

Sri Srinivasa Educational & Charitab SAPTHAGIRI COLLEGE OF ENGINEERING, BANGALORE – 57 (Affiliated to VTU, Belagavi, and Recognized by AICTE, New Delhi) (ISO: 9001-2015 and ISO: 14001-2015 certified, NAAC accredited with A Grade) 14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057 DEPARTMENT OF BIOTECHNOLOGY

1.3.2 Number of courses that include experiential learning through project work/field work/internship during the year 2021 -22

S1.No.	Program name	Program code	Name of the Course that include experiential learning through project work/field work/internship	Course code	Details of Experiential Learning through Projects/ Internship
			FINAL YEAD	R	
1.	BIOTECHNOLOG	Y BT	Bioprocess Engineering	18BT71	Microbial production of Polyhydroxy butyrate and Screening
2.	BIOTECHNOLOG	Y BT	Clinical & Pharmaceutical BT	18BT72	Removal of phosphorus from waste water by using isolated bacterial strains in
3.	BIOTECHNOLOG	Y BT	Bioreactor Design Concepts	18BT732	Effect of anti-inflammatory Potential of Santalum album L on Periodontal disease progress in rat models
4.	BIOTECHNOLOG	Y BT	Agricultural Biotechnology	18BT742	Time killing studies and antimicrobial of <i>Vinca rosea leaf</i> extract against pathogenic microbes
5.	BIOTECHNOLOG	Y BT	Bioprocess Engineering Laboratory	18BTL76	Determination of Antioxidant Activity of Vetivoria Zizanioides and Centratherum anthelminticum
6.	BIOTECHNOLOG	Y BT	Project Work Phase – 1	18BTL77	Optimization studies on isolation of Protease enzyme catalytic activity on blood stain
7.	BIOTECHNOLOGY	Y BT	Internship	18BTP71	Antiglycation activity of Garcinia camgogia
8.	BIOTECHNOLOGY	Y BT	Regulatory Affairs In Biotech	18BT81	Identification of fermentation mediating mechanism carried out by naturally available yeast and commercially

Sapthagili College of Engineering 14/5, Chikkasapdra, Hesaraghatta Main Road Bengaluru - 596-057 Dept. of Bio - Technology Sapihagiri College of Enciment No. 57/1 Chikle



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			Industry		available yeast under aerobic condition
9.	BIOTECHNOLOGY	BT	Environmental Biotechnology	18BT821	Aeroponoics: Fabrication and Comparative study for agriculture in drought region
10.	BIOTECHNOLOGY	BT	Industrial Microbiology	18BT822	Comparision Analysis of 2D and 3D cell Culture in cancer cell line
11.	BIOTECHNOLOGY	BT	Project Work Phase - 2	18BTP83	Production and characterization of bioplastic from vegetable
12.	BIOTECHNOLOGY	BT	Technical Seminar	18BTS84	Fabrication of metal doped graphane based screen printed electrode for detection of glucose
13.	BIOTECHNOLOGY	BT	Internship	18BTI85	Isolation, identification and Characterization of Debittering enzymes from microbial source
14.	BIOTECHNOLOGY	BT			Production of activated carbon from coconut shell for the purification of water
15.	BIOTECHNOLOGY	BT			Screening of Phytochemicals and Insilico approach through drug design of Centella asiatica to cure SARs COV-2
		1.31	THIRI) YEAR	
16.	BIOTECHNOLOGY	BT	Chemical Reaction Engineering	18BT52	Effect of green inhibitor on corrosion
17.	BIOTECHNOLOGY	BT	Enzyme Technology & Biotransformation	18BT53	Bacterial fertilizers
18.	BIOTECHNOLOGY	BT	Genomics & Proteomics	18BT54	Microwave assisted green synthesis of carbon dots



