# GENERAL  MATHEMATIC I

| 1 | Course Title: | GENERAL  MATHEMATIC I |
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| 2 | Course Code: | MAT1097 |
| 3 | Type of Course: | Compulsory |
| 4 | Level of Course: | First Cycle |
| 5 | Year of Study: | 1 |
| 6 | Semester: | 1 |
| 7 | ECTS Credits Allocated: | 5.00 |
| 8 | Theoretical (hour/week): | 4.00 |
| 9 | Practice (hour/week): | 0.00 |
| 10 | Laboratory (hour/week): | 0 |
| 11 | Prerequisites: | no |
| 12 | Language: | Turkish |
| 13 | Mode of Delivery: | Face to face |
| 14 | Course Coordinator: | Prof. Dr. SİBEL YALÇIN |
| 15 | Course Lecturers: | Doç.Dr.Ahmet TEKCAN |
| 16 | Contact information of the Course Coordinator: | Uludağ Üniversitesi Fen-Edebiyat Fakültesi Matematik Bölümü 16059 Görükle-Bursa-TÜRKİYE syalcın@uludag.edu.tr, +90 224 2941758 |
| 17 | Website: | |
| 18 | Objective of the Course: | is to give sufficient mathematics knowledge to solve chemical problems to students and also to improve the ability of finding solution to problems and analytical thinking. |
| 19 | Contribution of the Course to Professional Development: | |
| 20 | Learning Outcomes: | |

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| | 1 | Calculates limit of functions |
| | 2 | Determines whether a function is continuous or not |
| | 3 | Knows the concept of derivative |
| | 4 | Learns the rules of calculating derivative |
| | 5 | Calculates derivative of functions |
| | 6 | Sketches graphs of functions |
| | 7 | Learn to problems of maximum-minimum |
| | 8 | |
| | 9 | |
| | 10 | |

| 21 | Course Content: | |
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| Course Content: | |
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| Week | Theoretical | Practice |
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| 1 | Numbers. | |
| 2 | Cartesian product, relation, types of relations. | |
| 3 | Functions, properties of functions, type of functions | |
| 4 | The definition of limit and rules of limit, continuity | |

| 5 | The definition of derivative and derivation rules, the geometrical application of derivative, implicit derivative. | |
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| 6 | Derivative of some special functions | |
| 7 | Problems of change | |
| 8 | Midterm exam and evaluation of midterm exam | |
| 9 | Increasing and decreasing functions | |
| 10 | Fundamental theorems on derivative: Rolle and Main Value Theorems | |
| 11 | Maximum and minimum problems | |
| 12 | Critical points, increasing, decreasing, convex, concave | |
| 13 | L' Hospital rule on limits by using derivative | |
| 14 | Graphs of functions | |

| 22 | Textbooks, References and/or Other Materials: | [1] Genel Matematik, Mustafa Balcı, Balcı Yayınları, 2003. [2] Genel Matematik, Diferensiyel ve İntegral Hesap, Osman Bizim, Ahmet Tekcan, Betül Gezer. Dora Yayınları, 2011 [3] A First Course in Calculus, Serge Lang, World Student Series Third Edition, Addison-Wesley Publishing Company. [4] Thomas Calculus, 11. Edition,Pearson Addison-Wesley Publishing Company, 2005 |
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| Activites | | | Number | Duration (hour) | Total Work Load (hour) |
|---|---|---|---|---|---|
| Theoretical | R | | 14 | 4.00 | 56.00 |
| Midterm Exam | 1 | 1.00 | | | |
| Practicals/Labs | | | 0 | 0.00 | 0.00 |
| Quiz | 0 | 0.00 | | | |
| Self study and preperation | | | 14 | 5.00 | 70.00 |
| Homeworks | | | 0 | 0.00 | 0.00 |
| Final Exam | 1 | 60.00 | | | |
| Projects | | | 0 | 0.00 | 0.00 |
| Field Studies | | | 0 | 0.00 | 0.00 |
| Contribution of Term (Year) Learning Activities to Success Grade | 40.00 | | 1 | 12.00 | 12.00 |
| Midterm exams | | | | | |
| Others | | | 0 | 0.00 | 0.00 |
| Contribution of Final Exam to Success Grade | 60.00 | | | | |
| Final Exams | | | 1 | 12.00 | 12.00 |
| Total | 100.00 | | | | |
| Total Work Load | | | | | 150.00 |
| Measurement and Evaluation Techniques Used in the Course | | | | | 5.00 |
| Total work load/ 30 m | | | | | |
| ECTS Credit of the Course | | | | | 5.00 |
| 24 | ECTS / WORK LOAD TABLE | | | | |

| 25 | CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 |
| ÖK1 | 0 | 3 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 |
| ÖK2 | 0 | 3 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 |
| ÖK3 | 0 | 3 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 |
| ÖK4 | 0 | 3 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 |

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| **ÖK5** | 0 | 3 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 |
| **ÖK6** | 0 | 3 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 |
| **ÖK7** | 0 | 3 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 |

**LO: Learning Objectives    PQ: Program Qualifications**

| **Contribution Level:** | **1 very low** | **2 low** | **3  Medium** | **4 High** | **5 Very High** |
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