**Course Specifications**

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| **University** | Beni-Suef |
| **Faculty** | Pharmacy |
| **Dept.** | **Pharmaceutical Organic Chemistry** |

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| **1-Course Info.** |
| **Programme(s) on which the course is given: Clicnical Pharmacy Programme** |
| **Course Name and code No.: Pharmaceutical Organic chemistry 2/ PC203** |
| **Academic year/ Level: 2015-16-level 1-semester 2** |
| **Credit hours:** Lecture (2.) hour + Practical (1) hour  |

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| **2-Overall Aim of the Course****By the end of this course, the student should be able to name, identify different classes of** **aromatic compounds in addition to understanding the basic theories and applications of** **spectroscopy in organic chemistry. The students should be able to use the knowledge gained to** **interpret spectroscopic data and identify the chemical structure of an organic compound.** **Through the knowledge and skills gained, students should be able to differentiate between** **organic compounds using chemical tests and spectroscopic methods.** |
| **3-Intended Learning Outcomes of the course (ILOs)**  |
| **a. Knowledge and understanding****After completion of this course, the student should be able to:****a1- Demonstrate knowledge and understanding of principles of aromaticity and spectroscopy**  **a2- Describe different spectroscopic methods**  **a3- Enumerate types, properties and chemical synthesis of aromatic organic compounds** |
| **b. Professional and Practical Skills****After completing this course, the student should be able to:****b1- Use the suitable spectroscopic method differentiating between different organic classes** **b2- interpret data obtained from IR, 1HNMR, 13CNMR charts.** **b3- Handle samples, reagents and other chemicals safely.****b4- identify different organic compounds using chemical tests** |
| **c. Intellectual Skills****After completing this course, the student should be able to:** **b1- Apply spectroscopic method for organic compound identification** **b2- Suggest suitable chemical test for organic compound separation****b3- compare between different classes of aromatic compounds** |
| **d. General and Transferable Skills****By the end of this course, the student should be able to:****d1- Demonstrate time management ability and decision-making skills.****d2- Use critical thinking in problem-solving.** |

| **4-Course Contents** |
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| **Topics** | **No. of hours** |
| **Tutorial / Practical** | **Lecture** |
| The Concept of Aromaticity and Aromatic compounds , Huckel`s Rule for Aromaticity |  | 2 |
| Electrophilic aromatic substitution reactions |  | 2 |
| Effect of substituents on reactivity and orientation |  | 2 |
| Alkylbenzene, Aryl Halides |  | 2 |
| Aromatic amines  |  | 2 |
| Phenols |  | 2 |
| Aromatic carbonyl compounds |  | 2 |
| Ultraviolet spectroscopy |  | 2 |
| Infra-red spectroscopy |  | 2 |
| 1H-NMR spectroscopy |  | 2 |
| 13C-NMR spectroscopy |  | 2 |
| Mass spectroscopy |  | 2 |
| Identification of aromatic alcohols and aldehydes | 1 |  |
| Identification of phenols | 1 |  |
| Identification of aromatic carboxylic acids, derivatives (esters) | 2 |  |
| Identification of aromatic amines, amine salts, diazodization reactions | 2 |  |
| Identification of aromatic hydrocarbons | 1 |  |
| Identification of poly nuclear aromatic compounds | 1 |  |
| Revision and assessments | 3 |  |
| Total | 12 | 24 |

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| **5- Teaching and learning Methods** LecturesPractical sessionshome exercisesProblem solving and working in groups |
| **7- Student Assessment Methods** |
| **a-Methods**Exercises to assess knowledge and understanding of the course.Practical exam to assess ability for identification of an unknown organic chemistry.Written exam to assess knowledge and understanding of the course.Oral exam to assess verbal presentation of the basic knowledge and ability to answer questions in a limited time.**b- Assessment Schedule**Assessment 1: Exercises ……WeeklyAssessment 2: quiz 1…… week 3-4Assessment 3: quiz 2…….week 8-9Assessment 4: Practical exam……Week 10-12Assessment 5: Final written exam…Week 12-13Assessment 6: Final oral exam … Week 12-13(According to the exam time table)**c- Weighting of Assessment Marks**Semester work: 10%Practical exam 25%Final written exam: 50% Final oral exam: 15%**Total : 100%** |
| **8-List of References** |
| 1. **Notes**

Course Notes "Theoretical and practical Notes by the department teaching staff |
| **b. Mandatory Books**Organic chemistry, 6­­­­­­­­­th ed., R. T. Morrison and Boyed (2003) |
| **c. Suggested Books** |
| **d. Journals** |

**Course Coordinator:** Ass. Prof. Eman K. Ahmed

Head of department: Ass. Prof. Eman K. Ahmed

**Date:** 9/ 2017