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| **Basic details of the subject** |
| Academic Unit:  | FMNS –Department of Chemistry |
| Course title: | Mathematics I |
| Level: | Bachelor |
| Course status: | Obligatory |
| Study year: | 1st |
| Number of hours per week: | 2+2 |
| Credit value – ECTS: | 6 |
| Time/location |  |
| Subject teacher: | Rexhep Gjergji |
| Contact details | rgjergji@yahoo.com |
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| **Subject description:** | This course, together with the continuing course in the next semester, creates the basis of the mathematical knowledge for a future chemist. This course will enable the students to successfully grasp the professional courses in which mathematics is used as a science work apparatus. |
| **Subject purpose:** | The purpose of the course will be to enable the students to apply the gained knowledge in other chemistry courses and their professional completion. |
| **Expected results:** | After the succesful completion of the coursethe students will be able to: implement the understandings of numerical sets, complex numbers, matric theory,determinant theory, the theory of linear equation systems, in solving professional and everyday life problems, always finding the optimal solution. |
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| **Volume and quantity of necessary student work (it should correspond with the students results in learning):** |
| **Activity** | **Hours**  |  **Days/weeks** | **Total** |
| Lectures | 2 | 15 | 30 |
| Lab exercise | 2 | 15 | 30 |
| Practical work  |  |  |  |
| The contact with lecturer/consults | 1 | 15 | 15 |
| Field exercise |  |  |  |
| Colloquium, seminars | 2 | 2 | 4 |
| Homework |  |  |  |
| Time of self-learning of student (library or home) | 4 | 15 | 60 |
| The final preparation for exam |  |  | 8 |
| Time for student evaluation (tests, quiz, final exam) |  |  | 3 |
| Projects, presentations ,etc.  |  |  |  |
| **Total** |  |  | **150** |
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| **Methods of teaching:** | Lectures, discussions, exercises, consultations, tests, exams. |
| **Methods of evaluation:** | First evaluation (test): 20%Second evaluation(test) : 20%Attendance: 5%Homework: 5%Final exam: 50%Total: 100% |
| **Literature** |  |
| **Base literature:** | 1. R. Gjergji : Prepared lectures (part of the book)
2. R. Gjergji, R. Zejnullahu : Solved Mathematics exercises for students of Chemistry , ...
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| **Additional literature:** | 1. R. Zejnullahu: Advanced Mathematics Course, Prishtinë, 1995
2. I. Hoxha: Mathematics I (solved exercises), Prishtine, 1997
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| **Detailed lesson plan:**  |
| **Week** | ***Lesson that will be held*** |
| ***First week:*** | *Introduction to the course content, literature and the methods of evaluation.* |
| ***Second week:*** | *Sets and operations with sets. Numerical sets.* |
| ***Third week:*** | *Operations with decimal numbers. Interpreting fractions as decimal numbers and vice-versa, interpreting decimal numbers as fractions. Powers-roots and operations with them.* |
| ***Fourth week:*** | *Proportions and percentages.*  |
| ***Fifth week:***  | *Elements from trigonometry.*  |
| ***Sixth week:*** | *Complex numbers.* |
| ***Seventh week:***  | *Complex numbers in trigonometric form and operations with complex numbers in trigonometric form.* |
| ***Seventh week:***  | *Matrices, some kinds of matrices. Operations with matrices: sum of matrices, multiplying matrices with scalar.*  |
| ***Seventh week:***  | *Multiplying matrices and the properties of matrices. Transponation of matrices. Basic matric transformations.*  |
| ***Seventh week:***  | *Introduction to determinants.* *Determinants of second order and third order.*  |
| ***Seventh week:***  | *Properties of determinants and their illustration with examples.*  |
| ***Seventh week:***  | *Minors and algebraic complements. Laplace theorem for calculating the determinant of order n. Examples* |
| ***Seventh week:***  | *Inverse matric and its properties. Matric order. Examples*  |
| ***Seventh week:***  | *Introduction to the system of linear equations and its solution. Gauss method for solving systems of linear equations.* |
| ***Seventh week:***  | *Cramer’s method and matric method for solving systems of linear equations.*  |
|  | *Homogeneous systems of linear equations.* |

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| **Academic policies and rules of conduct:** |
| Students will follow the lectures regularly and will contribute to the professional and collegial atmosphere , always in accordance with the Statute of the University of Prishtina and other rules of the University and Faculty. Especially, students will not pertain in activities such as plagiarism, prohibited cooperation, test copying from others or permitting others to copy their tests, fraud or usage of any object in order to commit fraud in tests or final exam. Usage of cellphones or any other electrical device that can disrupt the teaching process will be prohibited.  |