**Course Specifications**

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

|  |
| --- |
| **1-Course Info.** |
| **Programme(s) on which the course is given: Pharmaceutical Sciences Programme** |
| **Course Name and code No.: Organic chemistry-4 / 505** |
| **Academic year/ Level: 2018-19-second term-second year** |
| **Credit hours:** Lecture (2) hour + Practical (1) hour  |

|  |
| --- |
| **2-Overall Aim of the Course**By the end of this course, the student should be able to name, identify aromatic carbonyl compounds ,fused and non-fused heterocyclic compounds. The students should be able to use the knowledge gained to draw the chemical structure of a heterocyclic compound. Through the knowledge and skills gained, students should be able to differentiate between organic compounds using chemical tests and to practice simple organic synthesis using different reactions. |
| **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 principles of aromatic compounds and heterocyclesa2- Describe different synthetic methods for carbonyl aromatic, heterocyclic compoundsa3- Enumerate types, properties and chemical synthesis of aromatic and heterocyclic compounds |
| **b. Professional and Practical Skills**After completing this course, the student should be able to:b1- Use the suitable synthetic method for different organic / heterocyclic compoundsb2-identify organic compounds practically using different chemical tests. b3- Handle samples, reagents and other chemicals safely. |
| **c. Intellectual Skills**After completing this course, the student should be able to: c1- Apply appropriate synthetic methods for synthesis of different organic compounds from their starting materialsc2- Suggest suitable chemical test fororganic compound identificationb3- 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,critical thinking in problem-solving and decision-making skills.d2- Use. Workeffectively in a team. |

| **4-Course Contents** |
| --- |
| **Topics** | **No. of hours** |
| **Tutorial / Practical** | **Lecture** |
| introduction to heterocyclic chemistry and Nomenclature of non fusedheterocycles |  | 2 |
| Nomenclature of non fusedheterocycles |  | 2 |
| Six memberd rings contain one heteroatom (pyridine) [chemical properties-chemical reactions-synthesis] |  | 2 |
| Benzo pyridines (quinoline&isoquinoline) [chemical properties-chemical reactions-synthesis] |  | 2 |
| Six memberd rings contain two heteroatom (diazines) [chemical properties-chemical reactions-synthesis] |  | 2 |
| five memberd rings contain one heteroatom (pyrrole-thiophene-furan) [chemical properties-chemical reactions-synthesis] |  | 2 |
| five memberd rings contain two heteroatom (thiazole-oxazole-pyrazole) [chemical properties-chemical reactions-synthesis] |  | 2 |
| Benzopyrrole (indole&isoindole) [chemical properties-chemical reactions-synthesis] |  | 2 |
| Aromatic aldehyds, ketons |  | 4 |
| Aromatic carboxylic acids &deivatives |  | 4 |
| Identification of ethyl alcohol, carboxylic acids, Esterification of ethyl alcohol, Preparation of ethyl benzoate | 3 |  |
| Preparation of phenylhydrazone of benzaldehyde | 1 |  |
| Preparation of 4-(phenylazo)-1-naphtol | 1 |  |
| Nitration of Naphthalene | 1 |  |
| Preparation of naphthalene and anthracene picrate | 1 |  |
| Preparation of Benzanilide | 1 |  |
| Identification of sugars, Osazone formation  | 2 |  |
| Revision and practical assessments | 2 |  |
| Total | 12 | 24 |

|  |
| --- |
| **5- Teaching and learning Methods** * Lectures
* Practical sessions
* homework exercises
* Problem solving, brain storming and working in groups
 |
| **7- Student Assessment Methods** |
| 1. **Methods**
* Exercises
* Practical exam
* Written exam
* Oral exam

**b- Assessment Schedule*** Assessment 1: Exercises ……Weekly
* Assessment 2: Practical exam……Week 12
* Assessment 3: Final written exam…Week 13-14
* Assessment 4: Final oral exam … Week 13-14

(According to the exam time table)**c- Weighting of Assessment Marks**

|  |  |  |
| --- | --- | --- |
| **Type of****Assessment** | **Marks** | **Weight (%)** |
| Practical exam  | 50 | 33.5% |
| Final written exam  | 80  | 53% |
| Final oral exam | 20 | 13.5% |
| Total  | 150 | 100% |

 |
| **8-List of References** |
| 1. **Notes**

Theoretical and practical course 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:** Dr- Wael Fadaly

Head of department: Prof. Eman K. Ahmed

**Date:** 10 / 2018