

ACS College of Engineering

(Approved by AICTE, New Delhi, Govt. of Karnataka & Affiliated to Visvesvaraya Technological University, Belgaum)

Sponsored by: MOOGAMBIGAI CHARITABLE AND EDUCATIONAL TRUST







1.3.2.1 Number of courses that include experiential learning through project work/field work/internship year - wise during last five years

The data shown below is the list of courses that include experiential learning through project work/field work/internship during the year 2020-2021.

SI.No	Program code	Program Name	Course	Course Name		
1	EC	Electronics And Communication Engineering	17ECP78	Project Work		
2	EC	Electronics And Communication Engineering	17EC84	Internship		
3	EC	Electronics And Communication Engineering	17ECP85	Project Work		
4	ME	Mechanical Engineering	17MEP78	Project Work		
5	ME	Mechanical Engineering	17ME84	Internship / Professional Practice		
6	ME	Mechanical Engineering	17ME85	Project Work		
7	AE	Aeronautical Engineering	17AEP78	Project Work		
8	AE	Aeronautical Engineering	17AE84	Internship Professional		
9	AE	Aeronautical Engineering	17AEP85	Project Work		
10	CV	Civil Engineering	17CVP78	Project Work		
11	CV	Civil Engineering	17CV84	Internship/ Professional Practice		
12	CV Civil Engineering		17CVP85	Project Work		
13	BM	Biomedical Engineering	18BMP68	Mini Project		
14	вм	Biomedical Engineering	17BMP78	Project Work		
15	вм	Biomedical Engineering	17BM84	Internship		
16	ВМ	Biomedical Engineering	17BMP85	Project Work		
17	CS	Computer Science & Engineering	18CSL67	Computer Graphics Laboratory With Mini Project		
18	CS	Computer Science & Engineering	17CSP78	Project Work		
19	CS	Computer Science & Engineering	17CS84	Internship/ Professional Practice		
20	CS	Computer Science & Engineering	17CSP85	Project Work		
21	AS	Aerospace	18ASMP68	MINI-PROJECT		
22	AS	Aerospace	17ASP78	Project Work		
23	AS	Aerospace	17AS84	INTERNSHIP		
24	AS	Aerospace	17ASP85	Project Work		
25	CSE	Mtech Structural Engineering	18CSE34	Project Work		
26	CSE	Mtech Structural Engineering	18CSEI35	Internship		
27	CSE	Mtech Structural Engineering	18CSE41	Project Work		
28	MPD	Product Design & Manufacturing	18MPD34	Project Work		
29	MPD	Product Design & Manufacturing	18MPDI35	Internship		





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SL.NO	Program code	Program Name	Course code	Course Name
30	MPD	Product Design & Manufacturing	18MPD41	Project Work Phase -2
31	MAE	M.Tech Aeronautical Engineering	18MAE34	Evaluation Of Project Phase I
32	MAE	M.Tech Aeronautical Engineering	18MAE41	Project Work Phase II

PRINCIPAL

Aeronautical Engineering

VII Semester

S.	Subject		Tea	Teaching Hours /Week		Examination			
No	Code	Title	Theo ry	Practical/Dra wing	Durati on	Theory/ Practica I Marks	I.A. Marks	Total Marks	
1	17AE71	CONTROL ENGINEERING	04		03	60	40	100	4
2	17AE72	COMPUTATIONAL FLUID DYNAMICS	04		03	60	40	100	4
3	17AE73	AIRCRAFT STABILITY AND CONTROL	04		03	60	40	100	4
4	17AE74X	PROFESSIONAL ELECTIVE	03		03	60	40	100	3
5	17AE75X	PROFESSIONAL ELECTIVE	03		03	60	40	100	3
6	17AEL76	FLIGHT SIMULATION LAB		1I+2P	03	60	40	100	2
7	17AEL77	MODELING AND ANALYSIS LAB		1I+2P	03	60	40	100	2
8	17AEP78	Project Phase –I + Project Seminar	-	03			100	100	2
	7	TOTAL	18	9	21	420	380	800	24

Profession	al Elective (17AE74X)	Profession	al Elective (17AE75X)
17AE741	FATIGUE AND FRACTURE MECHANICS	17AE751	OPERATIONS RESEARCH
17AE742	HIGH PERFORMANCE COMPUTING	17AE752	WIND TUNNEL TECHNIQUES
17AE743	HELICOPTER DYNAMICS	17AE753	NUMERICAL METHODS
17AE744	AERO-ELASTICITY	17AE754	GUIDANCE, NAVIGATION & CONTROL

- 1. Core subject: This is the course which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Project Phase -I + Project Seminar: Literature Survey, Problem Identification, objectives and Methodology. Submission of synopsis and seminar.

Aeronautical Engineering VIII SEMESTER

			Teach	ing Hours /Week			Credi					
SI. N	Subject Code	Title	Theor y	Practical/Drawi ng	Duratio n	Theo ry/ Pract ical Mark	I.A. Marks	Total Mark s	t			
1	17AE81	AVIONICS	4		3	60	40	100	4			
2	17AE82	FLIGHT VEHICLE DESIGN	4 -		3	60	40	100	4			
3	17AE83X	Professional Elective	3	3	3	3		3	60	40	100	3
4	17AE84	Internship / Professional Practice	Ind	Industry Oriented		50	50	100	2			
5	17AEP85	Project Work Phase	1	6	3	100	100	200	6			
6	17AES86	Seminar	-	4			100	100	1			
1	T	OTAL	11	10	15	330	370	700	20			

Professional	Elective	
17AE831	FLIGHT TESTING	
17AE832	BOUNDARY LAYER THEORY	
17AE833	OPTIMIZATION TECHNIQUES	V 10 13
17AE834	CRYOGENICS	

- Core subject: This is the course, which is to be compulsorily studied by a student as a core
 requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Internship / Professional Practice: To be carried between the 6th and 7th semester vacation or 7th and 8th semester vacation period.

B.E. AEROSPACE ENGINEERING

* ***		FROT	CECT
VII	2110	MEST	EK

31	EMESTER		Tea		hing /Week		Examin	ation		Credits
S I. N	Subject Title Code	Title	chi ng Dep t.	Theo ry	Pract ical/ Draw ing	Durati on	Theo ry/ Pract ical Mark s	I.A. Marks	Tot al Ma rks	
1	17AS71	AVIONICS SYSTEMS	AS	04		03	60	40	100	4
2	17AS72/1 7AE72	COMPUTATIONAL FLUID DYNAMICS	AS	04		03	60	40	100	4
3	17AS73/	SPACE VEHICLE DESIGN	AS	04		03	60	40	100	4
4	17AS74X	PROFESSIONAL ELECTIVE	AS	03		03	60	40	100	3
5	17AS75X	PROFESSIONAL ELECTIVE	AS	03		03	60	40	100	3
6	17ASL77	COMPUTATIONAL FLUID DYNAMICS LAB	AS		1I+2P	03	60	40	100	2
7	17ASL78	SPACE SIMULATION LAB	AS		1I+2P	03	60	40	100	2
8	17ASP78	PROJECT PHASE I + PROJECT SEMINAR	AS		03	-	(-)	100	100	2
	-	TOTAL		18	9	21	420	380	800	24

Foundation	Elective	Elective					
17AS741/ 17AE741	FATIGUE AND FRACTURE MECHANICS	17AS751	OPTIMIZATION TECHNIQUES				
17AS742	TOTAL QUALITY MANAGEMENT	17AS752/ 17AE752	WIND TUNNEL TECHNIQUES.				
17AS743	THEORY OF ELASTICITY & PLASTICITY	17AS753	SMART MATERIALS & CONTROLS				
17AS744/ 17AE744	AERO-ELASTICITY	17AS754/ 17AE754	GUIDANCE, NAVIGATION & CONTROL				

- 1. Core subject: This is the course which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Project Phase -I + Project Seminar: Literature Survey, Problem Identification, objectives and Methodology. Submission of synopsis and seminar.

B.E. AEROSPACE ENGINEERING

VIII SEMESTER

	MESTER			Teaching Hours/Week				Credits		
S I. N o	Subject Code	Code	Teach ing Dept.	The ory	Practi cal/Dr awing	Dur atlo n	Theory / Practic al Marks	I.A. Mark s	Total Marks	
1	17AS81	SATELLITE DESIGN	AS	4	-	3	60	40	100	4
2	17AS82	MISSILE DESIGN	AS	4		3	60	40	100	4
3	17AS83X	Professional Elective	AS	3	-	3	60	40	100	3
4	17AS84	Internship 7	AS		lustry iented	3	50	50	100	2
5	17ASP85	Project Work Phase II	AS	-	6	3	100	100	200	6
6	17ASS86	Seminar	AS	-	4	-	15	100	100	1
_		TOTAL		11	10	15	330	370	700	20

Elective-I	
17AS831	ARTIFICIAL INTELLIGENCE
17AS832	CRYOGENICS
17AS833	ROBOTICS
17AS834	SPACE CRAFT SYSTEMS

- Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the
 requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Internship / Professional Practice: To be carried between the 6th and 7th semester vacation or 7th and 8th semester vacation period.

B.E. Biomedical Engineering

VII SEMESTER

	New 1888		55-51 0500	Teachir	ng Hours /Week		Exam	ination		
Sl. No	Subject Code	Title	Teaching Department	Theory	Practical/ Drawing	Duration (in Hrs)	SEE Marks	CIE Marks	Total Marks	Credits
1	17BM71	Biomedical Digital Signal Processing	ВМ	04	A-W	03	60	40	100	4
2	17BM72	Computer Communication Networks in Healthcare	ВМ	04		03	60	40	100	4
3	17BM73	ARM Processor	ВМ	04		03	60	40	100	4
4	17BM74X	Professional Elective-III	BM	03	-41	03	60	40	100	3
5	17BM75X	Professional Elective-IV	ВМ	03	-	03	60	40	100	3
6	17BML76	Biomedical DSP Lab	ВМ	17	1Hr-Instruction 2Hr-Practical	03	60	40	100	2
7	17BML77	ARM Processor Lab	BM	K	1Hr-Instruction 2Hr-Practical	03	60	40	100	2
-8	17BMP78	Project Work Phase-I + Project Seminar	BM		03	- L		100	100	2
		TOTAL		18	9	21	420	380	800	24

Profession	al Elective-III	Professiona	al Elective-IV
17BM741	Database Management System in Healthcare	17BM751	Biostatistics
17BM742	Medical Informatics and Expert Systems	17BM752	Lasers and Optical Fibers in Medicine
17BM743	Hardware-Software Co-design	17BM753	Ergonomics
17BM744 Biometric Systems		17BM754	Big-data and Cloud Computing

• Project Phase – I and Project Seminar: Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.

B.E. Biomedical Engineering

VIII SEMESTER

				Teachin	g Hours /Week		Exam	ination		
Sl. No	Subject Code	Title	Teaching Department	Theory	Practical/ Drawing	Duration (in Hrs)	SEE Marks	CIE Marks	Total Marks	Credi
1	17BM81	Medical Imaging Systems	BM	4	4-34 A	3	60	40	100	4
2	17BM82	Biomaterials and Artificial Organs	BM	4	A- V	3	60	40	100	4
3	17BM83X	Professional Elective-V	BM	3	-	3	60	40	100	3
4	17BM84	Internship / Professional Practice	ВМ	Indust	ry Oriented	3	3 50	50	100	2
5	17BMP85	Project Work Phase-II	BM	-	6	3	100	100	200	6
6	17BMS86	Seminar	ВМ	-	4	B	-	100	100	1
		TOTAL		11	10	15	330	370	700	20

Profession	al Elective-V	M
17BM831	Bio-MEMS	4.
17BM832	Medical Device Regulations	
17BM833	Picture Archiving and Communication	
17BM834	Neural Networks and AI in Biomedia	cal Engg.

• Internship / Professional Practice: The 4 Weeks internship to be completed between the VI and VII semester vacation, and/or VII and VIII semester vacation period.

Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

B.E: Computer Science and Engineering

V SEMESTER

Sl.		Title	Teaching Department	Teaching	Hours /Week		Credits			
No	Course Code			Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CS51	Management and Entrepreneurship for IT Industry	CS/IS	04		03	60	40	100	4
2	17CS52	Computer Networks	CS/IS	04		03	60	40	100	4
3	17CS53	Database Management System	CS/IS	04		03	60	40	100	4
4	17CS54	Automata theory and Computability	CS/IS	04		03	60	40	100	4
5	17CS55x	Professional Elective-1	CS/IS	03		03	60	40	100	3
6	17CS56x	Open Elective-1	CS/IS	03		03	60	40	100	3
7	17CSL57	Computer Network Laboratory	CS/IS	01-Hour I 02-Hour F		03	60	40	100	2
8	17CSL58	DBMS Laboratory with mini project	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
			TOTAL		22hours : 06 hours	24	480	320	800	26

Professional	Elective-1		Open Electiv	e – 1*** (List offered by CSE Board only)
17CS551	CS551 Object Oriented Modeling and Design		17CS561	Programming in JAVA (Not for CSE/ISE students)
17CS552 Introduction to Software Testing			17CS562	Artificial Intelligence
17CS553	Advanced JAVA and J2EE		17CS563	Embedded Systems
17CS554 Advanced Algorithms			17CS564	Dot Net framework for application development;
			17CS565	Cloud Computing (Not for CSE/ISE students)

^{***}Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives). Selection of an open elective is not allowed, if:

- The candidate has no pre requisite knowledge.
- · The candidate has studied similar content course during previous semesters.
- The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s). Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

B.E: Computer Science and Engineering

VI SEMESTER

Sl.	Course	Title	Teaching Department		ng Hours Veek		Credits			
No	Code			Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CS61	Cryptography, Network Security and Cyber Law	CS/IS	04		03	60	40	100	4
2	17CS62	Computer Graphics and Visualization	CS/IS	04		03	60	40	100	4
3	17CS63	System Software and Compiler Design	CS/IS	04		03	60	40	100	4
4	17CS64	Operating Systems	CS/IS	04		03	60	40	100	4
5	17CS65x	Professional Elective-2	CS/IS	03		03	60	40	100	3
6	17CS66x	Open Elective-2	CS/IS	03		03	60	40	100	3
7	17CSL67	System Software and Operating System Laboratory	CS/IS		01-Hour Instruction 02-Hour Practical		60	40	100	2
8	17CSL68	Computer Graphics Laboratory with mini project	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
			TOTAL	Theory:22 Practical:		24	480	320	800	26

Professional	Elective-2		Open Elective –	2*** (List offered by CSE Board only)
17CS651	Data Mining and Data Warehousing		17CS661	Mobile Application Development
17CS652 Software Architecture and Design Patterns			17CS662	Big Data Analytics (Not for CSE/ISE students)
17CS653	17CS653 Operations research		17CS663	Wireless Networks and Mobile computing
17CS654	Distributed Computing system		17CS664	Python Application Programming
			17CS665	Service Oriented Architecture
			17CS666	Multicore Architecture and Programming

^{***}Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives). Selection of an open elective is not allowed, if:

[·] The candidate has no pre – requisite knowledge.

[·] The candidate has studied similar content course during previous semesters.

[·] The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s). Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

B.E: Computer Science and Engineering

VII SEMESTER

	EMESTER		Teaching	Teaching	Hours /Week		Examin	ation		Credits
Sl. No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CS71	Web Technology and its applications	CS/IS	04		03	60	40	100	4
2	17CS72	Advanced Computer Architectures	CS/IS	04		03	60	40	100	4
3	17CS73	Machine Learning	CS/IS	04		03	60	40	100	4
4	17CS74x	Professional Elective 3	CS/IS	03		03	60	40	100	3
5	17CS75x	Professional Elective 4	CS/IS	03		03	60	40	100	3
6	17CSL76	Machine Learning Laboratory	CS/IS	01-Hour II 02-Hour P		03	60	40	100	2
7	17CSL77	Web Technology Laboratory with mini project	CS/IS		01-Hour Instruction 02-Hour Practical		60	40	100	2
8	17CSP78	Project Work Phase–I + Project work Seminar	CS/IS		03			100	100	2
	TOTAL				3 hours and Project:	21	420	380	800	24

Profession	al Elective-3	Professional Elective-4				
17CS741	Natural Language Processing	17CS751	Soft and Evolutionary Computing			
17CS742	Cloud Computing and its Applications	17CS752	Computer Vision and Robotics			
17CS743	Information and Network Security	17CS753	Digital Image Processing			
17CS744	Unix System Programming	17CS754	Storage Area Networks			

^{1.} **Project Phase – I and Project Seminar:** Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.

Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

B.E: Computer Science and Engineering

VIII SEMESTER

			Teaching	Teachin	g Hours /Week		Examin	ation		Credits
Sl. No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CS81	Internet of Things and Applications	CS/IS	4	-	3	60	40	100	4
2	17CS82	Big Data Analytics	CS/IS	4	-	3	60	40	100	4
3	17CS83X	Professional Elective-5	CS/IS	3	-	3	60	40	100	3
4	17CS84	Internship/ Professional Practice	CS/IS	Indus	stry Oriented	3	50	50	100	2
5	17CSP85	Project Work-II	CS/IS	-	6	3	100	100	200	6
6	17CSS86	Seminar	CS/IS	-	4	-	-	100	100	1
	TOTAL				11 hours and Seminar:	15	330	370	700	20

Professional	Professional Elective -5							
17CS831 High Performance Computing								
17CS832	17CS832 User Interface Design							
17CS833	Network management							
17CS834	System Modeling and Simulation							

1. Internship/ Professional Practice: 4 Weeks internship to be completed between the (VI and VII semester vacation) and/or (VII and VIII semester vacation) period.

Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2017-2018

B.E: CIVIL ENGINEERING

VII SEMESTER

			Teaching	Teaching	Hours /Week		Examin	ation		Credits
Sl. No.	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CV71	Municipal and Industrial Waste Water Engineering	Civil Engg.	04		03	60	40	100	4
2	17CV72	Design of RCC and Steel Structures	Civil Engg.	04		03	60	40	100	4
3	17CV73	Hydrology and Irrigation Engineering	Civil Engg.	04		03	60	40	100	4
4	17CV74X	Professional Elective-3	Civil Engg.	03		03	60	40	100	3
5	17CV75X	Professional Elective-4	Civil Engg.	03		03	60	40	100	3
6	17CVL76	Environmental Engineering Laboratory	Civil Engg.	01-Hour II 02-Hour P		03	60	40	100	2
7	17CVL77	Computer Aided Detailing of Structures	Civil Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17CVP78	Project Work Phase–I + Project work Seminar	Civil Engg.		03			100	100	2
	TOTAL				3 hours and Project:	21	420	380	800	24

Professional	Elective-3	Professional Elective-4				
17CV741	Design of Bridges	Urban Transportation and Planning				
17CV742	Ground Water & Hydraulics	17CV752	Prefabricated Structures			
17CV743	Design Concept of Building Services	17CV753	Rehabilitation and Retrofitting of Structures			
17CV744	Structural Dynamics	17CV754	Reinforced Earth Structures			

^{1.} **Project Phase – I and Project Seminar:** Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.

Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2017-2018

B.E: CIVIL ENGINEERING

VIII SEMESTER

			Teaching	Teachin	g Hours /Week		Examin	ation		Credits
Sl. No.	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CV81	Quantity Surveying and Contracts Management	Civil Engg.	4	-	3	60	40	100	4
2	17CV82	Design of Pre Stressed Concrete Elements	Civil Engg.	4	-	3	60	40	100	4
3	17CV83X	Professional Elective-5	Civil Engg.	3	-	3	60	40	100	3
4	17CV84	Internship/ Professional Practice	Civil Engg.	Indus	stry Oriented	3	50	50	100	2
5	17CVP85	Project Work-II	Civil Engg.		6	3	100	100	200	6
6	17CVS86	Seminar on current trends in Engineering and Technology	Civil Engg.	-	4	-	-	100	100	1
		TOTAL			11 hours and Seminar:	15	330	370	700	20

Professiona	Professional Elective -5							
17CV831	Earthquake Engineering							
17CV832	Hydraulic Structures							
17CV833	Pavement Design							
17CV834	Advanced Foundation Design							

1. Internship/ Professional Practice: 4 Weeks internship to be completed between the (VI and VII semester vacation) and/or (VII and VIII semester vacation) period

B.E.: Electronics & Communication Engineering

	VII	IS.	EM	EST	EF
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	SEMESTER		Teaching Department		Teaching Hours /Week		Examination				
SI. No	Course Code	Title			Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks		
1	17EC81	Wireless Cellular and LTE 4G Broadband	EC	4	-	3	60	40	100	4	
2	17EC82	Fiber Optics & Networks	EC	4	-	3	60	40	100	4	
3	17EC83X	Professional Elective-5	EC	3	-	3	60	40	100	3	
4	/17EC84	/Internship/Professional Practice	EC	Industr	y Oriented	3	50	50	100	2	
5	[17ECP85]	Project Work	EC	-	6	3	100	100	200	6	
6	17ECS86	Seminar	EC	-	4	-	-	100	100	1	
		TOTAL		Project	11 hours and r: 10 hours	15	330	370	700	20	

Profession:	al Elective -5
17EC831	Micro Electro Mechanical Systems
17EC832	Speech Processing
17EC833	Radar Engineering
17EC834	Machine learning
17EC835	Network and Cyber Security

1. Internship/ Professional Practice: 4 Weeks internship to be completed between the (VI and VII semester vacation) and/or (VII and VIII semester vacation) period.

