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Program /Curriculum/Syllabus of the Courses Highlighting Project Work, Field Work, Internship

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CIPAL The Oxford College of Engineering Bommanahalli, Hosur Road Bengaluju-560 068

148-172



<u>Summary on Document showing project work, Internship /Field</u> <u>visit prescribed by affiliating university curriculum</u>

To integrate project work, Internship /Field visit, The Oxford College of Engineering, Bangalore has incorporated various types of courses into the curriculum, some of which aim to enhance professional competencies while others aim to instil general competencies such as social ethical values, human values, environmental sensitivity, and so on, resulting in the holistic development of students.

Project Work

Project-based learning has proven to be one of the most effective ways to engage students and provide a practical application for what they're learning. Project-based learning not only provides opportunities for students to collaborate or drive their own learning, but it also teaches them skills such as problem solving, and helps to develop additional skills integral to their future, such as critical thinking and time management. And maybe more importantly, it provides students with an opportunity to create authentic projects which are meaningful to society. Students have the chance to pursue their own interests and as a result, opportunities for learning for students and teachers are tremendous. Benefits of project-based learning: Collaboration, Problem Solving, Creativity, In-Depth Understanding, Self-Confidence, Critical Thinking, Perseverance, Project Management, Curiosity, Empowerment.

Internship

An internship is a professional learning experience that offers meaningful, practical work related to a student's field of study or career interest. An internship gives a student the opportunity for career exploration and development, and to learn new skills.

Field visit

A field trip or excursion is a journey by the college students to a place away from the normal college environment. Field trips can be educationally and socially engaging additions to students. The objective of all field trips in the college is to expose students to various parts of their community, facilitate connections between students and others, and help students understand themselves as members of their local community. The lessons that follow are general ideas; research specific destinations and activities in or near your community. Social field trips are also beneficial to building camaraderie amongst participants and for having fun!



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CSE

2016-17

UG

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING (Common to CSE & ISE)

III SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Exami	nation	
			-	Theory	Practi	Duration	Marks		
				-	cal	(Hrs)			
							IA	Exam	Total
1	10MAT31	Engineering Mathematics - III	Mathematics	04	-	03	25	100	125
2	10CS32	Electronic Circuits	CSE/ISE	04	-	03	25	100	125
3	10CS33	Logic Design	CSE/ISE	04	-	03	25	100	125
4	10CS34	Discrete Mathematical Structures	CSE/ISE	04	-	03	25	100	125
5	10CS35	Data Structures with C	CSE/ISE	04	-	03	25	100	125
6	10CS36	Object Oriented Programming with C++	CSE/ISE	04	-	03	25	100	125
7	10CSL37	Data Structures with C/C++ Laboratory	CSE/ISE	-	03	03	25	50	75
8	10CSL38	Electronic Circuits & Logic Design Laboratory	CSE/ISE	-	03	03	25	50	75
	1	24	06	-	200	700	900		



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SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING (Common to CSE & ISE)

IV SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Exami	nation	
				Theory	Practi cal	Duration Marks (Hrs)		Marks	
							IA	Exam	Total
1	10MAT41	Engineering Mathematics - IV	Maths	04	-	03	25	100	125
2	10CS42	Graph Theory and Combinatorics	CSE/ISE	04	-	03	25	100	125
3	10CS43	Design and Analysis of Algorithms	CSE/ISE	04	-	03	25	100	125
4	10CS44	Unix and Shell Programming	CSE/ISE	04	-	03	25	100	125
5	10CS45	Microprocessors	CSE/ISE	04	-	03	25	100	125
6	10CS46	Computer Organization	CSE/ISE	04	-	03	25	100	125
7	10CSL47	Design and Analysis of Algorithms	CSE/ISE	-	03	03	25	50	75
		Laboratory							
8	10CSL48	Microprocessors Laboratory	CSE/ISE	-	03	03	25	50	75
	Total					-	200	700	900

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Examination			
				Theory	Practi	Duration		Marks		
					cal	(Hrs)				
							IA	Exam	Total	
1	10IS51	Software Engineering	CSE/ISE	04	-	03	25	100	125	
2	10CS52	Systems Software	CSE/ISE	04	-	03	25	100	125	
3	10CS53	Operating Systems	CSE/ISE	04	-	03	25	100	125	
4	10CS54	Database Management Systems	CSE/ISE	04	-	03	25	100	125	
5	10CS55	Computer Networks - I	CSE/ISE	04	-	03	25	100	125	
6	10CS56	Formal Languages and Automata Theory	CSE/ISE	04	-	03	25	100	125	
7	10CSL57	Database Applications Laboratory	CSE/ISE	-	03	03	25	50	75	
8	10CSL58	Systems Software & Operating	CSE/ISE	-	03	03	25	50	75	
		Systems Laboratory								
	Total				06	-	200	700	900	



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SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING

VI SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teachin Week	g Hrs /		Exami	nation	
			2.11.	Theor	Practical	Duration	Marks		6
				у		(Hrs)			
							IA	Exam	Total
1	10AL61	Management and Entrepreneurship	CSE/ISE/	04	-	03	25	100	125
			MBA						
2	10CS62	Unix System Programming	CSE/ISE	04	-	03	25	100	125
3	10CS63/	Compiler Design	CSE/ISE	04	-	03	25	100	125
	10IS662								
4	10CS64	Computer Networks - II	CSE/ISE	04	-	03	25	100	125
5	10CS65 /	Computer Graphics and Visualization	CSE/ISE	04	-	03	25	100	125
	10IS665								
6	10CS66x	Elective I (Group-A)	CSE/ISE	04	-	03	25	100	125
7	10CSL67	Computer Graphics and Visualization	CSE/ISE	-	03	03	25	50	75
		Laboratory							
8	10CSL68	Unix System Programming and Compiler	CSE/ISE	-	03	03	25	50	75
		Design Laboratory							
		Total		24	06	-	200	700	900

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING

VII SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /	Examination			
			2 opti	Theory	Practi cal	Duration (Hrs)	Marks		
							IA	Exam	Total
1	10CS71	Object-Oriented Modeling and Design	CSE/ISE	04	-	03	25	100	125
2	10CS72/ 10IS752	Embedded Computing Systems	CSE/ISE	04	-	03	25	100	125
3	10CS73	Programming the Web	CSE/ISE	04	-	03	25	100	125
4	10CS74	Advanced Computer Architectures	CSE/ISE	04	-	03	25	100	125
5	10CS75x	Elective II (Group-B)	CSE/ISE	04	-	03	25	100	125
6	10CS76x	Elective III(Group-C)	CSE/ISE	04	-	03	25	100	125
7	10CSL77	Networks Laboratory	CSE/ISE	-	03	03	25	50	75
8	10CSL78	Web Programming Laboratory	CSE/ISE	-	03	03	25	50	75
		24	06	-	200	700	900		

Elective II – Group B

10CS751/10IS751	Advanced DBMS	10CS761/10IS761	C# Programming
10CS752	Digital Signal Processing	10CS762/10IS762	Digital Image Pı
10CS753/10IS753	Java and J2EE	10CS763/10IS763	Game Theory
10CS754/10IS754	Multimedia Computing	10CS764/10IS764	Artificial Intellig
10CS755/10IS74	Data Warehousing and Data M	fining10CS765/10IS765	Storage Area Ne
10CS756/10IS756	Neural Networks	10CS766/10IS766	Fuzzy Logic

Elective III - Group C

ng and .Net Processing igence etworks



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SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING

VIII SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Examination		
				Theory	Practi cal	Duration	Duration		
							IA	Exam	Total
1	10IS81	Software Architectures	CSE/ISE	04	-	03	25	100	125
2	10CS82	System Modeling and Simulation	CSE/ISE	04	-	03	25	100	125
3	10CS83x	Elective IV(Group-D)	CSE/ISE	04	-	03	25	100	125
4	10CS84x	Elective V(Group-E)	CSE/ISE	04	-	03	25	100	125
5	10CS85	Project Work	CSE		06	03	100	100	200
6	10CS86	Seminar	CSE	-	-	-	50	-	50
	Total				06		250	500	750

Elective IV - Group D

10CS831/10IS831 10CS832/10IS832 10CS833 10CS834/10IS834 10CS835/10IS835 10CS836/10IS836

 Wireless Networks and Mobile Computing
 10CS841/10IS841

 Web 2.0 and Rich Internet Applications
 10CS842
 VLSI Design and Algorithms Network Management Systems Information and Network Security Microcontroller-Based Systems

Elective V- Group E

10CS843 10CS844/10IS844 10CS845/10IS845 10CS846

Ad-hoc Networks Software Testing ARM Based System Design Services Oriented Architecture Clouds, Grids and Clusters Multi-core Architecture and Programming



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2017-18

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING (Common to CSE & ISE)

III SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Examination			
				Theory	Practi cal	Duration (Hrs)		Marks		
							IA	Exam	Total	
1	10MAT31	Engineering Mathematics - III	Mathematics	04	-	03	25	100	125	
2	10CS32	Electronic Circuits	CSE/ISE	04	-	03	25	100	125	
3	10CS33	Logic Design	CSE/ISE	04	-	03	25	100	125	
4	10CS34	Discrete Mathematical Structures	CSE/ISE	04	-	03	25	100	125	
5	10CS35	Data Structures with C	CSE/ISE	04	-	03	25	100	125	
6	10CS36	Object Oriented Programming with C++	CSE/ISE	04	-	03	25	100	125	
7	10CSL37	Data Structures with C/C++ Laboratory	CSE/ISE	-	03	03	25	50	75	
8	10CSL38	Electronic Circuits & Logic Design Laboratory	CSE/ISE	-	03	03	25	50	75	
	Total				06	•	200	700	900	

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING (Common to CSE & ISE)

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Hrs / Week		Examination			
				Theory	Practi cal	Duration (Hrs)	Marks		
							IA	Exam	Total
1	10MAT41	Engineering Mathematics - IV	Maths	04	-	03	25	100	125
2	10CS42	Graph Theory and Combinatorics	CSE/ISE	04	-	03	25	100	125
3	10CS43	Design and Analysis of Algorithms	CSE/ISE	04	-	03	25	100	125
4	10CS44	Unix and Shell Programming	CSE/ISE	04	-	03	25	100	125
5	10CS45	Microprocessors	CSE/ISE	04	-	03	25	100	125
6	10CS46	Computer Organization	CSE/ISE	04	-	03	25	100	125
7	10CSL47	Design and Analysis of Algorithms	CSE/ISE	-	03	03	25	50	75
		Laboratory							
8	10CSL48	Microprocessors Laboratory	CSE/ISE	-	03	03	25	50	75
	Total				06	-	200	700	900



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SCHEME OF TEACHING AND EXAMINATION

