#### STUDY & EVALUATION SCHEME B.SC. (H) BIOTECHNOLOGY I YEAR: I SEMESTER

S.	SUBJEC	SUBJECT	L	T	P		LUATION	TOTA	CREDIT	COURS	FACULT
NO.	T CODE					SCHEME		L	S	E TYPE	Y
						CIE	ESE				
						TH	EORY				
1	UBS1001	Cell Biology	4	0	0	40	60	100	4	Major	Own
											faculty
2	UBS1002	Genetics	4	0	0	40	60	100	4	Major	Own
											faculty
3	UBS1003	Plant	4	0	0	40	60	100	4	Major	Own
		Physiology									faculty
4	UBS1004	Biotechnology	4	0	0	40	60	100	4	Major	Own
		and Human									faculty
		Welfare									
5	UEG1502	Functional	2	0	0	40	60	100	2	Minor	Other
	SE	English								Skills	faculty
6	UPC1401	First Aid and	2	0	0	100	0	100	2*	Minor	Other
		Health								Co-	faculty
										curricular	
						PRA(	CTICAL				
7	UBS1209	Cell Biology	0	0	2	80	20	100	1	Major	Own
		Lab									faculty
8	UBS1202	Plant	0	0	2	80	20	100	1	Major	Own
		Physiology Lab									faculty
9	UEG150	English	0	0	2	80	20	100	1	Minor	Other
	1SE	Language Lab								Skill	faculty
	TOTAL		16	0	14	580	320	900	23		

- L Lecture
- T Tutorial
- P Practical
- CIE Continuous Internal Evaluation
- ESE-End Semester Exam
- C Credit

# STUDY & EVALUATION SCHEME B.SC. (H) BIOTECHNOLOGY

I YEAR: II SEMESTER

S. NO	SUBJECT CODE	SUBJECT	L	T	P		UATIO HEME	TOTA L	CREDIT S	COURSE TYPE	FACULT Y
	CODE					CIE	ESE	1	5	1112	-
							TEODY.				
		Taba	ı .	1 . 1	- 1		HEORY				
1	UBS2001	Molecular Biology	4	0	0	40	60	100	4	Major	Own faculty
2	UBS2002	Genetic Engineerin g	4	0	0	40	60	100	4	Major	Own faculty
3	UBS2003	Mammalia n Physiolog y	4	0	0	40	60	100	4	Major	Own faculty
4		Minor Elective-I	4	0	0	40	60	100	4	Minor/Electiv e	Other faculty
5	UBS2501V O	Enzyme Technolog y	3	0	0	40	60	100	3	Minor Vocational	Own faculty
6	UBS2402	Food, Nutrition and Hygiene	2	0	0	100	0	100	2*	Minor Co- curricular	Own faculty
			•			PRA	CTICAL				
7	UBS2209	Molecular Biology Lab	0	0	4	80	20	100	2	Major	Own faculty
8	UBS2210	Genetic Engineerin g Lab	0	0	4	80	20	100	2	Major	Own faculty
9	UBS2202	Mammalia n Physiolog y Lab	0	0	2	80	20	100	1	Major	Own faculty
10	UBS2203	Enzyme Technolog y Lab	0	0	2	80	20	100	1	Major	Own faculty
	TOTAL			0	12	620	380	1000	27		

L – Lecture CIE - Continuous Internal Evaluation

T – Tutorial ESE-End Semester Exam

P – Practical C - Credit

#### STUDY & EVALUATION SCHEME B.SC. (H) BIOTECHNOLOGY II YEAR: III SEMESTER

S.	SUBJEC	SUBJECT	L	T	P	EVA	LUATIO	TOTA	CREDIT	COURS	FACULT
NO	T CODE					N SC	CHEME	$\mathbf{L}$	S	E TYPE	Y
•						CIE	ESE				
						TH	EORY				
1	UBS3001	Biochemistry and Metabolism	4	0	0	40	60	100	4	Major	Own faculty
2	UBS3002	Environmental Biotechnology	4	0	0	40	60	100	4	Major	Own faculty
3	UBS3003	Green Chemistry	4	0	0	40	60	100	4	Major	Own faculty
4	UBS3004	Developmental Biology	4	0	0	40	60	100	4	Major	Own faculty
5	UBS3501 VO	Molecular Diagnostics	3	0	0	40	60	100	3	Minor Vocationa 1	Own faculty
6	UPE3401	Physical Education and Yoga	2	0	0	100	0	100	2*	Minor Co- curricular	Own faculty
						PRA	CTICAL				
7	UBS3201	Biochemistry and Metabolism Lab	0	0	4	80	20	100	2	Major	Own faculty
8	UBS3207	Green Chemistry Lab	0	0	2	80	20	100	1	Major	Own faculty
	TOTAL			0	6	460	340	800	24		