B.E.: Electronics & Communication Engineering

VII S	SEMESTER	B.E.: Electronics	Teaching Department	Teaching Hours /Week				Credits		
SI. No	Course Code	Title	Берагенен	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EC71	and Automore	EC	04		03	60	40	100	4
	The state of the s	Microwave and Antennas	EC	04		03	60	40	100	4
2	17EC72	Digital Image Processing				03	60	40	100	4
3	17EC73	Power Electronics	EC	04		0.5			100	3
4	17EC74X	Professional Elective-3	EC	03		03	60	40	100	
5	17EC75X		EC	03		03	60	40	100	3
3	17EC73X	Professional Elective-4		01-Hour	Instruction	03	60	40	100	2
6	17ECL76	Advanced Communication Lab	EC	02-Hour Practical		0.5	00	40	100	
7	17ECL77	VLSI Lab	EC	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
			EC		03		(S.)	100	100	2
8	/17ECP78	Project Work Phase-I + Project work Seminar	EC	m	10 hawa		-	200	900	24
		TOTAL		Practica	18 hours I and 09 hours	21	420	380	800	24

	71 -41 3	Professional Elective-4				
Professional Elective-3 17EC741 Multimedia Communication		17EC751	DSP Algorithms and Architecture			
17EC741		17EC752	10T and Wireless Sensor Networks			
17EC742	Biomedical Signal Processing		Pattern Recognition			
17EC743	Real Time Systems	17EC753	Advanced Computer Architecture			
17EC744	Cryptography	17EC754	Satellite Communication			
17EC745	CAD for VLSI	17EC755	Saterine Communication			

^{1.} Project Phase – I and Project Seminar: Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.

2017 Scheme

Visvesvaraya Technological University, Belagavi

B.E. in Mechanical Engineering

2017- Scheme of Teaching and Examination Choice Based Credit System (CBCS)

VII Semester

No			Teac	hing Hours	/Week	Examination				ts
SI. N	Subject Code	Title	Lecture	Tutorial	Practical	Duration (Hours)	SEE Marks	CIE Marks	Total Marks	Credits
1	17ME71	Energy Engineering	3	2	0	03	60	40	100	4
2	17ME72	Fluid Power Systems	4	0	0	03	60	40	100	4
3	17ME73	Control Engineering	3	2	0	03	60	40	100	4
4	17ME74X	Professional Elective - III	3	0	0	03	60	40	100	3
5	17ME75X	Professional Elective-IV	3	0	0	03	60	40	100	3
6	17MEL76	Design Lab	1	0	2	03	60	40	100	2
7	17MEL77	CIM Lab	1	0	2	03	60	40	100	2
8	17MEP78	Project Phase – I	-		(#)	+1	Ÿ	100	100	2
_		TOTAL	18	04	04	21	420	380	800	24

	Professional Elective-III	Professional Elective-IV			
17ME741	Design of Thermal Equipment's	17ME751	Automotive Electronics		
17ME742	Tribology	17ME752	Fracture Mechanics		
17ME743	Financial Management	17ME753	Mechatronics		
17ME744	Design for Manufacturing	17ME754	Advanced Vibrations		
17ME745	Smart Materials & MEMS	(f) -			

- Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete
 the requirement of aprogramme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch

VIII Se	emester	B.E. i 2017- S	in Mech cheme of	anical En Teaching a	niversity, Be ngineerin nd Examina tem (CBCS)	ıg				
0			Teacl	hing Hou	rs /Week		Examin	ation		ts
SI. No	Subject Code	Title	L	T	P	Duration (Hours)	SEE Marks	CIE Marks	Total Marks	Credits
1	17ME81	Operations Research	3	2	0	03	60	40	100	4
2	17ME82	Additive Manufacturing	4	0	0	03	60	40	100	4
3	17ME83X	Professional Elective - V	3	0	0	03	60	40	100	3
4	17ME84	Internship / Professional Practice	Indu	stry Oriei	nted	03	50	50	100	2
5	17ME85	Project Phase - II		C 425 - 15	6	03	100	100	200	6
6	17MES86	Seminar			4	10+1		100	100	1
		TOTAL	10	02	10	15	330	370	700	20

	Professional Elective-V						
15ME831	Cryogenics						
15ME832	Experimental Stress Analysis						
15ME833	Theory of Plasticity						
15ME834	Green Manufacturing						
15ME835	Product life cycle management						

- Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the
 requirement of approgramme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/branch
- 3. Internship / Professional Practice: To be carried out between 6th & 7th semester vacation or 7th & 8th semester vacation

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

B.E. In AERONAUTICAL ENGINEERING

(Effective from the academic year 2018 - 19)

VIII			

	how the		The state of the s		Teachir	g Hour	s /Week		Exami	nation		
SI. No		rse and rse code	Course Title	Teaching	Theary	Tutorial	Practical/ Drawing	Duration in hours	OE Marks	SEE Marks	Total Marks	Credits
1	PCC	18AE71	Aircraft Stability & Control		2	_	P	- 02	40			
2	PCC	18 AE 72	Computational Fluid Dynamics		3			03	40	60	100	3
3	PEC	18 AE 73X	Professional Elective - 2		3	**		03	40	60	100	2
4	PEC	18 AE 74X	Professional Electives - 3		3			03	40	60	100	3
5	OEC	18 AE 75X	Open Elective -B		3	-	***	03	40	60	100	3
6	PCC	18 AE L76	Modelling & Analysis Lab			2	2	03	40	60	100	2
-	PCC	18 AE L77	Flight Simulation Lab			2	2	03	40	60	100	2
7	Project	18 AE P78	Project Work Phase - 1			-	2		100		100	1
8	Internship		Internship	(If not con carried ou					VII sen	nesters,		e
				TOTAL 15 04 06 18 340 360 700								20

Note: PCC: Professional core, PEC: Professional Elective.

Professional Elective - 2		Professional Electives	1-3
Course code under 18XX73X	Course Title	Course code under 18XX74X	Course Title
18AE731	Fatigue And Fracture Mechanics	18AE741	High Performance Computing
18AE732	Control Engineering	18AE742/18AS742	Wind Tunnel Techniques
18AE733	Hydraulics and Pneumatics	18AE743/18AS743	Guidance, Navigation & Control
18AE734/18AS734	Heat and Mass Transfer	18AE744	Operations Research

Open Elective -B

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 18XX75X).

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 the 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.

Project work

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 (covering Literature Survey, Problem Identification, Objectives and Methodology), 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(covering Literature Survey, Problem identification, Objectives and Methodology), 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.

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 fail and shall have to complete during subsequent University examination after satisfying the internship requirements.

Scheme of Teaching and Examination 2018 – 19
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)

B.E.In AERONAUTICAL ENGINEERING

(Effective from the academic year 2018 - 19)

SI. No.		se and se code	Course Title		Teachir	ng Hours	/Week		Exam	ination		
				Teaching	Theory	Tutorial	Practical/ Drawing	Duration in hours	Marks	SEE Marks	Total Marks	Credits
_				P 0	L	T	P	200	SE	SEE	Tot	8
1	PCC	18AE81	Flight Vehicle Design		3	24	24	03	40	60	100	3
2	PEC	18AE82X	Professional Elective - 4		3			03	40	60	100	3
3	Project	18AEP83	Project Work Phase - 2		**		2	03	40	60	_	_
4	Seminar	18 AE S84	Technical Seminar				2	03	-		100	8
5	Internship	18AE18S	Internship	Complete VI and VI VIII seme	ed during t I semester	he vacat	tion/s of or VII and	03	40	60	100	3
				Total	06	T	04	15	260	240	500	18

Note: PCC: Professional Core, PEC: Professional Elective.

Professional Electives - 4

Course code under 18XX82X	Course Title
18AE821	Avionics
18AE822	Boundary Layer Theory
18AE823	Helicopter Dynamics
18AE824	Flight Testing

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 shall be declared as fall and have to complete during subsequent University examination after satisfying the internship requirements.

AICTE activity Points: In case students fall 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.

Activity points of the students who have earned the prescribed AICTE activity Points shall be sent the University along with the CIE marks of 8th semester. In case of students who have not satisfied the AICTE activity Points at the end of eighth semester, the column under activity Points shall be marked NSAP (Not Satisfied Activity Points).

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

M.Tech Aeronautical Engineering

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

111	I SEMESTER			hing Hours /Week	Examination					
SKO	Course	Course Code	Course Title	Theory	Practical! Field work! Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credity
1	PCC	18MAE31	Aircraft Flight Dynamics and Automatic Flight Control	04		03	40	60	100	4
2	PEC	18MAE32X	Professional Elective 3	04	**	03	40	60	100	4
3	PEC	18MAE33X	Professional Elective 4	04	100	03	40	60	100	4
4	Project	18MAE34	Evaluation of Project phase -1	-	02	-	100	-	100	2
5	Internship	18MAEI35	Internship	(Completed during the intervening vacation of I and II semesters and /or II and III semesters.)		03	40	60	100	6
		TO	FAL	12	02	12	260	240	500	20

Pr	ofessional Elective 3	Professional Elective 4			
Course Code under 18MAE32X	Course title	Course Code under 18MAE33X	Course title		
18MAE321	Flight Vehicle Design	18MAE331	Fatigue and Fracture Mechanics		
18MAE322	Theory of Aeroelasticity	18MAE332	Aero Engine Testing and Performance Evaluation		
18MAE323	Hypersonic Aerodynamics	18MAE333	Theory of Combustion		

1. Project Phase-1: Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a

CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE (University examination) shall be as per the University norms.

2. Internship: Those, who have not pursued /completed the internship, shall be declared as failed and have to complete during subsequent University examinations after satisfy the internship requirements. Internship SEE (University examination) shall be as per the University norms.

Scheme of Teaching and Examination 2018-19

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

B.E. AEROSPACE ENGINEERING

(Effective from the academic year 2018 - 19)

VI SE	MESTER		1		Teachir	g Hour	s/Week		Exami	nation		
Sl. No.	10-73-75	rse and rse code	Course Title	Teaching Department	Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P					
	PCC	18AS61	Missiles And Launch Vehicles	AS	3	2		03	40	60	100	4
2	PCC	18AS62	Computational Fluid Dynamics	AS	3	0	**	03	40	60	100	3
3	PCC	18AS63/ 18AE63	Finite Element Method	AS	3	0	••	03	40	60	100	3
_	DEC	18AS64X	Professional Elective -1	AS	3			03	40	60	100	3
4	PEC	18AS65X	Open Elective -A	AS	3			03	40	60	100	3
5	OEC		Design, Modelling & Analysis Lab	AS		2	2	03	40	60	100	2
6	PCC	18ASL66		AS		2	2	03	40	60	100	2
7	PCC	18ASL67	Aerospace Structures Lab				2	03	40	60	100	2
8	MP	18ASMP68	Mini-project	AS	J		zation/a of	VI and V	II cemes			d VIII
9	Internship		Internship	To be carried out during the vacation/s of VI and VII semesters and /or VII an semesters.								
888	•		TOTAL		15	6	6	24	320	480	800	22

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

Professional Elective -1 Course code under18XX64X	Course Title	
18AS641	Hypersonics	
18 AS 642	Theory of Vibrations	
18 AS 643	Introduction To Astrophysics And Space Environment	
18 AS 644	Radar and Microwave Engineering	

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 18XX65X). 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 the 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.

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.

(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 The CIE marks awarded for the Mini-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 the 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. SEE for Mini-project: (i) Single discipline: Contribution to the Mini-project and the performance of each group member shall be assessed individually in the 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 belong 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 fail and shall have to complete during subsequent University examination after satisfying the internship requirements.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Tenching and Examination 2018 - 19 Outcome Based Education(OBE) and Choice Based Credit System (CBCS) B.E. AEROSPACE ENGINEERING (Effective from the academic year 2018 – 19) VII SEMESTER

					Teachle	ng Hours	/Week		Exami	nation		
SI. No	Course and Course code		- Course live	Course line 9 3	Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
- 1					L	T	P					
,	PCC	18AS71	Space Mechanics	AS	3			03	40	60	100	3
2	PCC	18AS72	Control Engineering	AS	3			03	40	60	100	3
3	PEC	18AS73X	Professional Elective - 2	AS	3			03	40	60	100	_
4	PEC	18AS74X	Professional Elective - 3	AS	3			03	40	60	100	3
5	OEC	18AS75X	Open Elective -B	AS	3			03	40	60	100	2
6	PCC	18ASL76	Space Simulation Lab	AS		2	2	03	40	60	100	2
0	PCC	18ASL77	Avionics & Instrumentation Lab	AS		2	2	03	40	60	100	2
7	Project	18XXP78	Project Work Phase - 1	AS			2		100		100	
8	Internship		Internship	(If not com	pleted duri dur	ng the va	cation of V acation of	I and VII VII and V	semeste /III seme	rs, it shal sters)		ALC: N
			TOTAL		15	4	4	18	340	360	700	21
Note: F	PCC: Professiona	l core, PEC: Pr	ofessional Elective.									

Course Title	
Avionics Systems	
Space Vehicle Design	
Air and Missile Defense Systems	
Heat & Mass Transfer	
Course Title	
Satellite Communication	
Guidance, Navigation & Control	
Global Navigation Satellite Systems	
	Avionics Systems Space Vehicle Design Air and Missile Defense Systems Heat & Mass Transfer Course Title

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 18XX75X).

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 the 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.

Scheme of Teaching and Examination 2018-19

Outcome Based Education(OBE) and Choice Based Credit System (CBCS)
B.E. AEROSPACE ENGINEERING

(Effective from the academic year 2018 - 19)

					_		Teaching Hours / Week					
Sl. No	1777	rse and rse code	Course Title	Teaching Department	Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P					
1_	PCC	18AS81	Spacecraft Systems	AS	3	••		03	40	60	100	3
2	PEC	18 AS82X	Professional Elective - 4	AS	3			03	40	60	100	3
3	Project	18 ASP83	Project Work Phase - 2	AS			2	03	40	60	100	8
4	Seminar	18 ASS84	Technical Seminar	AS			2	03	100		100	1
5	Internship	18 ASI85	Internship		I semeste		tion/s of VI r VII and	03	40	60	100	3
			TOTAL		06		4	15	260	240	500	18

Note: PCC: Professional Core, PEC: Professional Elective.

Professional Electives - 4							
Course code under 18XX82X	Course Title						
18AS821	Satellite Navigation Systems						
18AS822	Cryogenics						
18AS823	Robotics						
18AS824	Optimization Techniques						

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 shall be declared as fail and have to complete during subsequent University examination after satisfying the internship requirements.

AICTE activity Points: 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.

Activity points of the students who have earned the prescribed AICTE activity Points shall be sent the University along with the CIE marks of 8th semester. In case of students who have not satisfied the AICTE activity Points at the end of eighth semester, the column under activity Points shall be marked NSAP (Not Satisfied Activity Points).

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: BIOMEDICAL ENGINEERING

					Teachi	ng Hours	/Week	Examination				
SI. No	- 100 CO	se and se code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Ouration in hours	CIE Marks	SEE Marks	Total Marks	Credits
_			Analog and Digital		L	Т	P	_	٦	· •	1	
1	PCC	18BM61	Communication Systems	ВМ	4			03	40	60	100	4
2	PCC	18BM62	Medical Image Processing								100	-
3	PCC	18BM63	Java Programming	BM	4			03	40	60	100	4
4	PEC	18BM64X	Professional Elective -1	BM	4			03	40	60	100	4
5	OEC	18BM65X	Open Elective -A	BM	2	2		03	40	60	100	3
_	PCC	18BML66	Medical P	BM	2	2		03	40	60	100	3
6			Medical Image Processing Lab	BM		2	2	03	40	60	100	2
1	PCC	18BML67	Java Programming Lab	BM		2	2	03	40	60	100	2
8	MP	18BMMP68	Mini-project	BM	STATE OF THE	No.	2	03	40	60	100	2
9	Internship	-	Internship	To be carri	ied out du	THE RESERVE OF THE PERSON NAMED IN	vacation					
				TOTAL	16	08	06	24	320	480	800	24

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

C	Professional Elective -1	
Course code under18BM64X	Course Title	
18BM641	Advanced Clinical Instrumentation	
18BM642	Hospital Design, Planning and Management	
18BM643	Medical Device Regulations and Safety	
18BM644	Virtual Bio-Instrumentation	

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 18XX65X).

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 the 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.

fini-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:

(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 Mini-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 the 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.

SEE for Mini-project:

(i) Single discipline: Contribution to the Mini-project and the performance of each group member shall be assessed individually in the 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 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 takeup/complete the internship shall be declared fail and shall have to complete during subsequent University examination after satisfying the internship requirements.

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: BIOMEDICAL ENGINEERING

I	SEMESTER		T T T T T T T T T T T T T T T T T T T		Teachi	ng Hour	s /Week	Examination				
iL io	Cour	se and se code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
				_		T	P					
_	PCC	18BM71	Biomedical Digital Signal	BM	2	2		03	40	60	100	3
	PCC	1001/72	Processing	DM	2	2		03	40	60	100	3
	PCC	18BM72	ARM Processor	BM		2		03	40	60	100	3
_	PEC	18BM73X	Professional Elective - 2	BM	2			03	40	60	100	3
_	PEC	18BM74X	Professional Elective - 3	BM	2	2		03	40	60	100	3
_	OEC	18BM75X	Open Elective -B	BM	2	2			40	60	100	2
		18BML76	Biomedical DSP Lab	BM		2	2	03	40	60	100	2
_	PCC	18BML77	ARM Processor Lab	BM		2	2	03		-	100	1
	PCC	18BMP78	Project Work Phase - 1	BM	-	-	2		100			
_	Project Internship		Internship	(If not con carried out	pleted du	ring the	vacation on of VII	of VI and and VIII	semeste			
	internship		-	TOTAL	10	14	06	21	380	420	800	20

Note: PCC: Professional core, PEC: Professional Elective, OEC: Open Elective

Professional	Elective - 2
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	1101433101111	
Course code under 18BM73X	Course Title	
18BM731	Database Management System in Healthcare	
18BM732	Ergonomics	
18BM733	Biomechanics and Biodynamics	
18BM734	Biometric Systems	
	Professional Electives - 3	

Course code under 18BM74X	Course Title
18BM741	Biostatistics
18BM742	Lasers and Optical Fibers in Medicine
18BM743	Medical Informatics and Expert Systems
18BM744	Internet of Things
	Open Elective -E

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 18XX75X).

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 the 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.

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 and recommendations of the mentor, a single discipline or a multidisciplinaryproject can be assigned to an individual and recommendations of the mentor, a single discipline or a multidisciplinaryproject can be assigned to an individual and recommendations of the mentor, a single discipline or a multidisciplinaryproject can be assigned to an individual and recommendations of the mentor, a single discipline or a multidisciplinaryproject can be assigned to an individual and recommendations of the mentor. 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.

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

The CIE marks awarded for the project work phase -1, shall be based on the evaluation of the project work phase -1 Report (covering Literature Survey, Problem identification, Objectives and Methodology), 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 project work phase -1, shall be based on the evaluation of project work phase -1 Report(covering Literature Survey, Problem identification, Objectives and Methodology), 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.

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 seements. 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 the considered for the country of the conducted for the country of the co included in VIII semesters. A University examination and shall be considered for the award of degree. Those, who do not takeup/complete the internship shall be declared fail and shall have to complete during subsequent University examination after satisfying the internship requirements.

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: BIOMEDICAL ENGINEERING

SEMESTER					Teach	ing Hou	rs /Week	Examination				4
		rse and se code	Course Title	Teaching Department	Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
١					L	Т	P	02	40	60	100	
1	PCC	18BM81	Medical Imaging Systems	BM	2	2		03		60	100	3
+	PEC	18BM82X	Professional Elective - 4	BM	2	2		03	40	-		9
+	Project	18BMP83	Project Work Phase - 2	BM			2	03	40	60	100	
+	Seminar	18BMS84	Technical Seminar	BM			2	03	100		100	-
1	Internship	18BMI85	Internship	Comple VI and	ted durin VII sem	esters a	ncation/s of and /or VII	03	40	60	100	
_				TOTAL		04	1 4	15	260	240	500	1

Note: PCC: Professional Core, PEC: Professional Elective.

	Professional Electives - 4	
urse code under 18BM82X	Course Title	
18BM821	Bio-MEMS	
18BM822	Computer Communication Networks in Healthcare	
18BM823	Biomaterials and Artificial Organs	
18BM824	Artificial Intelligence and Machine Learning	

Project Work

(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.

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.

(i) Single discipline: Contribution to the project and the performance of each group member shall be assessed individually in semester end examination

(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 belongs to.

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

AICTE activity Points: 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. Activity points of the students who have earned the prescribed AICTE activity Points shall be sent the University along with the CIE marks of 8th semester. In case of students who have not satisfied the AICTE activity Points at the end of eighth semester, the column under activity Points shall be marked NSAP (Not Satisfied Activity Points).

Scheme of Teaching and Examination 2018 – 19

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

(Effective from the academic year 2018 – 19)

V SE	MESTER											
						ning H Week	ours	Examination				
Sl. No	Course and Course code		Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P		_			
1	HSMC	18CS51	Management, Entrepreneurship for IT idustry	HSMC	2	2		03	40	60	100	3
2	PCC	18CS52	Computer Networks and Security	CS / IS	3	2		03	40	60	100	4
3	PCC	18CS53	Database Management System	CS / IS	3	2		03	40	60	100	4
4	PCC	18CS54	Automata theory and Computability	CS / IS	3			03	40	60	100	3
5	PCC	18CS55	Application Development using Python	CS / IS	3			03	40	60	100	3
6	PCC	18CS56	Unix Programming	CS / IS	3			03	40	60	100	3
7	PCC	18CSL57	Computer Network Laboratory	CS / IS		2	2	03	40	60	100	2
8	PCC	18CSL58	DBMS Laboratory with mini project	CS / IS	-	2	2	03	40	60	100	2
9	HSMC	18CIV59	Environmental Studies	Civil/ Environmental [Paper setting:	1			02	40	60	100	1
				Civil Engineering Board]								
				TOTAL	18	10	04	26	360	540	900	25

Note: PCC: Professional Core, HSMC: Humanity and Social Science.

