



Course specification

University/Academy: Damanhour University

Faculty/Institute: Science

Department: Chemistry

1. course Data:

Course code: Chem. 407	Course title: Organic Chemistry 4	Academic year/level: 2010-2011 Fourth year /1 st term
Specialization: Special Chemistry	No. of instructional units: lecture <input type="text" value="4hrs/week"/> tutorial <input type="text" value="1 hrs/week"/> practical <input type="text" value="0 hrs/week"/>	

2. course Aim

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

- Realize the principles of Definition, nomenclature, Classification and chemistry of Carbohydrates.

Understand the chemistry of Amino acids, Peptides, Lipids and nucleic acids.

3. Intended learning outcome

a) Knowledge and understanding

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

- A1 :define the chemistry of Monosaccharides (D- and L- family, ring structure, anomers, conformation, and reactions). Oligosaccharides. (maltose, lactose cellobiose, sucrose). Polysaccharides. (starch, chitin, peptidoglycans glycoproteins, lipopolysaccharides) structure (ring size, configuration), synthesis.
- A2: draw the principles of Chemistry of Amino Acids and Peptides.
- A3 illustrate the Application of Chemistry of lipids and nucleic acids.

b) Intellectual skills

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

- B1: Conclude the principles of Carbohydrates, Amino acids, Lipids and nucleic acids.
- B2: Classify the structure, synthesis and reactions of essential organic compounds.



c) Professional skills	By the end of the course, student will be able to: C1: use Practice Simple organic compounds. C2: perform the chemistry of Carbohydrates, Amino acids, Lipids and nucleic acids. C3: Use the principles of Amino acids, Lipids and nucleic acids to recall proteins, vitamins and hormones. proteins, vitamins and hormones.
d) General skills	D1: 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.
4. course content	Chemistry of monosaccharides: Introduction. Definition. Classification. D- and L-Family. Structure and Configuration of D-glucose and D-fructose. Mutarotation. Ring structures (pyranoses and furanoses). Anomers. Haworth formulation. Conformation. Reactions (hydrazones, osazones, osotriazoles, formazanes, osones, effect of acids, effect of alkalies, oxidation, reduction). Derivatives (ethers, acetals, thioacetals, ketals, esters, glycosyl halides, glycosides). Total synthesis. Nucleic acids, ribonucleic acid, Deoxyribonucleic acid, their nucleosides and nucleotides. Chemistry of Aminoacids and peptides: Introduction. α -aminoacids (neutral, acidic, basic, isoelectric point, configuration, synthesis, resolution, reactions, analysis). Peptides (geometry of peptide linkage determination of structure, synthesis). Lipids: Classification. Fatty acids. Properties of triglycerides (iodine number, saponification, hydrogenation, rancidity). Phospholipids (phosphoglycerides, plasmalogens, sphingolipids). Oligo-and Polysaccharides: Structure (ring size, configuration). Synthesis.
5. Teaching and learning methods	4.1. Lectures and seminars using data show and board. 4.2. Problem classes and group tutorial. 4.3. Reports and discussion groups
6. teaching and learning methods for students with special needs	-----



<p>7. Student Assessment</p>	<p>5.1. Mid term exam. 5.2. Problems. 5.3. Assignments. 5.4 Written exam.</p>										
<p>a) Procedures used:</p>	<p>-----</p>										
<p>b) Schedule:</p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">Assessment 1: Mid term</td> <td style="text-align: right;">Week: 9</td> </tr> <tr> <td>Assessment 2: Final written</td> <td style="text-align: right;">Week: 16</td> </tr> </table>	Assessment 1: Mid term	Week: 9	Assessment 2: Final written	Week: 16						
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Assessment 2: Final written	Week: 16										
<p>c) Weighing of Assessment:</p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">Mid-Term Examination:</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Final-Term Examination:</td> <td style="text-align: right;">200</td> </tr> <tr> <td>Semester Work:</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Other types of assessment</td> <td style="text-align: right;">0</td> </tr> <tr style="border-top: 1px solid black;"> <td style="text-align: center;">Total</td> <td style="text-align: right;">200</td> </tr> </table>	Mid-Term Examination:	0	Final-Term Examination:	200	Semester Work:	0	Other types of assessment	0	Total	200
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Other types of assessment	0										
Total	200										
<p>8. List of Textbooks and References:</p>	<p>6.1. Course Notes</p> <p>6.2. Essential Books (Text Books).</p> <ul style="list-style-type: none"> • Organic Chemistry, 4 th Eddition by Robert Wlorrison and Robert Boyd, Allyn and Bacon, Ir.c., Boston, London, Sydney, Toronto, 1983. • Organic Chemistry, 6 th Eddition by I. L. Finar, Longmann Group Limited, volume I and II1975. • Fundamentals of Organic chemistry, 5 th Edition by Solomon, 1991. • Herper's illustrated Biochemistry,27 th Edition by Murray,Granner and Rodwell,2006. <p>6.3 Recommended books.</p> <p>6.4 Periodical and website</p>										
<p>a) Course Notes</p>	<p>Course notes provided by the staff member of Math department, to be handed at the beginning of the semester.</p>										
<p>b) Required Books (Textbooks)</p>	<p>None-</p>										
<p>c) Recommended</p>	<p>--none</p>										



Books	
d) Periodicals, web sites,....,etc	-none

Course Instructor:

Head of Department: Dr. Medhat A. Shaker

1- Prof.Dr Adel Zaki Nasr

2- Dr.Mohamed Abd Ellatif Zein

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