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19.					Isolation identification and characterization of phosphate solubilising bacteria from soil and preparation of
12	BIOTECHNOLOGY	BT	Bioanalytical Techniques	18BT55	biofertilizer
20.	BIOTECHNOLOGY	BT	Genetic Engineering &Applications	18BT56	Isaolation of bromelain enzyme from pineapple and estimation of its enzyme activity
21.	BIOTECHNOLOGY	BT	Biokinetics & Enzyme Technology Laboratory	18BTL57	characterization of keratinase enzyme from the microbial source
22.	BIOTECHNOLOGY	BT	Genetic Engineering and Cell Culture Laboratory	18BTL58	Isolation, characterization and determination of activity of gama-CGTase from alkalophilic bacteria
23.	BIOTECHNOLOGY	BT	Process Control & Automation Chemical	18BT61	Bacterial contamination on the surface of mobile phones
24.	BIOTECHNOLOGY	BT	Bioinformatics	18BT63	Phytochemical analysis and total phenol and flavonoid content of the plant extract <i>Nasturtium officinale</i>
25.	BIOTECHNOLOGY	BT	Bioinformatics Laboratory	18BTL67	Green synthesis of silver nanoparticles using Nasturtium officinale
26.	BIOTECHNOLOGY	BT	Mini-project	18BTMP68	Elucidation of mass transfer rate of drug delivery and rate constant of antimicrobial activity: PVA encapsulated biopolymeric film using shrinking core model
27.	BIOTECHNOLOGY	BT	No. Contraction		Transformation in bacteria by heat shock method
		0.24	SECO	OND YEAR	
28.	BIOTECHNOLOGY	BT	Microbiology	18BT32	Production of ethanol

Sapthagiri College of Engineering" 14/5, Chikkesandra, Hesaraghatta Main Road Bengaluru - 530 057

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29.	BIOTECHNOLOGY	BT	Unit Operations	18BT33	Hemodialysis	
80.	BIOTECHNOLOGY	BT	Introduction to Biomolecules	18BT34	Diabetic nephropathy	
31.	BIOTECHNOLOGY	BT	Microbiology Laboratory	18BTL37	Aquaponics	
2.	BIOTECHNOLOGY	BT	Unit Operations Laboratory	18BTL38	Working model of Kidney	
3.	BIOTECHNGLOGY	BT	Stoichiometry	18BT41	Bioreactor	
4.	BIOTECHNOLOGY	BT	Molecular Biology	18BT42	Vertical farming	
5.	BIOTECHNOLOGY	BT	Immunotechnology	18BT43	Pumping action of heart	
5.	BIOTECHNOLOGY	BT	Cell Culture Techniques	18BT44	Wind solar hybrid system	
7.	BIOTECHNOLOGY	BT	Clinical Biochemistry	18BT46	Slow sand filtration	
3.	EKOTECHNOLOGY	BT	Biochemistry Laboratory	18BTL47	Water filtration	
9.	BIOTECHNOLCOY	ЗT	Immunotechnology Laboratory	18BTL4S	DNA recombination	
0.	BIGTECHNOLOGY	BT			Working of heart	
1.	BIOTECHNOLOGY	BT	· · · · · · · · · · · · · · · · · · ·		Transcription	a single

Principal Sapthagiri College of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road Bengaluru - 560 057

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELAGAVI



Scheme of Teaching and Examination B.E. BIOTECHNOLOGY III-VIIISEMESTER (Effective from Academic year 2018-19)

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SI. No	27.51	ourse and urse Code	Course Title	Teaching Department	Theory Lecture	Tutorial	Hractical	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
	BSC	18BT31	Biostatistics	Mathematics	3	1	1.	03	40	60	100	3
1 2	PCC	18BT32	Microbiology	Biotech	4	0		03	40	60	100	4
2	PCC	18BT33	Unit Operations	Chemical/Biotech	3	1		03	40	60	100	3
4	PCC	18BT34	Introduction to Biomolecules	Biotech	3	1	1	03	40	60	100	
5	PCC	18BT35	Cell Biology and Genetics	Biotech	3	0		03	40	60	100	3
6	PCC	18BT36	Python Programming	CSE	3	1		03	40	60	100	3
7	PCC	18BTL37	Microbiology Laboratory	Biotech		2	2	03	40	60	100	2
8	PCC	18BTL38	Unit Operations Laboratory	Chemical/Biotech		2	2	03	40	60	100	2
-		18KVK39	Vyavaharika Kannada (Kannada for communication)/									-
		18KAK39	Aadalitha Kannada (Kannada for Administration)			2			100		1. S. A.	
9	HSMC	TORARS	OR	HSMC		1					100	1 1
-		-			1			02	40	60		
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1				da ana ang ang ang ang ang ang ang ang an	19	08	1	24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	2
			The second s	and the second	20	10		26	360	540		1.00
0)Th ogra	K39Vyavah hts who spea NCMC e mandatory ams shall att c/fails to see	harika Kannada ak, read and wri 18MATDIP3 1 non – credit c tend the classes	Course prescribed to lateral entry Diploma ho	eading and writing st olders admitted to Mathematics d IV semesters respects s of the course and ap	udents and 1 III semester 02 tively, to the	8KAK39 / er of Eng 01 e lateral er University	ineering p 	03 03 na holders on. In case	40 admitted to admitted to	60 o III semes ont fails to p	100 ster of BE/I register for	B. Te