Scheme of Teaching and Examination 2018 – 19

Choice Based Credit System (CBCS) AND Outcome Based Education (OBE) (Effective from the academic year 2018 – 19)

VI SI	EMESTE	R										
					Teachi	ng Hours	/Week		Exami	nation		
Sl. No		ourse and ourse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	DCC	190001	Control Control	CC / IC	L	T	P	02	40	(0	100	4
1	PCC	18CS61	System Software and Compilers	CS / IS	3	2		03	40	60	100	4
2	PCC	18CS62	Computer Graphics and Visualization	CS/IS	3	2		03	40	60	100	4
3	PCC	18CS63	Web Technology and its applications	CS / IS	3	2		03	40	60	100	4
4	PEC	18CS64X	Professional Elective -1	CS / IS	3			03	40	60	100	3
5	OEC	18CS65X	Open Elective –A	CS / IS	3		-	03	40	60	100	3
6	PCC	18CSL66	System Software Laboratory	CS / IS		2	2	03	40	60	100	2
7	PCC	18CSL67	Computer Graphics Laboratory with mini project	CS/IS	1	2	2	03	40	60	100	2
8	MP	18CSMP68	Mobile Application Development	CS / IS			2	03	40	60	100	2
9	INT		Internship	(To be carried out during the intervening vacations of VI and VII semesters)								
				TOTAL	15	10	06	24	320	480	800	24

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

Professional Elective -1					
Course code under18XX64X	Course Title				
18CS641	Data Mining and Data Warehousing				
18CS642	Object Oriented Modelling and Design				
18CS643	Cloud Computing and its Applications				
18CS644	Advanced JAVA and J2EE				
18CS645	System Modelling and Simulation				
	Open Elective –A (Not for CSE / ISE Programs)				
18CS651	Mobile Application Development				
18CS652	Introduction to Data Structures and Algorithms				
18CS653	Programming in JAVA				
18CS654	Introduction to Operating System				

Students can select any one of the open electives offered by any Department (Please refer to the list of open electives under 18CS65X).

Selection of an open elective is not allowed provided,

- 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/ Adviser/Mentor.

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:

- (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 Mini-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 the 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.

SEE for Mini-project:

- (i) Single discipline: Contribution to the Mini-project and the performance of each group member shall be assessed individually in the 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 takeup/complete the internship shall be declared fail and shall have to complete during subsequent University examination after satisfying the internship requirements

Scheme of Teaching and Examination 2018 - 19

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

(Effective from the academic year 2018 – 19)

VII S	EMESTER											
					Teachi	ng Hours	/Week		Exami	nation		l
Sl. No	Cours Cours	se and e code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P			• • • • • • • • • • • • • • • • • • • •	1	
1	PCC	18CS71	Artificial Intelligence and Machine Learning	CS / IS	4			03	40	60	100	4
2	PCC	18CS72	Big Data Analytics	CS / IS	4			03	40	60	100	4
3	PEC	18CS73X	Professional Elective – 2	CS / IS	3			03	40	60	100	3
4	PEC	18CS74X	Professional Elective – 3	CS / IS	3		-	03	40	60	100	3
5	OEC	18CS75X	Open Elective –B	CS / IS	3			03	40	60	100	3
6	PCC	18CSL76	Artificial Intelligence and Machine Learning Laboratory	CS / IS			2	03	40	60	100	2
7	Project	18CSP77	Project Work Phase – 1	CS / IS			2		100		100	1
8	INT		Internship	(If not completed during the vacation of VI and VII semesters, it has to be carried out during the intervening vacations of VII and VIII semesters							be	
				TOTAL	17		04	18	340	360	700	20

,	Professional Elective - 2					
Course code under 18CS73X	Course Title					
18CS731	Software Architecture and Design Patterns					
18CS732	High Performance Computing					
18CS733	18CS733 Advanced Computer Architecture					
18CS734	User Interface Design					
	Professional Electives – 3					
Course code under 18CS74X	Course Title					
18CS741	Digital Image Processing					
18CS742	Network management					
18CS743	Natural Language Processing					
18CS744	Cryptography					
18CS745	Robotic Process Automation Design & Development					
	Open Elective –B (Not for CSE / ISE Programs)					

Students can select any one of the open electives offered by any Department (Please refer to the list of open electives under 18CS75X). Selection of an open elective is not allowed provided,

Introduction to Big Data Analytics

Python Application Programming

Introduction to Artificial Intelligence

- 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.

Note: PCC: Professional core, PEC: Professional Elective, OEC: Open Elective, INT: Internship.

• 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/ Adviser/Mentor.

Project work: Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary project 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.

Introduction to Dot Net framework for Application Development

CIE procedure for Project Work Phase - 1:

18CS751

18CS752

18CS753

18CS754

(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 (covering Literature Survey, Problem identification, Objectives and Methodology), 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.

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 takeup/complete the internship shall be declared fail and shall have to complete during subsequent University examination after satisfying the internship requirements

Scheme of Teaching and Examination 2018 - 19

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

(Effective from the academic year 2018 – 19)

VIII S	SEMESTEI	2										
					Teaching Hours /Week			Examination				
SI I		rse and rse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	3 3 8 1 3
					L	T	P		_	• • • • • • • • • • • • • • • • • • • •	1	
1	PCC	18CS81	Internet of Things	CS / IS	3			03	40	60	100	3
2	PEC	18CS82X	Professional Elective – 4	CS / IS	3			03	40	60	100	3
3	Project	18CSP83	Project Work Phase – 2	CS / IS			2	03	40	60	100	8
4	Seminar	18CSS84	Technical Seminar	CS / IS			2	03	100		100	1
5	INT	(18CSI85)	Internship)	interveni VII seme	Completed during the tervening vacations of VI and II semesters and /or VII and III semesters.)			03	40	60	100	3
	TOTAL 06 04							15	260	240	500	18

Note: PCC: Profes	Note: PCC: Professional Core, PEC: Professional Elective, OEC: Open Elective, INT: Internship.								
Professional Electives – 4									
Course code	e Course Title								
under 18CS82X									
18CS821	Mobile Computing								
18CS822	Storage Area Networks								
18CS823	NoSQL Database								
18CS824	Multicore Architecture and Programming								

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 shall be declared as fail and have to complete during subsequent University examination after satisfying the internship requirements

AICTE activity Points: 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. Activity points of the students who have earned the prescribed AICTE activity Points shall be sent the University along with the CIE marks of 8th semester. In case of students who have not satisfied the AICTE activity Points at the end of eighth semester, the column under activity Points shall be marked NSAP (Not Satisfied Activity Points).



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: CIVIL ENGINEERING

VII SEMESTER

					Teachi	ng Hours /	Week		Exa	mination		
Sl. No		rse and se code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				-	
1	PCC	18CV71	Quality Surveying and Contract Management	Civil Engg.	3			03	40	60	100	3
2	PCC	18CV72	Design of RCC and Steel Structures	Civil Engg.	3			03	40	60	100	3
3	PEC	18CV73X	Professional Elective - 2	Civil Engg.	3	-	<u></u>	03	40	60	100	3
4	PEC	18CV74X	Professional Elective - 3	Civil Engg.	3	-	-	03	40	60	100	3
5	OEC	18CV75X	Open Elective -B	Civil Engg.	3			03	40	60	100	3
6	PCC	18CVL76	Computer Aided Detailing of Structures	Civil Engg.		2	2	03	40	60	100	2
7	PCC	18CVL77	Geotechnical Engineering Laboratory	Civil Engg.	<u></u>	2	2	03	40_	60	100	2
8	Project	18CVP78	Project Work Phase - 1				2		100		100	1
9	Internship		Internship	(If not complet vacation of VII	_		on of VI a	and VII ser	nesters, it	shall be	carried out d	uring the
				TOTAL	15	04	06	21	380	420	00	20

Note: PCC: Professional core, PE	C: Professional Elective.
	Professional Elective - 2
Course code under 18CV73X	Course Title
18CV731	Theory of Elasticity
18CV732	Air Pollution and Control
18CV733	Pavement Materials & Construction
18CV734	Ground Water Hydraulics
18CV735	Masonry Structures
	Professional Electives - 3
Course code under 18CV74X	Course Title
18CV741	Earthquake Engineering
18CV742	Design Concepts of Building Services
18CV743	Reinforced Earth Structures

18CV744	Design of Hydraulic Structures						
18CV745	Urban Transport Planning						
Open Elective -B							
Course code under 18CV75X	Course Title						
18CV751	Finite Element Method						
18CV752	Numerical Methods and Applications						
18CV753	Environmental Protection and 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 18XX75X).

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 the 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.

Project work:

Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary project 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 (covering Literature Survey, Problem identification, Objectives and Methodology), 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 (covering Literature Survey, Problem identification, Objectives and Methodology), 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.

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 fail and shall have to complete during subsequent University examination after satisfying the internship requirements.

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: CIVIL ENGINEERING

VIII SEMESTER

				Teaching Hours / Week Examination		ļ						
Sl. No	Sl. No Course and Course code		Course Title	Teaching	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
		T			L	T	P					
1	PCC	18CV81	Design of Pre-stressed Concrete	Civil Engg.	3			03	40	60	100	3
2	PEC	18CV82X	Professional Elective - 4	Civil Engg.	3			03	40	60	100	3
3	Project	18CVP83	Project Work Phase - 2	Civil Engg.			16	03	40	60	100	8
4	Seminar	18CVS84	Technical Seminar	Civil Engg.			2	03	100		100	1
5	Internship (18CVI85) (Internship)		Completed during semesters and /or				03	40	60	100	3	
				TOTAL	06		18	15	260	240	500	18

Note: PCC: Professional Core, PEC: Professional Elective.

Professiona	l Electives - 4	ŀ
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Course code under 18CV82X	Course Title								
18CV821	Bridge Engineering								
18CV822	Prefabricated Structures								
18CV823	Advanced Foundation Engineering								
18CV824	Rehabilitation & Retrofitting								
18CV825	Pavement Design								

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:

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

M.Tech in Communication Systems/ Digital Communication & Networking/ Digital Communication Engineering/ Digital Electronics & Communication Systems/ Digital Electronics & Communication (ECS)

Choice Based Credit System (CBCS)

					ng Hours /cck	Examination				
SI. Cour No e	Cours	Course Code	Course Title	Theory	Field work/ Assignmen t	Duration in hours	CIE Marks	SEE Marks Viva voce	Total Marks	Credits
1	Proje ct	/18ECS41/	Project work Phase -2		04	03	40	60	10	20
			TOTAL		04	03	40	60	10	20

Note:

1. Project Phase-2:

CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a Senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.

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

M.Techin Communication Systems/ Digital Communication & Networking/
Digital Communication Engineering/ Digital Electronics & Communication
Systems/ Digital Electronics & Communication (ECS)

Choice Based Credit System (CBCS)

111	SEMESTE			Teach	Examination					
BI. No	Course	Course Code	- Course Title	Theory	Freducal/ Field work/ Assignmen t	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	PCC	18ECS31	LTE 4G Broadband	04	-3	03	40	60	100	4
2	PEC	18XXX32X	Professional Elective 3	04		03	40	60	100	4
3	PEC	18XXX33X	Professional Elective 4	04		03	40	60	100	4
4	Project	/18ECS34	Evaluation of Project		02		10 0		100	2
5	Internship	[18ECS[35]	/Internship/	(Completed during the intervening vacation of I and II semesters and /or II and III semesters.)		03	40	60	100	6
-	TOTAL			12	02	12	26 0	24 0	500	2

Note: PCC	: Professional	core. PEC:	Professional	Elective

Pro	fessional Elective 3	Professional Elective 4				
Course Code under 18XXX32X	Course title	Course Code under 18XXX33X	Course title			
18ECS321	Advances in Image Processing	18ECS331	RF and Microwave Circuit Design			
18ESP322	Array Signal Processing	18ESP332	Pattern Recognition & Machine Learning			
18ECS323	Real Time Systems	18ECS333	IoT			

Note:

1. Project Phase-1:Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a seminar.

CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE (University examination) shall be as per the University norms.

2. Internship: Those, who have not pursued /completed the internship shall be declared as failed and have to complete during subsequent University examinations after satisfying the internship requirements. Internship SEE (University examination) shall be as per the University norms.

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

					Teaching Hours /Week			Examination				T
SL No	1	rse and rse code	Course Title	Teaching Department	Theony Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	P		٥	S	1	
1	PCC	18EC61	Digital Communication		3	2		03	40	60	100	4
2	PCC	18EC62	Embedded Systems		3	2		03	40	60	100	4
3	PCC	18EC63	Microwave & Antennas		3	2		03	40	60	100	4
4	PEC	18XX64X	Professional Elective -1		3			03	40	60	100	3
5	OEC	18XX65X	Open Elective -A		3			03	40	60	100	3
6	PCC	18ECL66	Embedded Systems Laboratory			2	2	03	40	60	100	2
7	PCC	18ECL67	Communication Laboratory			2	2	03	40	60	100	2
8	MP	18ECMP68	/ Mini-project/				2	03	40	60	100	2
9	Internship		/Internship/	To be carrie		ing the	vacation/s	of VI an	d VII so	mesters	and /or	VII
			-As	TOTAL	15	10	6	24	320	480	800	24

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

	Professional Elective -1
Course code under 18XX64X	Course Title
18EC641	Operating System
18EC642	Artificial Neural Networks
18EC643	Object Oriented Programming using C++
18EC644	Digital System Design using Verilog
18EC645	Nanoelectronics
	Open Elective -A

(i) 18EC651 Signal Processing (ii) 18EC652 Sensors & Signal Conditioning

Students can select any one of the open electives offered by other Departments except those that are offered by the parent Department (Please refer to the list of open electives under 18XX65X).

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 the 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.

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:

(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 Mini-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 the 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.

SEE for Mini-project:

(i) Single discipline: Contribution to the Mini-project and the performance of each group member shall be assessed individually in the 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 belong 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 fail and shall have to complete during subsequent University examination after satisfying the internship requirements.

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)

					Teachi	ng Hours	/Week		Exami	nation		
SI. No	Course and Course code		Course Title	Teaching Department	Theory	Tutorial	Practical/ Drawing	uration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P] -	0	35	٦	
1	PCC	18EC71	Computer Networks		3			03	40	60	100	3
2	PCC	18EC72	VLSI Design		3			03	40	60	100	3
3	PEC	18XX73X	Professional Elective - 2		3			03	40	60	100	3
4	PEC	18XX74X	Professional Elective - 3		3			03	40	60	100	3
5	OEC	18XX75X	Open Elective -B		3			03	40	60	100	3
6	PCC	18ECL76	Computer Networks Lab			2	2	03	40	60	100	2
7	PCC	18ECL77	VLSI Laboratory			2	2	03	40	60	100	2
8	Project	[18ECP78]	Project Work Phase - 1				2		100		100	1
9	Internship		Internship	(If not completed during the vacation of VI and VII semesters, it shall be carried out during the vacation of VII and VIII semesters)						e		
			_	TOTAL	15	4	6	21	380	420	800	20

Note: PCC: Professional core, PEC: Professional Elective.

	Professional Elective - 2						
Course code under 18XX73X	Course Title						
18EC731	Real Time System						
18EC732	Satellite Communication						
18EC733	Digital Image Processing						
18EC734	Data Structures using C++						
18EC735	DSP Algorithms & Architecture						

	Professional Electives - 3	
Course code under 18XX74X	Course Title	
18EC741	IOT & Wireless Sensor Networks	
18EC742	Automotive Electronics	
18EC743	Multimedia Communication	
18EC744	Cryptography	
18EC745	Machine Learning	
	Open Elective -B	

(i) 18EC751 Communication Theory (ii) 18EC752 Neural Networks

Students can select any one of the open electives offered by other Departments except those that are offered by the parent Department (Please refer to the list of open electives under 18XX75X).

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 the 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.

Project work:

Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary project 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 (covering Literature Survey, Problem identification, Objectives and Methodology), 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.

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 fail and shall have to complete during subsequent University examination after satisfying the internship requirements.

AICTE activity Points: 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)

	Course and Course code				Teaching Hours /Week			Examination				
SI. No			Course Title	Teaching Department	Theory Lecture	Lecture Tutorial	Practical/ Drawing	Duration in hours	TE Marks	SEE Marks	Total Marks	Credits
				3022	L	T	P	1 "	0	S	-	
1	PCC	18EC81	Wireless and Cellular Communication		3			03	40	60	100	3
2	PEC	18XX82X	Professional Elective - 4		3		-	03	40	60	100	3
3	Project	/18ECP83	Project Work Phase - 2				2	03	40	60	100	8
4	Seminar	/18ECS84 /	Technical Seminar		-		2	03	100	777	100	1
5	Internship	18ECI85	Internship]	VI and V	ompleted during the vacation/s of and VII semesters and /or VII d VIII semesters.)			03	40	60	100	3

Note: PCC: Professional Core, PEC: Professional Elective.

Professional Electives - 4								
Course code under 18XX82X	Course Title							
18EC821	Network Security							
18EC822	Micro Electro Mechanical Systems							
18EC823	Radar Engineering							
18EC824	Optical Communication Networks							
18EC825	Biomedical Signal Processing							

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 shall be declared as fail and have to complete during subsequent University examination after satisfying the internship requirements.

AICTE activity Points: 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. Activity points of the students who have earned the prescribed AICTE activity Points shall be sent the University along with the CIE marks of 8th semester. In case of students who have not satisfied the AICTE activity Points at the end of eighth semester, the column under activity Points shall be marked NSAP (Not Satisfied Activity Points).



VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination - 2018-19 M.Tech Aeronautical Engineering

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

		Teachi								
SI. No	Course	Course Code	Course Title	Theory	setical/ ld work/ ignment	tration in hours	E Marks	E Marks ra voce	tal Marks	Credits

2 2 2 2 2 Project 18MAE41 Project work phase -2 100 20 04 03 40 60 TOTAL 04 03 40 60 100 20

Note:

1. Project Phase-2:

IV SEMESTER

CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guidelco-guide, if any and a Senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.

2018 Scheme

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)

Г	CEL	ALC: ST	TD

					Teachi	ng Hour	s /Week		Exam	ination		
SI. No	Course and Course Title		Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Fotal Marks	Credits	
					L	T	P	_		•	_	
1	PCC	18ME61	Finite Element Methods		3	2		03	40	60	100	4
2	PCC	18ME62	Design of Machine Elements II		3	2		03	40	60	100	4
3	PCC	18ME63	Heat Transfer		3	2		03	40	60	100	4
4	PEC	18ME64X	Professional Elective -1		3			03	40	60	100	3
5	OEC	18ME65X	Open Elective -A		3			03	40	60	100	3
6	PCC	18MEL66	Computer Aided Modelling and Analysis Lab			2	2	03	40	60	100	2
7	DCC	10MET 67	Heat Transfer Lab			2	2	Λ2	40	-60	100	2
8	MP	18MEMP68	Mini-project				2	03	40	60	100	2
9	Internship		Internship	To be carr and VIII s		ring the	vacation/	s of VI a	and VII	semeste	rs and /c	r VII
				TOTAL	15	10	06	24	320	480	800	24

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

	Pr	ofessional Elective -1									
Course code under	Course Title	Course code under	Course Title								
18XX64X		18XX64X									
18ME641	Non-Traditional Machining	18ME644	Vibrations and Noise Engineering								
18ME642	Refrigeration and Air conditioning	18ME645	Composite Materials Technology								
18ME643	Theory of Elasticity	18ME646	Entrepreneurship Development								
	Open Elective -A										

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 18XX65X).

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 the 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.

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)

VIIS	EMESTER											
					Teachi	ng Hour	s/Week		Exami	nation		
Sl. No	Course and Course code		Course Title	Teaching Department	Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P					
1	PCC	18ME71	Control Engineering		3			03	40	60	100	3
2	PCC	18ME72	Computer Aided Design and Manufacturing		3			03	40	60	100	3
3	PEC	18ME73X	Professional Elective - 2		3			03	40	60	100	3
4	PEC	18ME74X	Professional Elective - 3		3			03	40	60	100	3
5	OEC	18ME75X	Open Elective -B		3			03	40	60	100	3
6	PCC	18MEL76	Computer Integrated Manufacturing Lab			2	2	03	40	60	100	2
	DCC	103/07/22	Davies Late				2	-02	40	-60	100	
7	Project	18MEP78	Project Work Phase - 1				2		100		100	1
8	Internship		Internship	(If not completed during the vacation of VI and VII semesters, it shall to carried out during the vacation of VII and VIII semesters)							be	
				LVLAL	1.5	17.4	170	1.0	2411	200	/1000	400

	Professio	nal Elective - 2									
Course code under	Course Title	Course code	Course Title								
18XX73X		under 18XX73X									
18ME731	Design for Manufacture	18ME734	Total Quality Management								
18ME732	Automation and Robotics	18ME735	Operations Research								
18ME733	Computational Fluid Dynamics										
	Professional Electives - 3										
Course code under	Course Title	Course code	Course Title								
18XX74X		under 18XX74X									
18ME741	Additive Manufacturing	18ME744	Mechatronics								
18ME742	Emerging Sustainable Building Cooling	18ME745	Project Management								
	Technologies										
18ME743	Theory of Plasticity										

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)

					Teaching Hours /\				Exam	nation		
SI. No		rse and se code	Course Title	Teaching asm		Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
	D.C.C.	103.501			L	T	P				_	
1	PCC	18ME81	Energy Engineering		5		03	40	60	100	3	
	PEC	18MF82X	Professional Flective - 4		3			03	40	60	100	3
3	Project	18MEP83	Project Work Phase - 2				2	03	40	60	100	8
4	Seminar	18MES84	Technical Seminar				2	03	100		100	1
5	Internship	18XXI85	Internship	of VI ar	Completed during the vacation/s of VI and VII semesters and /or VII and VIII semesters.)			03	40	60	100	3
				TOTAL	00		04	15	260	240	500	18

Note: PCC: Professional Core, PEC: Professional Elective.

	Professiona	l Electives - 4					
Course code under 18XX82X Course Title Course code under 18XX82X Course Title							
18ME821	CNC Machine Tools	18ME824	Automobile Engineering				
18ME822	Tribology	18ME825	Tool Design				
18ME823	Non-Destructive Testing and Evaluation	18ME826	Fracture Mechanics				

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.