L - Lecture

T - Tutorial

P - Practical

CIE - Continuous Internal Evaluation

ESE-End Semester Exam

C - Credit

#### STUDY & EVALUATION SCHEME B.SC. (H) BIOTECHNOLOGY II YEAR: IV SEMESTER

S.	SUBJECT	SUBJECT	L	T	P		UATIO	TOTA	CREDIT	COURS	FACULT
NO	CODE						HEME	L	S	E TYPE	Y
•						CIE	ESE				
THEORY											
1	UBS4001	Microbiology	4	0	0	40	60	100	4	Major	Own
											faculty
2	UBS4002	Immunology	4	0	0	40	60	100	4	Major	Own
											faculty
3	UBS4011	Medicinal	3	0	0	40	60	100	3	Major	Own
		Chemistry									faculty
4	UBS4004	Industrial	4	0	0	40	60	100	4	Major	Own
		Fermentation									faculty
5		Minor	4	0	0	40	60	100	4	Minor	Other
		Elective-2								/Elective	faculty
6	UBS4501V	Basic of	3	0	0	40	60	100	3	Minor	Own
	O	Forensic								Vocationa	faculty
		Science								1	
7	USO4402	Human	2	0	0	100	0	100	2*	Minor	Own
		Values and								Co-	faculty
		Environment								curricular	
		al Studies									
						PRAC	TICAL				
8	UBS4208	Microbiology	0	0	2	80	20	100	1	Major	Own
		and									faculty
		Immunology									
		Lab									
9	UBS4202	Medicinal	0	0	2	80	20	100	1	Major	Own
		Chemistry									faculty
		Lab									
10	UBS4702S	Seminar	0	0	2	100	0	100	1	Major	Own
	M										faculty
	TOTAL			0	6	600	400	1000	27		1
	_										

L - Lecture

T - Tutorial

P - Practical

CIE - Continuous Internal Evaluation

ESE-End Semester Exam

C-Credit

#### STUDY & EVALUATION SCHEME B.SC. (H) BIOTECHNOLOGY III YEAR: IV SEMESTER

S.	SUBJEC	SUBJECT	L	T	P		UATIO	TOTA	CREDIT	COURS	FACULT
NO	T CODE						HEME	L	S	E TYPE	Y
•						CIE	ESE				
		T	•	•		THEC	•				
1	UBS5001	Biostatics and	4	0	0	40	60	100	4	Major	Own
		Bioinformatics									faculty
2	UBS5002	Animal and Plant	4	0	0	40	60	100	4	Major	Own
		Biotechnology									faculty
3	UBS5003	Bioprocess	4	0	0	40	60	100	4	Major	Own
		Technology									faculty
4		Departmental	4	0	0	40	60	100	4	Major	Own
		Elective -1 (DE –									faculty
		1)									
5	USS5401	Communication	2	0	0	100	0	100	2*	Minor	Other
		Skills and								Co-	faculty
		Personality								curricula	
		Development								r	
					]	PRACT	ICAL				
6	UBS5201	Bioinformatics,	0	0	4	80	20	100	2	Major	Own
		Biostatistics and									faculty
		Tissue culture									
		Lab									
7	UBS5202	Bioprocess	0	0	4	80	20	100	2	Major	Own
		Technology Lab								_	faculty
8	UBS5601I	Industrial	0	0	6	100	0	100	3	Major	Own
	S	Training/Internsh				100		100		Industria	faculty
	~	ip								1	100 010 9
										Training	
	TOTAL			0	1	520	280	800	25		
	TOTAL				4						

L- Lecture T- Tutorial

P - Practical

CIE- Continuous Internal Evaluation

ESE - End Semester Examination

**Departmental Elective (DE)-1** 

Sub Code Sub Name

USB5101 Plant Tissue Culture USB5102 Animal Cell Culture

### STUDY & EVALUATION SCHEME B.SC. (H) BIOTECHNOLOGY III YEAR: VI SEMESTER

C	SUBJECT	CUDIECT	т	Т	P	TEXT A T	UATIO	TOTA	CREDIT	COURS	FACULT
S.	CODE	SUBJECT	L	1	P			L	S	E TYPE	Y
NO	CODE						HEME	L	3	EIIPE	Y
•						CIE	ESE				
	IID 0 6001	T 1 1			0		ORY	100		3.6 :	
1	UBS6001	Industrial Biotechnolog y	4	0	0	40	60	100	4	Major	Own faculty
2	UBS6002	Food Biotechnolog y	4	0	0	40	60	100	4	Major	Own faculty
3	UBS6003	Genomics and Proteomics	4	0	0	40	60	100	4	Major	Own faculty
4		Departmental Elective -2 (DE – 1)	4	0	0	40	60	100	4	Major	Own faculty
5	UAP6401	Analytic Ability and Digital Awareness	2	0	0	100	0	100	2*	Minor Co- curricular	Other faculty
						PRAC	TICAL				
6	UBS6208	Industrial Biotechnolog y Lab	0	0	2	80	20	100	1	Major	Own faculty
7	UBS6209	Food Technology Lab	0	0	2	80	20	100	1	Major	Own faculty
8	UBS6210	Genomics and Proteomics Lab	0	0	2	80	20	100	1	Major	Own faculty
9	UBS6601I V	Industrial Visit	0	0	2	100	0	100	1	Minor	Own Faculty
10	UBS6701P J	Mini Project	0	0	6	100	0	100	3	Mini Project	Own Faculty
	TOTAL			0	1 4	700	300	1000	25		