B.E. COMPUTER SCIENCE AND ENGINEERING

V SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Exami	Examination		
				Theory	Practi cal	Duration (Hrs)				
							IA	Exam	Total	
1	10IS51	Software Engineering	CSE/ISE	04	-	03	25	100	125	
2	10CS52	Systems Software	CSE/ISE	04	-	03	25	100	125	
3	10CS53	Operating Systems	CSE/ISE	04	-	03	25	100	125	
4	10CS54	Database Management Systems	CSE/ISE	04	-	03	25	100	125	
5	10CS55	Computer Networks - I	CSE/ISE	04	-	03	25	100	125	
6	10CS56	Formal Languages and Automata Theory	CSE/ISE	04	-	03	25	100	125	
7	10CSL57	Database Applications Laboratory	CSE/ISE	-	03	03	25	50	75	
8	10CSL58	Systems Software & Operating	CSE/ISE	-	03	03	25	50	75	
		Systems Laboratory								
	Total			24	06	-	200	700	900	

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING

S. No.	Subject Code	Subject	Teaching Dept.	Teachin Week	g Hrs /		Exami	nation	
				Theor	Practical	Duration		Marks	8
				у		(Hrs)			
							IA	Exam	Total
1	10AL61	Management and Entrepreneurship	CSE/ISE/	04	-	03	25	100	125
			MBA						
2	10CS62	Unix System Programming	CSE/ISE	04	-	03	25	100	125
3	10CS63/	Compiler Design	CSE/ISE	04	-	03	25	100	125
	10IS662								
4	10CS64	Computer Networks - II	CSE/ISE	04	-	03	25	100	125
5	10CS65 /	Computer Graphics and Visualization	CSE/ISE	04	-	03	25	100	125
	10IS665								
6	10CS66x	Elective I (Group-A)	CSE/ISE	04	-	03	25	100	125
7	10CSL67	Computer Graphics and Visualization	CSE/ISE	-	03	03	25	50	75
		Laboratory							
8	10CSL68	Unix System Programming and Compiler	CSE/ISE	-	03	03	25	50	75
		Design Laboratory							
		Total		24	06	-	200	700	900



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SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING

VII SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Teaching Hrs / Week		Examination		
				Theory				Marks	
							IA	Exam	Total
1	10CS71	Object-Oriented Modeling and Design	CSE/ISE	04	-	03	25	100	125
2	10CS72/ 10IS752	Embedded Computing Systems	CSE/ISE	04	-	03	25	100	125
3	10CS73	Programming the Web	CSE/ISE	04	-	03	25	100	125
4	10CS74	Advanced Computer Architectures	CSE/ISE	04	-	03	25	100	125
5	10CS75x	Elective II (Group-B)	CSE/ISE	04	-	03	25	100	125
6	10CS76x	Elective III(Group-C)	CSE/ISE	04	-	03	25	100	125
7	10CSL77	Networks Laboratory	CSE/ISE	-	03	03	25	50	75
8	10CSL78	Web Programming Laboratory	CSE/ISE	-	03	03	25	50	75
		Total		24	06	-	200	700	900

Elective II - Group B

10CS751/10IS751	Advanced DBMS	10CS761/10IS761	
10CS752	Digital Signal Processing	10CS762/10IS762]
10CS753/10IS753	Java and J2EE	10CS763/10IS763	
10CS754/10IS754	Multimedia Computing	10CS764/10IS764	
10CS755/10IS74	Data Warehousing and Data M	fining10CS765/10IS765	;
10CS756/10IS756	Neural Networks	10CS766/10IS766	1

Elective III - Group C

C# Programming and .Net Digital Image Processing Game Theory Artificial Intelligence Storage Area Networks Fuzzy Logic

VIII SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week			Examination		
				Theory	Practi cal	Duration		Marks	
							IA	Exam	Total
1	10IS81	Software Architectures	CSE/ISE	04	-	03	25	100	125
2	10CS82	System Modeling and Simulation	CSE/ISE	04	-	03	25	100	125
3	10CS83x	Elective IV(Group-D)	CSE/ISE	04	-	03	25	100	125
4	10CS84x	Elective V(Group-E)	CSE/ISE	04	-	03	25	100	125
5	10CS85	Project Work	CSE		06	03	100	100	200
6	10CS86	Seminar	CSE	-	-	-	50	-	50
	•	Total		16	06		250	500	750

SCHEME OF TEACHING AND EXAMINATION **B.E. COMPUTER SCIENCE AND ENGINEERING**

Elective IV - Group D

10CS831/10IS831 10CS832/10IS832 10CS833 10CS834/10IS834 10CS835/10IS835 10CS836/10IS836

Wireless Networks and Mobile Computing 10CS841/10IS841 Web 2.0 and Rich Internet Applications VLSI Design and Algorithms Network Management Systems Information and Network Security Microcontroller-Based Systems

Elective V- Group E

10CS842 10CS843 10CS844/10IS844 10CS845/10IS845 10CS846

Ad-hoc Networks Software Testing ARM Based System Design Services Oriented Architecture Clouds, Grids and Clusters Multi-core Architecture and Programming

2018-19



III SEMESTED

THE OXFORD COLLEGE OF ENGINEERING

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

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

ш	SEMESTER								_
SI.	Cubicat			ing Hours Veek	<u>^</u>	Exam	ination	di la calcala da	Credits
N0	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	Engineering Mathematics - III	04		03	80	20	100	4
2	15CS32	Analog and Digital Electronics	04	X	03	80	20	100	4
3	15CS33	Data Structures and Applications	04	<	03	80	20	100	4
4	15CS34	Computer Organization	04		03	80	20	100	4
5	15CS35	Unix and Shell Programming	04	-	03	80	20	100	4
6	15CS36	Discrete Mathematical Structures	04	-	03	80	20	100	4
7	15CSL37	Analog and Digital Electronics Laboratory		1I+2P	03	80	20	100	2
8	15CSL38	Data Structures Laboratory		1I+2P	03	80	20	100	2
		TOTAL	24	6	24	640	160	800	28

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

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

IV	SEMESTER								
			Teaching H	ours /Week		Ex	amination		Credits
Sl. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practica I Marks	I.A. Marks	Total Marks	
1	15MAT41	Engineering Mathematics - IV	04		03	80	20	100	4
2	15CS 42	Software Engineering	04	Æ.	03	80	20	100	4
3	15CS43	Design and Analysis of Algorithms	04		03	80	20	100	4
4	15CS 44	Microprocessors and Microcontrollers	04		03	80	20	100	4
5	15CS45	Object Oriented Concepts	04		03	80	20	100	4
6	15CS46	Data Communication	04		03	80	20	100	4
7	15CSL47	Design and Analysis of Algorithm Laboratory	-	1I+2P	03	80	20	100	2
8	15CSL48	Microprocessors Laboratory		1I+2P	03	80	20	100	2
		TOTAL	24	06	24	640	160	800	28



V SEMESTER

THE OXFORD COLLEGE OF ENGINEERING

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

B.E. Computer Science & Engineering

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

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

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016 B.E. Computer Science & Engineering

SI.	Subject			ng Hours Veek		Exam	ination		Credits
No	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	X	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 El	Professional Elective 2							
15CS651	Data Mining and Data Warehousing							
15CS652	Software Architecture and Design Patterns							
15CS653	Operations research							
15CS654	Distributed Computing system							



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

B.E. Computer Science & Engineering

			mputer Sci	ence & Engin	eering				
S1.	VII SEMEST	ER		ing Hours Veek		Exam	ination	<u> </u>	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	× 4	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 Elective 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		

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

Ν.

B.E. Computer Science & Engineering VIII SEMESTER

	VIII SEMES	IEK							
Sl.	Subject			ng Hours Veek	Examination				Credits
No	Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total 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
1 <mark>5CS832</mark>	User Interface Design
15CS833	Network management
15CS834	System Modeling and Simulation



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

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

ш	SEMESTER	B.E. Computer Science & Engin	icering/	D.E. 11101	mation St.		gineering	S	
SI.	Cubicot			ing Hours Veek		Exami	ination		Credits
51. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	Engineering Mathematics - III	04	-	03	80	20	100	4
2	15CS32	Analog and Digital Electronics	04		03	80	20	100	4
3	15CS33	Data Structures and Applications	04	<	03	80	20	100	4
4	15CS34	Computer Organization	04		03	80	20	100	4
5	15CS35	Unix and Shell Programming	04		03	80	20	100	4
6	15CS36	Discrete Mathematical Structures	04		03	80	20	100	4
7	15CSL37	Analog and Digital Electronics Laboratory		1I+2P	03	80	20	100	2
8	15CSL38	Data Structures Laboratory		1I+2P	03	80	20	100	2
		TOTAL	24	6	24	640	160	800	28

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

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

IV	SEMESTER							\mathbb{R}	
			Teaching H	ours /Week		Ex	amination		Credits
Sl. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practica I Marks	I.A. Marks	Total Marks	
1	15MAT41	Engineering Mathematics - IV	04		03	80	20	100	4
2	15CS 42	Software Engineering	04	-	03	80	20	100	4
3	15CS43	Design and Analysis of Algorithms	04		03	80	20	100	4
4	15CS 44	Microprocessors and Microcontrollers	04		03	80	20	100	4
5	15CS45	Object Oriented Concepts	04		03	80	20	100	4
6	15CS46	Data Communication	04		03	80	20	100	4
7	15CSL47	Design and Analysis of Algorithm Laboratory		1I+2P	03	80	20	100	2
8	15CSL48	Microprocessors Laboratory		1I+2P	03	80	20	100	2
		TOTAL	24	06	24	640	160	800	28



V SEMESTER

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B.E. Computer Science & Engineering

SI.	Subject			ing Hours Veek	4	Exami	ination	F. S.	Credits
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		03	80	20	100	3
6	15CS56x	Open Elective 1	03	- 7	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 El	ective 1
15CS551	Object Oriented Modeling and Design
15CS552	Introduction to Software Testing
15CS553	Advanced JAVA and J2EE
15CS554	Advanced Algorithms

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-2016 B.E. Computer Science & Engineering

				**					a n
SI.	Subject			ing Hours Veek		Exami	ination		Credits
No	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 Ele	ective 2
15CS651	Data Mining and Data Warehousing
15CS652	Software Architecture and Design Patterns
15CS653	Operations research
15CS654	Distributed Computing system



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

B.E. Computer Science & Engineering

			mputer Sci	ence & Engin	eering				
S1.	VII SEMEST	ER	Teaching Hours /Week			Exam	ination	<u> </u>	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	× 4	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 Electi	ve 3	Professional Elective 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		

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

Ν.