2018 Scheme

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

Scheme of Teaching and Examination - 2018 - 19

M.Tech In Product Design and Manufacturing Engineering (MPD)

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

II SEMESTER

				Teach	ing Hours /Week		Exami	nation		
SI. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	PCC	18MPD21	Industrial Design & Ergonomics	04		03	40	60	100	4
2	PCC	18MPD22	Design for Manufacturing	04	-	03	40	60	100	4
3	PCC	18MPD23	Product Planning & Marketing	04		03	40	60	100	4
4	PEC	18MPD24X	Professional elective 1	04	-	03	40	60	100	4
5	PEC	18 MPD 25X	Professional elective 2	04		03	40	60	100	4
6	PCC	18 MPD L26	Product Design Lab-2		04	03	40	60	100	2
7	PCC	18 MPD 27	Technical Seminar		02		100		100	2
		TO	TAL	20	06	18	340	360	700	24

Note: PCC: Professional core, PEC: Professional Elective.

P	rofessional Elective 1	Professional Elective 2					
Course Code under 18MPD24X			Course title				
18 MPD 241	Product Data Management	18 MPD 251	Quality & Reliability Engineering				
18 MPD 242	Advanced Manufacturing Practices	18 MPD 252	Virtual Design and Manufacturing				
18 MPD 243	Non Traditional Machining Process	18 MPD 253	Lean Manufacturing System				

Note:

- 1. Technical Seminar: CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. Participation in the seminar by all postgraduate students of the same and other semesters of the programme shall be mandatory.
- The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report, Presentation skill and Question and Answer session in the ratio 50:25:25.
- 2. Internship: All the students shall have to undergo mandatory internship of 6 weeks during the vacation of I and II semesters and /or II and III semesters. A University examination shall be conducted during III semester and the prescribed credit shall be counted in the same 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 have to complete during the subsequent University examination after satisfying the internship requirements.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

Scheme of Teaching and Examination – 2018 - 19

M.Tech In Product Design and Manufacturing Engineering (MPD)

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

III SEMESTER

				Teaching	Hours/Week		Examination			
SI. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	PCC	18MPD31	Product Analysis and cost optimization	04	(==	03	40	60	100	4
2	PEC	18MPD32X	Professional elective 3	04	1177	03	40	60	100	4
3	PEC	18MPD33X	Professional elective 4	04	i i i i i i i i i i i i i i i i i i i	03	40	60	100	4
4	Project	18MPD34	Evaluation of Project phase -1	200	02		100	.75	100	2
5	Intenship	18MPDI35	Internship		during the racation of I and II d /or II and III	03	40	60	100	6
		7	TOTAL	12	02	12	260	240	500	20

Note: PCC: Professional core, PEC: Professional Elective.

16	Professional elective 3	Professional elective 4				
Course Code under Course title Course title Course title Course title		Course Code under 18MPD33X	Course title			
18MPD321	Optimization Techniques for Decision Making	18MPD331	Robust Design			
18MPD322	Rapid Prototyping	18MPD332	Simulation and Modeling			
18MPD323	Value Engineering	18MPD333	Computer Application in Design			

Note

- 1. Project Phase-1:Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a seminar.
- CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

 SEE (University examination) shall be as per the University norms.
- 2. Internship: Those, who have not pursued /completed the internship shall be declared as failed and have to complete during subsequent University examinations after satisfying the internship requirements.

Internship SEE (University examination) shall be as per the University norms.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

Scheme of Teaching and Examination - 2018 - 19

M.Tech In Product Design and Manufacturing Engineering(MPD)

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

IV SEMESTER

				Teaching Hours /Week		16 46	Ex	amina <mark>t</mark> ion			
SI. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks Viva voce	Total Marks	Credits	
1	Project	18MPD41	Project work phase -2		04	03	40	60	100	20	
			TOTAL		04	03	40	60	100	20	

Note:

1. Project Phase-2:
CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a Senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25.
SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

Scheme of Teaching and Examination -2018 - 19

M.Tech Name of the programme (CSE)

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

III SEMESTER

				Teaching /We			Exam	ination		
Sl. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	PCC	18CSE31	Design of Concrete Bridges	04		03	40	60	100	4
2	PEC	18CSE32X	Professional elective 3	04		03	40	60	100	4
3	PEC	18CSE33X	Professional elective 4	04		03	40	60	100	4
4	Project	18CSE34	Evaluation of Project phase -1		02		100		100	2
5	INT	18CSEI35	(Internship)	(Completed the intervel vacation of semesters a and III sem	ning f I and II and /or II	03	40	60	100	6
		T	OTAL	12	02	12	260	240	500	20

Note: PCC: Professional core, PEC: Professional Elective.

	Professional elective 3		Professional elective 4
Course Code under 18CSE32X	Course title	Course Code under 18CSE33X	Course title
18CSE321	Design Concepts of Substructures	18CSE331	Fracture Mechanics applied to concrete
18CSE322	Repair and Rehabilitation of Structures	18CSE332	Design of Masonry Structures
18CSE323	Theory of Plates and Shells	18CSE333	Design of Formwork
18CSE324	Optimization Techniques	18CSE334	Composite materials

Note:

1. Project Phase-1: Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a seminar. CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE (University examination) shall be as per the University norms.

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

Internship SEE (University examination) shall be as per the University norms.

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

M.Tech Name of the programme (CSE)

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

IV SEMESTER

				Teaching Ho	ours /Week		Exan	nination		
Sl. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks Viva voce	Total Marks	Credits
1	Project	18CSE41	Project work phase -2		04	03	40	60	100	20
			TOTAL		04	03	40	60	100	20

Note:

1. Project Phase-2:

CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a Senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.





ACS College of Engineering

(Approved by AICTE, New Delhi, Govt. of Karnataka & Affiliated to Visvesvaraya Technological University, Belgaum)

Sponsored by: MOOGAMBIGAI CHARITABLE AND EDUCATIONAL TRUST







1.3.2.1 Number of courses that include experiential learning through project work/field work/internship year - wise during last five years

The data shown below is the list of courses that include experiential learning through project work/field work/internship during the year 2019-2020.

SI.NO	Program code	Program Name	Course code	Course Name
1	EC	ELECTRONICS AND COMMUNICATION ENGINEERING	17ECP78	Project Work
2	EC	ELECTRONICS AND COMMUNICATION ENGINEERING	17EC84	Internship
3	EC	ELECTRONICS AND COMMUNICATION ENGINEERING	17ECP85	Project Work
4	ME	MECHANICAL ENGINEERING	15MEP78	Project Work
5	ME	MECHANICAL ENGINEERING	15ME84	Internship / Professional Practice
6	ME	MECHANICAL ENGINEERING	15ME85	Project Work
7	AE	AERONAUTICAL ENGINEERING	15AEP78	Project work
8	AE	AERONAUTICAL ENGINEERING	15AE84	Internship Professional
9	AE	AERONAUTICAL ENGINEERING	15AEP85	Project Work
10	cv	CIVIL ENGINEERING	15CVP78	Project Work
11	cv	CIVIL ENGINEERING	15CV84	Internship/Professional Practice
12	cv	CIVIL ENGINEERING	15CVP85	Project Work
13	вм	Biomedical Engineering	15BMP78	Project Work
14	вм	Biomedical Engineering	15BM84	Internship
15	вм	Biomedical Engineering	15BMP85	Project Work
16	cs	Computer Science & Engineering	15CSP78	Project Work
17	CS	Computer Science & Engineering	15CS84 Internship / Professional Practical Professional Pr	
18	CS	Computer Science & Engineering	15CSP85 Project work	
19	CSE	Mtech Structural Engineering	18CSE41 Project work	
20	MPD	Product Design & Manufacturing	18MPD41	Project work
21	ELD	Digital Electronics and Communication Engineering	18ELD41	Project work

PRINCIPAL

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS)

SCHEME OF TEACHING AND EXAMINATION 2015-2016

Aeronautical Engineering VIII SEMESTER

			Teach	ing Hours /Week		Exami	ination		Credi
SI. N	Subject Code	Title	Theor	Practical/Drawi	Duratio n	I.A. Mark s	Theory/ Practic al Marks	Total Mark s	t
1	15AE81	AVIONICS	4		3	20	80	100	4
2	15AE82	FLIGHT VEHICLE DESIGN	4		3	20	80	100	4
3	15AE83X	Professional Elective	3		3	20	80	100	3
4	15AE84	Internship / Professional Practice	Ind	ustry Oriented	3	50	50	100	2
5	15AEP85	Project Work Phase -II	-	6	3	100	100	200	6
6	15AES86	Seminar	-	4	-	100		100	1
	T	OTAL	11	10	15	310	390	700	20

Professiona	al Elective
15AE831	FLIGHT TESTING
15AE832	BOUNDARY LAYER THEORY
15AE833	OPTIMIZATION TECHNIQUES
15AE834	CRYOGENICS

- 1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Internship / Professional Practice: To be carried between the 6^{th} and 7^{th} semester vacation or 7^{th} and 8^{th} semester vacation period.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS)

SCHEME OF TEACHING AND EXAMINATION 2015-2016

Aeronautical Engineering VII Semester

	on	7	0	(A	4.	u	2	-	8.8	10 E
	ISAEP78	15AEL77	15AEL76	15AE75X	ISAE74X	ISAE73	15AE72	15AE71	Subject Code	No.
TOTAL	Project Phase -I + Project Seminar	ANALYSIS LAB AND	LAB SIMULATION	PROFESSIONAL	PROFESSIONAL	AND CONTROL	FLUID DYNAMICS	ENGINEERING	Tide	
18				03	03	9	94	04	Theory	Tene
6		11+2P	11+2P						Practical/Drawing	Teaching Hours /Weck
21		03	0.3	03	03	03	03	03	Duration	
240	100	20	20	20	20	20	20	20	LA. Marks	Exami
560		80	80	80	80	80	80	80	Theory/ Practical Marks	Examination
800	100	100	100	100	100	100	100	100	Total Marks	
22	2	2	10	w	G.	de	4	44		Credits

Professional	Elective (ISAE74X)	Professional	Elective (ISAE75X)
15AE741	FATIGUE AND FRACTURE MECHANICS	15AE751	OPERATIONS RESEARCH
15AE742	HIGH PERFORMANCE COMPUTING	15AE752	WIND TUNNEL TECHNIQUES
15AE743	HELICOPTER DYNAMICS	15AE753	NUMERICAL METHODS
15AE744	AERO-ELASTICITY	ISAE754	GUIDANCE, NAVIGATION & CONTROL

- 1. Core subject: This is the course which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Project Phase -I + Project Seminar: Literature Survey, Problem Identification, objectives and Methodology. Submission of synopsis and seminar

SCHEME OF TEACHING AND EXAMINATION 2015-2016 (APPROVED) VISVESVARAYA DECHNOLOGICAL UNIVERSITY, DELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS)

B.E. Biomedical Engineering

VII SEMESTER

2	Cubicat			Teachi /W	Teaching Hours /Week		Examination	nation	
\$ 5	Code	Title	Dept.	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks
1	15BM71	Biomedical Digital Signal Processing	ВМ	2		03	20	80	100
2	15BM72	Computer Communication Networks in Healthcare	вм	2		03	20	80	100
3	15BM73	ARM Processor	ВМ	2		03	20	80	100
4	15BM74X	Professional Elective-III	ВМ	03		03	20	80	100
S	15BM75X	Professional Elective-IV	вм	03	7.	03	20	80	100
6	15BML76	Biomedical DSP Lab	BM	<	11+2P	03	20	80	100
7	15BML77	ARM Processor Lab	BM		11+2P	03	20	80	100
∞	15BMP78	Project Work Phase-1 + Project Seminar	BM	-	11+2P		100	•	100
		TOTAL		18	9	21	240	560	800

rofessiona	Professional Elective-III	Professiona	rofessional Elective-IV
15BM741	Database Management System in Healthcare	15BM751	Biostatistics
15BM742	Medical Informatics and Expert Systems	15BM752	Lasers and Optical Fibers in Medicine
15BM743	Hardware-Software Co-design	15BM753	Ergonomics
15BM744	15BM744 Biometric Systems	15BM754	15BM754 Big-data and Cloud Computing

- 1. Core Subject: This is the course which is compulsorily need to be studied by the student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Project Work Phase-I + Project Seminar: Literature Survey, Problem Identification, Objectives & Methodology, Submission of synopsis & seminar presentation

SCHEME OF TEACHING AND EXAMINATION 2015-2016 (APPROVED) VISVESVARAYA DECHNOLOGICAL UNIVERSITY, TELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS)

B.E. Biomedical Engineering

III SEMESTER

20	700	390	310	15	10	11		TOTAL		
1	100	,	100	•	4	•	ВМ	Seminar	15BMS86	6
6	200	100	100	<i>ॐ</i> 3	6		BM =	Project Work Phase-II	1SBMP85	5
2	100	50	50	3	Industry Oriented	Industry	BM	Internship / Professional Practice	15BM84	4
3	100	80	20	3	-	3	BM	15BM83X Professional Elective-V	15BM83X	3
4	100	80	20	. 3		4	BM	Biomaterials and Artificial Organs	15BM82	2
4	100	80	20	3	-	4	ВМ	Medical Imaging Systems	15BM81	1
Credit	Total Marks	Theory/ Practical Marks	I.A. Marks	Duration	Practical/ Drawing	Theory	Dept.	Title	Code	No
		ation	Examination		Teaching Hours /Week	Teachi /V	Teaching		Subject	2

15BM834 Neural Networks and AI in Biomedical Engg.	Neural Networks and /	15BM834
15BM833 Picture Archiving and Communication Systems	Picture Archiving and	15BM833
ations	15BM832 Medical Device Regulations	15BM832
	15BM831 Bio-MEMS	15BM831
in a	Professional Elective-V	Professiona

- 1. Core Subject: This is the course which is compulsorily need to be studied by the student as a core requirement to complete the requirement of a programme in a said discipline of study.
- Professional Elective: Elective relevant to chosen specialization/ branch.
 Internship / Professional Practice: To be carried between the 6th and 7th semester vacation or 7th and 8th semester vacation period.
- 4. Project Work Phase -II: Design, Development, Implementation, Demonstration, Testing, Presentation and Project Report Submission.
- 5. Seminar: On current topics of Engineering & Technology related to said discipline of study. Preparation of Seminar Report and Presentation.

B.E. Computer Science & Engineering

V SEMESTER

26	800	160	640	24	6	22	TOTAL		
2	100	20	80	03	1I+2P		DBMS Laboratory with mini project	15CSL58	8
2	100	20	80	03	1I+2P	1	Computer Network Laboratory	15CSL57	7
3	100	20	80	03		03	Open Elective 1	15CS56x	6
3	100	20	80	03		03	Professional Elective 1	15CS55x	5
4	100	20	80	03		04	Automata theory and Computability	15CS54	4
4	100	20	80	03	-	04	Database Management System	15CS53	3
4	100	20	80	03		04	Computer Networks	15CS52	2
4	100	20	80	03		04	Management and Entrepreneurship for IT Industry	15CS51	1
	Total Marks	I.A. Marks	Theory/ Practical Marks	Duration	Practical/ Drawing	Theory	Title	Code	No.
Credits		Examination	Exami		Teaching Hours /Week	Teach			3

Professional Elective 1	ctive 1
15CS551	Object Oriented Modeling and Design
15CS552	Introduction to Software Testing
15CS553	Advanced JAVA and J2EE
15CS554	Advanced Algorithms

- l. Professional Elective: Electives relevant to chosen specialization / branch
- Open Elective: Electives from other technical and/or emerging subject areas (Announced separately)

B.E. Computer Science & Engineering

VI SEMESTER

						-			
26	800	160	640	24	6	22	TOTAL		
2	100	20	80	03	11+2P	=	Computer Graphics Laboratory with mini project	15CSL68	8
2	100	20	80	03	1I+2P	-	System Software and Operating System Laboratory	15CSL67	7
3	100	20	80	03		03	Open Elective 2	15CS66x	6
3	100	20	80	03		03	Professional Elective 2	15CS65x	5
4	100	20	80	03	-	04	Operating Systems	15CS64	4
4	100	20	80	03		04	System Software and Compiler Design	15CS63	3
4	100	20	80	03		04	Computer Graphics and Visualization	15CS62	2
4	100	20	80	03		04	Cryptography, Network Security and Cyber Law	15CS61	1
	Total Marks	I.A. Marks	Theory/ Practical Marks	Duration	y Practical/ Drawing	Theory	Title	Code	No No
Credits		nation	Examination	*	Teaching Hours /Week	Teac			2

Professional Elective 2	ective 2
15CS651	Data Mining and Data Warehousing
15CS652	Software Architecture and Design Patterns
15CS653	Operations research
15CS654	Distributed Computing system

- . Professional Elective: Electives relevant to choosen specialization / branch
- Open Elective: Electives from other technical and/or emerging subject areas (Announced separately)

B.E. Computer Science & Engineering

VII SEMESTER

_	- 1			1				1			
		~	7	6	5	4	3	2	1	No	2
		15CSP78	15CSL77	15CSL76	15CS75x	15CS74x	15CS73	15CS72	15CS71	Code	Cubioct
	TOTAL	Project Phase 1 + Seminar	Web Technology Laboratory with mini project	Machine Learning Laboratory	Professional Elective 4	Professional Elective 3	Machine Learning	Advanced Computer Architectures	Web Technology and its applications	Title	
	18	1	=		03	03	04	04	04	Theory	Teachi /W
	6		1I+2P	1I+2P	-	-			-	Practical/ Drawing	Teaching Hours /Week
	21	1	03	03	03	03	03	03	03	Duration	
	240	100	20	20	20	20	20	20	20	I.A. Marks	Exam
	560	l	80	80	80	80	80	80	80	Theory/ Practical Marks	Examination
	800	100	100	100	100	100	100	100	100	Total Marks	
	24	2	2	2	3	3	4	4	4		Credits

Professional Elective 3	ctive 3	Professional Elective 4	tive 4
15CS741	Natural Language Processing	15CS751	Soft and Evolutionary Computing
15CS742	Cloud Computing and its Applications	15CS752	Computer Vision and Robotics
15CS743	Information and Network Security	15CS753	Digital Image Processing
15CS744	Unix System Programming	15CS754	Storage Area Networks

- Professional Elective: Electives relevant to choosen specialization / branch
- Project Phase 1 + Seminar: Literature Survey, Problem Identification, Objectives and Methodology, Submission of Synopsis and Seminar

B.E. Computer Science & Engineering VIII SEMESTER

	6	5	4	3	2	1	No	2
	15CSS86	15CSP85	15CS84	15CS83x	15CS82	15CS81	Code	Subject
TOTAL	Seminar	Project work phase II	Internship / Professional Practice	Professional Elective 5	Big Data Analytics	Internet of Things and Applications	Title	
11		1	Indust	3	4	4	Theory	Teacl
10	4	6	Industry Oriented			-	Practical/ Drawing	Teaching Hours /Week
15	-	3	3	3	ω	3	Duration	
310	100	100	50	20	20	20	I.A. Marks	Exam
390	ŀ	100	50	80	80	80	Theory/ Practical Marks	Examination
700	100	200	100	100	100	100	Total Marks	
20	2	5	2	3	4	4		Credits

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System Modeling and Simulation

Network management User Interface Design Professional Elective 5

15CS831

High Performance Computing

15CS834

15CS833 15CS832

⁵ Internship / Professional Practice: To be carried out between 6th and 7th semester vacation or 7th and 8th semester vacation period

B.E. CIVIL ENGINEERING

04 04 04 03	03		20	
	3		03	03 20
Theory Pr	act	Practical/ Duration		Duration
D.		ractical/		
i eacning Hours /Week	$N m{ ilde{e}ek}$	Week		Week Examination
Hom	rs /Week	rs /Week		Examinat

Professional Elective 3	Elective 3	Professional Elective 4	
15CV741	Design of Bridges	15CV751	Urban Transportation and Planning
15CV742	Ground Water & Hydraulics	15CV752	Prefabricated Structures
15CV743	Design Concept of Building Services	15CV753	Rehabilitation and Retrofitting of Structures
15CV744	15CV744 Structural Dynamics	15CV754	Reinforced Earth Structures

^{1.} Project Phase-I + Seminar: Literature Survey, Problem Identification, objectives and Methodology, Submission of synopsis and seminar

B.E. CIVIL ENGINEERING

SI. No.	Subject Code 15CV81	Title Quantity Surveying and Contracts Management Design of Pre-Stressed Congrete Flaments	Tea Hour Theory	Teaching Hours /Week Practical/ Drawing	Duration 3	Examination I.A. The Practical Marks Marks Ma 20 8		Theory/ Practical Marks 80	tion Theory/ Total Practical Marks 80 100
	15CV82	Design of Pre Stressed Concrete Elements	4	ı	3		20		80
3	15CV83X	Professional Elective 5	3		3		20	20) 80	
4	15CV84	Internship/Professional Practice	Industr	Industry Oriented	3		50	50 50	
5	15CVP85	Project Work		6	<u>(</u>		(100)	(100)	
6	15CVS86	Seminar on current trends in Engineering and Technology	-	4	1		100	100 -	100 - 100
		TOTAL	11	10	15	<u> </u>	310		310

Professiona	Professional Elective 5
15CV831	Earthquake Engineering
15CV832	15CV832 Hydraulic Structures
15CV833	15CV833 Pavement Design
15CV834	15CV834 Advanced Foundation Design

SCHEME OF TEACHING AND EXAMINATION B.E.: Electronics & Communication Engineering

							_							70	1
					00	7	6	υ	4 .	ω	2	н	No	<u> </u>	NI S
					15ECP78	15ECL77	15ECL76	15EC75X	15XX74X	15EC73	15EC72	15EC71	Code	Subject	VII SEMESTER
יייייייייייייייייייייייייייייייייייייי	15EC742 Biomedical Signal Processing	15EC741 Multimedia Communication	Professional Elective-3	TOTAL	Project Work Phase-I + Project work Seminar/	VLSI Lab	Advanced Communication Lab	Professional Elective-4	Professional Elective-3	Power Electronics	Digital Image Processing	Microwave and Antennas	Title	ON WINDS	
	rocessing	nication		18				03	03	04	04	04	Theory	Teaching Hours /Week	
こうてつてつ	15EC752	15EC751	Professional	09	03	1I+2P	1I+2P						Practic al/Dra wing	g Hours ek	
Dattam	IoT and	DSP Alg	nal Elective-4	21		03	03	03	03	03	03	03	Duration		
D	Wireless S	DSP Algorithms and	4	240	100	20	20	20	20	20	20	20	I.A. Marks	Examina	
200	IoT and Wireless Sensor Networks	nd Architecture		560	-	80	80	80	80	80	80	80	Theory/ Practical Marks	nation	
	ίς.	.,		800	100	100	100	100	100	100	100	100	Total Marks		
				24	2	2	ъ	ω	ω	4	4	4		15EC	

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15EC743

Real Time Systems

15EC744 15EC745

Cryptography CAD for VLSI

15EC755

Satellite Communication

Advanced Computer Architecture

15EC753 15EC754

Pattern Recognition

SCHEME OF TEACHING AND EXAMINATION B.E.: Electronics & Communication Engineering

Credits

VIII SEMESTER

2	Subject		Teachi /V	Teaching Hours /Week		Examination	nation		
No	Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	V
1	15EC81	Wireless Cellular and LTE 4G Broadband	4	1	ω	20	80	100	
2	15EC82	Fiber Optics & Networks	4	,	ω	20	80	100	
ω	15EC83X	Professional Elective-5	а	1	w	20	80	100	11
4	15EC84	Internship/Professional Practice	Industr	Industry Oriented	သ	50	50	100	
5	15ECP85	Project Work	1	6	ω	100	100	200	
6	15ECS86	Seminar	1	4	-	100	21	100	
		TOTAL	11	10	15	310	390	700	
Profe	Professional Elective -5	ective -5							
15EC	15EC831 Micr	Micro Electro Mechanical Systems	1_						
15EC832									
15EC	1	Speech Processing							
-	15EC833 Rad	Speech Processing Radar Engineering							
15EC834	_	Speech Processing Radar Engineering Machine learning							

20

1. Internship
/ Professional Practice: T
o be carried between the
e (6th and 7th Semester)
or (7th and 8th) Semeste
er Vacation period.