	Departmenta	l Elective- 2
L - Lecture	Sub Code	Sub Name
T - Tutorial	USB6101	Application of Biotechnology in
P - Practical		agriculture
CIE - Continuous Internal Evaluation	USB6102	Medical Biotechnology
ESE-End Semester Exam	UBS6103	MOOCs from SWAYAM
C – Credit		Biotech2

#### STUDY & EVALUATION SCHEME B.SC. (H) BIOTECHNOLOGY IV YEAR: VII SEMESTER

S.	SUBJECT	SUBJECT	L	T	P	EVAL	EVALUATIO		CREDIT	COURS	FACULT
NO	CODE						<b>N SCHEME</b>		S	E TYPE	$\mathbf{Y}$
						CIE	ESE				
						THE	ORY				
1	UBS7009	Research Methodolog y	4	0	0	40	60	100	4	Major	Own faculty
2	UBS7010	Research Publication Ethics	2	0	0	40	60	100	2	Major	Own faculty
3	UBS7002	Intellectual Property Right	4	0	0	40	60	100	4	Major	Own faculty
4	UBS7001	Bio- analytical Tools	4	0	0	40	60	100	4	Major	Own faculty
5		Departmenta 1 Elective-3 (DE-3)	4	0	0	40	60	100	4	Major	Own faculty
						PRAC	TICAL				
6	UBS7201	Bio- analytical Tools Lab	0	0	4	80	20	100	2	Major	Own faculty
7	UBS7703P J	Research Project:1	0	0	1 2	80	20	100	6	Major Project	Own faculty
	TOTAL			0	1 6	360	340	700	26		

L - Lecture

T - Tutorial

P - Practical

CIE - Continuous Internal Evaluation

ESE-End Semester Exam

C-Credit

**Departmental Elective- 3** 

**Subject Name** 

Sub Code

USB7101 Nano- Biotechnology

USB7102 Drug Design

#### STUDY & EVALUATION SCHEME B.SC. (H) BIOTECHNOLOGY IV YEAR: VIII SEMESTER

S.	SUBJEC	SUBJECT	L	T	P		UATIO	TOTA	CREDIT	COURSE	FACULT
NO	T CODE						HEME	L	S	TYPE	Y
•						CIE	ESE				
	1	r	T		1		HEORY	ı	T		1
1	UBS8010	Food Processing and Preservation	4	0	0	40	60	100	4	Major	Own faculty
2	UMA8003	Biostatistics	4	0	0	40	60	100	4	Major	Other faculty
3	UBS8003	Computation al and Structural Biology	4	0	0	40	60	100	4	Major	Own faculty
4		Departmenta 1 Elective-4 (DE-4)	4	0	0	40	60	100	4	Major	Own faculty
5		Minor Elective-3	4	0	0	40	60	100	4	Minor/Electi ve	Other faculty
						PRA	CTICAL	,			
6	UBS8201	Computation al and Structural Biology Lab	0	0	4	80	20	100	2	Major	Own faculty
7	UMA8201	Biostatistics Lab	0	0	4	80	20	100	2	Major	Other faculty
8	UBS8702 PJ	Research Project: II	0	0	1 2	80	20	100	6	Major Project	Own faculty
	TOTAL			0	1 6	360	340	700	26		

L - Lecture

T - Tutorial

P - Practical

CIE - Continuous Internal Evaluation

ESE-End Semester Exam

C-Credit

**Departmental Elective- 4** 

Sub Code Sub Name

USB8101 Industrial Microbiology UBS8102 MOOCs from SWAYAM

Biotech1/2

## STUDY & EVALUATION SCHEME B.SC. (H) BIOTECHNOLOGY LIST OF ELECTIVE

	MINOR ELECTIVE COURSES (OPEN FOR THE STUDENTS OF OTHER PROGRAMS OF THE UNIVERSITY)												
S.	SUBJECT	SUBJECT	SEMESTER										
NO.	CODE												
1	UBS2304	Bioethics and Bio-safety	4	II									
2	UBS2305	Food Plant Sanitation	4	II									
3	UBS2305	Food Quality Management	4	II									
4	UBS4301	Ecology and Environmental	4	IV									
		Management											
5	UBS4302	Food Quality and Standard	4	IV									
6	UBS4303	MOOCS from SWAYAM Biotech	4	IV									
		1											
7	UBS8301	Medical Microbiology	4	VIII									
8	UBS8302	Food Microbiology	4	VIII									