# ORGANIC CHEMISTRY LABORATORY I

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| 1 | Course Title: | ORGANIC CHEMISTRY LABORATORY I |
| 2 | Course Code: | KIM2013 |
| 3 | Type of Course: | Compulsory |
| 4 | Level of Course: | First Cycle |
| 5 | Year of Study: | 2 |
| 6 | Semester: | 3 |
| 7 | ECTS Credits Allocated: | 4.00 |
| 8 | Theoretical (hour/week): | 0.00 |
| 9 | Practice (hour/week): | 0.00 |
| 10 | Laboratory (hour/week): | 4 |
| 11 | Prerequisites: | None |
| 12 | Language: | Turkish |
| 13 | Mode of Delivery: | Face to face |
| 14 | Course Coordinator: | Prof. Dr. MUSTAFA TAVASLI |
| 15 | Course Lecturers: | Prof.Dr. Mustafa Tavaslı<br>Doç.Dr. Nevin Arıkan Ölmez |
| 16 | Contact information of the Course Coordinator: | coskun@uludag.edu.tr<br>+90 224 29 41 725<br>Uludağ Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, 16059 Görükle / BURSA, TÜRKİYE |
| 17 | Website: | |
| 18 | Objective of the Course: | The aim of the course is to make sure students understand organic syntheses, isolation and characterization techniques. |
| 19 | Contribution of the Course to Professional Development: | |
| 20 | Learning Outcomes: | |

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| | 1 | Learning the risks (personel and environmental) about organic compounds and use the compounds with this consciousness |
| | 2 | Beholding practical the general properties of some organic compounds |
| | 3 | Becoming conscious about organic synthesis |
| | 4 | Developing of the knowledge and experience about the isolation of the product after organic synthesis |
| | 5 | Earning the organic laboratory culture |
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| 21 | Course Content: | |
| | **Course Content:** | |
| Week | Theoretical | Practice |
| 1 | | Introduction  General information  Safety rules |

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| **2** | | Crystallization<br>- Crystallization of salicylic acid from salicylic acid-sand mixture<br>. Quiz |
| **3** | | Destillation<br>- Separating of ethyl acetate and 1-butanol liquids which mixed with each other via simple and fractional distillation techniques<br>. Quiz |
| **4** | | Chemical active extraction<br>- Separating of the solid mixture consist of biphenyl, 3-nitroaniline and benzoic acid via chemical active extraction based on acid-base reactions<br>. Quiz |
| **5** | | Isolation of caffeine from tea<br>- Isolation of caffeine from tea solvent via extraction method<br>- Preparation of caffeine-salicylate derivative for proving the accuracy of isolated caffeine<br>. Quiz |
| **6** | | Column and thin layer chromatography<br>- Isolation of chlorophyl and ß-carotene from spinach via column chromatography<br>- Applying of the isolated chlorophyl and ß-carotene to thin layer chromatography for determination of Rf values<br>. Quiz |
| **7** | | Synthesis of sulpha drugs (First week)<br>- Synthesis of p-Acetamidobenzenesulphonyl chloride<br>. Quiz |
| **8** | | Problem solving<br>Midterm |
| **9** | | Problem solving |
| **10** | | Luminole synthesis<br>- Synthesis of 3-aminophthalic acid<br>. Quiz |
| **11** | | - Synthesis of pthalimide and anthranilic acid<br>Quiz |
| **12** | | - Synthesis of phenylglycine-o-carboxylic acid<br>Quiz |
| **13** | | Indigo synthesis (Third week)<br>- Synthesis of indigo |
| **14** | | Reduction of camphore<br>- Reduction of camphore to isoborneol via NaBH4<br>. Quiz |

| Activites | Number | Duration (hour) | Total Work Load (hour) |
|---|---|---|---|
| Theoretical | 0 | 0.00 | 0.00 |
| Practicals/Labs | 14 | 4.00 | 56.00 |
| Self study and preperation | 14 | 0.50 | 7.00 |
| Homeworks | 0 | 0.00 | 0.00 |
| Projects | 0 | 0.00 | 0.00 |
| Field Studies | 0 | 0.00 | 0.00 |
| Midterm exams | 1 | 24.00 | 24.00 |
| Others | 12 | 0.50 | 6.00 |
| Final Exams | 1 | 24.00 | 24.00 |
| Total Work Load | | | 117.00 |
| Total work load/ 30 hr | | | 3.90 |
| ECTS Credit of the Course | | | 4.00 |

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| **22** | Textbooks, References and/or Other Materials: | 1) G. Solomons ve C. Fryhle ;(Çev. Ed. G. Okay ve Y. Yıldırır), Organik Kimya; Literatür Yayınları, 2002.<br>2) Kenneth L. Williamson ; Macroscale and Microscale Organic Experiments,; D.C. Healt and Company, 1989.<br>3) Brian S. Furniss, Antony J. Hannaford, Peter W.G. Smith, Austin R. Tatchell; Vogel's Textbook of Practical Organic Chemistry,; Longman Scientific &Technical,; 1989.<br>4) Ender Erdik, Metin Obalı, Nadire Yüksekışık, Atilla Öktemer, Tarık Pekel, İhsanoğlu; Denel Organic Kimya; A.Ü.F.F Döner Sermaye İşletmesi yayınları, 2000. |
| **23** | Assesment | |

| TERM LEARNING ACTIVITIES | NUMBER | WEIGHT |
|---|---|---|
| Midterm Exam | 1 | 25.00 |
| Quiz | 1 | 25.00 |
| Home work-project | 0 | 0.00 |
| Final Exam | 1 | 50.00 |
| Total | 3 | 100.00 |
| Contribution of Term (Year) Learning Activities to Success Grade | | 50.00 |
| Contribution of Final Exam to Success Grade | | 50.00 |
| Total | | 100.00 |
| Measurement and Evaluation Techniques Used in the Course | | |

| 24 | ECTS / WORK LOAD TABLE |
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| 25 | CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS | | | | | | | | | | | | | | | |
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| | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 |
| ÖK1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ÖK2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ÖK3 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ÖK4 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ÖK5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 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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