**TEMPLATE FOR COURSE SPECIFICATION**

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |

**Course Instructor: Asst. prof. Dr. khalid khazzal hummadi**

**COURSE SPECIFICATION**

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| This course is concerned with the identification of organic chemistry, preparation &reactions, and properties. Environmental impact of organic compound, petroleum products, halogenated and dehalogenated solvents, pesticides, environmental significance of petroleum products**.** |

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| University of Baghdad /College of Engineering | 1. Teaching Institution |
| Environmental Engineering Department | 2. University Department/Centre |
| Organic Chemistry EnE | 3. Course title/code |
| Annual System: They attend in electronic mode 2 hrs. a Week. | 4. Modes of Attendance offered |
| Annual | 5. Semester/Year |
| 60 hrs./ 2 hrs per week | 6. Number of hours tuition (total) |
| 2019 | 7. Date of production/revision of this specification |
| **8. Aims of the Course** | |
| The main objectives of the course are:  1. To understand organic chemistry fundamentals,  2. To understand the principles, instrumentation and applications of chemical.  3. To perform to dealing with organic materials in environmental engineering. | |

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| **9· Learning Outcomes, Teaching ,Learning and Assessment Method**   1. **Cognitive goals.**   **At the end of the year the students should gain:**  A1. Essential dealing with principles organic chemistry results  A2. Studying the groups of organic chemistry.  A3. Preparation of organic components.  A4. Learning the reaction of organic materials.  A5. Study the mechanical of reactions for the organic reactions.  A6. Attract and welcome undergraduate students to our Bachelor of Science program in Environmental Engineering, and to graduate B.S. students who are innovative problem solvers, who become leaders in their organizations, and who possess the knowledge and skills required for a wide range of careers and career changes. |
| **B. The skills goals special to the course**  **B1.**  Essential of organic and skills in organic chemistry.  **B2.** Concentrating on scientific research and its leading role in helping to serve the society and solving its problems through conducting application researches  **Teaching and Learning Methods**  1- Lectures.  2- Homework and Assignments.  3- Tests and Exams.  4- In-Class Questions and Discussions.  5- Connection between Theory and Application.  6- In- and Out-Class oral conservations. |
| **Assessment Methods**  1. Examinations, Tests, and Quizzes.  2. Student Engagement during Lectures.  3. Responses Obtained from Students, Questionnaire about curriculum and faculty member (Instructor)***.***  4***.*** Home work related to problem solving. |
| C. Affective and value goals  C1.Applicable skills to learn the role of organic chemistry in environmental .  C2. Dealing with organic to solve the pollutants .  C3. Research and analysis**.**  C4. Prepare students for successful careers in environmental engineering. |
| Teaching and Learning Methods  Intensive studies of regulations |
| Assessment methods |
| Case studies |
| D. General and rehabilitative transferred skills(other skills relevant to employability and personal development) |
| D1. Become more effective, independent and confident self-directed learners  D2. Improve their general skills for study and career management  D3. Articulate personal goals and evaluate progress towards their achievement  D4. An ability to identify, formulate, and solve engineering problems. |

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| **10. Course Structure** | | | | | |
| Assessment Method | Teaching  Method | Unit/Module or Topic Title | ILOs | Hours | Week |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Review of fundamental concepts | 1&2 | 2 (Theo.) | 1 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Good lab. practice | 1 &2 | 2 (Theo.) | 2 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Classification and identification of organic compounds | 1 &2 | 2 (Theo.) | 3 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | structural characterization of organic compounds | 1 &2 | 2 (Theo.) | 4 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Alkanes , definition ,names of alkanes components | 1 &2 | 2 (Theo.) | 5 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Reactions of alkanes | 1,2,&3 | 2 (Theo.) | 6 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Preparation of alkanes | 1,2,&3 | 2 (Theo.) | 7 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Alkenes ,definition ,names of components | 2,3 &4 | 2 (Theo.) | 8 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Reactions and preparation of alkenes | 2,3 &4 | 2 (Theo.) | 9 |
| ------------- | Electronic | Examination | -------- | 2 (Theo.) | 10 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Alkynes, definition and names of components | 2,3 &4 | 2 (Theo.) | 11 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Reactions of alkynes components | 2,3 &4 | 2 (Theo.) | 12 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Aromatic ,definitions ,names of components | 2,3 &4 | 2 (Theo.) | 13 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Reactions | 2,3 &4 | 2 (Theo.) | 14 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Preparation of alkynes components | 2,3 &4 | 2 (Theo.) | 15 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Alkyl halides | 2,3 &4 | 2 (Theo.) | 16 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Reaction | 2,3 &4 | 2 (Theo.) | 17 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | preperation | 2,3 &4 | 2 (Theo.) | 18 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Alcoholes | 2,3 &4 | 2 (Theo.) | 19 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Reaction and preprations | 2,3 &4 | 2 (Theo.) | 20 |
| ------------------ | Electronic | Examination | ------- | 2 (Theo.) | 21 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Ethers | 5 | 2 (Theo.) | 22 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Aldehydes and ketones | 5 | 2 (Theo.) | 23 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Carboxylic acids | 5 | 2 (Theo.) | 24 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | Preparations and reactions | 5 | 2 (Theo.) | 25 |
| ---------------------- | Electronic | Examination | --------- | 2 (Theo.) | 26 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | environmental significance of petroleum products |  | 2 (Theo.) | 27 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | selected polymers |  | 2 (Theo.) | 28 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | pesticides | 1,2,3,4&5 | 2 (Theo.) | 29 |
| Questions during the lectures ,quiz, exam, present in the class | Electronic | industrial intermediate | 1,2,3,4&5 | 2 (Theo.) | 30 |

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| 11. Infrastructure | |
| S.Nafls Haider, 2008"Fundamentals of Organic Chemistry". Rajendra printers NewDelhi. | 1. Books required reading: |
| Schaum s , 1999"Theory and problems of organic chemistry"Third Edition. McGraw-Hill | 1. Main references (sources) |
| Smith, 2006" Organic Chemistry". McGraw-Hill  Francis A.Carey, 2006" Organic Chemistry". McGraw-Hill | A- Recommended books and references (scientific journals, reports…). |
| <https://chem.libretexts.org/Bookshelves/organic_Chemistry/Book%3A_A>  [https://www.sciencedirect.com/book/9780125551601/organic -chemistry](https://www.sciencedirect.com/book/9780125551601/analytical-chemistry)  https://www.nature.com/articles/062292b0 | B-Electronic references, Internet  sites |

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| 12. The development of the curriculum plan  Not to relay on traditional examinations but the creation of reports following the reading of textbooks. These reports are validated and transformed into academic credits for graduation purposes. |