

**SCHEME OF TEACHING AND EXAMINATION**

**B.E. III SEMESTER (2015-16)**

Sl. No.	Subject Code	Subject	Credits	Hours/Week			Examination Marks		
				Lecture	Tutorial	Practical	CIE	SEE	Total
1	UMA301C	Mathematics – III (EC)	4	4	0	0	50	50	100
2	UBT313C	Microbiology (PC)	3	3	0	0	50	50	100
3	UBT303C	Cell Biology & Genetics (PC)	3	3	0	0	50	50	100
4	UBT304C	Biochemistry (PC)	4	4	0	0	50	50	100
5	UBT311C	Bioprocess Principles and Calculations (PC)	4	3	2	0	50	50	100
6	UBT312C	Unit operations(PC)	3	3	0	0	50	50	100
7	UBT307L	Biochemistry Lab	1.5	0	0	3	50	50	100
8	UBT308L	Microbiology Lab	1.5	0	0	3	50	50	100
9	UBT310L	Cell biology and Genetics Lab	1	0	0	2	50	50	100
<b>Total</b>			<b>25</b>	<b>20</b>	<b>2</b>	<b>8</b>	<b>450</b>	<b>450</b>	<b>900</b>

**SCHEME OF TEACHING AND EXAMINATION**

**B.E. IV SEMESTER (2015-16)**

Sl. No.	Subject Code	Subject	Credits	Hours/Week			Examination Marks		
				Lecture	Tutorial	Practical	CIE	SEE	Total
1	UBT415C	Biostatistics & Bio-modeling (EC)	3	3	0	0	50	50	100
2	UBT402C	Structural Biology (PC)	3	3	0	0	50	50	100
3	UBT404C	Molecular Biology (PC)	4	4	0	0	50	50	100
4	UBT412C	Heat and Mass Transfer(PC)	3	3	0	0	50	50	100
5	UBT416C	Thermodynamics (PC)	4	3	2	0	50	50	100
6	UBT406C	Immunotechnology (PC)	3	3	0	0	50	50	100
7	UBT410L	Immunotechnology Lab	1	0	0	2	50	50	100
8	UBT408L	Molecular biology Lab	1.5	0	0	3	50	50	100
9	UBT409L	Unit Operations Lab	1.5	0	0	3	50	50	100
<b>Total</b>			<b>24</b>	<b>19</b>	<b>2</b>	<b>8</b>	<b>450</b>	<b>450</b>	<b>900</b>

## SCHEME OF TEACHING AND EXAMINATION

### B.E. V SEMESTER (2015-16)

Sl. No.	Subject Code	Subject	Credits	Hours/Week			Examination Marks		
				Lecture	Tutorial	Practical	CIE	SEE	Total
1	UBT501C	Enzyme kinetics(PC)	3	3	0	0	50	50	100
2	UBT503C	Bioinformatics(PC)	4	3	2	0	50	50	100
3	UBT504C	Genetic Engineering & Applications(PC)	4	4	0	0	50	50	100
4	UBT516C	Bioprocess & Reaction Engg. (PC)	4	3	2	0	50	50	100
5	UBT521E	Elective –1	3	3	0	0	50	50	100
6	UBT517C	Plant and animal cell culture techniques(PC)	3	3	0	0	50	50	100
7	UBT508L	Bioinformatics Lab	1.5	0	0	3	50	50	100
8	UBT509L	Genetic Engineering Lab	1.5	0	0	3	50	50	100
9	UBT510L	Biostatistics lab	2	0	0	4	50	50	100
<b>Total</b>			<b>26</b>	<b>19</b>	<b>4</b>	<b>10</b>	<b>450</b>	<b>450</b>	<b>900</b>

