



### Course specification

**University/Academy:** Alexandria

**Faculty/Institute:** Science

**Department:** Chemistry

#### 1. course Data:

Course code: Chem. 321	Course title: Organic Chemistry 2	Academic year/level:2009/2010 Third year /1 <sup>st</sup> term
Specialization: Zoology and chemistry	No. of instructional units: lecture <input type="text" value="2hrs/week"/> practical <input type="text" value="5hr/week"/>	

#### 2. course Aim

By the end of this course, students should be able to:

- Recognize basic concepts of stereochemistry.
- Realize the principles of nomenclature, classification, Preparation and reactions Polynuclear aromatic hydrocarbons: Fused rings (naphthalene, anthracene, phenanthracene, pyrene and chrysene). Isolated rings (biphenyl system).
- Recognize basic concepts of Spectroscopic techniques and Application of spectroscopic



techniques in the identification of organic compounds by IR, UV,  $^1\text{H}$ -NMR,  $^{13}\text{C}$ -NMR and mass spectra.

### 3. Intended learning outcome

#### a) Knowledge and understanding

By the end of this course, students should be able to:

A1 : show the Application of spectroscopic techniques in the identification of organic compounds by IR, UV,  $^1\text{H}$ -NMR,  $^{13}\text{C}$ -NMR and mass spectra.

A2: list the principles of nomenclature, classification, Preparation and reactions of Polynuclear aromatic hydrocarbons.

A3 : summarize basic concepts of stereochemistry.

#### b) Intellectual skills

By the end of this course, students should be able to:

B1: analyze different types of chemical calculations and describe the structures and preparation of Polynuclear aromatic hydrocarbons.

B2: use the Applications of stereochemistry in the identification of organic compounds.

B3: Apply the spectroscopic techniques in



	the identification of organic compounds by IR, UV, $^1\text{H-NMR}$ , $^{13}\text{C-NMR}$ and mass spectra.
<b>c) Professional skills</b>	By the end of the course, student will be able to: C1:P reape Simple organic compounds C2:examine the Applications of stereochemistry.
<b>d) General skills</b>	D1:Use IT and web search engines for collecting information. D2:Work effectively in a team, and independently on solving organic chemistry problems. D3:Exchange ideas, principles and information by oral, written and visual means. D4:Communicate effectively with his lecturer and colleagues.
<b>4. course content</b>	<b>Stereochemistry</b> (Geometrical and optical isomerism <b>Polynuclear aromatic hydrocarbons:</b> Fused rings (naphthalene, anthracene, phenanthracene, pyrene and chrysene). Isolated rings (biphenyl system). <b>Spectroscopic identification</b> of organic compounds by IR, UV, $^1\text{H-NMR}$ , $^{13}\text{C-NMR}$ and mass spectra.



<b>5. Teaching and learning methods</b>	5.1. Lectures and seminars using data show and board. 5.2. Laboratory work and assignment. 5.3. Problem classes and group tutorial. 5.4. Reports and discussion groups
<b>6. teaching and learning methods for students with special needs</b>	-----
<b>7. Student Assessment</b>	7.1. Mid term exam. 7.2. Practical exam. 7.3. Problems. 7.4. Assignments 7.5 Written exam.
<b>a) Procedures used:</b>	-----
<b>b) Schedule:</b>	Assessment 1: Practical Assessment 2: Mid term Assessment 3: Final practical Assessment 4: Final written Week: 16



<b>c) Weighing of Assessment:</b>	Mid-Term Examination:15 Final-Term Examination:50 Practical Examination:25 Semester Work: 10 Total 100
<b>8. List of Textbooks and References:</b>	8.1. Course Notes 8.2. Essential Books (Text Books). <ul style="list-style-type: none"><li>• Organic Chemistry, 4 th Eddition by Robert Wlorrison and Robert Boyd, Allyn and Bacon, Ir.c., Boston, London, Sydney, Toronto, 1983.</li><li>• Organic Chemistry, 6 th Eddition by I. L. Finar, Longmann Group Limited, volume I and II 1975.</li><li>• Fundamentals of Organic chemistry, 5 th Edition by Solomon, 1991.</li><li>• Fundamentals of spectroscopic methods, 2 th Edition ,1985.</li></ul> 8.3 Recommended books. 8.4 Periodical and website
<b>a) Course Notes</b>	-----
<b>b) Required Books (Textbooks)</b>	-----



<b>c) Recommended Books</b>	-----
<b>d) Periodicals, web sites, ..., etc</b>	-----

**Course Instructor:**

**Head of Department:** Dr. Medhat A.

Shaker

1- Prof. Dr. Adel Zaki Nasr

2- Dr. Mohamed Abd Ellatif Zein

**Date:** -----/-----/-----