2015 Scheme

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI SCHEME OF TEACHING AND EXAMINATION 2015-2016 **CHOICE BASED CREDIT SYSTEM (CBCS)**

B.E. Mechanical Engineering

ΥII	VII SEMESTER		D.E. Mechanical Engineering	icai Enginee	g					
			Teac	Teaching Hours /Week	/Week		Examination	ation		Credits
No SI.	Subject Code	Title	Lecture	Tutorial	Practical	Duration	Theory/ Practical	Ā	Total	
						(Hours)	Marks	Marks	Marks	
1	15ME71	Energy Engineering	ω	2	0	03	08	20	100	4
2	15ME72	Fluid Power Systems	4	0	0	03	08	20	100	4
ω	15ME73	Control Engineering	w	2	0	03	08	20	100	4
4	15ME74X	Professional Elective - III	s	0	0	03	80	20	100	3
u	15ME75X	Professional Elective-IV	u	0	0	03	08	20	100	3
ō	15MEL76	Design Lab	1	0	2	03	08	20	100	2
7	15MEL77	CIM Lab	1	0	2	03	80	20	100	2
00	15MEP78	Project Phase — I						100	100	2
		TOTAL	18	4	04		560	240	800	24
Pro	Professional Elective-III		Professional Elective-IV	Elective-IV						
151	15ME741	Design of Thermal Equipments	15ME751	Automotive Electronics	e Electronics					
151	15ME742	Tribology	15ME752	Fracture Mechanics	echanics					
151	15ME743	Financial Management	15ME753	Mechatronics	ics					
151	15ME744	Design for Manufacturing	15ME754	Advanced Vibrations	/ibrations					
151	15ME745	Smart Materials & MEMS								

study.

2. Professional Elective: Elective relevant to chosen specialization/ branch 1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a progr in a said discipline of

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Mechanical Engineering

VIII SEMESTER

			Teach	Teaching Hours /Week	/Week		Examination	ition		Credits
No No	Subject Code	Title	Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME81	Operations Research	3	2	0	03	80	20	100	4
2	15ME82	Additive Manufacturing	4	0	0	03	80	20	100	4
3	15ME83X	Professional Elective - V	3	0	0	03	80	20	100	3
4	15ME84	Internship / Professional Practice	nı	Industry Oriented	ited	03	50	50	100	2
5	15ME85	Project Phase — II	-	6	-	03	100	100	200	6
9	15MES86	Seminar	-	4	-		٠	100	100	1
		TOTAL	10	12			390	310	700	20
٦			_							

15ME835 Product life cycle management

15ME834 15ME833 15ME832

Green Manufacturing

Theory of Plasticity

Experimental Stress Analysis

15ME831

Cryogenics

^{1.} Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of

Professional Elective: Elective relevant to chosen specialization/ branch
 Internship / Professional Practice: To be carried out between 6th& 7th semester vacation or 7th& 8th semester vacation

2018 Scheme

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)

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2		ote:		9	8			5	4	3	2	1		N'SI.		T SE	
Course code under		PCC: Profess		Internship	MP			OEC	PEC	PCC	PCC	PCC		Cour Cour		VI SEMESTER	
Commo Title		sional core, PE		,	18MEMP68		18MEL66	18ME65X	18ME64X	18ME63	18ME62	18ME61		Course and Course code			
	Professi	Note: PCC: Professional core, PEC: Professional Elective, OE: Open Elective, MP: Mini-project		Internship	Mim-project		Computer Aided Modelling and Analysis Lab	Open Elective -A	Professional Elective -1	Heat Transfer	Design of Machine Elements II	Finite Element Methods		Course Title			
C	Professional Elective -1	en Elective,	TOTAL	To be carried out during the vacation/s of VI and VII semesters and /or VII and VIII semesters.		_								Teaching Department			
•	e-1	MP: Min	15	ied out du emesters.			1	3	3	3	3	3	L	Theory Lecture	Teachi		*
2		u-proje	10	tring the	-		2	-		2	2	2	Т	Tutorial	Teaching Hours /Week		
C. Tial		ct.	06	vacation/	2		2	-		-			P	Practical/ Drawing	s /Week		,
			24	s of VI	03		8 8	03	03	03	03	03	1	Duration in hours			
			320	and VII	40		1	40	40	40	40	40	(CIE Marks	Exam		
			480	semeste	60		60	60	60	60	60	60		SEE Marks	Examination		
			800	rs and /	100		100	100	100	100	100	100	1	otal Marks			
			24	IIA ze	2		2	3	3	4	4	4		Credits			

	Open Elective -A		
Entrepreneurship Development	18ME646	Theory of Elasticity	18ME643
Composite Materials Technology	18ME645	Refrigeration and Air conditioning	18ME642
Vibrations and Noise Engineering	18ME644	Non-Traditional Machining	18ME641
	18XX64X		18XX64X
Course Title	Course code under	Course Title	Course code under
	TOTESSIONAL PIECUVE -T		

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 18XX65X).

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 the 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.

VII SEMESTER 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)

Sillar Course and Course	VII SEMESTER	ESIEK											
Course Title						Teachin	g Hours	Week		Exami	nation		
ISME71 Control Engineering I	N. SI	Course Course	and code	Course Title			Tutorial			TE Marks	SEE Marks	otal Marks	Credits
18ME71 Control Engineering 3						L	Т	P	1	(Т	
18ME72 Computer Aided Design and 3		CC	18ME71	Control Engineering		w	1		03	40	60	100	w
18ME73X Professional Elective - 2 03 40 60 18ME74X Professional Elective - 3 3 03 40 60 18ME75X Open Elective - B 3 03 40 60 18ME75X Open Elective - B 3 03 40 60 18ME75X Open Elective - B 3 03 40 60 18ME75X Open Elective - B 3 03 40 60 18ME75X Open Elective - B 3 03 40 60 18ME75X Open Elective - B 3 03 40 60 18ME75X Open Elective - B 2 2 2 2 18ME75X Open Elective - B 2 2 2 2 2 18ME75X Project Work Phase - 1 Office on pleted during the vacation of VI and VII semesters, incarried out during the vacation of VI and VII semesters 18ME75X Operation of VI and VII semesters 18ME75X Operations Research 18ME75X Operations Rese		cc	18ME72	Computer Aided Design and Manufacturing		3	-		03	40	60	100	3
18ME74X		EC	18ME73X	Professional Elective - 2		w	1		03	40	60	100	S
18ME75X Open Elective - B		EC	18ME74X	Professional Elective - 3		3	-		03	40	60	100	33
ISMEL76 Computer Integrated Computer Integrated Computer Integrated Computer Integrated Computer Internship Computer Internship Computer Internship Computer Internship Computer Internship Computer Internship Computer Integrated Computer I	5 0	EC	18ME75X	Open Elective -B		s	-	-	03	40	60	100	3
ISMEP78 Project Work Phase - 1 2 2 2 2 2 2 2 2		СС	18MEL76	Computer Integrated Manufacturing Lab			2	2	03	40	60	100	2
IsMEP78 Project Work Phase - 1			-				٠	ŀ	3	•	-	100	د
Internship Course Title Professional Elective - 2 Course Title Course T	7 P	roject	18MEP78	Project Work Phase - 1		1	!	2	!	100	!	100	1
Course Title Professional Elective - 2 Course Title Design for Manufacture Automation and Robotics Computational Fluid Dynamics Course Title Course Title Additive Manufacturing Emerging Sustainable Building Cooling Theory of Plasticity Professional Electives - 3 Course Title NAME 735 Course Code Under 18XX73X Course Title Course Code Under 18XX74X Mechatronics Project Management 18ME 745 Project Management Professional Electives - 3 Course Title NAME 745 Project Management Professional Electives - 3 Course Title NAME 745 Project Management Professional Electives - 3 Course Title NAME 745 Project Management Professional Electives - 3 Course Title NAME 745 Project Management	<u> </u>	nternship	,	Internship	(If not com carried out	pleted du during the	ing the	vacation on of VII	of VI an	d VII se [semest	mesters, ers)	it shall	ě
Course Title Course Title Course Code under 18XX73X Design for Manufacture Automation and Robotics Computational Fluid Dynamics Course Title Course Title Additive Manufacturing Emerging Sustainable Building Cooling Technologies Course Title Additive Manufacturing Technologies Theory of Plasticity Course Title All ME745 Track Course Title Lister Sional Electives - 3 Course Code under 18XX74X Lister Sional Electives - 3 Lister Sional Elective - 2 Lister Sional Elective - 3 Lister Sional Elective - 2 Lister Sional Elective - 2 Lister Sional Elective - 2 Lister Sional Elective - 3 Lister Sional Elective - 3					TOTAL	TO	4	vo	то	040	200	/00	20
Course Title Course Title Course Code and Course code under 18XX73X Design for Manufacture Automation and Robotics Computational Fluid Dynamics Course Title Course Title Additive Manufacturing Emerging Sustainable Building Cooling Technologies Theory of Plasticity Course Title 18ME745 Course Title 18ME745 Course Title 18ME745				D. f.		•							
Design for Manufacture under 18XX/3X Design for Manufacture 18XX/3X Automation and Robotics 18ME/34 Computational Fluid Dynamics Professional Electives - 3 Course Title Course code under 18XX/4X Additive Manufacturing 18ME/34 Emerging Sustainable Building Cooling 18ME/34 Technologies 18ME/34 Theory of Plasticity		ada amdan	Carra Tul	T TOTESSION	Commence		2	Till					
Design for Manufacture Automation and Robotics Computational Fluid Dynamics Professional Electives - 3 Course Title Course Title Additive Manufacturing Emerging Sustainable Building Cooling Technologies Theory of Plasticity Automation and Robotics Professional Electives - 3 Course code under 18XX74X 18ME744 18ME745	18XX733	ode under	Course Title		under 18X	ne X73X	Cours	se Titte					
Automation and Robotics Computational Fluid Dynamics Professional Electives - 3 Course Title Course Code under 18XX74X Additive Manufacturing Fine Sustainable Building Cooling Technologies Theory of Plasticity	18ME73		Design for N	Ianufacture	18ME734		Total	Quality N	Ianage	ment			
Computational Fluid Dynamics Professional Electives - 3 Course Title Course Title Additive Manufacturing Emerging Sustainable Building Cooling Technologies Theory of Plasticity Professional Electives - 3 Course code under 18XX74X 18XE744 18XE745	18ME73	2	Automation	and Robotics	18ME735		Opera	ations Res	search				
Course Title Course code Additive Manufacturing Emerging Sustainable Building Cooling Technologies Theory of Plasticity Professional Electives - 3 Course code under 18XX74X 18NE744 INE744	18ME73	3	Computatio	nal Fluid Dynamics									
Course Title Additive Manufacturing Emerging Sustainable Building Cooling Technologies Theory of Plasticity Course code under 18XX74X 18ME745 I SWE745				Profession	al Electives	- 3							
Additive Manufacturing under 18XX74X Emerging Sustainable Building Cooling 18ME744 Technologies 18ME745	Course c	ode under	Course Title		Course co	de	Cours	se Title					
Additive Manufacturing 18ME744 Emerging Sustainable Building Cooling 18ME745 Technologies Theory of Plasticity	18XX742	K			under 18X	X74X							
Emerging Sustainable Building Cooling 18ME745 Technologies Theory of Plasticity	18ME74		Additive Ma	mufacturing	18ME744		Mech	atronics					
	18ME743		Emerging Sus	stainable Building Cooling	18ME745		Proje	ct Manag	ement				
			Technologies										
	18ME74		Theory of P	asticity									

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)

Γ			(2000)									
VIII	III SEMESTER											
					Teacl	uing Hou	Feaching Hours /Week		Exami	Examination		
N°ST.	Cou Cou	Course and Course code	Course Title	Teaching Department	Theory Lecture	⊢ Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					t	٠						
	PCC	18ME81	Energy Engineering		w	:	!	03	40	60	100	w
2	PEC	18MF82X	Professional Elective _ 4		ú	1		03	40	60	100	ıı
(J)	Project	18MEP83	Project Work Phase - 2		-	-	2	03	40	60	100	8
4	Seminar	18MES84	Technical Seminar				2	03	100		100	1
5	Internship	18XXI85	Internship	Completed during the vacation/s of VI and VII semesters and /or VII and VIII semesters.)	ed durir d VII se VIII sen	ng the va mesters nesters.)	cation/s and /or	03	40	60	100	ü
				00 TALOI	00		04	5	200	240	15 200 240 500 18	ā

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18ME823	18ME822	18ME821	Course code under 18XX82X	
Non-Destructive Testing and Evaluation	Tribology	CNC Machine Tools	Course Title	Professiona
18ME826	18ME825	18ME824	Course code under 18XX82X	Professional Electives - 4
Fracture Mechanics	Tool Design	Automobile Engineering	Course Title	

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.

2018 Scheme

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

M.Tech In Product Design and Manufacturing Engineering (MPD)
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)

				Teach	eaching Hours /Week		Examination	ation	,	
No.	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
-	PCC	18MPD21	Industrial Design & Ergonomics	04		03	40	60	100	4
2	PCC	18MPD22	Design for Manufacturing	04	ı	03	40	60	100	4
w	PCC	18MPD23	Product Planning & Marketing	04	ı	03	40	60	100	4
4	PEC	18MPD24X	Professional elective 1	04	1	03	40	60	100	4
5	PEC	18 MPD 25X	Professional elective 2	04	,	03	40	60	100	4
6	PCC	18 MPD L26	Product Design Lab-2		04	03	40	60	100	2
7	PCC	18 MPD 27	Technical Seminar		02	ı	100	1	100	2
		TO	TATOI	20	90	18	340	360	700	24

P	rofessional Elective 1		Professional Elective 2
Course Code under 18MPD24X	Course title	Course Code under 18 MPD 25X	Course title
18 MPD 241	Product Data Management	18 MPD 251	Quality & Reliability Engineering
18 MPD 242	Advanced Manufacturing Practices	18 MPD 252	Virtual Design and Manufacturing
18 MPD 243	Non Traditional Machining Process	18 MPD 253	Lean Manufacturing System

- Note:
 1. Technical Seminar: CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. Participation in the seminar by all postgraduate students of the same and other semesters of the programme shall be mandatory.

 The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report, Presentation skill and Question and Answer session in the ratio 50:25:25.

 2. Internship: All the students shall have to undergo mandatory internship of 6 weeks during the vacation of 1 and 11 semesters and /or 11 and 111 semesters. A University examination shall be considered during III semester and the prescribed credit shall be counted in the same 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 have to complete during the subsequent University examination after satisfying

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

M.Tech In Product Design and Manufacturing Engineering (MPD)
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)

	SI. Course		Course Code Course Title 18MPD31 Product Analysis and cost optimization	Course Code Course Title 18MPD31 Product Analysis and cost optimization	Course Code Course Title Course Title	Course Code Course Title Course Title	Course Code Course Title Course Title	2 PEC 3 PEC 4 Project 5 Intenship					1 PCC	N ₀	
Course Code			04 Theory Ching	Theory Practical/ Field work/ Assignment Teaching Hours Week	O Duration in	Duration in hours 40 CIE Marks	Duration in hours 40 CIE Marks	Professional elective 4 Evaluation of Project phase -1 Internship	Professional elective 4 Evaluation of Project phase -1	Professional elective 4		Professional elective 3	Product Analysis and cost optimization	Course Title	
Code Course Title Code Course Title Course Title Course Title Course Title Code Course Title Course Title	Teaching Hours Week Theory Practical/ Field work/ Assignment Duration in hours CIE Marks SEE Marks SEE Marks	Duration in hours Output Duration in hours CIE Marks SEE Marks SEE Marks	hours Kamination SEE Marks SEE Marks	S : S S SEE Marks in ation		100 100 100 Total Marks			6	2	4	4	4	Credits	

18MPD323 18MPD322

Value Engineering Rapid Prototyping

Optimization Techniques for Decision Making

18MPD32X 18MPD321

Course Code under

Professional elective 3

Course title

Course Code under 18MPD33X

Professional elective 4

Course title

18MPD333 18MPD332 18MPD331

Computer Application in Design Simulation and Modeling Robust Design

- 1. Project Phase-1: Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall
- prepare relevant introductory project document, and present a seminar.

 CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -I, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

 SEE (University examination) shall be as per the University norms.

 2. Internship: Those, who have not pursued /completed the internship shall be declared as failed and have to complete during subsequent University examinations after satisfying the internship.
- nternship SEE (University examination) shall be as per the University norms

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination – 2018 - 19 M.Tech In Product Design and Manufacturing Engineering(MPD) Outcome Based Education(OBE) and Choice Based Credit System (CBCS)

				Teach	hing Hours /Week		Ex	Examination	
SI.	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks Viva voce	Total Marks
-	Project	18MPD41	Project work phase -2		04	03	40	60	100
			TOTAL	3	94	03	40	60	100

1. Project Phase-2:
CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a Senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25.
SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI 19

Scheme of Teaching and Examination – 2018 - 1 M. Tech Name of the programme (CSE)

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

St. Course Course Code Course Title	III SEMESTER	ER		- 						
Course Code Course Cide Course Fitte PCC RCSE31 PEC RCSE32X Professional elective 3 Project RCSE33X Professional elective 4 PEC RCSE33X Professional elective 4 RCSE33X Rofessional elective 4 Repair and Rehabilitation of Structures Course Code RCSE323 RCSE323 Repair and Rehabilitation of Structures RCSE333 RCSE333 RCSE333 Romse Code Repair and Rehabilitation of Structures RCSE333 RCSE333 RCSE333 RCSE333 RCSE333 ROMSE Code Repair and Rehabilitation of Structures RCSE333 RCSE333				Teachin, /We	g Hours eek		Exami	ination		
ges 04 04 04 08 (Completed the intervent vacation of 1 semesters an and III seme 12 Course Code under 18CSE33X 18CSE331 18CSE332		Course Code	Course Title	Theory	Field work/		CIE Marks	SEE Marks	Total Marks	Credits
04 04 04	1 PCC	18CSE31	Design of Concrete Bridges	04	1	03	40	60	100	4
ase -1 (Completed the interven) vacation of 1 semesters an and III seme 12 Course Code under 18CSE33X 18CSE331 18CSE332 18CSE333		18CSE32X	Professional elective 3	04	-	03	40	60	100	4
Course Code under 18CSE33X 18CSE333		18CSE33X	Professional elective 4	04	-	03	40	60	100	4
Course Code under 18CSE333 (Completed the intervent vacation of 1 semesters an and III seme 12 Course Code under 18CSE33X 18CSE331 18CSE333		18CSE34	Evaluation of Project phase -1		02		100		100	2
Course Code under 18CSE33X 18CSE331 18CSE332		18CSEI35	Internship	(Complete the interve vacation or semesters; and III sen	d during ning f I and II and /or II nesters.)	03	40	60	100	6
Course Code under 18CSE33X 18CSE331 18CSE332 18CSE333		T	OTAL	12	02	12	260	240	500	20
Professional elective 3 Course Code under 18CSE33X Design Concepts of Substructures 18CSE331 Repair and Rehabilitation of Structures 18CSE332 Theory of Plates and Shells 18CSE333	Note: PCC: Pr	ofessional core, l	PEC: Professional Elective.							
Course Code under 18CSE33X Design Concepts of Substructures 18CSE331 Repair and Rehabilitation of Structures 18CSE332 Theory of Plates and Shells 18CSE333		Profession	al elective 3		Profe	ssional	electiv	e 4		
Design Concepts of Substructures 18CSE331 Repair and Rehabilitation of Structures 18CSE332 Theory of Plates and Shells 18CSE333	Course Code under		Course title	Course Code under			Cours	e title		
Repair and Rehabilitation of Structures 18CSE332 Theory of Plates and Shells 18CSE333	18CSE321	Design Conce	epts of Substructures	18CSE331	Fracture	Mechar	ics app	lied to	concrete	
Theory of Plates and Shells 18CSE333	18CSE322	Repair and Re	habilitation of Structures	18CSE332	Design o	of Mason	ıry Stru	ıctures		
	18CSE323	Theory of Pla	tes and Shells	18CSE333	Design o	f Formy	work			

Note:

18CSE324

Optimization Techniques

18CSE334

Composite materials

- requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a seminar. CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25. 1. Project Phase-1: Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary
- SEE (University examination) shall be as per the University norms.
- 2. Internship: Those, who have not pursued /completed the internship shall be declared as failed and have to complete during subsequent University examinations after satisfying the internship requirements.

