

**SCHEME OF TEACHING AND EXAMINATION
B.E. III SEMESTER (2016-17)**

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	2	2	0	50	50	100
4	UBT304C	Biochemistry (PC)	4	3	2	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
Total			25	18	6	8	450	450	900

B.E. IV SEMESTER (2016-17)

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
Total			24	19	2	8	450	450	900

B.E. V SEMESTER (2016-17)

Sl. No.	Subject Code	Subject	Credits	Hours/Week			Examination Marks		
				Lecture	Tutorial	Practical	CIE	SEE	Total
1	UBT518C	Enzymology (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
Total			26	19	4	10	450	450	900

Elective -1

UBT521E: Environmental BT

UBT522E: Biomedical Instrumentation

UBT523E: Operating system and DBMS

UBT525E: Stem cell technology

B.E. VI SEMESTER (2016-17)

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	UBT613C	Instrumentation and process control	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

B.E. VII SEMESTER (2016-17)

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	UBT709L	Bioseparation techniques Lab	1.5	0	0	3	50	50	100
9	UBT712L	Advanced microbiology lab	1	0	0	2	50	50	100
10	UBT710A / UBT711A	Industrial internship / Mini project	0	0	0	0	50	50	100
11	UBT709P	Project phase-I	4	-	0	-	50	50	100
			26	19	0	6	500	500	1000

***Student can select any one among the following audit courses:**

UBT710A: Industrial internship

UBT711A: Mini project

**** Advanced microbiology lab (UBT712L) is offered for credit adjustments.**

Elective- 4

UBT721E: Separation techniques

UBT722E: Aquaculture & Marine biotechnology

UBT723E: Dairy Biotechnology

UBT724E: Food processing technology

Elective- 5

UBT731E: Nanobiotechnology & biomaterials

UBT733E: Bioconjugative technology

UBT732E: Computational biology

UBT734E: Industrial waste water treatment

B.E. VIII SEMESTER (2016-17)

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
Total			25	9	0	0	200	200	400

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