</td><td>E</td></tr>
<tr><td>45</td><td></td><td>45</td></tr>
<tr><td>Status of the course</td><td>Compulsory course</td><td>Percentage of application of e-learning</td><td colspan="3">15%</td></tr>
<tr><td colspan="6">COURSE DESCRIPTION</td></tr>
<tr><td>Course objectives</td><td colspan="5">The aim of the course is to introduce students to the knowledge and skills in classical algebra of vectors and analytic geometry. Students will adopt an elementary knowledge in basic algebraic structures and vector spaces.</td></tr>
<tr><td>Course enrolment requirements and entry competences required for the course</td><td colspan="5">Prerequisites: none
Entry competences: Knowledge of secondary school mathematics</td></tr>
<tr><td>Learning outcomes expected at the level of the course (4 to 10 learning outcomes)</td><td colspan="5">Students will be able to :
- formulate the theorems and definitions of classic algebra of vectors, analytic geometry, and elementary algebraic structures,
- present in a clear manner correct mathematical reasoning and proofs,
- distinguish and give examples of elementary algebraic structures,
- demonstrate understanding of the concepts of vector space and subspace,
- solve problems within the course content.</td></tr>
<tr><td>Course content broken down in detail by weekly class schedule (syllabus)</td><td colspan="5">Classic algebra of vectors.
The notion of a vector, magnitude and direction. Addition of vectors. (3) Vectors and scalars. Base and dimension. Coordinatization. (3)
The scalar (dot) product of two vectors. The vector (cross) product of two vectors. The scalar triple product. (4)
Elements of analytic geometry.
Cartesian coordinate systems. Three-dimensional analytic geometry. Points, lines, and planes. Various forms of the equation of a plane. The distance from a point to a plane. Angle between two planes. (4) Various forms of the equation of a line. The distance from a point to a line. The distance between two lines. (4) Quadratic curves. The standard equation of quadratic curves. Quadratic surfaces. Some others coordinate systems. (4)
Algebraic structures.
Definitions and examples. (3) Groups and subgroups. (5) Group homomorphism. (3) Rings and fields. (2)
Vector spaces, basic definitions and examples. (2) Linearly (in)dependent vectors. Vector space bases and dimension. (4) Subspaces of a vector space, the sum of subspaces. Quotient space. (4)</td></tr>
<tr><td>Format of instruction</td><td colspan="5">Lectures and tutorial sessions.</td></tr>
<tr><td>Student responsibilities</td><td colspan="5">Class attendance. Students are expected to be present at least 70% of classes.</td></tr>
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Screening student work *(name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)*	Class attendance: 4 ECTS. Partial exams/Written exam: 2 ECTS Final exam: 2 ECTS.
Grading and evaluating student work in class and at the final exam	There are 2 partial written exams during the semester and the final exam. Passing the both partial exams or the final written exam allows students to take the oral exam. Successfully passing the oral exam leads to a successful completion of the course.
Required literature (available in the library and via other media)	K. Horvatić, Linearna algebra I i II, PMF – Matematički odjel, HMD, Zagreb, 1995. N. Elezović, A. Aglić, Linearna algebra, Element, Zagreb, 1999. N. Bakić, A. Milas, Zbirka zadataka iz linearne algebre s rješenjima, PMF–Matematički odjel, HMD, Zagreb, 1995. N. Elezović, A. Aglić, Linearna algebra, Zbirka zadataka, Element, Zagreb, 1999.
Optional literature (at the time of submission of study programme proposal)	B. Pavković, D. Veljan, Elementarna matematika 2, Školska knjiga, Zagreb, 1994. S. Kurepa, Konačnodimenzionalni vektorski prostori i primjene, Liber, Zagreb 1992.
Quality assurance methods that ensure the acquisition of exit competences	Anonymous student evaluations according to the regulations of the University of Split and summarizing test results.
Other (as the proposer wishes to add)	