## Course title: Mathematics I

| Course Basic Information | |
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| **Academic Unit:** | **Faculty of Civil Engineering** |
| **Course Name:** | **Mathematics I** |
| **Level:** | **Bachelor** |
| **Course Status:** | **Mandatory** |
| **Year of Study:** | **I  (first)** |
| **Number of Hours per Week:** | **3+2** |
| **ECTS Credits:** | **9** |
| **Time /Venue:** | **Faculty of Civil Engineering** |
| **Course Teacher:** | **Prof.Dr.Abdullah Zejnullahu** |
| **Contact Details:** | **e-mail:** abdullah.zejnullahu@uni-pr.edu www.fn.uni-pr.edu |
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| **Course Description** | The subject concentrates on the information from the field of mathematics with the aim to facilitate and help other subjects from the field engineering. |
| **Course Objectives:** | Introduction with the mathematical knowledge applicable in the sciences of Civil Engineering. |
| **Learning Outcomes:** | At the end of this course students will be able to use and to understand concepts of higher Mathematics with the aim to use this knowledge as an aide in other subjects which use mathematical apparatus. Upon completion of this course students will be able to: <br> - apply numerical sets while analyzing and presenting other concepts from algebra as well as mathematical analysis <br> - to understand the concept of matrix and determinants, to know the properties of determinants which are used in solving of the system of equations. <br> - to solve systems of equations in a different manner <br> - to understand the concept of vectors, linear and non-linear operations with vectors, application of vector properties in the technical sciences. <br> - to present different forms of the equation of plane and line in the space as well as their mutual relations. <br> - to present in the geometrical and analytic way the forms of surfaces in the space. |

| Student Workload (Consistent with the Learning Outcomes) | | | |
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| **Activity** | **Hours** | **Day/ Week** | **Total** |
| Lectures | 3 | 15 | 45 |
| Theory/ Lab Work | 2 | 15 | 30 |
| Practical Work | | | |
| Contact Hours with Teacher /Consultations during Office Hours | 2 | 10 | 40 |
| Field Work | | | |
| Colloquium, Seminars | 9 | 2 | 18 |
| Homework | 2 | 15 | 30 |

| Self-study Time (in the Library or at Home) | 2 | 15 | 30 |
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| Final Exam Preparation | 5 | 5 | 25 |
| Evaluations (Tests, Quiz, Final exam) | 3 | 2 | 6 |
| Projects, Presentations, etc. | | | |
| **Total** | | | **224** |

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| **Teaching Methodology:** | Lectures and exercises |
| **Evaluation Methods:** | First assessment 20%<br>Second Assessment 20%<br>Activity during exercises 10%<br>Attendance 5%<br>Final Exam 45% |

| Literature | |
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| **Basic Literature:** | 1. Fevzi Berisha-Abdullah Zejnullahu: Matematika- për arkitekturë , 1996, Prishtinë.<br>2. Fevzi Berisha: Përmbledhje detyrash të provimit nga matematika1,2, Prishtinë 2006. |
| **Additional Literature:** | 1. Ejup Hamiti – Matematika I, II. Elektro - Prishtinë<br>2. Isak Hoxha – Matematika I,I  Ndërtimtari, Prishtinë<br>3. Ismet Dehiri – Matematika I,II  Fakultet Teknik, Prishtinë<br>4. Përmbledhje të ndryshme të detyrave<br>5. Interneti |

| **Course Plan:** | |
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| *Week 1:* | Real numbers |
| *Week 2:* | Mathematical induction, binomial formula |
| *Week 3:* | Complex numbers |
| *Week 4:* | Power and the root of complex number |
| *Week 5:* | Matrix, operations |
| *Week 6:* | Determinants, inverse matrix |
| *Week 7:* | System of linear equations |
| *Week 8:* | Methods for solving systems of equations |
| *Week 9:* | Analytic geometry in space |
| *Week 10:* | Linear operations with vectors |
| *Week 11:* | Scalar product of vectors |
| *Week 12:* | Vector and mixed product |
| *Week 13:* | Equation of the plane |
| *Week 14:* | Equation of the line |
| *Week 15:* | Surfaces |

| **Academic Policies and Rules of Civility:** |
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| **Silence during classes**<br>**Turning down cell phones.**<br>**Punctuality**<br>**Respecting student Regulations** |