B.E. Computer Science & Engineering VIII SEMESTER

	VIII SEMES	IEK							
S1.	Subject			ing Hours Week		Exam	ination		Credits
No	Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total 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
1 <mark>5CS832</mark>	User Interface Design
15CS833	Network management
15CS834	System Modeling and Simulation



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C1			Teaching	Teaching Hours /Week			Credits			
SI. No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics - III	Maths	04		03	60	40	100	4
2	17CS32	Analog and Digital Electronics	CS/IS	04		03	60	40	100	4
3	17CS33	Data Structures and Applications	CS/IS	04		03	60	40	100	4
4	17CS34	Computer Organization	CS/IS	04		03	60	40	100	4
5	17CS35	Unix and Shell Programming	CS/IS	03		03	60	40	100	3
6	17CS36	Discrete Mathematical Structures	CS/IS	04		03	60	40	100	4
7	17CSL37	Analog and Digital Electronics Laboratory	CS/IS	01-Hour In 02-Hour Pr		03	60	40	100	2
8	17CSL38	Data Structures Laboratory	CS/IS		01-Hour Instruction 02-Hour Practical		60	40	100	2

B.E: Computer Science and Engineering

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

B.E: Computer Science and Engineering

~		Title	Teaching	Teaching Hours /Week			Credits			
SI. No	Course Code		Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics - IV	Maths	04		03	60	40	100	4
2	17CS42	Object Oriented Concepts	CS/IS	03		03	60	40	100	3
3	17CS43	Design and Analysis of Algorithms	CS/IS	04		03	60	40	100	4
4	17CS44	Microprocessors and Microcontrollers	CS/IS	04		03	60	40	100	4
5	17CS45	Software Engineering	CS/IS	04		03	60	40	100	4
6	17CS46	Data Communication	CS/IS	04		03	60	40	100	4
7	17CSL47	Design and Analysis of Algorithm Laboratory	CS/IS	01-Hour Instru 02-Hour Pract		03	60	40	100	2



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B.E: Computer Science and Engineering

VSI	EMESTER	D.L. Con	iputer setene	e and Eng	sincering					
SI.		Title	Teaching Department				Exami	nation		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	nstruction Practical	03	60	40	100	2
8	17CSL58	DBMS Laboratory with mini project	CS/IS	01-Hour I 02-Hour F	nstruction Practical	03	60	40	100	2

Professional	Professional Elective-1							
17CS551 Object Oriented Modeling and Design								
17CS552 Introduction to Software Testing								
17CS553	Advanced JAVA and J2EE							
17CS554	Advanced Algorithms							

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

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

B.E: Computer Science and Engineering

Professiona	Elective-2	Ope	Open Elective – 2*** (List offered by CSE Board only)					
17CS651	Data Mining and Data Warehousing	17C	S661	Mobile Application Development				
17CS652	Software Architecture and Design Patterns	17C	S662	Big Data Analytics (Not for CSE/ISE students)				
17CS653	Operations research	17C	S663	Wireless Networks and Mobile computing				
17CS654	Distributed Computing system	17C	S664	Python Application Programming				
		17C	S665	Service Oriented Architecture				
		17C	S666	Multicore Architecture and Programming				



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B.E: Computer Science and Engineering

			Teaching	Teaching	Hours /Week		Examin	xamination			
SI. 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 In 02-Hour P		03	60	40	100	2	
7	17CSL77	Web Technology Laboratory with mini project	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2	
8	17CSP78	Project Work Phase-I + Project work Seminar	CS/IS		03			100	100	2	

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			

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

B.E: Computer Science and Engineering

VII	I SEMESTEF	2					<u> </u>			~ **
SI. No	Course Code	Title	Teaching Department	Teachin	g Hours /Week Practical/ Drawing	Duration in hours	Examin SEE Marks	ation CIE Marks	Total Marks	Credits
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	Industry Oriented		3	50	50	100	2
5	17CSP85	Project Work-II	CS/IS	-	6	3	100	100	200	6

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

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ISE Department

2016-17 UG

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING (Common to CSE & ISE)

III SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Examir	Examination	
			-	Theory	Practi cal	Duration (Hrs)		Marks	
						(111)	IA	Exam	Total
1	10MAT31	Engineering Mathematics - III	Mathematics	04	-	03	25	100	125
2	10CS32	Electronic Circuits	CSE/ISE	04	-	03	25	100	125
3	10CS33	Logic Design	CSE/ISE	04	-	03	25	100	125
4	10CS34	Discrete Mathematical Structures	CSE/ISE	04	-	03	25	100	125
5	10CS35	Data Structures with C	CSE/ISE	04	-	03	25	100	125
6	10CS36	Object Oriented Programming with C++	CSE/ISE	04	-	03	25	100	125
7	10CSL37	Data Structures with C/C++ Laboratory	CSE/ISE	-	03	03	25	50	75
8	10CSL38	Electronic Circuits & Logic Design Laboratory	CSE/ISE	-	03	03	25	50	75
		Total		24	06	-	200	700	900

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING (Common to CSE & ISE)

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Exami	nation	
				Theory	Practi cal	Duration (Hrs)	Marks		
							IA	Exam	Total
1	10MAT41	Engineering Mathematics - IV	Maths	04	-	03	25	100	125
2	10CS42	Graph Theory and Combinatorics	CSE/ISE	04	-	03	25	100	125
3	10CS43	Design and Analysis of Algorithms	CSE/ISE	04	-	03	25	100	125
4	10CS44	Unix and Shell Programming	CSE/ISE	04	-	03	25	100	125
5	10CS45	Microprocessors	CSE/ISE	04	-	03	25	100	125
6	10CS46	Computer Organization	CSE/ISE	04	-	03	25	100	125
7	10CSL47	Design and Analysis of Algorithms	CSE/ISE	-	03	03	25	50	75
		Laboratory							
8	10CSL48	Microprocessors Laboratory	CSE/ISE	-	03	03	25	50	75
		Total		24	06	-	200	700	900



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V SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Exami	Examination		
				Theory	Practi cal	Duration (Hrs)		Marks		
							IA	Exam	Total	
1	10IS51	Software Engineering	CSE/ISE	04	•	03	25	100	125	
2	10CS52	Systems Software	CSE/ISE	04	-	03	25	100	125	
- 3	10CS53	Operating Systems	CSE/ISE	04	-	03	25	100	125	
4	10CS54	Database Management Systems	CSE/ISE	04	-	03	25	100	125	
5	10C\$55	Computer Networks - I	CSE/ISE	04	-	03	25	100	125	
6	10CS56	Formal Languages and Automata Theory	CSE/ISE	04	-	03	25	100	125	
7	10CSL57	Database Applications Laboratory	CSE/ISE	-	03	03	25	50	75	
8	10CSL58	Systems Software & Operating	CSE/ISE	-	03	03	25	50	75	
		Systems Laboratory								
		Total		24	06	-	200	700	900	

S. No.	Subject Code	Subject	Teaching Dept.	Teachin Week	g Hrs /		Examination		
				Theor	Practical	Duration		Marks	\$
				у		(Hrs)			
							IA	Exam	Total
1	10AL61	Management and Entrepreneurship	CSE/ISE/	04	•	03	25	100	125
			MBA						
2	10CS62	Unix System Programming	CSE/ISE	04	•	03	25	100	125
3	10CS63/	Compiler Design	CSE/ISE	04	•	03	25	100	125
	10IS662								
4	10CS64	Computer Networks - II	CSE/ISE	04	-	03	25	100	125
5	10CS65 /	Computer Graphics and Visualization	CSE/ISE	04	•	03	25	100	125
	10IS665								
6	10CS66x	Elective I (Group-A)	CSE/ISE	04	•	03	25	100	125
7	10CSL67	Computer Graphics and Visualization	CSE/ISE	-	03	03	25	50	75
		Laboratory							
8	10CSL68	Unix System Programming and Compiler	CSE/ISE	-	03	03	25	50	75
		Design Laboratory							
		Total		24	06	-	200	700	900



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VII SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Exami	Examination			
				Theory	Practi	Duration		Marks			
					cal	(Hrs)					
							IA	Exam	Total		
1	10CS71	Object-Oriented Modeling and Design	CSE/ISE	04	-	03	25	100	125		
2	10CS72/ 10IS752	Embedded Computing Systems	CSE/ISE	04	•	03	25	100	125		
3	10CS73	Programming the Web	CSE/ISE	04		03	25	100	125		
4	10CS74	Advanced Computer Architectures	CSE/ISE	04	-	03	25	100	125		
5	10CS75x	Elective II (Group-B)	CSE/ISE	04	-	03	25	100	125		
6	10CS76x	Elective III(Group-C)	CSE/ISE	04	-	03	25	100	125		
7	10CSL77	Networks Laboratory	CSE/ISE	-	03	03	25	50	75		
8	10CSL78	Web Programming Laboratory	CSE/ISE	-	03	03	25	50	75		
		Total		24	06	-	200 700 900				

Elective II - Group B

10CS751/10IS751	Advanced DBMS	10CS761/10IS761	C# Programming and .Net
10CS752	Digital Signal Processing	10CS762/10IS762	Digital Image Processing
10CS753/10IS753	Java and J2EE	10CS763/10IS763	Game Theory
10CS754/10IS754	Multimedia Computing	10CS764/10IS764	Artificial Intelligence
10CS755/10IS74	Data Warehousing and Data Minin	1g10CS765/10IS765	Storage Area Networks
10CS756/10IS756	Neural Networks	10CS766/10IS766	Fuzzy Logic

VIII SEMESTER

S. No. Subject Code Subject Teaching Dept.			Teaching Hrs / Week			Examination			
				Theory	Practi	Duration		Marks	
					cal		TA	Enor	Tatal
							IA	Exam	Total
1	10IS81	Software Architectures	CSE/ISE	04	•	03	25	100	125
2	10CS82	System Modeling and Simulation	CSE/ISE	04	•	03	25	100	125
3	10CS83x	Elective IV(Group-D)	CSE/ISE	04	•	03	25	100	125
4	10CS84x	Elective V(Group-E)	CSE/ISE	04	•	03	25	100	125
- 5	10CS85	Project Work	CSE		06	03	100	100	200
6	10CS86	Seminar	CSE	-	•	•	50	-	50
		16	06		250	500	750		

Elective IV - Group D

10CS831/10IS831 10CS832/10IS832 10CS833 10CS834/10IS834 10CS835/10IS835 10CS836/10IS836

Wireless Networks and Mobile Computing 10CS841/10IS841 Web 2.0 and Rich Internet Applications VLSI Design and Algorithms Network Management Systems Information and Network Security Microcontroller-Based Systems

Elective V- Group E

10CS842 10CS843 10CS844/10IS844 10CS845/10IS845 10CS846

Ad-hoc Networks Software Testing ARM Based System Design Services Oriented Architecture Clouds, Grids and Clusters Multi-core Architecture and Programming

Elective III – Group C



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2017-18

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING (Common to CSE & ISE)

III SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Hrs / Week		Examination			
				Theory	Practi cal	Duration (Hrs)		Marks	
							IA	Exam	Total
1	10MAT31	Engineering Mathematics - III	Mathematics	04	-	03	25	100	125
2	10CS32	Electronic Circuits	CSE/ISE	04	-	03	25	100	125
3	10CS33	Logic Design	CSE/ISE	04	-	03	25	100	125
4	10CS34	Discrete Mathematical Structures	CSE/ISE	04	-	03	25	100	125
5	10CS35	Data Structures with C	CSE/ISE	04	-	03	25	100	125
6	10CS36	Object Oriented Programming with C++	CSE/ISE	04	-	03	25	100	125
7	10CSL37	Data Structures with C/C++ Laboratory	CSE/ISE	-	03	03	25	50	75
8	10CSL38	Electronic Circuits & Logic Design Laboratory	CSE/ISE	-	03	03	25	50	75
	Total					-	200	700	900