Lateral entrant students from B.Sc. Stream, shall clear the non-credit courses Engineering Graphics and Elements of Civil Engineering and Mechanics of the First Year Engineering Programme. These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

AICTE Activity Points to be earned by students admitted to BE/B. Tech/B. Plan. day college programme (For more details refer to Chapter 6, AICTE Activity Point Programme, Model Internship Guidelines):

Over and above the academic grades, everyday College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other Universities to fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card.

The activities can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimum hours' requirement should be fulfilled. Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.

In case students fail to earn the prescribed activity Points, Eighth semester Grade Card shall be issued only after earning the required activity Points. Students shall be admitted for the award of degree only after the release of the Eighth semester Grade Card.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2018 – 19

Outcome Based Education(OBE) and Choice Based Credit System (CBCS)

(Effective from the academic year 2018 – 19)

Programme: BIOTECHNOLOGY

III SEMESTER (continued)

Courses prescribed to lateral entry B.Sc. degree holders admitted to III semester of Engineering programs

Lateral entrant students from B.Sc. Stream, shall clear the non-credit courses Engineering Graphics and Elements of Civil Engineering and Mechanics of the First Year Engineering Programme. These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

AICTE Activity Points to be earned by students admitted to BE/B. Tech/B. Plan. day college programme (For more details refer to Chapter 6, AICTE Activity Point Programme, Model Internship Guidelines):

Over and above the academic grades, everyday College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other Universities to fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card.

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V SE	MESTER				Teaching H	ours /Weak	-		Evan	ination		
51. No		Course and ourse Code	Course Title	Teaching Department	Leaching H	T T	d Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
	PCC	18BT41	Stoichiometry	Chemical/Biotech	3	1	1.er	03	40	60	100	3
2	PCC	18BT42	Molecular Biology	Biotech	4	0		03	40	60	100	4
3	PCC	18BT42 18BT43	Immunotechnology	Biotech	3	0	77	03	40	60	100	3
4	PCC	18BT44	Cell Culture Techniques	Biotech	3	0		03	40	60	100	3
5	PCC	18BT45	Biochemical Thermodynamics	Chemical/Biotech	3	1		03	40	60	100	3
6	PCC	18BT46	Clinical Biochemistry	Biotech	3	0		03	40	60	100	3
7	PCC	18BTL47	Biochemistry Laboratory	Biotech		2	2	03	40	60	100	2
8	PCC	18BTL48	Immunotechnology Laboratory	Biotech		2	2	03	40	60	100	2
0	ice	18KVK49	Vyavaharika Kannada (Kannada for communication)/	Dioteen		2	-	05	40	00	100	
		18KAK49	Aadalitha Kannada (Kannada for Administration)	-		2			100	-		
9	HSMC	18KAK49	Aadanina Kannada (Kannada for Administration)	- HSMC		-					100	1
2	nowie			OR			1	02	10	(0	100	1
	2.237	18CPC49	Constitution of India, Professional Ethics and Cyber Law	and the second states of the second states	1001				40	60		
					10	-	ion is by obj			400		
				TOTAL	19 OR	06 OR	04	24 OR	420 OR	480 OR	900	2
				TOTAL	20	08	04	26	360	540	900	4
KVK te K 0 The	49Vyavaha annada. NCMC mandatory r	rika Kannada (Ka 18MATDIP41 10n – credit cours	ofessional Core, HSMC: Humanity and Social Science, NCMC: No annada for communication) is for non-Kannada speaking, reading a Course prescribed to lateral entry Diploma Additional Mathematics - II ses Additional Mathematics I and II prescribed for III and IV seme ers to complete all the formalities of the course and appear for the	holders admitted to II Mathematics sters respectively, to the la	KAK49 Aad I semester 02 Iteral entry D	of Enginee 01 iploma hold	ering progr	ams 03 to III seme:	40 ster of BE/B	60 . Tech. Pro	100 grams shall	atte

Lateral entrant students from B.Sc. Stream, shall clear the non-credit courses Engineering Graphics and Elements of Civil Engineering and Mechanics of the First Year Engineering Programme. These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

AICTE Activity Points to be earned by students admitted to BE/B. Tech/B. Plan. day college programme (For more details refer to Chapter 6, AICTE Activity Point Programme, Model Internship Guidelines): Over and above the academic grades, everyday College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other Universities to fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card.

