

**University / Academy: Al-azhar University**  
**Faculty : Medicine**  
**Department:Medical Biochemistry**

### Course Specification

<b>1. Course Data</b>						
<b>Course Code:</b>	<b>Course Title</b> Medical Biochemistry ( MD degree )	<b>Academic Year / level</b> 2014/2015				
<b>Specialization:</b>	<b>No. of Instructional Units:</b> <table style="margin-left: auto; margin-right: auto; border: none;"> <tr> <td style="padding: 0 10px;"><b>Lecture</b></td> <td style="border: 1px solid black; padding: 2px 10px; text-align: center;">80hrs</td> <td style="padding: 0 10px;"><b>practical</b></td> <td style="border: 1px solid black; padding: 2px 10px; text-align: center;">40hrs</td> </tr> </table>		<b>Lecture</b>	80hrs	<b>practical</b>	40hrs
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<b>2. Course Aim</b>	<ul style="list-style-type: none"> <li>· Opportunities to appreciate and understand the concepts and methodologies on which are based our understanding of the chemistry of life, and to develop a perspective of biochemical knowledge within the broader framework of biology.</li> <li>· The opportunity for students to develop personal, practical and intellectual skills enabling them to realize their potential both within and beyond the university environment. These skills include working singly and in groups, oral and written communication, data management and numeracy, experience with information technology and laboratory expertise, including the opportunity for first-hand experience of a grade five research establishment.</li> <li>· Preparation for further study and employment in</li> </ul>
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	<p>both science and non science-based careers by development of cognitive and transferable skills.</p> <p>· A flexible curriculum which combines a comprehensive grounding in biochemistry, molecular biology and genetics in health and in disease. All are delivered with effective teaching methods that meet the needs of students of varying levels of ability</p> <p><i>Faculty of Medicine for Girls, Al-Azhar University</i></p>
<p><b>3-Intended Learning Outcome (ILOs)</b></p>	

<p><b>a. Knowledge and Understanding:</b></p>	<p><b>By the end of the program the candidate should be able to:</b></p> <ol style="list-style-type: none"> <li>1) Demonstrate the properties of the major metabolites.</li> <li>2) Demonstrate different metabolic pathways and the related errors.</li> <li>3) Show an appreciation of the breadth of material covered in modern biochemistry.</li> <li>4) Describe mechanisms of biochemical processes.</li> <li>5) Demonstrate an understanding of the significance of biological specificity at the molecular level.</li> <li>6) Relate biochemistry to cellular and organismal processes.</li> <li>7) Demonstrate an understanding of how the principles of genetics underlie much of the basis of modern molecular biology.</li> <li>8) Contrast important biochemical features that distinguish prokaryotes from eukaryotes.</li> <li>9) Appreciate some ethical issues concerning the advances in the Biosciences and their impact on the society</li> </ol>
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<b>b. Intellectual Skills:</b>	<p><b>By the end of the program the candidate should be able to:</b></p> <ol style="list-style-type: none"> <li>1) Evaluate the different Biochemical pathways, and indicate the site of error; if present.</li> <li>2) Suggest the possible investigations needed for diagnosis.</li> <li>3) Get access of biochemical information from a variety of sources.</li> <li>4) Plan, execute and present an independent piece of work (e.g. a project) within a supported framework.</li> <li>5) Carry out basic manipulation of biochemical data (including some statistical analysis if appropriate), and to work safely in a laboratory environment.</li> <li>6) Show that they have basic strategies that enable them to update their knowledge of biochemistry.</li> <li>7) Appreciate the different approaches taken in the various areas of biochemistry.</li> <li>8) Marshal evidence and criticize the logic of evidentially based arguments.</li> <li>9) Critically evaluate the primary literature in particular areas of biochemistry.</li> </ol>
<b>c. Professional Skills:</b>	<p><b>candidate should be able to:</b></p> <ol style="list-style-type: none"> <li>1) Demonstrate basic competencies in a range of practical biochemical techniques including data collection, and analysis and interpretation of those data</li> <li>2) Carry out basic manipulation of biochemical data (including some statistical analysis if appropriate). Such manipulations include: chromatography, molecular biology, electrophoresis, tissue culture, RIA and ELISA.</li> </ol>