SCHEME OF TEACHING AND EXAMINATION B.E. COMPUTER SCIENCE AND ENGINEERING (Common to CSE & ISE)

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week	Hrs /		Examination			
				Theory	Practi cal	Duration (Hrs)		Marks		
							IA	Exam	Total	
1	10MAT41	Engineering Mathematics - IV	Maths	04	-	03	25	100	125	
2	10CS42	Graph Theory and Combinatorics	CSE/ISE	04	-	03	25	100	125	
3	10CS43	Design and Analysis of Algorithms	CSE/ISE	04	-	03	25	100	125	
4	10CS44	Unix and Shell Programming	CSE/ISE	04	-	03	25	100	125	
5	10CS45	Microprocessors	CSE/ISE	04	-	03	25	100	125	
6	10CS46	Computer Organization	CSE/ISE	04	-	03	25	100	125	
7	10CSL47	Design and Analysis of Algorithms	CSE/ISE	-	03	03	25	50	75	
		Laboratory								
8	10CSL48	Microprocessors Laboratory	CSE/ISE	-	03	03	25	50	75	
	Total					-	200	700	900	



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V SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Hrs / Week		Examination				
				Theory	Practi cal	Duration (Hrs)	Marks			
						: 03605550 N	IA	Exam	Total	
1	10IS51	Software Engineering	CSE/ISE	04	•	03	25	100	125	
2	10C\$52	Systems Software	CSE/ISE	04	•	03	25	100	125	
3	10CS53	Operating Systems	CSE/ISE	04		03	25	100	125	
4	10CS54	Database Management Systems	CSE/ISE	04		03	25	100	125	
5	10CS55	Computer Networks - I	CSE/ISE	04		03	25	100	125	
6	10CS56	Formal Languages and Automata Theory	CSE/ISE	04	•	03	25	100	125	
7	10CSL57	Database Applications Laboratory	CSE/ISE	1.000	03	03	25	50	75	
8	10CSL58	Systems Software & Operating Systems Laboratory	CSE/ISE	•	03	03	25	50	75	
		Total	-111-12 V	24	06	7 4	200	700	900	

S. No.	Subject Code	Subject	Teaching Dept.	Teachin Week	g Hrs /		Exami	nation	
			Dep.	Theor	Practical	Duration (Hrs)		Marks	ŝ
				-		(113)	IA	Exam	Total
1	10AL61	Management and Entrepreneurship	CSE/ISE/ MBA	04	•	03	25	100	125
2	10CS62	Unix System Programming	CSE/ISE	04	•	03	25	100	125
3	10C\$63/ 10I\$662	Compiler Design	CSE/ISE	04	•	03	25	100	125
4	10CS64	Computer Networks - II	CSE/ISE	04	•	03	25	100	125
5	10CS65 / 10IS665	Computer Graphics and Visualization	CSE/ISE	04	•	03	25	100	125
6	10CS66x	Elective I (Group-A)	CSE/ISE	04	•	03	25	100	125
7	10CSL67	Computer Graphics and Visualization Laboratory	CSE/ISE	•	03	03	25	50	75
8	10CSL68	Unix System Programming and Compiler Design Laboratory	CSE/ISE	•	03	03	25	50	75
		Total		24	06	•	200	700	900



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VII SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Week			Examination			
			· ·	Theory	Practi	Duration		Marks		
					cal	(Hrs)				
							IA	Exam	Total	
1	10CS71	Object-Oriented Modeling and Design	CSE/ISE	04	-	03	25	100	125	
2	10CS72/ 10IS752	Embedded Computing Systems	CSE/ISE	04	•	03	25	100	125	
3	10CS73	Programming the Web	CSE/ISE	04	-	03	25	100	125	
4	10CS74	Advanced Computer Architectures	CSE/ISE	04	-	03	25	100	125	
5	10CS75x	Elective II (Group-B)	CSE/ISE	04	-	03	25	100	125	
6	10CS76x	Elective III(Group-C)	CSE/ISE	04	-	03	25	100	125	
7	10CSL77	Networks Laboratory	CSE/ISE	-	03	03	25	50	75	
8	10CSL78	Web Programming Laboratory	CSE/ISE	-	03	03	25	50	75	
	Total					-	200	700	900	

Elective II – Group B

10CS752Digital Signal Processing10CS762/10IS762Digital Image Processing10CS753/10IS753Java and J2EE10CS763/10IS763Game Theory10CS754/10IS754Multimedia Computing10CS764/10IS764Artificial Intelligence10CS755/10IS74Data Warehousing and Data Mining10CS765/10IS765Storage Area Networks	10CS751/10IS751	Advanced DBMS	10CS761/10IS761	C# Programming and .Net
10CS754/10IS754Multimedia Computing10CS764/10IS764Artificial Intelligence10CS755/10IS74Data Warehousing and Data Mining10CS765/10IS765Storage Area Networks	10CS752	Digital Signal Processing	10CS762/10IS762	Digital Image Processing
10CS755/10IS74 Data Warehousing and Data Mining10CS765/10IS765 Storage Area Networks	10CS753/10IS753	Java and J2EE	10CS763/10IS763	Game Theory
	10CS754/10IS754	Multimedia Computing	10CS764/10IS764	Artificial Intelligence
	10CS755/10IS74	Data Warehousing and Data M	fining10CS765/10IS765	Storage Area Networks
10CS756/10IS756 Neural Networks 10CS766/10IS766 Fuzzy Logic	10CS756/10IS756	Neural Networks	10CS766/10IS766	Fuzzy Logic

VIII SEMESTER

S. No. Subject Code Subject Teaching Dept.			Teaching Hrs / Week			Examination			
				Theory	Practi cal	Duration	Marks		
							IA	Exam	Total
1	10IS81	Software Architectures	CSE/ISE	04	•	03	25	100	125
2	10CS82	System Modeling and Simulation	CSE/ISE	04	•	03	25	100	125
3	10CS83x	Elective IV(Group-D)	CSE/ISE	04	•	03	25	100	125
4	10CS84x	Elective V(Group-E)	CSE/ISE	04	•	03	25	100	125
5	10CS85	Project Work	CSE		06	03	100	100	200
6	10CS86	Seminar	CSE	-	•	•	50	-	50
		16	06		250	500	750		

Elective IV - Group D

10CS831/10IS831	
10CS832/10IS832	
10CS833	
10CS834/10IS834	
10CS835/10IS835	
10CS836/10IS836	

Wireless Networks and Mobile Computing Web 2.0 and Rich Internet Applications VLSI Design and Algorithms Network Management Systems Information and Network Security Microcontroller-Based Systems

Elective V- Group E

10CS841/10IS841
10CS842
10CS843
10CS844/10IS844
10CS845/10IS845
10CS846

Ad-hoc Networks Software Testing

ARM Based System Design Services Oriented Architecture Clouds, Grids and Clusters Multi-core Architecture and Programming

Elective III - Group C

2018-19



III SEMESTED

THE OXFORD COLLEGE OF ENGINEERING

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

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

ш	SEMESTER								_
61	Subject			ing Hours Veek	<u> </u>	Exam	ination		Credits
SI. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	Engineering Mathematics - III	04		03	80	20	100	4
2	15CS32	Analog and Digital Electronics	04	X	03	80	20	100	4
3	15CS33	Data Structures and Applications	04	<	03	80	20	100	4
4	15CS34	Computer Organization	04		03	80	20	100	4
5	15C835	Unix and Shell Programming	04		03	80	20	100	4
6	15CS36	Discrete Mathematical Structures	04	-	03	80	20	100	4
7	15CSL37	Analog and Digital Electronics Laboratory		1I+2P	03	80	20	100	2
8	15CSL38	Data Structures Laboratory		[₩] 1I+2P	03	80	20	100	2
		TOTAL	24	6	24	640	160	800	28

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

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

IV	SEMESTER								
			Teaching H	ours /Week		Ex	amination		Credits
Sl. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practica I Marks	I.A. Marks	Total Marks	
1	15MAT41	Engineering Mathematics - IV	04		03	80	20	100	4
2	15CS 42	Software Engineering	04	-	03	80	20	100	4
3	15CS43	Design and Analysis of Algorithms	04		03	80	20	100	4
4	15CS 44	Microprocessors and Microcontrollers	04		03	80	20	100	4
5	15CS45	Object Oriented Concepts	04		03	80	20	100	4
6	15CS46	Data Communication	04	-	03	80	20	100	4
7	15CSL47	Design and Analysis of Algorithm Laboratory		1I+2P	03	80	20	100	2
8	15CSL48	Microprocessors Laboratory		1I+2P	03	80	20	100	2
		TOTAL	24	06	24	640	160	800	28



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V SEMESTER

SI.	Subject	ubject		ng Hours Veek	1	Exami	nation		Credits
No	Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	LA. 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	-	03	80	20	100	3
6	15CS56x	Open Elective 1	03	(- 7	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

				Teaching Hours /Week			Examination			
SI. Subject No Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	LA. Marks	Total Marks			
1	15CS61	Cryptography, Network Security and Cyber Law	04		0.3	80	20	100	4	
2	15CS62	Computer Graphics and Visualization	04	X	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		II+2P	03	80	20	100	2	
		TOTAL	22	6	24	640	160	800	26	

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



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VII SEMESTER	

SL.	Cubling.	diare		ng Hours Veek		>	Credits		
SI. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	LA Marks	Theory Practical Marks	Total Marks	
1	15CS71	Web Technology and its applications	04	-	03	20	80	100	4
2	15C872	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	1-1	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	-	II+2P	03	20	80	100	2
8	15CSP78	Project Phase 1 + Seminar		1		100	5	100	2
		TOTAL	18	6	21	240	560	800	24

Professional Elect	ive 3	Professional Elective 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		

	VIII SEMEST	TER					- AL		
SL.	Subject			ing Hours Veek		Credits			
No	Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	7 Total Marks	
1	15CS81	Internet of Things and Applications	4		3	20	80	100	4
2	15CS82	Big Data Analytics	4	- 7	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
1 <mark>5CS832</mark>	User Interface Design
15CS833	Network management
15CS834	System Modeling and Simulation

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III SEMESTED

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

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

ш	SEMESTER								_
61	Subject			ing Hours Veek	<u> </u>	Exam	ination		Credits
SI. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	Engineering Mathematics - III	04		03	80	20	100	4
2	15CS32	Analog and Digital Electronics	04	X	03	80	20	100	4
3	15CS33	Data Structures and Applications	04	<	03	80	20	100	4
4	15CS34	Computer Organization	04		03	80	20	100	4
5	15C835	Unix and Shell Programming	04		03	80	20	100	4
6	15CS36	Discrete Mathematical Structures	04	-	03	80	20	100	4
7	15CSL37	Analog and Digital Electronics Laboratory		1I+2P	03	80	20	100	2
8	15CSL38	Data Structures Laboratory		[₩] 1I+2P	03	80	20	100	2
		TOTAL	24	6	24	640	160	800	28