#### Elective -1

**UBT521E:** Environmental BT

**UBT523E:** Operating system and DBMS

**UBT522E:** Biomedical Instrumentation

**UBT525E:** Stem cell technology

## SCHEME OF TEACHING AND EXAMINATION

### B.E. VI SEMESTER (2015-16)

Sl. No.	Subject Code	Subject	Credits	Hours/Week			Examination Marks		
				Lecture	Tutorial	Practical	CIE	SEE	Total
1	UBT612C	Bio-transformation & Enzyme Technology (PC)	4	4	0	0	50	50	100
2	UBT604C	Bioprocess Equipment Design & Drawing (PC)	4	3	2	0	50	50	100
3	UBT602C	Bioprocess control and automation	4	4	0	0	50	50	100
4	UBT605H	Bioethics and biosafety	3	3	0	0	50	50	100
5	UBT62XE	Elective-2	3	3	0	0	50	50	100
6	UBT62XE	Elective – 3	3	3	0	0	50	50	100
7	UBT608L	Bio-kinetics & Enzyme Technology Lab	1.5	0	0	3	50	50	100
8	UBT609L	Bioprocess control and automation Lab	1.5	0	0	3	50	50	100
9	UBT610L	Advanced microbiology lab	2	0	0	4	50	50	100
Total			26	20	2	10	450	450	900

#### Elective- 2 & 3

**UBT621E** Microbial BT

**UBT622E** Genomics & Proteomic

**UBT623E** Plant BT

**UBT624E** Animal BT

**UBT625E** Biofuels technology

**UBT626E** Pearl programming

**UBT627E** Tissue engineering

**UBT628E** Transport phenomena

## SCHEME OF TEACHING AND EXAMINATION

### B.E. VII SEMESTER (2015-16)

Sl. No.	Subject Code	Subject	Credits	Hours/Week			Examination Marks		
				Lecture	Tutorial	Practical	CIE	SEE	Total
1	UBT701C	Upstream processing technology	3	3	0	0	50	50	100
2	UBT715C	Downstream Processing Technology (PC)	3	3	0	0	50	50	100
3	UBT703C	Economics and Plant Design (PC)	4	4	0	0	50	50	100
4	UBT716H	Industrial management and entrepreneurship	3	3	0	0	50	50	100
5	UBT72XE	Elective-4	3	3	0	0	50	50	100
6	UBT73XE	Elective-5	3	3	0	0	50	50	100
7	UBT707L	Upstream Processing Lab	1.5	0	0	3	50	50	100
8	UBT708L	Downstream Processing Lab	1.5	0	0	3	50	50	100
9	UBT710M	Industrial internship/ mini project (mandatory)	0	0	0	0	50	50	100
10	UBT709P	Project phase-I	4	-	0	-	50	50	100
			<b>26</b>	<b>19</b>	<b>0</b>	<b>6</b>	<b>500</b>	<b>500</b>	<b>1000</b>

#### Elective- 4

UBT721E: Separation techniques

UBT723E: Dairy Biotechnology

UBT722E: Aquaculture & Marine biotechnology

UBT724E: Food processing technology

#### Elective- 5

UBT731E: Nanobiotechnology & biomaterials

UBT732E: Computational biology

UBT733E: Bioconjugative technology

UBT734E: Industrial waste water treatment

## SCHEME OF TEACHING AND EXAMINATION

### B.E. VIII SEMESTER (2015-16)

Sl. No.	Subject Code	Subject	Credits	Hours/Week			Examination Marks		
				Lecture	Tutorial	Practical	CIE	SEE	Total
1	UBT8XXE	Elective – 6	3	3	0	0	50	50	100
2	UBT8XXE	Elective – 7	3	3	0	0	50	50	100
3	UBT8XXE	Elective – 8	3	3	0	0	50	50	100
4	UBT804P	Project Phase-II	16	0	0	0	50	50	100
<b>Total</b>			<b>25</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>200</b>	<b>200</b>	<b>400</b>

#### **ELECTIVES -6, 7, 8**

**UBT821E:** Micro-Array (Systems biology)

**UBT822E:** Protein Engg. & Drug Design

**UBT823E:** Chemical Plant utilities & Safety

**UBT824E:** Metabolic Engineering

**UBT825E:** Food biotechnology

**UBT826E :** Nano Biotechnology

**UBT827E :** Pharmaceutical BT

**UBT828E:** Lab to Industrial Scaling

**UBT829E:** Facilitation, Validation & Quality Control

**UBT830E:** Clinical research

**UBT831E:** Biomaterials

**UBT832E:** Health Diagnostics

