| NAME OF THE COURSE | Mathematics II | | | | | |
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| **Code** | PMM852 | Year of study | 1st year of undergraduate study | | | |
| Course teacher | doc. dr. sc. Gordan Radobolja | Credits (ECTS) | 7,0 | | | |
| Associate teachers | Jelena Pleština, mag. math. | Type of instruction (number of hours) | P | S | V | T |
| | | | 45 | | 45 | |
| Status of the course | | Percentage of application of e-learning | 30 | | | |
| **COURSE DESCRIPTION** | | | | | | |
| Course objectives | Focus on intuitive presentation of mathematical theory and on illustrative examples in order to prepare the students for future courses. | | | | | |
| Course enrolment requirements and entry competences required for the course | Courses taken: Mathematics I | | | | | |
| Learning outcomes expected at the level of the course (4 to 10 learning outcomes) | Successful students will be able to - represent vectors analytically and geometrically, and compute dot and cross products for presentations of lines and planes; - geometrically interpret lines and planes equations, as well as equations of second order curves and surfaces; - compute limits and derivatives of functions of 2 and 3 variables; - apply derivative concepts to solve optimization problems; - use double and triple integrals for area and volume. - recognize and solve first order differential equations and linear DE of higher order | | | | | |
| Course content broken down in detail by weekly class schedule (syllabus) | - Vector algebra (4) - Analytic geometry of planes and lines (4) - Plane and space coordinate systems (3) - 2nd order curves and surfaces (3) - Multivariable scalar functions (2) - Limit and continuity of multivariable scalar functions (2) - Partial derivatives (3) - Differential and tangent plane (3) - Local extrema (4) - Optimization and Lagrange multiplier (3) - Double and triple integral (3) - Fubini's theorem, change of variables (3) - Applications of double and triple integral (2) - 1st order ODE (3) - 2nd order ODE (3) | | | | | |
| Format of instruction | Frontal lectures | | | | | |
| Student responsibilities | Attending lectures | | | | | |

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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)* | attending lectures (3) three partial exams (3) oral exam (1) |
| Grading and evaluating student work in class and at the final exam | During semester, students write three tests with practical and theoretical tasks. |
| Required literature (available in the library and via other media) | - I. Slapničar, Matematika 1, FESB, Split, 2002. (http://lavica.fesb.hr/mat1/) - I. Slapničar, Matematika 2, FESB, Split, 2002. http://lavica.fesb.hr/mat2/) - B.P. Demidovič, Zadaci i riješeni primjeri iz više matematike, Tehnička knjiga, Zagreb, 1989. - I. Slapničar, J. Barić, M. Ninčević, Matematika 1 – zbirka zadataka, FESB, Split, 2010. |
| Optional literature (at the time of submission of study programme proposal) | - K. Horvatić, Linearna algebra, 9. izdanje, Tehnička knijga, Zagreb, 2004. - N. Uglešić, Viša matematika I and II, skripta, PMF, Split. - Bradič, Pečarić, Matematika za tehnološke fakultete, Element, Zagreb - P.V. Minorski, Zbirka zadataka iz više matematike, Tehnička knijga, Zagreb, 1990. |
| Quality assurance methods that ensure the acquisition of exit competences | Discussion in classes and official student survey. |
| Other (as the proposer wishes to add) | |