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

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

IV	SEMESTER								
			Teaching H	ours /Week		Ex	amination		Credits
Sl. No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practica I Marks	I.A. Marks	Total Marks	
1	15MAT41	Engineering Mathematics - IV	04		03	80	20	100	4
2	15CS 42	Software Engineering	04	-	03	80	20	100	4
3	15CS43	Design and Analysis of Algorithms	04		03	80	20	100	4
4	15CS 44	Microprocessors and Microcontrollers	04		03	80	20	100	4
5	15CS45	Object Oriented Concepts	04		03	80	20	100	4
6	15CS46	Data Communication	04	1	03	80	20	100	4
7	15CSL47	Design and Analysis of Algorithm Laboratory		1I+2P	03	80	20	100	2
8	15CSL48	Microprocessors Laboratory		1I+2P	03	80	20	100	2
		TOTAL	24	06	24	640	160	800	28



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V SEMESTER

SI.	Subject			ng Hours Veek		Exami	nation		Credits
SL No	Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	LA. 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	1- 1	03	80	20	100	4
4	15CS54	Automata theory and Computability	04		03	80	20	100	4
5	15CS55x	Professional Elective 1	03	1	03	80	20	100	3
6	15CS56x	Open Elective 1	03	(- 7	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

SL.	Cablert		Teaching Hours /Week		Examination				Credits
No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	LA. Marks	Total Marks	
1	15CS61	Cryptography, Network Security and Cyber Law	04		03	80	20	100	4
2	15CS62	Computer Graphics and Visualization	04	X	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		II+2P	03	80	20	100	2
		TOTAL	22	6	24	640	160	800	26

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



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VII SEMESTER

SI.	Subject			ng Hours Veek		Exam	ination	>	Credits
SI. No	Code	Title	Theory	Practical/ Drawing	Duration	LA: 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	1	03	20	80	100	4
4	15CS74x	Professional Elective 3	03	1-1	03	20	80	100	3
5	15CS75x	Professional Elective 4	03	-	03	20	80	100	3
6	15CSL76	Machine Learning Laboratory		II+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	-	V-		100	5	100	2
		TOTAL	18	6	21	240	560	800	24

Professional Elect	ive 3	Professional Elective 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			

	VIII SEMEST	TER					A		
SL.	Subject			ing Hours Veek		Exam	ination		Credits
No	Code	Title	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	7 Total Marks	
1	15CS81	Internet of Things and Applications	4		3	20	80	100	4
2	15CS82	Big Data Analytics	4	- 7	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
1 <mark>5CS832</mark>	User Interface Design
15CS833	Network management
15CS834	System Modeling and Simulation

2	n	1	n	21
2	U	Z	U	-21



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III SEMESTER

SL.			Teaching	Teaching	Hours /Week		Exami	nation		Credits
N0	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics - III	Maths	04		03	60	40	100	4
2	17CS32	Analog and Digital Electronics	CS/IS	04		03	60	40	100	4
3	17CS33	Data Structures and Applications	CS/IS	04		03	60	40	100	4
4	17CS34	Computer Organization	CS/IS	04		03	60	40	100	4
5	17CS35	Unix and Shell Programming	CS/IS	03		03	60	40	100	3
6	17C\$36	Discrete Mathematical Structures	CS/IS	04		03	60	40	100	4
7	17CSL37	Analog and Digital Electronics Laboratory	CS/IS	01-Hour In 02-Hour Pr		03	60	40	100	2
8	17CSL38	Data Structures Laboratory	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
				va-riour ri	ideuedi					_

			Teaching	Teaching Ho	ours /Week		Exami	ination		Credits
SL No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics - IV	Maths	04		03	60	40	100	4
2	17CS42	Object Oriented Concepts	CS/IS	03		03	60	40	100	3
3	17CS43	Design and Analysis of Algorithms	CS/IS	04		03	60	40	100	4
4	17CS44	Microprocessors and Microcontrollers	CS/IS	04		03	60	40	100	4
5	17CS45	Software Engineering	CS/IS	04		03	60	40	100	4
6	17CS46	Data Communication	CS/IS	04		03	60	40	100	4
7	17CSL47	Design and Analysis of Algorithm Laboratory	CS/IS	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
				AL 11 1	10					



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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	17C851	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 I 02-Hour F		03	60	40	100	2

Professional	Professional Elective-1						
17CS551 Object Oriented Modeling and Design							
17CS552 Introduction to Software Testing							
17CS553	Advanced JAVA and J2EE						
17CS554	Advanced Algorithms						

sı.	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 In 02-Hour Pr		03	60	40	100	2
8	17CSL68	Computer Graphics Laboratory with mini project	CS/IS	01-Hour In 02-Hour Pr		03	60	40	100	2

Professional	Elective-2	Open Electiv	e – 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	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



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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	17CS71	Web Technology and its applications	CS/IS	04		03	60	40	100	4
2	17C\$72	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	17C\$75x	Professional Elective 4	CS/IS	03		03	60	40	100	3
6	17CSL76	Machine Learning Laboratory	CSIS	01-Hour In 02-Hour P		03	60	40	100	2
7	17CSL77	Web Technology Laboratory with mini project	CS/IS	01-Hour In 02-Hour P		03	60	40	100	2
8	17CSP78	Project Work Phase-I + Project work Seminar	CS/IS		03	-		100	100	2

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

			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	Indu	stry Oriented	3	50	50	100	2
5	17CSP85	Project Work-II	CS/IS	•	6	3	100	100	200	6

Professiona	Professional Elective -5							
17CS831	17CS831 High Performance Computing							
17CS832	32 User Interface Design							
17CS833	Network management							
17CS834	System Modeling and Simulation							



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SCHEMEOFTEACHINGANDEXAMINATION

B.EElectronics&CommunicationEngineering/<u>TelecommunicationEngineering</u>(CommontoElectronics&CommunicationandTelecommunicationEngineering) 2018-19

IIISEMESTER

			TeachingH	ours/Week		Exan	inati o n		Credits
SLNo.	SubiectCode	Title	Theory	Prac t ical /Dravi ng	Duration	T heorx /Pract. icalMarks	I.A.Marks	TotalMarks	
1	15MAT31	EngineeringMathematics-III*	04		03	80	20	100	4
2	15EC32	AnalogElectronics	04		03	80	20	100	4
3	15EC33	Digital Electronics	04		03	80	20	100	4
4	15EC34	Network Analysis	04		03	80	20	100	4
5	15EC35	ElectronicInstrumentation	04		03	80	20	100	4
6	15EC36	Engineering Electromagnetics	04		03	80	20	100	4
7	15ECL37	AnalogElectronicsLab		1I+2P	03	80	20	100	2
8	15ECL38	Digital ElectronicsLab		1I+2P	03	80	20	100	2
		TOTAL	24	6	24	640	160	800	28

* Additional course for Lateral entry students only:

1	15MATDIP31	AdditionalMathematics-I	03	03	80	-	80	

IVSEMESTER

(1))	SubjectCode	Title		ngHours Veek		Examinat	ion		Credits
Sl.No.	auntectante		Theory	Practical / Drawing	Duration	T heory /Prac t icalMarks	I.A. Marks	TotalMarks	
1	15MAT41	EngineeringMathematics-IV*	04		03	80	20	100	4
2	15EC42	Microprocessor	04		03	80	20	100	4
3	15EC43	ControlSystems	04		03	80	20	100	4
4	15EC44	SignalsandSystems	04		03	80	20	100	4
5	15EC45	PrinciplesofCommu nicationSystems	04		03	80	20	100	4
6	15EC46	LinearIntegrated Circuits	04		03	80	20	100	4
7	15ECL47	MicroprocessorLab		1I+2P	03	80	20	100	2
8	15ECL48	Linear ICs and CommunicationLab		1I+2P	03	80	20	100	2
		TOTAL	24	06	24	640	160	800	28

*Additionalcoursefor Lateralentrystudentsonly:

1	15MATDIP41	AdditionalMathematics-II	03	03	80	 80	



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B.E Electronics & Communication Engineering / VSEMESTER

		SL.	s		Title		TeachingHo /Week	ours	Examination						
			ubjectCode		litte		Theory	Practical /Drawing	Duration	ration eou ic			ATo I saf Mark	Credits	
	1 15		151	ES51	Managementand Entrepreneurship_Developmen	ut	04		03		20		100	4	
		2	151	EC52	Digital SignalProcessing		04	(1	0	1	00 4	4	Ľ
3	15EC53			VerilogH1	DL	04	7	03	80	30		_	100	4	
4	15EC54		ŀ	Informa	tionTheory_andCoding	04	1	03	80			20	1	100	4
5	15XX55X		Х	Professio	nalElective-1	03		03	80		20		100 3	\$!
6	15XX56X		X	OpenElecti	ve-1	03		03	80		20		100		3
7	15ECL57		7	DSPLab			1I+2P	03	80		20	_		100	2
8	15ECL58		8	HDLLab			1I+2P	03	80			20)	100	2
	TOTAL						06	24		64	10	10	60	800	2

Professions	IElective -1	Open Elective -1*(ListofferedbyEC/TCBoard only)						
15EC551	Nanoelectronics	15EC561	Automotive Electronics					
15EC552	Switching&FiniteAutomataTheory	15EC562 (bjectOrientedProgrammingUsingC++					
15EC553	OperatingSystem	15EC563 8	51 Microcontroller					
15EC554	Electrical Engineering Materials							
15TE555	TransmissionLinesandWaveguides							

1. Professional Elective: Electiverelevanttochosenspecialization/branch.

2. *Ope nElec tive List: Forot herOpenElectivesofferedbyother Boards, refert he Schemeofot herBoards or Consolidated listinVTUWebsite

SCHEMEOFTEACHINGANDEXAMINATION

VISI	VISEMESTER															
	SL S T			_		TeachingHours /Week				Examination						
		No	ubjectCode	Title		1	Theory		c tical awing	Dur	ation		Pract Marks	I.A. Marks	To t alMarks	
		1	15EC61	DigitalCommunication	-	04	4		(8		2	1	00 4	
		2	15EC62	ARMMicrocontroller&Embedded System	15	0	04			03		80		20	100	4
3	151	TE63	Microw	aveTheoryandAntennas	_	04			(8		2	1	00 4	
4	15E	C64	Compu	terCommunicationNetworks	04				-	03		80		20	100	4
5	15X	X65	X Professio	onalElective-2	03				03		80		20	100 3		
6	15X	X66	X OpenElec	tive-2	03				03		80		20	100 1	\$	
7	15E	ECL	67 Embed	dedControllerLab			1I+2P		03		80		20	100 2	2	
8	15T	EL6	8 Microwa	aveandAntennas Lab			1I+2P		03	5	30	- 2	20	100 2		
				TOTAL	22		6		24		640		160	800	26	

÷÷					
P	Professional Elective -2			Open Elective -	2*(List offeredbyEC/TCBoard only)
1	5EC651	CellularMobileCommunication		15EC661	DataStructuresUsingC++
1	5EC652	Adaptive SignalProcessing		EC662 F	wer Electronics
1	5EC653	ArtificialNeuralNetworks		EC663 1	igital SystemDesign usingVerilog
1	5EC654	DigitalSwitchingSystems			
1	5TE655	ImageProcessing			