The activities can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimum hours' requirement should be fulfilled. Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.

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			Outcome Based Education(C	ing and Examination	a 2018 – 19 ed Credit	9 System						
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V SE	EMESTER						1000	12.7				26. 19
					Teaching H	lours /Wee	k		Exam	ination	anne S	
SI. No		ourse and urse Code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	Р				F	1567
1	HSMC	18BT51	Bio-Business and Entrepreneurship	HSMC/Biotech	3	- 17		03	40	60	100	3
2	PCC	18BT52	Chemical Reaction Engineering	Chemical/Biotech	4	1		03	40	60	100	4
3	PCC	18BT53	Enzyme Technology & Biotransformation	Biotech	4		All reactions	03	40	60	100	4
4	PCC	18BT54	Genomics & Proteomics	Biotech	3	1		03	40	60	100	3
5	PCC	18BT55	Bioanalytical Techniques	Biotech	3	01		03	40	60	100	3
6	PCC	18BT56	Genetic Engineering & Applications	Biotech	3		tor there is	03	40	60	100	3
7	PCC	18BTL57	Biokinetics & Enzyme Technology Laboratory	Chemical/Biotech		2	2	03	40	60	100	2
8	PCC	18BTL58	Genetic Engineering and Cell Culture Laboratory	Biotech		2	2	03	40	60	100	2
9	HSMC	18CIV59	Environmental Studies	Civil/ Environmental [Paper setting: Civil Engineering Board]	1 E	 Examinatio	 on is by obj	02 ective type	40 questions	60	100	1
		Y. C. State		TOTAL	21	06	04	26	360	540	900	25

Note: BSC: Basic Science, PCC: Professional Core, HSMC: Humanity and Social Science, NCMC: Non-credit mandatory course.

continued

AICTE Activity Points to be earned by students admitted to BE/B. Tech/B. Plan. day college programme (For more details refer to Chapter 6,AICTE Activity Point Programme, Model Internship Guidelines):

Over and above the academic grades, everyday College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other Universities to fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card.

The activities can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimum hours' requirement should be fulfilled. Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.

In case students fail to earn the prescribed activity Points, Eighth semester Grade Card shall be issued only after earning the required activity Points. Students shall be admitted for the award of degree only after the release of the Eighth semester Grade Card.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
Scheme of Teaching and Examination 2018 – 19
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2018 – 19)

		Alex Condition			Teaching Ho	ours /Week			Exam	ination		
SI. No	Course Title		Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits	
					L	Т	Р				-	
1	PCC	18BT61	Process Control & Automation	Chemical	4	I		03	40	60	100	4
2	PCC	18BT62	Bioprocess Equipment Design & CAED	Chemical	4	2		04	40	60	100	4
3	PCC	18BT63	Bioinformatics	Biotech	4	ina dia		03	40	60	100	4
4	PEC	18BT64X	Professional Elective -1	Biotech	3			03	40	60	100	3
5	OEC	18BT65X	Open Elective -A	Biotech	3	Kat	- 161	03	40	60	100	3
6	PCC	18BTL66	Process Control & Automation Laboratory	Chemical		2	2	03	40	60	100	2
7	PCC	18BTL67	Bioinformatics Laboratory	Biotech	100 Tan (1977)	2	2	03	40	60	100	2
8	MP	18BTMP68	Mini-project	William Alexandri		1	2	03	40	60	100	2
9	Internship	-	Internship		To be carrie	d out duri	ng the vaca	tion/s of V semest		emesters a	und /or VII	and VIII
			and the second second second second	TOTAL	18	08	06	25	320	480	800	24

Note: PCC: Professional core, PEC: Professional Elective, OE: Open Elective, MP: Mini-project.

Mini-project work:

Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary Mini-project can be assigned to an individual student or to a group having not more than 4 students.

CIE procedure for Mini-project:

Programme: BIOTECHNOLOGY

(i) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide.