<p><b>d. General Skills:</b></p>	<p><b>By the end of the program the candidate should be able to:</b></p> <ol style="list-style-type: none"> <li>1) Plan, execute and present an independent piece of work (e.g. a project) within a supported framework.</li> <li>2) Update their knowledge of biochemistry.</li> <li>3) Have command of a range of presentational techniques and communication skills including the ability to write for a general audience.</li> <li>4) Have the ability to communicate ideas and experiments to others and to debate relevant scientific and ethical issues.</li> <li>5) Appreciate the value of different approaches to their discipline and in some cases to topics outside their discipline.</li> <li>6) Have the interpersonal skills that will allow them to participate in co-operative group planning and making decision.</li> <li>7) Recognize the applicability of biochemistry to their progressing careers.</li> <li>8) Use standard C&amp;IT packages (word-processing, email, WWW and spreadsheets and demonstrate computer literacy.</li> </ol>			
<p><b>No.</b></p>	<p><b>Course Content</b></p>	<p><b>subject</b></p>	<p><b>Professor</b></p>	<p><b>Hours</b></p>
<p><b>1</b></p>		<p><b>Carbohydrate metabolism</b></p>	<p>ا.د / سيد حمادة □ دبولي</p>	<p><b>10</b></p>
<p><b>2</b></p>		<p><b>Protein metabolism</b></p>	<p>ا.د/□ حمود محمد ابو المكارم</p>	<p><b>10</b></p>
<p><b>3</b></p>		<p><b>Lipid metabolism</b></p>	<p>ا.د./ سـعيد محمد حلمي</p>	<p><b>10</b></p>

4	starvation and well fed state	ا.د./ محمد سعيد السيد عرابي	4
5	oncogenes and tumor suppressor gene, tumor markers, apoptosis	ا.د./ عبد المحسن فهمي سويلم	9
6	nucleotide metabolism	ا.د./ وسى □ دنى	10
7	hormones and basic concepts	ا.د./ وسى □ دنى □	6
8	- hem metabolism	ا.د./ طارق على حسن	4
9	-vitamins	د/ابراهيم حسن محمد	4
	-minerals		
	-Enzymes of clinical importance.	د/ابراهيم حسن محمد	4
	-Biological oxidation		4
	-cell memberane	د/عصام فؤاد حمودة	2
-Nutrition		3	
Special topics	د/محمد عبد العزيز فهمي		

		<p><b>-farnisoides receptors</b></p> <p><b>-epigenitices</b></p> <p><b>-polyomorphism</b></p> <p><b>-gene therapy</b></p> <p><b>--biochemical techniques</b></p> <p><b>-cases</b></p>		
<b>4. Teaching and Learning Methods</b>	<p><b>A) METHODS USED:</b></p> <p><i>a.</i> Lectures</p> <p><i>b.</i> Tutorial classes</p> <p><i>c.</i> Practical training</p>			
<b>5. Teaching and Learning Methods for Students with Special Needs</b>	We did not have students with special needs			
<b>6. Student Assessment:</b>				
<b>a. Procedures used:</b>	Through written ,oral exams .			
<b>b. Schedule:</b>	<ul style="list-style-type: none"> <li>• <b>Final examination:</b> at the end of the academic year, in April, for all students.</li> </ul>			

	<ul style="list-style-type: none"> <li>The exam will be re-held in September for those who fail to pass the final exam or postpone it.</li> </ul>
<b>Weighting of Assessment:</b>	<p>Final written exam 40%</p> <p>Oral exam 30%</p> <p>Practical exam 30%</p>
<b>7. List of Textbooks and References:</b>	
<b>a. Course Notes</b>	Laboratory book
<b>b. Required Books (Textbooks)</b>	<ul style="list-style-type: none"> <li>Harper's Biochemistry.</li> <li>Lippincott's Illustrated Biochemistry.</li> <li>Strayer's Biochemistry.</li> </ul>
<b>c. Recommended Books</b>	<p>Books: available for students to purchase from different bookshops at the faculty.</p> <p>Overhead projections and data show used during teaching.</p>
<b>d. Periodicals, Web Sites, ..., etc.</b>	Medical biochemistry

**Course Instructor:**

**Head of Department:**