1. Professional Elective: Electiverelevanttochosenspecialization/branch.



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B.ETelecommunicationEngineering

2019-20

VIIISEMESTER

SLNo.	Su		Teaching! /Week	TeachingHours /Week					Credit
	bjectCode	Title	Theory	Practical /Drawing	Duration	I.A. Marks	Th eory /Practical Marks	To talMarks	
1	15EC81	Wireless Cellular andLTE4G Broadband	4	-	3	20	80	100	4
2	15EC82	FiberOpticsandNetworks	4	-	3	20	80	100	4
3	15XX83X	Professional Elective-5	3	-	3	20	80	100	3
4	15EC84	Intemship/Professional Practice	Industry	Oriented	3	50	50	100	2
5	15ECP85	ProjectWork	-	6	3	100	100	200	6
6	15ECS86	Seminar	-	4	-	100	-	100	1
		TOTAL	11	10	15	310	390	700	20

Profession	Professional Elective -5						
15EC831	MicroElectroMechanicalSystems						
15EC832	Speech Processing						
15EC833	RadarEngineering						
15EC834	MachineLearning						
15TE835	ADHOCWirelessNetworks						

1. Intemship / Professional Practice: Tobecarriedbetweenthe(6th and7thSemester)or(7th and8th Semester)Vacationperiod.

B.E Electronics & Communication Engineering / Telecommunication Engineering(CommontoElectronics&CommunicationandTelecommunicationEngineering) 2020-21

III SI	EMESTER	1								
SUNo			TeachingDepartment	Teaching	Hours/Week			mination		Credits
	CourseCode.	Title		Theory	- u		SEE Marks	CIE Marks	TotalMarks	
1	17MAT31	EngineeringMathematics-III*	Maths	04		03	60	40	100	4
2	17EC32	ElectronicInstrumentation	EC	03		03	60	40	100	3
3	17EC33	AnalogElectronics	EC	04		03	60	40	100	4
4	17EC34	DigitalElectronics	EC	04		03	60	40	100	4
5	17EC35	NetworkAnalysis	EC	04		03	60	40	100	4
6	17EC36	EngineeringElectromagnetics	EC	04		03	60	40	100	4
7	17ECL37	AnalogElectronics Lab	EC	01- HourIn 02- HourPr		03	60	40	100	2
8	17ECL38	DigitalElectronics Lab	EC	01-Hour Instruction02- HourPractical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India,ProfessionalEthicsandHumanRights	Humanities	01		01	30	20	50	01
	TOTAL				y: sPractical:06hours	25	510	340	850	28

1. Kannada/ConstitutionofIndia_<u>ProfessionalEthicsandHumanRights:50</u>% of the programs of the Institution have to teachKannada/Constitution of India, ProfessionalEthicsand <u>HumanRightsincycle</u> basedconcept during III and IV semester 2. AuditCourse:

(i) * All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics - I, which is 03 contact hours per week.

+	6.6		(exceptiblisee and dates in a verore gisterion	uunonanvianena	tics 1, which	isobcontactiou	sperweek.			
	1	17MATDIP31	AdditionalMathematics –I	Maths	03		03	60	 60	
									,	



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IV SEMESTER

			TeachingDepartme	TeachingH	ours/Week		Exami	nation		Credits
SLNo	CourseCode	Title	nt	Theory	Theory Practical/Drawing		SEE Marks	CIE Marks	TotalMarks	
1	17MAT41	EngineeringMathematics-IV*	Maths	04		03	60	40	100	4
2	17EC42	SignalsandSystems	EC	04		03	60	40	100	4
3	17EC43	ControlSystems	EC	04		03	60	40	100	4
4	17EC44	PrinciplesofCommunication Systems	EC	04		03	60	40	100	4
5	17EC45	LinearIntegratedCircuits	EC	04		03	60	40	100	4
6	17EC46	Microprocessor	EC	03		03	60	40	100	3
7	17ECL47	MicroprocessorLab.	EC	01-Hour Inst HourPractica		03	60	40	100	2
8	17ECL48	LinearICsandCommunicationLab	EC	01-Hour Instruction02- HourPractical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/ConstitutionofIndia, ProfessionalEthicsandHumanRights	Humanities	01		01	30	20	50	01
	1	TOTAL		Theory:	hoursPractical:06hours	25	510	340	850	28

1. Kannada/ConstitutionofIndia, ProfessionalEthicsandHumanRights: 50% of the programs of the Institution have to teachKannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of teach Kannada/Constitution 2. AuditCourse:

()*Allateralentrystudents(exceptB.Sccandidates)havetoregisterforAdditionalMathematics-II,whichis03 contacthoursperweek.

1 17MATDIP41 AdditionalMathematics-II Maths 03 03 60 60					 		 	
	1	17MATDIP41		03	03	60	 60	

V SEMESTER

B.E.:Electronics&CommunicationEngineering

SL No	CourseCode	ode Title		Teaching /Week	Hours	Examination				Credits
	s.uurses.uue	The second secon		Theory	Practical/Drawing	Duration inhours	SEEMarks	CIE Marks	IotalMarks	
1	17ES51	ManagementandEntrepreneurshipDexelopment	EC	04		03	60	40	100	4
2	17EC52	DigitalSignalProcessing	EC	04		03	60	40	100	4
3	17EC53	VenlogHDL	EC	04		03	60	40	100	4
4	17EC54	InformationTheory&Coding	EC	04		03	60	40	100	4
5	17EC55X	ProfessionalElective-1	EC	03		03	60	40	100	3
6	17EC56X	OpenElective-1	EC	03		03	60	40	100	3
7	17ECL57	DSPLab	EC	01-Hour I HourPrac	nstruction02- tical	03	60	40	100	2
8	17ECL58	HDLLab.	EC	01-Hour I HourPrace	nstruction02- tical	03	60	40	100	2
		TOTAL		Theory: 6hours	22hoursPractical:0	24	480	320	800	26

Professional	Elective-1	OpenElective - 1***(ListofferedbyEC/TCBoardonly)					
7EC551	Nanoelectronics	17EC561	AutomotiveElectronics				
7EC552	Switching&Finite Automata Theory	17EC562	ObjectOrientedProgrammingUsingC++				
7EC553	OperatingSystem	17EC563	8051Microcontroller				
7EC554	ElectricalEngineeringMaterials						
700555	MCD420Minnerenterline						

***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:

Inecandidatehasnopre requisiteknowledge. Thecandidatehasstudiedsimilarcontentcourseduringprevioussemesters. 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 theguidanceofProgrammeCoordinator and Adviser.



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VI SEMESTER

B.E.:Electronics&CommunicationEngineering

SL.No	CourseCode	Title	TeachingDepartme	I.	eachingHours /Week			Credits		
				Theory	Practical/Drawing	Durationinhours	SEE Marks	CIE Marks	TotalMarks	
1	17EC61	DigitalCommunication	EC	04		03	60	40	100	4
2	17EC62	ARMMicrocontroller&EmbeddedSystems	EC	04		03	60	40	100	4
3	17EC63	VLSIDesign	EC	04		03	60	40	100	4
4	17EC64	ComputerCommunicationNetworks	EC	04		03	60	40	100	4
5	17EC65X	ProfessionalElective-2	EC	03		03	60	40	100	3
6	17EC66X	OpenElective-2	EC	03		03	60	40	100	3
7	17ECL67	EmbeddedControllerLab	EC	01-Hour Ir HourPracti	ustruction02- cal	03	60	40	100	2
8	17ECL68	ComputerNetworksLab	EC	01-Hour Ir HourPracti	nstruction02- ical	03	60	40	100	2
		TOTAL	·	Theory: 6hours	22hoursPractical:0	24	480	320	800	26
+ D	sionalElective	2	On an Election 1++	+ (] : ====	Jhar College and a law			•		<u> </u>
17EC		-2 lobileCommunication		:-2***(ListofferedbyEC/TCBoardonly) DataStructuresUsingC++						
		SignalProcessing	× *	PowerElectronics(notforE&Cstudents)						

1 1010331011	Liccuve-2	- 25 BROWN (199 (199 -	· (1773)07707707707707707707770777077707777
17EC651	CellularMobileCommunication	17EC661	DataStructuresUsingC++
17EC652	AdaptiveSignalProcessing	17EC662	PowerElectronics(notforE&Cstudents)
17EC653	ArtificialNeuralNetworks	17EC663	Digital SystemDesignusingVerilog
17EC654	DigitalSwitchingSystems		

17EC655 Microelectronics

***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 installowed, if: The candidate has no pre-requisite knowledge.

 $The {\tt candidate} has studied similar content course during previous semesters.$

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 open electives and be documented und the guidance of Programme Coordinator and Adviser.

VII SEMESTER

					s&CommunicationE	ingineering				
SLNo.			TeachingDepartme nt	If	leachingHours /Week		Examina	ation		Credits
	CourseCode	Title		Theory	Practical/Drawing	Durationinhours	SEE Marks	CIE Marks	TotalMarks	
1	17EC71	MicrowaveandAntennas	EC	04		03	60	40	100	4
2	17EC72	DigitalImageProcessing	EC	04		03	60	40	100	4
3	17EC73	PowerElectronics	EC	04		03	60	40	100	4
4	17EC74X	ProfessionalElective-3	EC	03		03	60	40	100	3
5	17EC75X	ProfessionalElective-4	EC	03		03	60	40	100	3
6	17ECL76	AdvancedCommunicationLab		01-Hour In HourPractio	nstruction02- ical	03	60	40	100	2
7	17ECL77	XLSILab.		01-Hour Instruction02- EC HourPractical		03	60	40	100	2
8	17ECP78	ProjectWorkPhase_I+Project workSeminar	EC		03		-	100	100	2
		TOTAL		Theory:18 hoursPract Project:091	cticaland	21	420	380	800	24

÷	÷										
	ProfessionalE	lective-3	ProfessionalElective-4								
	17EC741	MultimediaCommunication	17EC751	DSPAlgorithmsandArchitecture							
	17EC742	BiomedicalSignalProcessing	17EC752	IOT andWirelessSensorNetworks							

17EC743	RealTime Systems	17EC753	PattemRecognition
17EC744	Cryptography	17EC754	AdvancedComputerArchitecture
17EC745	CADforVLSI	17EC755	SatelliteCommunication

1. Project Phase – I and Project Seminar: Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on th reportcoveringLiteratureSurvey, Problem identification, Objectives and Methodology and Seminar presentationskill.