 Internship SEE (University examination) shall be as per the University norms

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

Scheme of Teaching and Examination – 2018 - 19
M.Tech Name of the programme (CSE)

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

03 40 60 100	40		\mathfrak{Z}		04	:	TOTAL			
03 40 60 100	03 40 60	03 40	03		04		Project work phase -2	18CSE41	Project	
Duration in hours CIE Marks SEE Marks Viva voce Total Marks	Duration in hours CIE Marks SEE Marks	Duration in hours	Duration in	g	Practical/ Field work/ Assignment	Theory	Course Title	Course Code	Course	SI.
eek Examination			eek	eek	ours /W	Teaching Hours /Week				
								ER	IV SEMEST	IV

Note:

1. Project Phase-2:

CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a Senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.





ACS College of Engineering

(Approved by AICTE, New Delhi, Govt. of Karnataka & Affiliated to Visvesvaraya Technological University, Belgaum)

Sponsored by: MOOGAMBIGAI CHARITABLE AND EDUCATIONAL TRUST







1.3.2.1 Number of courses that include experiential learning through project work/field work/internship year - wise during last five years

The data shown below is the list of courses that include experiential learning through project work/field work/internship during the year 2018-2019.

SL.	Program			
No	code	Program Name	Course code	Course Name
1	EC	Electronics And Communication Engineering	15ECP78	Project Work Phase–I
2	EC	Electronics And Communication Engineering	15EC84	Internship
3	EC	Electronics And Communication Engineering	15ECP85	Project Work
4	ME	Mechanical Engineering	15MEP78	Project Phase – I
5	ME	Mechanical Engineering	15ME84	Internship / Professional Practice
6	ME	Mechanical Engineering	15ME85	Project Phase – II
7	AE	Aeronautical Engineering	15AEP78	Project Phase –I + Project Seminar
8	AE	Aeronautical Engineering	15AE84	INTERNSHIP PROFESSIONAL
9	AE	Aeronautical Engineering	15AEP85	Project Work Phase - II
10	CV	Civil Engineering	15CVP78	Project Phase I +Project Seminar
11	CV	Civil Engineering	15CVP85	Project Work
12	ВМ	Biomedical Engineering	15BMP78	Project Work Phase- I
13	вм	Biomedical Engineering	15BM84	Internship
14	вм	Biomedical Engineering	15BMP85	Project
15	cs	Computer Science & Engineering	15CSP78	Project Phase 1 + Seminar
16	cs	Computer Science & Engineering	15CS84	Internship / Professional Practice
17	cs	Computer Science & Engineering	15CSP85	Project work phase II
18	CSE	Mtech Structural Engineering	16CSE33	Evaluation and Viva-Voce of Internship
19	CSE	Mtech Structural Engineering	16CSE43	Project phase -2
20	MPD	Product Design & Manufacturing	16MPD44	Project Work and Viva-voce
21	ECS	Digital Electronics And Communication Engineering	16ECS31	Seminar / Presentation on Internship
22	ECS	Digital Electronics And Communication Engineering	16ECS43	Evaluation of Project phase -2



VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS)

SCHEME OF TEACHING AND EXAMINATION 2015-2016

Aeronautical Engineering VIII SEMESTER

			Teach	ing Hours /Week		Exami	ination		Credi
SI. N	Subject Code	Title	Theor	Practical/Drawi	Duratio n	I.A. Mark s	Theory/ Practic al Marks	Total Mark s	t
1	15AE81	AVIONICS	4		3	20	80	100	4
2	15AE82	FLIGHT VEHICLE DESIGN	4		3	20	80	100	4
3	15AE83X	Professional Elective	3		3	20	80	100	3
4	15AE84	Internship / Professional Practice	Ind	ustry Oriented	3	50	50	100	2
5	15AEP85	Project Work Phase -II	-	6	3	100	100	200	6
6	15AES86	Seminar	-	4	-	100		100	1
	T	OTAL	11	10	15	310	390	700	20

Professiona	al Elective
15AE831	FLIGHT TESTING
15AE832	BOUNDARY LAYER THEORY
15AE833	OPTIMIZATION TECHNIQUES
15AE834	CRYOGENICS

- 1. Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Internship / Professional Practice: To be carried between the 6^{th} and 7^{th} semester vacation or 7^{th} and 8^{th} semester vacation period.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS)

SCHEME OF TEACHING AND EXAMINATION 2015-2016

Aeronautical Engineering VII Semester

	on	7	0	(A	4.	u	2	-	8.8	10 E
	ISAEP78	15AEL77	15AEL76	15AE75X	ISAE74X	ISAE73	15AE72	15AE71	Subject Code	No.
TOTAL	Project Phase -I + Project Seminar	ANALYSIS LAB AND	LAB SIMULATION	PROFESSIONAL	PROFESSIONAL	AND CONTROL	FLUID DYNAMICS	ENGINEERING	Tide	
18				03	03	9	94	04	Theory	Tene
6		11+2P	11+2P						Practical/Drawing	Teaching Hours /Weck
21		03	0.3	03	03	03	03	03	Duration	
240	100	20	20	20	20	20	20	20	LA. Marks	Exami
560		80	80	80	80	80	80	80	Theory/ Practical Marks	Examination
800	100	100	100	100	100	100	100	100	Total Marks	
22	2	2	10	w	G.	de	4	44		Credits

Professional	Elective (ISAE74X)	Professional	Elective (ISAE75X)
15AE741	FATIGUE AND FRACTURE MECHANICS	15AE751	OPERATIONS RESEARCH
15AE742	HIGH PERFORMANCE COMPUTING	15AE752	WIND TUNNEL TECHNIQUES
15AE743	HELICOPTER DYNAMICS	15AE753	NUMERICAL METHODS
15AE744	AERO-ELASTICITY	ISAE754	GUIDANCE, NAVIGATION & CONTROL

- 1. Core subject: This is the course which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Project Phase -I + Project Seminar: Literature Survey, Problem Identification, objectives and Methodology. Submission of synopsis and seminar

VISVESVARAYA ECHNOLOGICAL UNIVERSITY, ELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016 (APPROVED)

B.E. Biomedical Engineering

VII SEMESTER

SI.	No Code	Title	Teaching		ng Hours Veek	1	Examination			
No			Teaching Dept.	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	Credits
1	15BM71	Biomedical Digital Signal Processing	ВМ	04	4.	03	20	80	100	4
2	15BM72	Computer Communication Networks in Healthcare	ВМ	04	1	03	20	80	100	4
3	15BM73	ARM Processor	ВМ	04	- 1	03	20	80	100	4
4	15BM74X	Professional Elective-III	ВМ	03	-	03	20	80	100	3
5	15BM75X	Professional Elective-IV	ВМ	03	- ·	03	20	80	100	3
6	15BML76	Biomedical DSP Lab	ВМ		1I+2P	03	20	80	100	2
7	15BML77	ARM Processor Lab	ВМ	1.	11+2P	03	20	80	100	2
8	15BMP78	Project Work Phase-I + Project Seminar	BM	- >	11+2P	-	100		100	2
		TOTAL	100	18	9	21	240	560	800	24

Professiona	al Elective-III	Professiona	al Elective-IV
15BM741	Database Management System in Healthcare	15BM751	Biostatistics
15BM742	Medical Informatics and Expert Systems	15BM752	Lasers and Optical Fibers in Medicine
15BM743	Hardware-Software Co-design	15BM753	Ergonomics
15BM744	Biometric Systems	15BM754	Big-data and Cloud Computing

- 1. Core Subject: This is the course which is compulsorily need to be studied by the student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Project Work Phase-I + Project Seminar: Literature Survey, Problem Identification, Objectives & Methodology, Submission of synopsis & seminar presentation

VISVESVARAYA ECHNOLOGICAL UNIVERSITY, ELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016 (APPROVED)

B.E. Biomedical Engineering

III SEMESTER

Sl.	Subject	77.4	Teaching		ing Hours Veek	Allen	Exami	nation		
No	Code	Title	Dept.	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	Credit
1	15BM81	Medical Imaging Systems	BM	4	-	3	20	80	100	4
.2	15BM82	Biomaterials and Artificial Organs	BM	4	-	. 3	20	80	100	. 4
3	15BM83X	Professional Elective-V	BM	3	- 1	3	20	80	100	3
4	15BM84	Internship / Professional Practice	BM	Industry	Oriented	3	50	50	100	2
5	15BMP85	Project Work Phase-II	BM —	•	6	3	100	100	200	6
6	15BMS86	Seminar	ВМ	\\ <u>}</u>	4	-	100	A.T.	100	1
		TOTAL		11	10	15	310	390	700	20

al Elective-V	
Bio-MEMS	
Medical Device Regulations	The second second
Picture Archiving and Communica	tion Systems
	NACTION AND STATE OF PROPERTY.

- 1. Core Subject: This is the course which is compulsorily need to be studied by the student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective: Elective relevant to chosen specialization/ branch.
- 3. Internship / Professional Practice: To be carried between the 6th and 7th semester vacation or 7th and 8th semester vacation period.
- 4. Project Work Phase -II: Design, Development, Implementation, Demonstration, Testing, Presentation and Project Report Submission.
- 5. Seminar: On current topics of Engineering & Technology related to said discipline of study. Preparation of Seminar Report and Presentation.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering

V SEMESTER

CI	Cubicat			ng Hours Veek	4	Examination				
Sl. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks		
1	15CS51	Management and Entrepreneurship for IT Industry	04		03	80	20	100	4	
2	15CS52	Computer Networks	04	-	03	80	20	100	4	
3	15CS53	Database Management System	04		03	80	20	100	4	
4	15CS54	Automata theory and Computability	04		03	80	20	100	4	
5	15CS55x	Professional Elective 1	03	7	03	80	20	100	3	
6	15CS56x	Open Elective 1	03	}	03	80	20	100	3	
7	15CSL57	Computer Network Laboratory		1I+2P	03	80	20	100	2	
8	15CSL58	DBMS Laboratory with mini project	-	1I+2P	03	80	20	100	2	
		TOTAL	22	6	24	640	160	800	26	

Professional Ele	ective 1
15CS551	Object Oriented Modeling and Design
15CS552	Introduction to Software Testing
15CS553	Advanced JAVA and J2EE
15CS554	Advanced Algorithms

- 1. Professional Elective: Electives relevant to chosen specialization / branch
- 2. Open Elective: Electives from other technical and/or emerging subject areas (Announced separately)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering

VI SEMESTER

Sl.	Cubicat			ng Hours Veek	A	Exami	ination		Credits
No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15CS61	Cryptography, Network Security and Cyber Law	04		03	80	20	100	4
2	15CS62	Computer Graphics and Visualization	04		03	80	20	100	4
3	15CS63	System Software and Compiler Design	04		03	80	20	100	4
4	15CS64	Operating Systems	04		03	80	20	100	4
5	15CS65x	Professional Elective 2	03		03	80	20	100	3
6	15CS66x	Open Elective 2	03		03	80	20	100	3
7	15CSL67	System Software and Operating System Laboratory		1I+2P	03	80	20	100	2
8	15CSL68	Computer Graphics Laboratory with mini project		1I+2P	03	80	20	100	2
		TOTAL	22	6	24	640	160	800	26

Professional Elective 2	
15CS651	Data Mining and Data Warehousing
15CS652	Software Architecture and Design Patterns
15CS653	Operations research
15CS654	Distributed Computing system

1. Professional Elective: Electives relevant to choosen specialization / branch

2. Open Elective: Electives from other technical and/or emerging subject areas (Announced separately)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering

VII SEMESTER

Sl.	Cubicat			ng Hours Veek		Exam	ination		Credits
No	Subject Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CS71	Web Technology and its applications	04		03	20	80	100	4
2	15CS72	Advanced Computer Architectures	04		03	20	80	100	4
3	15CS73	Machine Learning	04		03	20	80	100	4
4	15CS74x	Professional Elective 3	03		03	20	80	100	3
5	15CS75x	Professional Elective 4	03		03	20	80	100	3
6	15CSL76	Machine Learning Laboratory		1I+2P	03	20	80	100	2
7	15CSL77	Web Technology Laboratory with mini project		1I+2P	03	20	80	100	2
8	15CSP78	Project Phase 1 + Seminar				100		100	2
		TOTAL	18	6	21	240	560	800	24

Professional Elect	ive 3	Professional Electi	ve 4
15CS741	Natural Language Processing	15CS751	Soft and Evolutionary Computing
15CS742	Cloud Computing and its Applications	15CS752	Computer Vision and Robotics
15CS743	Information and Network Security	15CS753	Digital Image Processing
15CS744	Unix System Programming	15CS754	Storage Area Networks

- 1. Professional Elective: Electives relevant to choosen specialization / branch
- 2. Project Phase 1 + Seminar : Literature Survey, Problem Identification, Objectives and Methodology, Submission of Synopsis and Seminar

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI **CHOICE BASED CREDIT SYSTEM (CBCS)** SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering

VIII SEMESTER

CI	Calabara			ing Hours Veek		Exam	ination		Credits
Sl. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical	Total Marks	
				Drawing			Marks		
1	15CS81	Internet of Things and Applications	4		3	20	80	100	4
2	15CS82	Big Data Analytics	4		3	20	80	100	4
3	15CS83x	Professional Elective 5	3	-	3	20	80	100	3
4	15CS84	Internship / Professional Practice	Industr	y Oriented	3	50	50	100	2
5	15CSP85	Project work phase II		6	3	100	100	200	5
6	15CSS86	Seminar		4		100		100	2
		TOTAL	11	10	15	310	390	700	20

Professional Elective 5	
15CS831	High Performance Computing
15CS832	User Interface Design
15CS833	Network management
15CS834	System Modeling and Simulation

- Professional Elective: Electives relevant to chosen specialization / branch
 Internship / Professional Practice: To be carried out between 6th and 7th semester vacation or 7th and 8th semester vacation period

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. CIVIL ENGINEERING

VII SEMESTER

	Subject			aching rs /Week		Exam	ination		Credits
Sl. No.	Subject Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CV71	Municipal and Industrial Waste Water Engineering	04		03	20	80	100	4
2	15CV72	Design of RCC and Steel Structures	04		03	20	80	100	4
3	15CV73	Hydrology and Irrigation Engineering	04		03	20	80	100	4
4	15CV74X	Professional Elective 3	03		03	20	80	100	3
5	15CV75X	Professional Elective 4	03		03	20	80	100	3
6	15CVL76	Environmental Engineering Laboratory		1I+2P	03	20	80	100	2
7	15CVL77	Computer Aided Detailing of Structures		1I+2D	03	20	80	100	2
8	15CVP78	Project Phase I +Project Seminar		3		100		100	2
	1	TOTAL	18	9	21	240	560	800	24

Professional Elective 3		Professional Elective 4	
15CV741	Design of Bridges	15CV751	Urban Transportation and Planning
15CV742	Ground Water & Hydraulics	15CV752	Prefabricated Structures
15CV743	Design Concept of Building Services	15CV753	Rehabilitation and Retrofitting of Structures
15CV744	Structural Dynamics	15CV754	Reinforced Earth Structures

^{1.} Project Phase-I + Seminar: Literature Survey, Problem Identification, objectives and Methodology, Submission of synopsis and seminar

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. CIVIL ENGINEERING

VIII SEMESTER

	Subject.			ching s /Week		Exar	nination		Credits
Sl. No.	Subject Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CV81	Quantity Surveying and Contracts Management	4	-	3	20	80	100	4
2	15CV82	Design of Pre Stressed Concrete Elements	4	1	3	20	80	100	4
3	15CV83X	Professional Elective 5	3	•	3	20	80	100	3
4	15CV84	Internship/Professional Practice	Industry	y Oriented	3	50	50	100	2
5	15CVP85	Project Work	-	6	3	100	100	200	6
6	15CVS86	Seminar on current trends in Engineering and Technology	-	4	-	100	-	100	1
		TOTAL	11	10	15	310	390	700	20

Professiona	Professional Elective 5		
15CV831	Earthquake Engineering		
15CV832	Hydraulic Structures		
15CV833	Pavement Design		
15CV834	Advanced Foundation Design		

SCHEME OF TEACHING AND EXAMINATION

B.E.: Electronics & Communication Engineering

VII SEMESTER

S1.	Subject		Teachin /We	g Hours eek		15EC			
No	Code	Title	Theory	Practic al/Dra wing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15EC71	Microwave and Antennas	04		03	20	80	100	4
2	15EC72	Digital Image Processing	04		03	20	80	100	4
3	15EC73	Power Electronics	04		03	20	80	100	4
4	15XX74X	Professional Elective-3	03		03	20	80	100	3
5	15EC75X	Professional Elective-4	03		03	20	80	100	3
6	15ECL76	Advanced Communication Lab		1I+2P	03	20	80	100	2
7	15ECL77	VLSI Lab		1I+2P	03	20	80	100	2
8	[15ECP78	Project Work Phase-I + Project work		03		100	-	100	2
	70	TOTAL	18	09	21	240	560	800	24

Profession	Professional Elective-3		Elective-4		
15EC741	Multimedia Communication	15EC751	DSP Algorithms and Architecture		
15EC742	Biomedical Signal Processing	15EC752	IoT and Wireless Sensor Networks		
15EC743	Real Time Systems	15EC753	Pattern Recognition		
15EC744	Cryptography	15EC754	Advanced Computer Architecture		
15EC745	CAD for VLSI	15EC755	Satellite Communication		

1. Project Phase -I + Project Work Seminar: Literature Survey, Problem Identification, Objectives and Methodology. Submission of Synopsis and Seminar.

SCHEME OF TEACHING AND EXAMINATION B.E.: Electronics & Communication Engineering

VIII SEMESTER

S1.	Subject		5,000,000	ing Hours Week			Credits		
No	Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15EC81	Wireless Cellular and LTE 4G Broadband	4	-	3	20	80	100	4
2	15EC82	Fiber Optics & Networks	4	-	3	20	80	100	4
3	15EC83X	Professional Elective-5	3	-	3	20	80	100	3
4	15EC84	Internship/Professional Practice	Industr	ry Oriented	3	50	50	100	2
5	15ECP85	Project Work	-	6	3	100	100	200	6
6	15ECS86	(Seminar)	-	4	-	100	=	100	1
		TOTAL	11	10	15	310	390	700	20

Professional Elective -5					
15EC831	Micro Electro Mechanical Systems				
15EC832	Speech Processing				
15EC833	Radar Engineering				
15EC834	Machine learning				
15EC835	Network and Cyber Security				

1. Internship / Professional Practice: To be carried between the (6th and 7th Semester) or (7th and 8th) Semester Vacation period.

2015 Scheme

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Mechanical Engineering

VII SEMESTER

				Teaching Hours /Week			Examin	ation		Credits
SI. No	Subject Code	Title	Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME71	Energy Engineering	3	2	0	03	80	20	100	4
2	15ME72	Fluid Power Systems	4	0	0	03	80	20	100	4
3	15ME73	Control Engineering	3	2	0	03	80	20	100	4
4	15ME74X	Professional Elective - III	3	0	0	03	80	20	100	3
5	15ME75X	Professional Elective-IV	3	0	0	03	80	20	100	3
6	15MEL76	Design Lab	1	0	2	03	80	20	100	2
7	15MEL77	CIM Lab	1	0	2	03	80	20	100	2
8	15MEP78	Project Phase – I	-	-	-	-	-	100	100	2
	TOTAL		18	4	04		560	240	800	24

Professional	Professional Elective-III		Elective-IV
15ME741	Design of Thermal Equipments	15ME751	Automotive Electronics
15ME742	Tribology	15ME752	Fracture Mechanics
15ME743	Financial Management	15ME753	Mechatronics
15ME744	Design for Manufacturing	15ME754	Advanced Vibrations
15ME745	ME745 Smart Materials & MEMS		

Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Mechanical Engineering

VIII SEMESTER

				Teaching Hours /Week			Examin	ation		Credits
SI. No	Subject Code	Title	Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME81	Operations Research	3	2	0	03	80	20	100	4
2	15ME82	Additive Manufacturing	4	0	0	03	80	20	100	4
3	15ME83X	Professional Elective - V	3	0	0	03	80	20	100	3
4	15ME84	Internship / Professional Practice	Inc	dustry Orier	nted	03	50	50	100	2
5	15ME85	Project Phase – II	-	6	-	03	100	100	200	6
6	15MES86	Seminar	-	4	-	-	-	100	100	1
	TOTAL		10	12			390	310	700	20

Professional	Professional Elective-V						
15ME831 Cryogenics							
15ME832 Experimental Stress Analysis							
15ME833	Theory of Plasticity						
15ME834	Green Manufacturing						
15ME835 Product life cycle management							

Core subject: This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

- 2. Professional Elective: Elective relevant to chosen specialization/ branch
- 3. Internship / Professional Practice: To be carried out between 6th & 7th semester vacation or 7th & 8th semester vacation.

