

*Hashemite University*  
*Faculty of Engineering*  
*Biomedical Engineering Department*

**Guidance Syllabus for Students of Biomedical Engineering Department**

**General Syllabus**

<b>Semester Requirements</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>Total</b>
<b><u>University Requirements</u></b>											
1-Compulsory / Elective	3	3	3	3	3	3	3	-	3	3	27
2- Free Requirements	-	-	-	-	-	-	3	-	-	-	3
<b><u>Faculty Requirements</u></b>	14	12	4	3	-	-	-	-	-	-	33
<b><u>Department Requirements</u></b>											
1 – Compulsory	-	3	9	12	13	13	10	11	7	4	82
2 – Elective	-	-	-	-	-	-	-	3	6	6	9
<b>Total</b>	<b>17</b>	<b>18</b>	<b>16</b>	<b>18</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>14</b>	<b>16</b>	<b>13</b>	<b>160</b>

## First Year

First Semester						Second Semester					
Course No.	Course Title	Credit Hours	Week Hours		Pre-request	Course No.	Course Title	Credit Hours	Week Hours		Pre-request
			Lecture	Practical					Lecture	Practical	
110102101	General Physics 1	3	3	-	-	110101102	Calculus 2	3	3	-	110108101
110102103	General Physics lab(1)	1	-	3	110102101 - Co-requisite	110102102	General Physics(2)	3	3	-	110102101
110103107	Engineering Chemistry	3	3	-	-	110104101	Biology (1)	3	3	-	-
110103108	Engineering Chemistry lab	1	-	3	110103107 - Co-requisite	110400203	Ethics and Communication Skills	3	3	-	111405110
110108101	Calculus 1	3	3	-	-	110400101	Engineering Workshop	1	0.5	2	-
110108112	Computer Programming	3	3	-	Level test or 110108099	110400201	Manual Engineering Drawing	2	1	3	-
111405110	English Language	3	3	-	Level test or 111405099	111405101	Arabic Language	3	3	-	Level test or 111405098
<b>Total</b>			<b>17</b>			<b>Total</b>			<b>18</b>		

## Second Year

First Semester						Second Semester					
Course No.	Course Title	Credit Hours	Week Hours		Pre-request	Course No.	Course Title	Credit Hours	Week Hours		Pre-request
			Lecture	Practical					Lecture	Practical	
110101203	Ordinary Differential Equations 1	3	3	-	110101102	110101201	Calculus 3	3	3	-	110101102
110400202	Computer Aided Engineering Drawing	1	-	3	110400201	110406260	Applied mathematics	3	3	-	110101203
110406210	Biomechanics (1)	3	3	-	110102101	110409203	Electrical Circuits(2)	3	3	-	110409201
110408220	Digital logic	3	3	-	110101102 or 111001141	110409240	Electronics (1)	3	3	-	110409201 or 110406229
110409201	Electrical Circuits(1)	3	3	-	110101102 and 110102102	110501222	Human Physiology	3	3	-	110104101
	University requirement (compulsory)	3	3	-	-		University requirement (compulsory)	3	3	-	-
<b>Total</b>			<b>16</b>			<b>Total</b>			<b>18</b>		

## Third Year

First Semester						Second Semester					
Course No.	Course Title	Credit Hours	Week Hours		Pre-request	Course No.	Course Title	Credit Hours	Week Hours		Pre-request
			Lecture	Practical					Lecture	Practical	
110402303	Numerical Analysis	3	3	-	110101203 and 110108112	110405331	Automatic Control	3	3	-	110101203
110406310	Biomaterials	3	3	-	110103107	110406311	Bio-Fluids	3	3	-	110406210 and 110406260
110406320	Biomedical Electronics	3	3	-	110409240	110406321	Biomedical Instrumentation (1)	3	3	-	110501222 and 110406320
110406370	Signal and System Analysis for biomedical engineering	3	3	-	110406260	110409342	Electronics lab	1	-	3	(110406320 or 110409341) and 110409300
110409300	Electrical Circuits Lab	1	-	3	(110406229 or 110409203 ) and 110102103	110409343	Digital electronics	3	3	-	110408220 and 110409240
	University requirement (elective)	3	-	-			University requirement (elective)	3	-	-	
<b>Total</b>			<b>16</b>			<b>Total</b>			<b>16</b>		

## Fourth Year

<b>First Semester</b>						<b>Second Semester</b>						
Course No.	Course Title	Credit Hours	Week Hours		Pre-request	Course No.	Course Title	Credit Hours	Week Hours		Pre-request	
			Lecture	Practical					Lecture	Practical		
110406421	Biomedical Instrumentation Lab (1)	1	-	3	110406321 and 110409342	110406420	Biomedical Instrumentation (2)	3	3	-	110406321	
110406423	Biomedical transducers and telemetry	3	3	-	110406370 and 110406321	110406422	Biomedical Instrumentation Lab (2)	1	-	3	110406421 and 110406420 -Co-requisite	
110408433	Microprocessors and impeded systems	3	-	3	110409343	110406424	Biomedical transducers and telemetry lab	1	-	3	110406423	
110409422	Digital signal processing	3	3	-	110409322 or 110406370	110406430	Artificial Organs Prosthetics	3	3	-	110406310 and 110406321	
	Free elective	3	-	3		110406470	Medical Imaging	3	3	-	110406321	
	University requirement (elective)	3	-	-	-		University requirement (elective)	3	-	-		
<b>Total</b>			<b>16</b>				<b>Total</b>			<b>14</b>		

<b>Summer Semester</b>					
Course No.	Course Title	Credit Hours	Week Hours		Pre-request
			Lecture	Practical	
110406450	Practical training	0	0	0	Successfully completion of at least 112 credit hours.* Including (110400203).

## Fifth Year

First Semester						Second Semester					
Course No.	Course Title	Credit Hours	Week Hours		Pre-request	Course No.	Course Title	Credit Hours	Week Hours		Pre-request
			Lecture	Practical					Lecture	Practical	
110406530	Rehabilitation Engineering	3	3	-	110406423 and 110406210	110406531	Biomechanics and Rehabilitation Engineering Laboratory	1	-	3	110406530 and 110406310
110406570	Medical Image Processing	3	3	-	110409422	110406592	Graduation Project (2)	2	-	6	110406591
110406591	Graduation Project (1)	1	-	3	Successfully completion of 120 credit hours and department approval.	110408434	Digital logic and microprocessors lab	1	-	3	110408433
	Department requirement (elective)	3	-	-			Department requirement (elective)	3	-	-	
	Department requirement (elective)	3	-	-			University requirement (elective)	3	-	-	-
	University requirement (elective)	3	-	-	-		University requirement (elective)	3	-	-	-
<b>Total</b>			<b>16</b>			<b>Total</b>			<b>13</b>		