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VIII SEMESTER

SLNo	CourseCode		TeachingDepartme nt	ĩ	eachingHours /Week		Examina	tion		Credits
		Title		Theory	Practical/Drawing	Durationinhours	SEE Marks	CIE Marks	TotalMarks	
1	17EC81	WirelessCellular and LTE4GBroadband	EC	4	-	3	60	40	100	4
2	17EC82	FiberOptics&Networks	EC	4	-	3	60	40	100	4
3	17EC83X	ProfessionalElective-5	EC	3	-	3	60	40	100	3
4	17EC84	Internship/ProfessionalPractice	EC	Indust	ryQriented	3	50	50	100	2
5	17ECP85	ProjectWork	EC	-	6	3	100	100	200	6
6	17ECS86	Seminar	EC	-	4	-	-	100	100	1
	<u> </u>	TOTAL			11 ojectand ::10hours	15	330	370	700	20

Profession	alElective-5	
17EC831	MicroElectroMechanicalSystems	
17EC832	SpeechProcessing	
17EC833	RadarEngineering	
17EC834	Machineleaming	
17EC835	NetworkandCyberSecurity	_

 $\label{eq:linearised} 1 \\ \underline{Internship} (Professional Practice: 4 \\ Weeks internship to be completed between the (VI and VII semesterva cation) and /or (VII and VII semesterva cation) period. \\ \underline{Internship} (Professional Practice: 4 \\ Weeks internship to be completed between the (VI and VII semesterva cation) and /or (VII and VII semesterva cation) period. \\ \underline{Internship} (Professional Practice: 4 \\ Weeks internship to be completed between the (VI and VII semesterva cation) and /or (VII and VII semesterva cation) period. \\ \underline{Internship} (Professional Practice: 4 \\ Weeks internship to be completed between the (VI and VII semesterva cation) and /or (VII and VII semesterva cation) period. \\ \underline{Internship} (Professional Practice: 4 \\ Weeks internship to be completed between the (VI and VII semesterva cation) and /or (VII and VII semesterva cation) period. \\ \underline{Internship} (Professional Practice: 4 \\ Weeks internship to be completed between the (VI and VII semesterva cation) period. \\ \underline{Internship} (Professional Practice: 4 \\ Weeks internship to be completed between the (VI and VII semesterva cation) period. \\ \underline{Internship} (Professional Practice: 4 \\ Weeks internship to be completed between the (VI and VII semesterva cation) period. \\ \underline{Internship} (Professional Practice: 4 \\ \underline{Internship} (Professional Practice:$

SCHEMEOFTEACHINGANDEXAMINATION B.EElectronics&CommunicationEngineering/TelecommunicationEngineering(CommontoElectronics&CommunicationAndTelecommunicationEngineering 2018-19

IIISEMESTER

			TeachingH	ours/Week		Exan	uinati o n		Credits
SLNo	SubiectCode	Title	Theory	Prac t ical /Dravi ng	Duration	T heorx /Pract. icalMarks	I.A.Marks	TotalMarks	
1	15MAT31	EngineeringMathematics-III*	04		03	80	20	100	4
2	15EC32	AnalogElectronics	04		03	80	20	100	4
3	15EC33	Digital Electronics	04		03	80	20	100	4
4	15EC34	Network Analysis	04		03	80	20	100	4
5	15EC35	ElectronicInstrumentation	04		03	80	20	100	4
6	15EC36	Engineering Electromagnetics	04		03	80	20	100	4
7	15ECL37	AnalogElectronicsLab		1I+2P	03	80	20	100	2
8	15ECL38	Digital ElectronicsLab		1I+2P	03	80	20	100	2
	1	TOTAL	24	6	24	640	160	800	28

*AdditionalcourseforLateralentrystudentsonly:

1	15MATDIP31	AdditionalMathematics-I	03	03	80	-	80	



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IVSEMESTER

	SubjectCode	ode Title		ingHours Veek			Credits		
SLNo.	SubjectCode	Litte	Theory	Practical / Drawing	Duration	T heory /Prac t icalMarks	I.A. Marks	TotalMarks	
1	15MAT41	EngineeringMathematics-IV*	04		03	80	20	100	4
2	15EC42	Microprocessor	04		03	80	20	100	4
3	15EC43	ControlSystems	04		03	80	20	100	4
4	15EC44	SignalsandSxstems.	04		03	80	20	100	4
5	15EC45	PrinciplesofCommu nicationSystems	04		03	80	20	100	4
6	15EC46	LinearIntegrated Circuits	04		03	80	20	100	4
7	15ECL47	MicroprocessorLab		1I+2P	03	80	20	100	2
8	15ECL48	Linear ICs and CommunicationLab		1I+2P	03	80	20	100	2
	•	TOTAL	24	06	24	640	160	800	28

*Additionalcoursefor Lateralentrystudentsonly:

1	15MATDIP41	AdditionalMathematics-II	03	03	80	 80	

B.E Electronics & Communication Engineering / VSEMESTER

		,	~				TeachingH /Week	ours		xamination]
	N		S ubje	ctC o de	Title		Theory	Practic /Drawin	D	uration		y/Pract alMarks		ATo I adM ark	Credits	
	1		15I	2851	Managementand Entrepreneurship Developmer	at	04		0	3	80	20		100	4	
	2		15I	C52	Digital SignalProcessing		04		(1 1	0	1	00 4	i	L
3	15E(053		VerilogH	DL	04		03		80		20	_	100	4	
4	15E(C54		Informa	tionTheory_andCoding	04		03		80			20	1	00	4
5	15XX	(55)	X	Professio	nalElective-1	03		03		80		20		100 3		
6	15XX	(56)	X	OpenElecti	ve-1	03		03		80		20		100		_3
7	15EC	L5	7	DSPLab			1I+2P	03		80		20			100	2
8	15EC	L58	8	HDLLab			1I+2P	03		80			20)	100	2
				T	OTAL	22	06	24			64	0	1	60	800	2

Professiona	IElective -1	Open Elective -1*(ListofferedbyEC/TCBoard only)
15EC551	Nanoelectronics	15EC561	Automotive Electronics
15EC552	Switching&FiniteAutomataTheory	15EC562 (bjectOrientedProgrammingUsingC++
15EC553	OperatingSystem	15EC563 8	51 Microcontroller
15EC554	Electrical Engineering Materials		
15TE555	TransmissionLinesandWaxeguides		

 $1. \ \ Professional \ Elective: \ \ Elective relevant to chosen specialization/branch.$

2. *Ope nElec tive List:Forot herOpenElectivesofferedbyother Boards, refert he Schemeofot herBoards or Consolidated listinVTUWebsite.

SCHEMEOFTEACHING ANDEXAMINATION



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VISEMESTER

V151	s		s		-	TeachingH /Week	ours	Examination	Credits			
	N		ubjectCode	Title		Theory	Prac t ical /Drawing	Duration	Th eory/Pract icalMarks	LA. Marks	To t alMarks	
	1		15EC61	DigitalCommunication	-	04		(8	2	1 00 4	1
	2		15EC62	ARMMicrocontroller&Embedded System	s	04		03	80	20	100	4
3	15 TE	E63	Microw	aveTheoryandAntennas	-	04		(8	2	100 4	Ļ
4	15EC	C64	Compu	terCommunicationNetworks	04			03	80	20	100	4
5	15XX	(652	X Professi	onalElective-2	03		03	80	20	100	3	
6	15XX	(66)	X OpenEle	ctive-2	03		03	80	20	100	3	
7	15EC	CL6	57 Embed	dedControllerLab		1I+2P	03	80	20	100	2	
8	15TE	L68	8 Microw	aveandAntennas Lab		1I+2P	03	80	20	100	2	
				TOTAL	22	6	24	640	160	800	26	

Profession	al Elective -2	Open Elect	tive -2*(List offeredbxEC/JCBoard only)
15EC651	CellularMobileCommunication	15EC661	DataStructuresUsingC++
15EC652	Adaptive SignalProcessing	1 EC662	P wer Electronics
15EC653	ArtificialNeuralNetworks	EC663	I igital SystemDesign usingVerilog
15EC654	DigitalSwitchingSystems		
15TE655	ImageProcessing		

Professional Elective: <u>Electiverelevanttochosenspecialization</u>/branch.
 *OpenElectiveList:ForotherOpenElectivesofferedbyother_Boards, refertheSchemeofotherBoardsorConsolidatedlistinVTUWebsite.

B.ETelecommunicationEngineering 2019-20

VIIISEMESTER

SLNo.	Su		Teaching! /Week	lours	Examination	Credit			
	bjectCode		Theory	Practical /Drawing	Duration	I.A. Marks	Th eory /Practical Marks	To talMarks	
1	15EC81	Wireless Cellular andLTE4G Broadband	4	-	3	20	80	100	4
2	15EC82	FiberOpticsandNetworks	4	-	3	20	80	100	4
3	15XX83X	Professional Elective-5	3	-	3	20	80	100	3
4	15EC84	Internship/Professional Practice	Industry	Oriented	3	50	50	100	2
5	15ECP85	ProjectWork	-	6	3	100	100	200	6
6	15ECS86	Seminar	-	4	-	100	-	100	1
		TOTAL	11	10	15	310	390	700	20

Professiona	al Elective -5
15EC831	MicroElectroMechanicalSystems
15EC832	Speech Processing
15EC833	RadarEngineering
15EC834	MachineLearning
15TE835	ADHOCWirelessNetworks

1. Intemship / Professional Practice: Tobecarriedbetweenthe(6th and7thSemester)or(7th and8th Semester)Vacationperiod.



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III SEMESTER Examination SEE TeachingDepartment TeachingHours/Week Credits SLNo CourseCode Title TotalMarks Duration Theory inhours Marks Marks 17MAT31 EngineeringMathematics-III* 04 40 Maths 03 60 4 2 17EC32 ElectronicInstrumentation EC 03 03 60 40 100 3 17EC33 AnalogElectronics EC 04 03 40 4 3 60 100 17EC34 DigitalElectronics 4 EC 04 03 60 40 100 4 17EC35 5 Network Analysis EC 04 03 60 40 100 4 17EC36 6 EngineeringElectromagnetics EC 04 03 60 40 100 4 01- HourInstruction 02- HourPractical 7 17ECL37 AnalogElectronics Lab EC 03 60 40 100 2 01-Hour Instruction02-HourPractical 8 17ECL38 DigitalElectronics Lab EC 03 40 100 2 60 Kannada/Constitution of India ProfessionalEthicsandHumanRight 9 17KL/CPH39/49 Humanities 01 01 30 20 50 01 Theory: 24hoursPractical:06hours TOTAL 25 510 340 850 28

1. Kannada/ConstitutionofIndia_<u>ProfessionalEthicsandHumanRights:50</u>% of the programs of the Institution have to teachKannada/Constitution of India, ProfessionalEthicsand <u>HumanRights:ncycle basedconceptduingIII and IV</u> semester 2. AuditCourse:

(i) * All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics - I, which is 0.3 contact hours per week.