^{2.} Professional Elective: Elective relevant to chosen specialization/ branch

M.Tech. in Communication Systems, Digital Communication & Networking, Digital Communication Engineering, Digital Electronics & Communication Systems, Digital Electronics & Communication (Common to all 5 Programmes)

III SEMESTER: Internship

			Teaching	Hours /Week		Exa	nination		Credit
SL No	Subject Code	Title	Theory	Practical/Fi eld Work/ Assignment	Dura tion	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16ECS31	Seminar / Presentation on Internship (After 5 weeks from the date of commencement)			•	25	-	25	
2	16ECS32	Report on Internship	-	-	-	25	-	25	20
3	A6ECS33	Evaluation and Viva-Voce of Internship	-	-	-	-	50	50	
4	Joecs34	Evaluation of Project phase -i	-		•	50		50	1
		TOTAL		-	-	100	50	150	21

M. Tech. in Communication Systems, Digital Communication & Networking, Digital Communication Engineering, Digital Electronics & Communication Systems, Digital Electronics & Communication (Common to all 5 Programmes)

IV SEMESTER

		T	Teaching	Hours /Week		Exan	nination		Credit
Sl. No	Subject Code	Title	Theory	Practical/Fi eld Work/ Assignment	Dura tion	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16ECS41	Wireless Broadband LTE 4G	4	-	3	20	80	100	4
2	16EXX42X	Elective-3	3	-	3	20	80	100	3
3	16ECS43	Evaluation of Project phase -2	-	V-	-	50	-	50	3
4	[6ECS44]	Evaluation of Project and Viva-Voce	-	-	-	-	100+100	200	10
	1	TOTAL	-	-	6	90	360	450	20

Elective-3	
16EVE421	CMOS RF Circuit Design
16ECS422	Advances in Image Processing
16ECS423	
16ECS424	Real Time Systems

Note:

- 1. Project Phase-1: 6-week duration shall be carried out between 2nd and 3rd Semester vacation. Candidates in consultation with the guide shall carry out literature survey/ visit industries to finalize the topic of Project.
- 2. Project Phase-2: 16-week duration during 4th semester. Evaluation shall be done by the committee constituted comprising of HoD as Chairman, Guide and Senior faculty of the department.
- 3. Project Evaluation: Evaluation shall be taken up at the end of 4th semester. Project work evaluation and Viva-Voce examination shall be conducted. a. Internal Examiner shall carry out the evaluation for 100 marks.

 - b. External Examiner shall carry out the evaluation for 100 marks.
 - c. The average of marks allotted by the internal and external examiner shall be the final marks of the project evaluation.
 - d. Viva-Voce examination of Project work shall be conducted jointly by Internal and External examiner for 100 marks.

2016 Scheme

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

SCHEME OF TEACHING AND EXAMINATION FOR

M.TECH.-PRODUCT DESIGN AND MANUFACTURING ENGINEERING (MPD)

II Semester

Subject		Tea	aching hours/week	Duration of	Ma	
Code	Name of the Subject	Lecture	Practical / Field Work / Assignment/ Tutorials	Exam in Hours	I.A.	
16 MPD 21	Industrial Design And Ergonomics	4	<u> </u>	3	20	
16 MPD 22	Product data Management	4	(3	20	
16 MPD 23	Design for Manufacturing	4	(26)	3	20	
16 MPD 14	Rapid Prototyping	4	927	3	20	
16 MPD 25x	Elective - I	3		3	20	
16 MPD 26	Lab Component	(10)	3	3	20	
16MPD 27	Seminar		3		100	
	Total	19	6	18	220	

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM SCHEME OF TEACHING AND EXAMINATION FOR M.TECH.-PRODUCT DESIGN & MANUFACTURING (MPD)

III Semester: INTERNSHIP CREDIT BASED

Course		No. of I	Irs./Week	Duration of the	Marks for		Total	a nacesta a constante a soci	
Code	Subject	Lecture	Practical /	Exam in Hours	I.A.	Exam	Marks	CREDITS	
16MPD31	Seminar / Presentation on Internship (After 8 weeks from the date of commencement)	(5)	-	-	25	-	25	20	
16MPD 32	Report on Internship	150	. 5:		25	, a	25		
16MPD 33	Evaluation and Viva-voce of Internship	-	-	=	75	50	50		
16MPD34	Evaluation of Project Phase 1				50	Ē	50	1	
	Total	121	0.21	="	100	50	150	21	

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

SCHEME OF TEACHING AND EXAMINATION FOR M.TECH.-PRODUCT DESIGN & MANUFACTURING (MPD)

CREDIT BASED IV Semester

		No. of l	Hrs./Week		Mar	ks for			
Subject Code	Subject	Lecture Field Work / Assignment / Tutorials		Duration of Exam in Hours	I.A. Exam		Total Marks	CREDITS	
16MPD41	Advanced Manufacturing Practices	4	77.0	3	20	80	100	4	
16MPD42X	Elective-III	3	\$#J	3	20	80	100	3	
16MPD43	Evaluation of Project Phase-II	-	17/	(7.)	50	855	50	3	
16MPD44	Evaluation of Project Work and Viva-voce	194	±	(#3)		100+100	200	10	
	Total	07	(T)	06	90	360	450	20	

Sub. Code	Name of the Subject
16 MPD 421	Optimization Techniques for Decision Making
16 MPD 422	Product Planning and Marketing
16 MPD 423	Agile Manufacturing
16 MPD 424	Product Analysis and Cost Optimization

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2016-2017

M.Tech.- Structural Engineering

III SEMESTER: Internship

			Teachin	g Hours /Week		Credit			
S1. No.	Subject Code	Title	Theory	Practical/Field Work/ Assignment	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16CSE31	Seminar / Presentation on Internship (After 8 weeks from the date of commencement)	-	-	-	25	-	25	20
2	16CSE32	Report on Internship	-	-	-	25	-	25	20
3	16CSE33	Evaluation and Viva-Voce of Internship					50	50	
4	16CSE34	Project Phase -1	-		-	50	-	50	1
		TOTAL	-	-	-	100	50	150	21

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2016-2017

M.Tech.- Structural Engineering

IV SEMESTER

			Teaching	Hours /Week		Credit			
S1. No.	Subject Code	Title	Theory	Practical/ Field Work/ Assignment	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16CSE41	Design of Concrete Bridges	4	-	3	20	80	100	4
2	16CSE42X	Elective-3	3_		3_	20	80	100	3_
3	16CSE43	Project phase -2	-	-	-	50		50	3
4	16CSE44	Evaluation of Project and Viva- Voce	-	-	3	-	100+100	200	10
		TOTAL	-	-	6	90	360	450	20

Elective-III			
16CSE421	Optimization Techniques		
16CSE422	Design of Industrial Structures		
16CSE423	Theory of Plasticity and Fracture Mechanics		
16CSE424	Design of Masonry Structures		

Note:

- 1. **Project Phase-1:** 6-week duration shall be carried out between 2nd and 3rd Semester vacation. Candidates in consultation with the guide shall carry out literature survey/ visit industries to finalize the topic of Project.
- **2. Project Phase-2:** 16-week duration during 4th semester. Evaluation shall be done by the committee constituted comprising of HoD as Chairman, Guide and Senior faculty of the department.
- 3. Project Evaluation: Evaluation shall be taken up at the end of 4th semester. Project work evaluation and Viva-Voce examination shall conducted
- 4. Project evaluation:
 - a. Internal Examiner shall carry out the evaluation for 100 marks.
 - b. External Examiner shall carry out the evaluation for 100 marks.
 - c .The average of marks allotted by the internal and external examiner shall be the final marks of the project evaluation.
 - d. Viva-Voce examination of Project work shall be conducted jointly by Internal and External examiner for 100 marks.



ACS College of Engineering

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1.3.2.1 Number of courses that include experiential learning through project work/field work/internship year - wise during last five years

The data shown below is the list of courses that include experiential learning through project work/field work/internship during the year 2017-2018.

SL.No	Program	1900				
	code	Program Name	Course code	Course Name		
1	EC	Electronics And Communication Engineering	10ECP85	Project Work		
2	ME	Mechanical Engineering	10ME85L	PROJECT WORK		
3	AE	Aeronautical Engineering	10AE85	Project Work		
4	CV	Civil Engineering	15CVP68	Extensive Survey Project /Camp		
5	CV	Civil Engineering	10CV85	Project Work		
6	ВМ	Biomedical Engineering	10BM86	Project		
7			*			
	EE	Electrical And Electronics Engineering	10EE86	Project		
8						
	CS	Computer Science & Engineering	10CS85	Project Work		
9	CSE	Mtech Structural Engineering	16CSE32	Report on Internship		
10	CSE	Mtech Structural Engineering	16CSE43	Project phase -2		
11	SE	Pg-Software Engineering	16SSE33	Evaluation and Viva-Voce of Internship		
12	SE	Pg-Software Engineering 16SSE43 Evaluation				
13	MPD	Product Design & Manufacturing	16MPD 33	Viva-voce of Internship		
14						
	MPD	Product Design & Manufacturing	16MPD44	Project Work and Viva-voce		
15	ECS	Digital Electronics And Communication Engineering	16ECS31	Seminar / Presentation on Internship		
16	ECS	Digital Electronics And Communication Engineering	16ECS43	Evaluation of Project phase -2		

PRINCIPAL

SCHEME OF TEACHING AND EXAMINATION B.E. AERONAUTICAL ENGINEERING VIII SEMESTER

SI.	Subject	Title	ching ept.	Teac Hours	hing / week		Exami	ination	
No.		Ance	Teaching	Th.	Pr.	Duration	I.A Marks	Theory/ Practical	Total Marks
1	10AE81	Flight Vehicle Design	AE	04	_	03	25	100	125
2	10AE82	Avionics	. AE	04	_	03	25	100	125
3	10AE83*	*Electives IV- (Group D)	AE	04	_	03	25	100	125
4	10AE84*	*Electives V- (Group E)	AE	04	_	03	25	100	
5	10AE85	Project Work	AE	-	03	- 03	100		125
6	10AE86	Seminar on Current / Topics	AE	03				100	200
		Total	AL	19	03	12	50 250	500	750

Note: One question has to be set for every 6 to 8 hours of teaching.

Subject Code	* Elective IV (Group D)
10AE831	Flight Testing
10AE832	Fracture Mechanics
10AE833	Theory of Aeroelasticity
10AE834	Hydraulics and Pneumatics
10AE835	Reliability and Maintenance Engineering
10AE836	Boundary Layer Theory
10AE837	Operation Research
10AE838	Aerospace Quality Assurance

Subject Code	* Elective V (Group E)
10AE841	Aircraft Safety Rules and Regulations
10AE842	Guidance and Navigation
10AE843	Management Information Systems
10AE844	Project Management
10AE845	Product Design and Manufacturing
10AE846	Artificial Intelligence
10AE847	Computer Integrated Manufacturing
10AE848	Aircraft Systems and Instrumentation

^{*} Students shall register for one subject each from Group D and E Electives.

Teaching Hours /
Teaching
Theory
Data Base Management System BM 04
Medical Imaging Systems BM 04
Elective-IV (Group - D) BM 04
10BM84X Elective-V (Group - E) BM 04
Work BM
MG
BM
Total 16

	Electiv	Electives-IV (Group-D)		Elec	Electives-V (Group-E)
SI. No	Subject Code	Title of the Subject	SI. No	Sl. No Subject Code	Title of the Subject
1	10BM831	Lasers & Optical Fibers in Medicine	1	10BM841 Bio-MEMS	Bio-MEM
2	10BM832	Biosensors & Smart Sensors	2	10BM842	10BM842 Biological Control Systems and Modeling
3	10BM833	Nanotechnology	3	10BM843	Picture Archiving & Communication Systems
4	10BM834	Neural Networks & AI in Biomedical Engg.	4	10BM844	Pattern Recognition in Medicine
5	10BM835	Hardware-Software Co-design	5	10BM845	10BM845 Digital Systems using Verilog
9	10BM836	Distributed Sensor Networks	9	10BM846	10BM846 Real Time Systems

SCHEME OF TEACHING AND EXAMINATION B.E. CIVIL EINGINEERING VII SEMESTER

			Teaching Hrs / Week		Examination				
Sl.	Subject Code Title of the Subject Teaching				Duration	Marks			
No.	Dept.	Dept.	Theory	Practical	(Hrs)	IA	Theory / Practical	Total	
1	10 CV 71	Environmental EngineeringII	Civil	04		03	25	100	125
2	10 CV 72	Design of Steel Structures	Civil	04		03	25	100	125
3	10 CV 73	Estimation and Valuation	Civil	04		03	25	100	125
4	10 CV 74	Design of Pre Stressed Concrete Structures	Civil	04		03	25	100	125
5	10 CV 75x	Elective-II (Group B)	Civil	04	-	03	25	100	125
6	10 CV 76x	Elective-III (Group C)	Civil	04	-	03	25	100	125
7	10 CVL 77	Environmental Engineering. Lab	Civil		03	03	25	50	75
8	10 CVL 78	Concrete and Highway Materials lab.	Civil		03	03	25	50	75
		TOTAL	·	24	06	24	200	700	900

Elective-II (Group B)

Elective-III (Group C)

10 CV 751	Matrix Method of Structural Analysis	10 CV 761	Numerical methods in Civil Engineering
10 CV 752	Advanced Design of RC Structures	10 CV 762	Rock Mechanics
10 CV 753	Design of Masonry Structures	10 CV 763	Pavement Materials and Construction
10 CV 754	Earth and Earth Retaining Structures	10 CV 764	Photogrammetry and Remote Sensing
10 CV 755	Highway Geometric Design	10 CV 765	Air Pollution and Control
10 CV 756	Open Channel Hydraulics	10 CV 766	Design and Drawing of Bridges.: * (2 Hrs of Theory + 3 Hrs of Drawing) * (Exam Duration : 4 Hrs)
10 CV 757	Solid Waste Management	10 CV 767	Structural Dynamics

SCHEME OF TEACHING AND EXAMINATION B.E. CIVIL EINGINEERING VIII SEMESTER

			Teaching Hrs / Week		Examination				
Sl. No. Subject Code	Title of the Subject	Teaching	Teaching		Duration	Marks			
	Subject Code	Title of the Subject	Dept.	Theory Practica	Practical	(Hrs)	IA	Theory / Practical	Total
1	10 CV 81	Advanced Concrete Technology	Civil	04		03	25	100	125
2	10 CV 82	Design and Drawing of Steel Structures	Civil	02	03	04	25	100	125
3	10 CV 83x	Elective-IV (Group D)	Civil	04	-	03	25	100	125
4	10 CV 84x	Elective-V (Group E)	Civil	04	-	03	25	100	125
5	10 CV 85	Project Work	Civil		06	03	100	100	200
6	10 CV 86	Seminar	Civil		03	03	50		50
	•	TOTAL	•	14	12	19	250	500	750

Elective-IV (Group D)

10 CV 831 Advanced Pre-stressed Concrete Structures 10 CV 832 Advanced Foundation Design 10 CV 833 Pavement Design 10 CV 834 Earthquake Resistant Design of Structures 10 CV 835 Industrial Waste Water Treatment Quality Management System 10 CV 836 In Civil Engineering

Elective-V (Group E)

10 CV 841	Finite Element Analysis
10 CV 842	Reinforced Earth Structures
10 CV 843	Urban Transport Planning
10 CV 844	Geographic Information System
10 CV 845	Advanced Design of Steel Structures
10 CV 846	Water Resources Engineering

10 CV 847 Environmental Impact Assessment

2010 Scheme

VISVESWARAIAH TECHNOLOGICAL UNIVERSITY, BELGAUM

SCHEME OF TEACHING AND EXAMINATION VII SEMESTER B.E. MECHANICAL

S.No.	Sub-Code	Title	Teaching 1	Hours/week	1	Examination		Total
			Theory	Pract/ Drg.	Duration	Max. I.A. Marks	Max. Theory /Pr.	Marks
1	10ME71	Engineering Economics	04	1221	03	25	100	125
2	10ME72	Mechanical Vibrations	04	(45)	03	25	100	125
3	10ME73	Hydraulics and Pneumatics	04	186	03	25	100	125
4	10ME74	Operations Research	04	(22)	03	25	100	125
5	10ME75X	Elective B	04	(42)	03	25	100	125
6	10ME76X	Elective C	04	[42]	03	25	100	125
7	10MEL77	Design Lab		03	03	25	50	75
8	10MEL78	CIM and Automation Lab	-	03	03	25	50	75
9	10MEL79	Project Phase I	-	(22)	2	50	(12)	50
			24	06	24	250	700	950

VISVESWARAIAH TECHNOLOGICAL UNIVERSITY, BELGAUM SCHEME OF TEACHING AND EXAMINATION VIII SEMESTER B.E. MECHANICAL

S.No.	Sub-Code	de Title		ching s/week	E		Total Marks	
			Theory	Pract/ Drg.	Duration	Max. I.A. Marks	Max. Theory /Pr.	
1	10ME81	Operations Management	04	142)	03	25	100	125
2	10ME82	Control Engineering	04	623	03	25	100	125
3	10ME83X	Elective D	04	<u> </u>	03	25	100	125
4	10ME84X	Elective E	04	<u> 100</u> 1	03	25	100	125
5	10ME85L	Project Work		06	03	100	100	200
6	10ME86L	Seminar	5 529	03	<u>1221</u>	50	144	50
	20	20		09	15	250	500	750

M.Tech. in Communication Systems, Digital Communication & Networking, Digital Communication Engineering, Digital Electronics & Communication Systems, Digital Electronics & Communication (Common to all 5 Programmes)

III SEMESTER: Internship

			Teaching	Hours /Week		Exa	nination		Credit
SŁ No	Subject Code	Title	Theory	Practical/Fi eld Work/ Assignment	Dura tion	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16ECS31	Seminar / Presentation on Internship (After 5 weeks from the date of commencement)			•	25	-	25	
2	16ECS32	Report on Internship	-	-	-	25	-	25	20
3	A6ECS33	Evaluation and Viva-Voce of Internship	-	-	-	-	50	50	
4	Joecs34	Evaluation of Project phase -i	-		•	50		50	1
		TOTAL		-	-	100	50	150	21

M. Tech. in Communication Systems, Digital Communication & Networking, Digital Communication Engineering, Digital Electronics & Communication Systems, Digital Electronics & Communication (Common to all 5 Programmes)

IV SEMESTER

		T	Teaching	Hours /Week		Exan	nination		Credit
Sl. No	Subject Code	Title	Theory	Practical/Fi eld Work/ Assignment	Dura tion	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16ECS41	Wireless Broadband LTE 4G	4	-	3	20	80	100	4
2	16EXX42X	Elective-3	3	-	3	20	80	100	3
3	16ECS43	Evaluation of Project phase -2	-	V-	-	50	-	50	3
4	[6ECS44]	Evaluation of Project and Viva-Voce	-	-	-	-	100+100	200	10
	1	TOTAL	-	-	6	90	360	450	20

Elective-3	
16EVE421	CMOS RF Circuit Design
16ECS422	Advances in Image Processing
16ECS423	
16ECS424	Real Time Systems

Note:

- 1. Project Phase-1: 6-week duration shall be carried out between 2nd and 3rd Semester vacation. Candidates in consultation with the guide shall carry out literature survey/ visit industries to finalize the topic of Project.
- 2. Project Phase-2: 16-week duration during 4th semester. Evaluation shall be done by the committee constituted comprising of HoD as Chairman, Guide and Senior faculty of the department.
- 3. Project Evaluation: Evaluation shall be taken up at the end of 4th semester. Project work evaluation and Viva-Voce examination shall be conducted. a. Internal Examiner shall carry out the evaluation for 100 marks.

 - b. External Examiner shall carry out the evaluation for 100 marks.
 - c. The average of marks allotted by the internal and external examiner shall be the final marks of the project evaluation.
 - d. Viva-Voce examination of Project work shall be conducted jointly by Internal and External examiner for 100 marks.

2016 Scheme

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

SCHEME OF TEACHING AND EXAMINATION FOR

M.TECH.-PRODUCT DESIGN AND MANUFACTURING ENGINEERING (MPD)

II Semester

Subject		Tea	aching hours/week	Duration of	Ma	
Code	Name of the Subject	Lecture	Practical / Field Work / Assignment/ Tutorials	Exam in Hours	I.A.	
16 MPD 21	Industrial Design And Ergonomics	4	<u> </u>	3	20	
16 MPD 22	Product data Management	4	(3	20	
16 MPD 23	Design for Manufacturing	4	(26)	3	20	
16 MPD 14	Rapid Prototyping	4	927	3	20	
16 MPD 25x	Elective - I	3		3	20	
16 MPD 26	Lab Component	(10)	3	3	20	
16MPD 27	Seminar		3		100	
	Total	19	6	18	220	

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM SCHEME OF TEACHING AND EXAMINATION FOR M.TECH.-PRODUCT DESIGN & MANUFACTURING (MPD)

III Semester: INTERNSHIP CREDIT BASED

Course		No. of I	Irs./Week	Duration of the	Marks for		Total	
Code	Subject	Lecture	Practical /	Exam in Hours	I.A.	Exam	Marks	CREDITS
16MPD31	Seminar / Presentation on Internship (After 8 weeks from the date of commencement)	(5)	-	-	25	-	25	
16MPD 32	Report on Internship	150	. 5:		25	, a	25	20
16MPD 33	Evaluation and Viva-voce of Internship	-	-	=	75	50	50	
16MPD34	Evaluation of Project Phase 1				50	Ē	50	1
	Total	121	0.21	="	100	50	150	21

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

SCHEME OF TEACHING AND EXAMINATION FOR M.TECH.-PRODUCT DESIGN & MANUFACTURING (MPD)

CREDIT BASED IV Semester

1		No. of l	Hrs./Week		Marks for			CREDITS
Subject Code	Subject	Lecture	Lecture Field Work / Assignment / Tutorials		I.A.	Exam	Total Marks	
16MPD41	Advanced Manufacturing Practices	4	77.0	3	20	80	100	4
16MPD42X	Elective-III	3	\$#J	3	20	80	100	3
16MPD43	Evaluation of Project Phase-II	-	17/	(7.)	50	855	50	3
16MPD44	Evaluation of Project Work and Viva-voce	194	±	(#3)		100+100	200	10
	Total	07	(T)	06	90	360	450	20

Sub. Code Name of the Subject					
16 MPD 421	Optimization Techniques for Decision Making				
16 MPD 422	Product Planning and Marketing				
16 MPD 423	Agile Manufacturing				
16 MPD 424	Product Analysis and Cost Optimization				

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2016-2017

M.Tech.- Structural Engineering

III SEMESTER: Internship

			Teachin	g Hours /Week	Examination				Credit
S1. No.	Subject Code	Title	Theory	Practical/Field Work/ Assignment	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16CSE31	Seminar / Presentation on Internship (After 8 weeks from the date of commencement)	-	-	-	25	-	25	20
2	16CSE32	Report on Internship	-	-	-	25	-	25	20
3	16CSE33	Evaluation and Viva-Voce of Internship					50	50	
4	16CSE34	Project Phase -1	-		-	50	-	50	1
		TOTAL	-	-	-	100	50	150	21

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2016-2017

M.Tech.- Structural Engineering

IV SEMESTER

			Teaching	Hours /Week		Exam	ination		Credit
S1. No.	Subject Code	Title	Theory	Practical/ Field Work/ Assignment	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16CSE41	Design of Concrete Bridges	4	-	3	20	80	100	4
2	16CSE42X	Elective-3	3_		3_	20	80	100	3_
3	16CSE43	Project phase -2	-	-	-	50		50	3
4	16CSE44	Evaluation of Project and Viva- Voce	-	-	3	-	100+100	200	10
		TOTAL	-	-	6	90	360	450	20

Elective-III	Elective-III					
16CSE421	Optimization Techniques					
16CSE422	Design of Industrial Structures					
16CSE423	Theory of Plasticity and Fracture Mechanics					
16CSE424	Design of Masonry Structures					

Note:

- 1. **Project Phase-1:** 6-week duration shall be carried out between 2nd and 3rd Semester vacation. Candidates in consultation with the guide shall carry out literature survey/ visit industries to finalize the topic of Project.
- **2. Project Phase-2:** 16-week duration during 4th semester. Evaluation shall be done by the committee constituted comprising of HoD as Chairman, Guide and Senior faculty of the department.
- 3. Project Evaluation: Evaluation shall be taken up at the end of 4th semester. Project work evaluation and Viva-Voce examination shall conducted
- 4. Project evaluation:
 - a. Internal Examiner shall carry out the evaluation for 100 marks.
 - b. External Examiner shall carry out the evaluation for 100 marks.
 - c .The average of marks allotted by the internal and external examiner shall be the final marks of the project evaluation.
 - d. Viva-Voce examination of Project work shall be conducted jointly by Internal and External examiner for 100 marks.



