



**Course Planning (Biotechnology Department)  
Bachelor of Engineering (Biotechnology)**

**Revised Course Structure with effect from September 2015**

**SEMESTER I**

<b>Course No.</b>	<b>Theory Course</b>	<b>Credits</b>
HU-1101	Technical English	3
PH1201	Physics	4
MA1201	Engg. Mathematics	4
EE2201	Principles of Electrical Engg	4
CH1401	Engg. Chemistry	3
ME1202	Engg. Graphics	3
CS1302	Fundamental of Unix & C Programming	3
<b>Course No.</b>	<b>Sessional/Laboratories</b>	<b>Credits</b>
PE1202	Workshop Practice	2
PH1202	Physics lab	2
GA1002/ GA1004 GA1006/GA1008	NCC / NSS / PT & Games / C. Arts	1
<b>Total Credits</b>		<b>29</b>

**SEMESTER II**

<b>Course No.</b>	<b>Theory Course</b>	<b>Credits</b>
EC2001	Principle of Electronics Engg	3
MA2201	Advance Engg Mathematics	4
CH2203	Environmental Science	3
CS2301	Fundamentals of Data Structure	4
ME2001	Principles of Mechanical Engg	3
AM1201	Engineering Mechanics	4
<b>Course No.</b>	<b>Sessional/Laboratories</b>	<b>Credits</b>
CH1402	Chemistry Lab	2
EE3202//AM2202	Basic Electrical Engg Lab/ Engineering Mechanics Lab	2
EC2002	Basic Electronics Engg Lab	2
CS2302	Data Structure Lab	2
GA2/ 4/6/8	NCC / NSS / PT & Games / C. Arts	1
<b>TOTAL CREDITS</b>		<b>30</b>

### **SEMESTER III**

<b>Course No.</b>	<b>Theory Course</b>	<b>Credits</b>
BT3023	Cell & Molecular Biology	3
BT3025	Bio-analytical techniques	3
BT3027	Biomolecules & Bioenergetics	3
BT3029	Chemical Engineering I	3
BT3001/HU4001	Biological Science/ Foreign Language ( <b>Breadth Subject III</b> )	3
<b>Course No.</b>	<b>Sessional/Laboratories</b>	<b>Credits</b>
AM2202/ EE3202	Engineering Mechanics Lab/ Basic Electrical Engg Lab	2
BT3024	Cell & Molecular Biology Lab.	2
BT3026	Bio-analytical techniques Lab.	2
BT3028	Biochemistry Lab.	2
GA3002/4 /6/8	NCC/NSS/PT & Games/ Creative Arts	1
<b>TOTAL CREDITS</b>		<b>24</b>

### **SEMESTER IV**

<b>Course No.</b>	<b>Theory Course</b>	<b>Credits</b>
BT4021	Chemical Engineering II	4
BT4023	Microbiology	3
BT4025	Immunology	3
BT4027	Thermodynamics of Chemical & Biological Systems	3
HU4001/ BT3001	Foreign Language / Biological Science ( <b>Breadth Subject IV</b> )	3
<b>Course No.</b>	<b>Sessional/Laboratories</b>	<b>Credits</b>
BT4022	Chemical Engineering I Lab.	2
BT4024	Microbiology Lab.	2
BT4026	Immunology Lab.	2
GA4002/4 /6/8	NCC/NSS/PT & Games/ Creative Arts	1
<b>TOTAL CREDITS</b>		<b>23</b>

### **SEMESTER V**

<b>Course No.</b>	<b>Theory Course</b>	<b>Credits</b>
BT5021	Bioprocess Engineering	3
BT5023	Chemical Engineering III	4
BT5025	Functional Genomics and rDNA Technology	3
BT5027	Reaction Engineering	3
	Breadth Subject-V	3
<b>Course No.</b>	<b>Sessional/Laboratories</b>	<b>Credits</b>
BT5022	Bioprocess Engineering Lab.	2
BT5024	Chemical Engineering Lab. II	2
BT5026	rDNA Tech. Lab	2
<b>TOTAL CREDITS</b>		<b>22</b>

## SEMESTER VI

Course No.	Theory Course	Credits
BT6021	Bioseparation Engineering	3
BT6023	Plant & Agriculture Biotechnology	3
BT6025	Food & Enzyme Technology	3
BT6027	Process Measurement and Control	3
	Breadth Subject-VI	3
Course No.	Sessional/Laboratories	Credits
BT6022	Bioseparation Engineering Lab.	2
BT6024	Plant Cell Technology Lab.	2
BT6026	Enzyme Technology Lab.	2
<b>TOTAL UNITS</b>		<b>21</b>

## SEMESTER VII

Course No.	Theory Course	Credits
BT7021	Biological Waste Management	3
BT7023	Bioreactor and Bioprocess Design	3
	Breadth Subject-VII	3
ELECTIVE-I	[DEPT.] (Any one from following)	3
BT7025	Bioenergy	
BT7027	Bioremediation	
BT7029	Pharmaceutical Biotechnology	
BT7031	Mineral Biotechnology	
BT7033	Animal & Stem Cell Technology	
BT7035	IPR, Biosafety & Bioethics	
ELECTIVE-II	[OPEN](Any one from following)	3
Course No.	Sessional/Laboratories	Credits
BT7022	Environmental Biotechnology Lab.	2
BT7024	Bioinformatics Lab I	2
BT7050	Dept. Project I	4
<b>TOTAL CREDITS</b>		<b>23</b>

## SEMESTER VIII

Course No.	Theory Course	Credits
BT8021	Biotechnology Management	3
BT8040	Industrial Training (To be evaluated with Dept. Project II)	-
BT8050	Dept. Project II	4
<b>TOTAL CREDITS</b>		<b>7</b>

<b>Breadth - V(Elective)</b>		
Course No.	Theory Course	Credits
MSH 1131	Principles of Management	3
PE 5021	Industrial Organization and Management for Oman	3
MSH 1125	Organisation Behavior	3
MSH 1113	Environmental Psychology	3

PE 5011	Project Engineering	3
<b>Breadth - VI(Elective)</b>		
MSH 1137	Economics	3
PE 6009	Engineering Economy	3
MSH1117	Financial Management	3
<b>Breadth - VII(Elective)</b>		
MSH 1159	IPR in Oman	3
MSH 1163	Entrepreneurship and Small Business Management in Oman	3
MSH 1161	Business Ethics in Oman	3

*Note: Bachelor of Engineering (Biotechnology) Degree shall be awarded on successfully obtaining 179 credits after fourth year.*