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| Basic details of the subject |
| Academic Unit:  | FMNS –Department of Chemistry |
| Course title: | Mathematics II |
| Level: | Bachelor |
| Course status: | Obligatory |
| Study year: | 1st, second semester |
| Number of hours per week: | 3+2 |
| Credit value – ECTS: | 6 |
| Time / location: |  |
| Lecturer: | Rexhep Gjergji |
| Contact details:  | rgjergji@yahoo.com |
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| Subject description: | This course is the continuation of the course Mathematic, and to some degree, 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 goal of this course will be to enable the students to apply the gained knowledge in other chemistry courses and their professional completion. |
| Expected results: | It is expected for the students to know:-limits of progression, convergent processes and limits of various functions-function derivatives and their use in chemical processes-integration of various classes of functions and the use of definite integral in finding surface areas ect. |
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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 , Prishtinë, 2002
3. B. O. Connell: Business Statistics in practice, Miami University, 2003
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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. Definition of function limit.  |
| *Second week:* | Basic limit laws**.** Some important limits. Exercises  |
| *Third week:* | Definition of function derivative. Derivation rules. |
| *Fourth week:* | The derivative of a complex function. The derivative of an inverse function. The derivative of a parametric function. |
| *Fifth week:* | Basic functions derivatives. Derivatives of higher orders. |
| *Sixth week:* | Function differential. Differentials of higher orders. Functions with multiple variables. |
| *Seventh week:* | Partial derivatives. |
| *Eighth week:*  | Definition of indefinite integral. Basic properties of indefinite integral. Table of integrals of basic functions. |
| *Ninth week:* | Methods for integration: direct, by substitution, by parts. Integration of rational functions. |
| *Tenth week:* | The definition of the integral as a set of primitive functionsNewton-Leibniz formula. Applications**.** |
| *Eleventh week:* | Introduction to Statistics. Descriptive and differential statistics. Statistics analysis, grouping after characteristics.  |
| *Twelfth week:* | The phases of statistical research. Arithmetic, geometric and harmonic mean.  |
| *Thirteenth week:* | Mode, median, quartile. |
| *Fourteenth week:* | Variance and standard deviation. |
| *Fifteenth week:* | Managing risks through variance and standard deviation |

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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 cellophanes or any other electrical device that can disrupt the teaching process will be prohibited.  |