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1.3.2.1 Number of courses that include experiential learning through project work/field work/internship year - wise during last five years

The data shown below is the list of courses that include experiential learning through project work/field work/internship during the year 2016-2017.

SL.NO	Program			
	code	Program Name	Course code	Course Name
1			No storegraph on the	
	EC	Electronics And Communication Engineering	10ECP85	Project Work
2	ME	Mechanical Engineering	10ME85L	Project Work
3	AE	Aeronautical Engineering	10AE85	Project Work
4	cv	Civil Engineering	10CV85	Project Work
5	вм	Biomedical Engineering	10BM86	Project
6	EE	Electrical And Electronics Engg	10EE86	Project
7				
	CS	Computer Science & Engineering	10CS85	Project Work
8	CSE	Structural Engineering	14CSE31	Seminar Presentation On Internship
9	CSE	Structural Engineering	14CSE44	Final Evaluation Of Project Work & Viva Voce
10	SE	Software Engineering	14SSE31	Seminar / Presentation On Internship
11	SE	Software Engineering	14SSE43	Evaluation Of Project Phase -2
12	MPD	Product Design & Manufacturing	14MPD31	SEMINAR/PRESENTATION OF Internship
13	MPD	Product Design & Manufacturing	14MPD424	Final Viva-Voce Of Project Work
14		Digital Electronics And Communication		
	ECS	Engineering	14ECS32	Evaluation Of Intenrship
15	ECS			
		Digital Electronics And Communication		
		Engineering	14ECS44	Final Project Viva Voce

PRINCIPAL

SCHEME OF TEACHING AND EXAMINATION B.E. AERONAUTICAL ENGINEERING VIII SEMESTER

SI.	Subject Code	Title	ching ept.	Teac Hours	Teaching Hours / week		Examination			
No.			Teaching	Th.	Pr.	Duration	I.A Marks	Theory/ Practical	Total Marks	
1	10AE81	Flight Vehicle Design	AE	04	_	03	25	100	125	
2	10AE82	Avionics	. AE	04	_	03	25	100	125	
3	10AE83*	*Electives IV- (Group D)	AE	04	_	03	25	100	125	
4	10AE84*	*Electives V- (Group E)	AE	04	_	03	25	100		
5	10AE85	Project Work	AE	-	03	- 03	100		125	
6	10AE86	Seminar on Current / Topics	AE	03				100	200	
		Total	AL	19	03	12	50 250	500	750	

Note: One question has to be set for every 6 to 8 hours of teaching.

Subject Code	* Elective IV (Group D)
10AE831	Flight Testing
10AE832	Fracture Mechanics
10AE833	Theory of Aeroelasticity
10AE834	Hydraulics and Pneumatics
10AE835	Reliability and Maintenance Engineering
10AE836	Boundary Layer Theory
10AE837	Operation Research
10AE838	Aerospace Quality Assurance

Subject Code	* Elective V (Group E)
10AE841	Aircraft Safety Rules and Regulations
10AE842	Guidance and Navigation
10AE843	Management Information Systems
10AE844	Project Management
10AE845	Product Design and Manufacturing
10AE846	Artificial Intelligence
10AE847	Computer Integrated Manufacturing
10AE848	Aircraft Systems and Instrumentation

^{*} Students shall register for one subject each from Group D and E Electives.

SI.	Subject	The of the Subject	Teaching	Teaching Hours / Week		Examination				
No	Code		Dept.	Theory	Practic	Duration (Hrs)	Marks			
					al		IA	External Marks	Total	
1	10BM81	Data Base Management System in Healthcare	ВМ	04	-	03	25	100	125	
2	10BM82	Medical Imaging Systems	BM	04	-	03	25	100	125	
3	10BM83X	Elective-IV (Group - D)	BM	04		03	25	100	125	
4	10BM84X	Elective-V (Group - E)	ВМ	04		03	25	100	125	
5	10BM85	Project Work	BM	Z.	06		100	100	200	
6	10BM86	Seminar	BM		-		50	-	50	
		Total		16	06	4.77	250	500	750	

	Electiv	ves-IV (Group-D)	Electives-V (Group-E)				
Sl. No	Subject Code	e Title of the Subject		Subject Code	Title of the Subject		
1	10BM831	Lasers & Optical Fibers in Medicine	1	10BM841	Bio-MEMS		
2	10BM832	Biosensors & Smart Sensors	2	10BM842	Biological Control Systems and Modeling		
3	10BM833	Nanotechnology	3	10BM843	Picture Archiving & Communication Systems		
4	1 10BM834	Neural Networks & AI in Biomedical Engg.	4	10BM844	Pattern Recognition in Medicine		
5	10BM835	Hardware-Software Co-design	5	10BM845	Digital Systems using Verilog		
6	10BM836	Distributed Sensor Networks	6	10BM846	Real Time Systems		

SCHEME OF TEACHING AND EXAMINATION B.E. CIVIL EINGINEERING VII SEMESTER

				Teaching l	Hrs / Week		Exa	mination	
Sl.	Subject Code	Title of the Subject	Teaching			Duration	Marks		
No.	Subject Code	Title of the Subject	Dept.	Theory	Practical	(Hrs)	IA	Theory / Practical	Total
1	10 CV 71	Environmental EngineeringII	Civil	04		03	25	100	125
2	10 CV 72	Design of Steel Structures	Civil	04		03	25	100	125
3	10 CV 73	Estimation and Valuation	Civil	04		03	25	100	125
4	10 CV 74	Design of Pre Stressed Concrete Structures	Civil	04		03	25	100	125
5	10 CV 75x	Elective-II (Group B)	Civil	04	-	03	25	100	125
6	10 CV 76x	Elective-III (Group C)	Civil	04	-	03	25	100	125
7	10 CVL 77	Environmental Engineering. Lab	Civil		03	03	25	50	75
8	10 CVL 78	Concrete and Highway Materials lab.	Civil		03	03	25	50	75
		TOTAL	·	24	06	24	200	700	900

Elective-II (Group B)

Elective-III (Group C)

10 CV 751	Matrix Method of Structural Analysis	10 CV 761	Numerical methods in Civil Engineering
10 CV 752	Advanced Design of RC Structures	10 CV 762	Rock Mechanics
10 CV 753	Design of Masonry Structures	10 CV 763	Pavement Materials and Construction
10 CV 754	Earth and Earth Retaining Structures	10 CV 764	Photogrammetry and Remote Sensing
10 CV 755	Highway Geometric Design	10 CV 765	Air Pollution and Control
10 CV 756	Open Channel Hydraulics	10 CV 766	Design and Drawing of Bridges.: * (2 Hrs of Theory + 3 Hrs of Drawing) * (Exam Duration : 4 Hrs)
10 CV 757	Solid Waste Management	10 CV 767	Structural Dynamics

SCHEME OF TEACHING AND EXAMINATION B.E. CIVIL EINGINEERING VIII SEMESTER

				Teaching H	rs / Week	Examination			
Sl.	Subject Code	Title of the Subject	Teaching			Duration	Marks		
No.	Subject Code	Title of the Subject	Dept.	Theory	Practical	(Hrs)	IA	Theory / Practical	Total
1	10 CV 81	Advanced Concrete Technology	Civil	04		03	25	100	125
2	10 CV 82	Design and Drawing of Steel Structures	Civil	02	03	04	25	100	125
3	10 CV 83x	Elective-IV (Group D)	Civil	04	-	03	25	100	125
4	10 CV 84x	Elective-V (Group E)	Civil	04	-	03	25	100	125
5	10 CV 85	Project Work	Civil		06	03	100	100	200
6	10 CV 86	Seminar	Civil		03	03	50		50
	•	TOTAL	•	14	12	19	250	500	750

Elective-IV (Group D)

10 CV 831 Advanced Pre-stressed Concrete Structures 10 CV 832 Advanced Foundation Design 10 CV 833 Pavement Design 10 CV 834 Earthquake Resistant Design of Structures 10 CV 835 Industrial Waste Water Treatment Quality Management System 10 CV 836 In Civil Engineering

Elective-V (Group E)

10 CV 841	Finite Element Analysis
10 CV 842	Reinforced Earth Structures
10 CV 843	Urban Transport Planning
10 CV 844	Geographic Information System
10 CV 845	Advanced Design of Steel Structures
10 CV 846	Water Resources Engineering

10 CV 847 Environmental Impact Assessment

2010 Scheme

VISVESWARAIAH TECHNOLOGICAL UNIVERSITY, BELGAUM

SCHEME OF TEACHING AND EXAMINATION VII SEMESTER B.E. MECHANICAL

S.No.	Sub-Code	Title	Teaching 1	Hours/week	1	Total		
			Theory	Pract/ Drg.	Duration	Max. I.A. Marks	Max. Theory /Pr.	Marks
1	10ME71	Engineering Economics	04	1221	03	25	100	125
2	10ME72	Mechanical Vibrations	04	(45)	03	25	100	125
3	10ME73	Hydraulics and Pneumatics	04	186	03	25	100	125
4	10ME74	Operations Research	04	(22)	03	25	100	125
5	10ME75X	Elective B	04	(42)	03	25	100	125
6	10ME76X	Elective C	04	[42]	03	25	100	125
7	10MEL77	Design Lab		03	03	25	50	75
8	10MEL78	CIM and Automation Lab	-	03	03	25	50	75
9	10MEL79	Project Phase I	-	(22)	2	50	(12)	50
			24	06	24	250	700	950

VISVESWARAIAH TECHNOLOGICAL UNIVERSITY, BELGAUM SCHEME OF TEACHING AND EXAMINATION VIII SEMESTER B.E. MECHANICAL

S.No.	Sub-Code	-Code Title		ching s/week	E	Total Marks		
		2	Theory	Pract/ Drg.	Duration	Max. I.A. Marks	Max. Theory /Pr.	
1	10ME81	Operations Management	04	142)	03	25	100	125
2	10ME82	Control Engineering	04	623	03	25	100	125
3	10ME83X	Elective D	04	<u> </u>	03	25	100	125
4	10ME84X	Elective E	04	<u> 100</u> 1	03	25	100	125
5	10ME85L	Project Work		06	03	100	100	200
6	10ME86L	Seminar	5 529	03	<u>1221</u>	50	144	50
	20 /	20		09	15	250	500	750

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. CIVIL ENGINEERING

VII SEMESTER

	Subject			aching rs /Week		Exam	ination		Credits
Sl. No.	Subject Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CV71	Municipal and Industrial Waste Water Engineering	04		03	20	80	100	4
2	15CV72	Design of RCC and Steel Structures	04		03	20	80	100	4
3	15CV73	Hydrology and Irrigation Engineering	04		03	20	80	100	4
4	15CV74X	Professional Elective 3	03		03	20	80	100	3
5	15CV75X	Professional Elective 4	03		03	20	80	100	3
6	15CVL76	Environmental Engineering Laboratory		1I+2P	03	20	80	100	2
7	15CVL77	Computer Aided Detailing of Structures		1I+2D	03	20	80	100	2
8	15CVP78	Project Phase I +Project Seminar		3		100		100	2
	1	TOTAL	18	9	21	240	560	800	24

Professional Elective 3		Professional Elective 4			
15CV741	Design of Bridges	15CV751	Urban Transportation and Planning		
15CV742	Ground Water & Hydraulics	15CV752	Prefabricated Structures		
15CV743	Design Concept of Building Services	15CV753	Rehabilitation and Retrofitting of Structures		
15CV744	Structural Dynamics	15CV754	Reinforced Earth Structures		

^{1.} Project Phase-I + Seminar: Literature Survey, Problem Identification, objectives and Methodology, Submission of synopsis and seminar

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. CIVIL ENGINEERING

VIII SEMESTER

	Subject.			ching s /Week		Exar	nination		Credits
Sl. No.	Subject Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CV81	Quantity Surveying and Contracts Management	4	-	3	20	80	100	4
2	15CV82	Design of Pre Stressed Concrete Elements	4	1	3	20	80	100	4
3	15CV83X	Professional Elective 5	3	•	3	20	80	100	3
4	15CV84	Internship/Professional Practice	Industry	y Oriented	3	50	50	100	2
5	15CVP85	Project Work	-	6	3	100	100	200	6
6	15CVS86	Seminar on current trends in Engineering and Technology	-	4	-	100	-	100	1
		TOTAL	11	10	15	310	390	700	20

Professiona	Professional Elective 5						
15CV831	Earthquake Engineering						
15CV832	Hydraulic Structures						
15CV833	Pavement Design						
15CV834	Advanced Foundation Design						

M.Tech. in Communication Systems, Digital Communication & Networking, Digital Communication Engineering, Digital Electronics & Communication Systems, Digital Electronics & Communication (Common to all 5 Programmes)

III SEMESTER: Internship

			Teaching	Hours /Week		Exa	nination		Credit	
SŁ No	Subject Code	Title	Theory	Practical/Fi eld Work/ Assignment	Dura tion	I.A. Marks	Theory/ Practical Marks	Total Marks		
1	16ECS31	Seminar / Presentation on Internship (After 5 weeks from the date of commencement)			•	25	-	25		
2	16ECS32	Report on Internship	-	-	-	25	-	25	20	
3	A6ECS33	Evaluation and Viva-Voce of Internship	-	-	-	-	50	50		
4	Joecs34	Evaluation of Project phase -i	-		•	50		50	1	
		TOTAL		-	-	100	50	150	21	

M. Tech. in Communication Systems, Digital Communication & Networking, Digital Communication Engineering, Digital Electronics & Communication Systems, Digital Electronics & Communication (Common to all 5 Programmes)

IV SEMESTER

		T	Teaching	Hours /Week		Exan	nination		Credit
Sl. No	Subject Code	Title	Theory	Practical/Fi eld Work/ Assignment	Dura tion	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16ECS41	Wireless Broadband LTE 4G	4	-	3	20	80	100	4
2	16EXX42X	Elective-3	3	-	3	20	80	100	3
3	16ECS43	Evaluation of Project phase -2	-	V-	-	50	-	50	3
4	[6ECS44]	Evaluation of Project and Viva-Voce	-	-	-	-	100+100	200	10
	1	TOTAL	-	-	6	90	360	450	20

Elective-3	
16EVE421	CMOS RF Circuit Design
16ECS422	Advances in Image Processing
16ECS423	
16ECS424	Real Time Systems

Note:

- 1. Project Phase-1: 6-week duration shall be carried out between 2nd and 3rd Semester vacation. Candidates in consultation with the guide shall carry out literature survey/ visit industries to finalize the topic of Project.
- 2. Project Phase-2: 16-week duration during 4th semester. Evaluation shall be done by the committee constituted comprising of HoD as Chairman, Guide and Senior faculty of the department.
- 3. Project Evaluation: Evaluation shall be taken up at the end of 4th semester. Project work evaluation and Viva-Voce examination shall be conducted. a. Internal Examiner shall carry out the evaluation for 100 marks.

 - b. External Examiner shall carry out the evaluation for 100 marks.
 - c. The average of marks allotted by the internal and external examiner shall be the final marks of the project evaluation.
 - d. Viva-Voce examination of Project work shall be conducted jointly by Internal and External examiner for 100 marks.

2016 Scheme

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

SCHEME OF TEACHING AND EXAMINATION FOR

M.TECH.-PRODUCT DESIGN AND MANUFACTURING ENGINEERING (MPD)

II Semester

Subject		Tea	aching hours/week	Duration of	Ma
Code	Name of the Subject	Lecture	Practical / Field Work / Assignment/ Tutorials	Exam in Hours	1.A. 20 20 20 20 20 20 20 20
16 MPD 21	Industrial Design And Ergonomics	4	<u> </u>	3	20
16 MPD 22	Product data Management	4	\$.	3	20
16 MPD 23	Design for Manufacturing	4	(26)	3	20
16 MPD 14	Rapid Prototyping	4	927	3	20
16 MPD 25x	Elective - I	3		3	20
16 MPD 26	Lab Component	(10)	3	3	20
16MPD 27	Seminar		3		100
	Total	19	6	18	220

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM SCHEME OF TEACHING AND EXAMINATION FOR M.TECH.-PRODUCT DESIGN & MANUFACTURING (MPD)

III Semester: INTERNSHIP CREDIT BASED

Course		No. of I	Irs./Week	Duration of the	Mar	ks for	Total		
Code	Subject	Lecture	Practical /	Exam in Hours	I.A.	Exam	Marks	CREDITS 20	
16MPD31	Seminar / Presentation on Internship (After 8 weeks from the date of commencement)	(5)	-	-	25	-	25		
16MPD 32	Report on Internship	150	. 5:		25	, a	25	20	
16MPD 33	Evaluation and Viva-voce of Internship	-	-	=	75	50	50		
16MPD34	Evaluation of Project Phase 1				50	Ē	50	1	
	Total	121	0.21	="	100	50	150	21	

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

SCHEME OF TEACHING AND EXAMINATION FOR M.TECH.-PRODUCT DESIGN & MANUFACTURING (MPD)

CREDIT BASED IV Semester

		No. of l	Hrs./Week		Mar	ks for		
Subject Code	Subject	Lecture	Field Work / Assignment / Tutorials	Duration of Exam in Hours	I.A.	Exam	Total Marks	CREDITS
16MPD41	Advanced Manufacturing Practices	4	77.0	3	20	80	100	4
16MPD42X	Elective-III	3	\$#J	3	20	80	100	3
16MPD43	Evaluation of Project Phase-II	-	17/	(7.)	50	855	50	3
16MPD44	Evaluation of Project Work and Viva-voce	194	±	(#3)		100+100	200	10
	Total	07	(T)	06	90	360	450	20

Sub. Code	Name of the Subject
16 MPD 421	Optimization Techniques for Decision Making
16 MPD 422	Product Planning and Marketing
16 MPD 423	Agile Manufacturing
16 MPD 424	Product Analysis and Cost Optimization

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2016-2017

M.Tech.- Structural Engineering

III SEMESTER: Internship

			Teachin	g Hours /Week		Exami	nation		Credit
S1. No.	Subject Code	Title	Theory	Practical/Field Work/ Assignment	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16CSE31	Seminar / Presentation on Internship (After 8 weeks from the date of commencement)	-	-	-	25	-	25	20
2	16CSE32	Report on Internship	-	-	-	25	-	25	20
3	16CSE33	Evaluation and Viva-Voce of Internship					50	50	
4	16CSE34	Project Phase -1	-		-	50	-	50	1
		TOTAL	-	-	-	100	50	150	21

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2016-2017

M.Tech.- Structural Engineering

IV SEMESTER

			Teaching Hours / Week		Examination				Credit
S1. No.	Subject Code	Title	Theory	Practical/ Field Work/ Assignment	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16CSE41	Design of Concrete Bridges	4	-	3	20	80	100	4
2	16CSE42X	Elective-3	3_		3_	20	80	100	3_
3	16CSE43	Project phase -2				50		50	3
4	16CSE44	Evaluation of Project and Viva- Voce	-	-	3	-	100+100	200	10
TOTAL			-	-	6	90	360	450	20

Elective-III					
16CSE421	421 Optimization Techniques				
16CSE422	Design of Industrial Structures				
16CSE423	Theory of Plasticity and Fracture Mechanics				
16CSE424	Design of Masonry Structures				

Note:

- 1. **Project Phase-1:** 6-week duration shall be carried out between 2nd and 3rd Semester vacation. Candidates in consultation with the guide shall carry out literature survey/ visit industries to finalize the topic of Project.
- **2. Project Phase-2:** 16-week duration during 4th semester. Evaluation shall be done by the committee constituted comprising of HoD as Chairman, Guide and Senior faculty of the department.
- 3. Project Evaluation: Evaluation shall be taken up at the end of 4th semester. Project work evaluation and Viva-Voce examination shall conducted
- 4. Project evaluation:
 - a. Internal Examiner shall carry out the evaluation for 100 marks.
 - b. External Examiner shall carry out the evaluation for 100 marks.
 - c .The average of marks allotted by the internal and external examiner shall be the final marks of the project evaluation.
 - d. Viva-Voce examination of Project work shall be conducted jointly by Internal and External examiner for 100 marks.