The CIE marks awarded for the Min-project work, shall be based on the evaluation of project report, project presentation skill and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

(ii) Interdisciplinary: Continuous Internal Evaluation shall be group wise at the college level with the participation of all guides of the college.

The CIE marks awarded for the Mini-project, shall be based on the evaluation of project report, project presentation skill and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2018 – 19 Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2018 – 19)

Programme: BIOTECHNOLOGY

VI SEMESTER (continued)

SEE for Mini-project:

(i) Single discipline: Contribution to the Mini-project and the performance of each group member shall be assessed individually in semester end examination (SEE) conducted at the department. (ii) Interdisciplinary: Contribution to the Mini-project and the performance of each group member shall be assessed individually in semester end examination (SEE) conducted separately at the departments to which the student/s belongs to.

Internship: All the students admitted to III year of BE/B.Tech. Shall have to undergo mandatory internship of 4 weeks during the vacation of VI and VII semesters and /or VII and VIII semesters. A University examination shall be conducted during VIII semester and the prescribed credit shall be included in VIII semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as failed and shall have to complete during subsequent University examination after satisfying the internship requirements.

Professional Elective -1

Course code under18BT64X Course Title

18BT641: Food Process Engineering

18BT642: Phyto-Chemistry and Phyto-Harmones

18BT643: Human Physiology

Open Elective -A

18BT651: Biology for Engineers

18BT652:Biomaterials

18BT653: Nanobiotechnology

Students can select any one of the open electives offered by other Departments expect those that are offered by the parent Department (Please refer to the list of open electives under 18BT65X). Selection of an open elective shall not be allowed if,

• The candidate has studied the same course during the previous semesters of the programme.

· The syllabus content of open elective is similar to that of Departmental core courses or professional electives.

• A similar course, under any category, is prescribed in the higher semesters of the programme.

Registration to electives shall be documented under the guidance of Programme Coordinator/ Advisor/Mentor.

AICTE activity Points: In case a student fails to earn the prescribed activity Points, Eighth semester Grade Card shall be issued only after earning the required activity Points

			Outcome Based Education		d Credit S	System (CBCS)					
VIIS	SEMESTER		(Effective fr	om the academic year 2	2018 – 19)	10- 10- 					10 July 10	
					Teaching H	ours /Week			Exam	ination		T
SI. No		se and se Code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	Т	Р	P	0	ŝ	F	
1	PCC	18BT71	Bioprocess Engineering	Chemical/ Biotech	4	1	1000	03	40	60	100	
2	PCC	18BT72	Clinical & Pharmaceutical Biotechnology	Biotech	4			03	40	60	100	
3	PEC	18BT73X	Professional Elective – 2	Chemical/ Biotech	3		-	03	40	60	100	
4	PEC	18BT74X	Professional Elective – 3	Biotech	3			03	40	60	100	12
5	OEC	18BT75X	Open Elective -B	Biotech	3		- 1922	03	40	60	100	
6	PCC	18BTL76	Bioprocess Engineering Laboratory	Chemical/ Biotech		2	2	03	40	60	100	
7	Project	18BTP77	Project Work Phase – 1	the set of the set of the set of the			2	1 - 24 - V I	100	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100	
8	Internship	18BT71	Internship	(If not completed			VI and VII VII and VI			carried out	during th	e
TOT	AL				17	03	04	18	340	360	700	

Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinaryproject can be assigned to an individual student or to a group having not more than 4 students. In extraordinary cases, like the funded projects requiring students from different disciplines, the project student strength can be 5 or 6.

CIE procedure for Project Work Phase - 1:

(i) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide.

The CIE marks awarded for the project work phase -1, shall be based on the evaluation of the project work phase -1 Report, project presentation skill and question and answer session in the ratio 50:25:25.The marks awarded for the Project report shall be the same for all the batch mates.

(ii) Interdisciplinary: Continuous Internal Evaluation shall be group wise at the college level with the participation of all guides of the college. Participation of external guide/s, if any, is desirable.

The CIE marks awarded for the project work phase -1, shall be based on the evaluation of project work phase -1 Report, project presentation skill and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2018 – 19 Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2018 – 19)

Programme: BIOTECHNOLOGY

VI SEMESTER (continued)

Internship: All the students admitted to III year of BE/B. Tech. shall have to undergo mandatory internship of 4 weeks during the vacation of VI and VII semesters and /or VII and VIII semesters. A University examination shall be conducted during VIII semester and the prescribed credit shall be included in VIII semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as failed and shall have to complete during subsequent University examination after satisfying the internship requirements

Prof	fessional Elective – 2	Prof	fessional Electives - 3
Course code under 18BT73X	Course Title	Course code under 18BT74X	Course Title
18BT731	Process Equipment & Plant Design	18BT741	Bioethics, Biosafety & IPR
18BT732	Bioreactor Design Concepts	18BT742	Agricultural Biotechnology
18BT733	Transport Phenomena	18BT743	Tissue Engineering
	OI	en Elective -B	
Course code under 18BT75X	Course Title		

	Course Thie	
18BT751	BT for sustainable Environment	
18BT752	Forensic Science	
18BT753	Biological Data Management	

Students can select any one of the open electives offered by other Departments expect those that are offered by the parent Department (Please refer to the list of open electives under 18BT75X). Selection of an open elective shall not be allowed if,

• The candidate has studied the same course during the previous semesters of the programme.

• The syllabus content of open elective is similar to that of Departmental core course/s or professional electives.

• A similar course, under any category, is prescribed in the higher semesters of the programme.

· Registration to electives shall be documented under the guidance of Programme Coordinator/ Advisor/Mentor.

AICTE activity Points: In case a student fails to carn the prescribed activity Points, Eighth semester Grade Card shall be issued only after earning the required activity Points.

	1		Scheme Outcome Based Edu	A TECHNOLOGICAL UNI of Teaching and Examinatio (cation(OBE) and Choice Ba ctive from the academic yea	on 2018 – 1 ised Credit	9 System						
Prog	ramme: BIC	DTECHNOI	LOGY			11.191.7	1. 1. 1. 2.	i California	5.32.54	A. S. A.	Sec. 1	
VIII	SEMESTER	2		and the state of the second	1.1.1.1.1.1	1.5		-2512		1 1 2		
120					Teaching Hours /Week			Examination				
SI. No	Course and Course Code		Course Title	Teaching Department	Theory Lecture	Tutorial Practical/ Drawing	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	P					
1	PCC	18BT81	Regulatory Affairs in Biotech Industry	Biotech	3		1	03	40	60	100	3
2	PEC	18BT82X	Professional Elective - 4	Biotech	3			03	40	60	100	3
3	Project	18BTP83	Project Work Phase - 2				2	03	40	60	100	8
4	Seminar	18BTS84	Technical Seminar				2	03	100		100	1
5	Internship	18BTI85	Internship	Completed during the vacation/s of VI and VII semesters and /or VII and VIII semesters. 03 40 60 100						3		
		all part of the		TOTAL	06		04	15	260	240	500	18
Note:	PCC: Profess	ional Core, PE	C: Professional Elective.		THE PLAN		a contra		N. T.			
		M. M. Maria		Professional Electives - 4	TRUE TO THE			17.2.5		d. Clav	No.	
Cours	e code under	18BT82X	Course Title	and the second		Proventil	Di At	Terrar III	14	2012015	2	-

Course code under 18BT82X	Course Title
18BT821	Environmental Biotechnology
18BT822	Industrial Microbiology
18BT823	Marine Biotechnology

Project Work

CIE procedure for Project Work Phase - 2:

(i) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide.

The CIE marks awarded for the project work phase -2, shall be based on the evaluation of project work phase -2 Report, project presentation skill and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

(ii) Interdisciplinary: Continuous Internal Evaluation shall be group wise at the college level with the participation of all guides of the college. Participation of external guide/s, if any, is desirable. The CIE marks awarded for the project work phase -2, shall be based on the evaluation of project work phase -2 Report, project presentation skill and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

SEE for Project Work Phase - 2:

(i) Single discipline: Contribution to the project and the performance of each group member shall be assessed individually in semester end examination (SEE) conducted at the department. (ii) Interdisciplinary: Contribution to the project and the performance of each group member shall be assessed individually in semester end examination (SEE) conducted separately at the departments to which the student/s belong to.

Internship: Those, who have not pursued /completed the internship, will be declared as failed and have to complete during subsequent University examination after satisfying the internship requirements.

AICTE activity Points: In case a student fails to earn the prescribed activity Points, Eighth semester Grade Card shall be issued only after earning the required activity Points. The principals shall include the prescribed activity points earned by the students along with the CIE marks.