+	w	***********************	(enceptibliseean addites) na veteregisterion		,	1505 contactinou	sperween.			
	1	17MATDIP31	AdditionalMathematics –I	Maths	03		03	60	 60	

			TeachingDepartme	TeachingH	ours/Week		Exami	nation		Credits
SLNo.	CourseCode	Title	nt	t Theory		Duration inhours	SEE Marks	CIE Marks	TotalMarks	
1	17MAT41	EngineeringMathematics-IV*	Maths	04		03	60	40	100	4
2	17EC42	SignalsandSystems	EC	04		03	60	40	100	4
3	17EC43	ControlSystems	EC	04		03	60	40	100	4
4	17EC44	PrinciplesofCommunication Systems	EC	04		03	60	40	100	4
5	17EC45	LinearIntegratedCircuits	EC	04		03	60	40	100	4
6	17EC46	Microprocessor	EC	03		03	60	40	100	3
7	17ECL47	MicroprocessorLab	EC	01-Hour Inst HourPractica		03	60	40	100	2
8	17ECL48	LinearICsandCommunicationLab	EC	01-Hour Instruction02- HourPractical		03	60	40	100	2
9	17KL/CPH39/49	Kanna da/ConstitutionofIndia. ProfessionalEthicsandHumanRights	Humanities	01		01	30	20	50	01
	1	TOTAL	1	Theory: 24	4hoursPractical:06hours	25	510	340	850	28

1. Kannada/ConstitutionofIndia, ProfessionalEthicsandHumanRights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, Professional EthicsandHuman Rightsincycle based concept during III and IV series 2. Audit Course:

 $(i) ^{*} All a teral entry students (except B. Sc candidates) have to register for Additional Mathematics -- II, which is 03 contact hours per week.$

÷	(e) comm		acepto.occanduateo,na vetoregisterron i	dutionaliviational	ico in, minemoo ş	allowing over				
	1	17MATDIP41	AdditionalMathematics-II	Maths	03	03	60	-	60	



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B.E.:Electronics&CommunicationEnginee

			2000	~~~~~	onics&Communication	<u>iEngineering</u>				Credits	
SLNo	CourseCode	Title	TeachingDepartment TeachingHours /Week		Examination	Examination					
	Concorsione.			Theory	Practical/Drawing	Duration inhours	SEEMarks	CIE Marks	IntalMarks		
1	17ES51	ManagementandEntrepreneurshipDexelopment	EC	04		03	60	40	100	4	
2	17EC52	DigitalSignalProcessing	EC	04		03	60	40	100	4	
3	17EC53	VenlogHDL	EC	04		03	60	40	100	4	
4	17EC54	InformationTheory&Coding	EC	04		03	60	40	100	4	
5	17EC55X	ProfessionalElective-1	EC	03		03	60	40	100	3	
6	17EC56X	OpenElective-1	EC	03		03	60	40	100	3	
7	17ECL57	DSPLab	EC	01-Hour In HourPract	Instruction02- ctical	03	60	40	100	2	
8	17ECL58	HDLLab	EC	01-Hour In HourPract	Instruction02- ctical	03	60	40	100	2	
		TOTAL		Theory: 6hours	22hoursPractical:0	24	480	320	800	26	

Professional	lElective-1		OpenElectiv	e – 1***(ListofferedbyEC/TCBoardonly)
17EC551	7EC551 Nanoelectronics		17EC561	AutomotiveElectronics
17EC552	7EC552 Switching&Finite Automata Theory		17EC562	ObjectOrientedProgrammingUsingC++
17EC553	OperatingSystem		17EC563	8051Microcontroller
17EC554	ElectricalEngineeringMaterials			
1700555	MCD420MC			

17EC555 MSP430Microcontroller

***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: Thecandidatehasnopre-requisiteknowledge.

Thecandidatehasstudiedsimilarcontentcourseduringprevioussemesters.

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 open electives and be documented under theguidanceofProgrammeCoordinator and Adviser.

VI SEMESTER

SL.No	CourseCode	Title	TeachingDepartme at		<u>cs&Communication</u> eachingHours /Week	Examination					
				Theory	Practical/Drawing	Durationinhours	SEE Marks	CIE Marks	TotalMarks		
1	17EC61	DigitalCommunication	EC	04		03	60	40	100	4	
2	17EC62	ARMMicrocontroller&EmbeddedSystems	EC	04		03	60	40	100	4	
3	17EC63	XLSIDesign	EC	04		03	60	40	100	4	
4	17EC64	ComputerCommunicationNetworks	EC	04		03	60	40	100	4	
5	17EC65X	ProfessionalElective-2	EC	03		03	60	40	100	3	
6	17EC66X	OpenElective-2	EC	03		03	60	40	100	3	
7	17ECL67	EmbeddedControllerLab	EC	01-Hour In HourPracti	istruction02- cal	03	60	40	100	2	
8	17ECL68	ComputerNetworksLab	EC	01-Hour In HourPracti	istruction02- cal	03	60	40	100	2	
		TOTAL		Theory: 6hours	22hoursPractical:0	24	480	320	800	26	

17EC651 CellularMobileCommunication 17EC661 DataStructuresUsingC++ 17EC652 AdaptiveSignalFracessing 17EC662 PowerElectronics/ontfor_E&C:tudent;) 17EC652 AdaptiveDirectory 17EC662 Diritel Structures Dociment/Leaflor	Elective-2 OpenElective -2***(ListofferedbyEC/ICBoardonly)	
	ellularMobileCommunication 17EC661 DataStructuresUsingC++	
17EC652 Artificia Neural Networks 17EC662 Digital System Designation Verile g	daptiveSignalProcessing 17EC662 PowerElectronics(nationEdCastudents)	
1/EC005 Bituitiauxeorativetworks	ntificialNeuralNetworks 17EC663 Digital SystemDesignusingVenlog	
17EC654 DigitalSwitchingSystems	igitalSwitchingSystems	

17EC655 Microelectronics ***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:

 $\label{eq:linear} \begin{array}{l} \mbox{Inecandidatehasnopre_requisiteknowledge} \\ \mbox{Thecandidatehasstudiedsimilarcontentcourseduring previous semesters}. \end{array}$

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 open electives hall be documented und theguidance of ProgrammeCoordinatorandAdviser.



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B.E. Electronics&CommunicationEngineering

SL.No			TeachingDepartme		eachingHours /Week		Examina	tion		Credits
	CourseCode	Title		Theory	Practical/Drawing	Durationinhours	SEE Marks	CIE Marks	TotalMarks	
1	17EC71	MicrowaxeandAntennas	EC	04		03	60	40	100	4
2	17EC72	DigitalImageProcessing	EC	04		03	60	40	100	4
3	17EC73	PowerElectronics	EC	04		03	60	40	100	4
4	17EC74X	ProfessionalElective-3	EC	03		03	60	40	100	3
5	17EC75X	ProfessionalElective-4	EC	03		03	60	40	100	3
6	17ECL76	AdvancedCommunicationLab	EC	01-Hour In HourPracti	istruction02- cal	03	60	40	100	2
7	17ECL77	VLSILab.	EC	01-Hour In HourPracti	istruction02- cal	03	60	40	100	2
8	17ECP78	ProjectWorkPhase=I+Project workSeminar	EC		03		-	100	100	2
		TOTAL		Theory:18 hoursPrac Project:09	ticaland	21	420	380	800	24
	+									

	ctive-3	ProfessionalElective-4					
17EC741 M	[ultimediaCommunication	17EC751	DSPAlgorithmsandArchitecture				
17EC742 Bi	iomedicalSignalProcessing	17EC752	IOT andWirelessSensorNetworks				

17EC743	RealTime Systems	17EC753	PattemRecognition
17EC744	Cryptography	17EC754	AdvancedComputerArchitecture
17EC745	CADforVLSI	17EC755	SatelliteCommunication

1. Project Phase – I and Project Seminar: Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on th reportcoveringLiteratureSurvey, Problem identification, Objectives and Methodology and Seminar presentationskill.

SL.No	CourseCode		TeachingDepartme nt	ĩ	eachingHours /Week	Examination				
		Title		Theory	Practical/Drawing	Durationinhours	SEE Marks	CIE Marks	TotalMarks	
1	17EC81	WirelessCellular and LTE4GBroadband	EC	4	-	3	60	40	100	4
2	17EC82	FiberOptics&Networks	EC	4	-	3	60	40	100	4
3	17EC83X	ProfessionalElective-5	EC	3	-	3	60	40	100	3
4	17EC84	Internship/ProfessionalPractice	EC	Indust	vOriented	3	50	50	100	2
5	17ECP85	ProjectWork	EC	-	6	3	100	100	200	6
6	17ECS86	Seminar	EC	-	4	-	-	100	100	1
		TOTAL			11 ojectand :10hours	15	330	370	700	20

Profession	alElective-5	
17EC831	MicroElectroMechanicalSystems	
17EC832	SpeechProcessing	
17EC833	RadarEngineering	
17EC834	Machineleaming	
17EC835	NetworkandCyberSecurity	

 $\label{eq:linearised} 1. Internship (Professional Practice: 4 Weeks internship to be completed between the (VI and VII semester vacation) and /or (VII and VII semester vacation) period. In the second sec$



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SCHEMEOFTEACHINGANDEXAMINATION

B.EElectronics&CommunicationEngineering/TelecommunicationEngineering(CommontoElectronics&CommunicationandTelecommunicationEngineering 2018-19

IIISEMESTER

			TeachingH	ours/Week		Exan	inati o n		Credits
SLNo.	SubiectCode	Title	Theory	Prac. t ical /Drawi ng	Duration	T heorx /Pract icalMarks	I.A.Marks	TotalMarks	
1	15MAT31	EngineeringMathematics-III*	04		03	80	20	100	4
2	15EC32	AnalogElectronics	04		03	80	20	100	4
3	15EC33	Digital Electronics	04		03	80	20	100	4
4	15EC34	Network Analysis	04		03	80	20	100	4
5	15EC35	ElectronicInstrumentation	04		03	80	20	100	4
6	15EC36	Engineering Electromagnetics	04		03	80	20	100	4
7	15ECL37	AnalogElectronicsLab	1	1I+2P	03	80	20	100	2
8	15ECL38	Digital ElectronicsLab	1	1I+2P	03	80	20	100	2
	1	TOTAL	24	6	24	640	160	800	28

*AdditionalcourseforLateralentrystudentsonly:

1 02 02 00 00					~~~~	~~~~~	~~~~~
1 15MATDIP31 AdditionalMathematics-I 05 05 05 80 - 80	 80	 80	03	03	AdditionalMathematics-I	15MATDIP31	1

IVSEMESTER

61 X I		iectCode. Title		ngHours Veek			Credits		
<u>Sl.No</u>	SUBJECTCODE	Little	Theory	Practical / Drawing	Duration	T heory /Prac t icalMarks	I.A. Marks	TotalMarks	
1	15MAT41	EngineeringMathematics-IV*	04		03	80	20	100	4
2	15EC42	Microprocessor	04		03	80	20	100	4
3	15EC43	ControlSystems	04		03	80	20	100	4
4	15EC44	SignalsandSystems	04		03	80	20	100	4
5	15EC45	PrinciplesofCommu nicationSystems	04		03	80	20	100	4
6	15EC46	LinearIntegrated Circuits	04		03	80	20	100	4
7	15ECL47	MicroprocessorLab		1I+2P	03	80	20	100	2
8	15ECL48	Linear ICs and CommunicationLab		1I+2P	03	80	20	100	2
		TOTAL	24	06	24	640	160	800	28

*Additionalcoursefor Lateralentrystudentsonly:

1	15MATDIP41	AdditionalMathematics-II	03	03	80	 80	



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B.E Electronics & Communication Engineering / VSEMESTER

		SI.	s		Title		TeachingHo /Week	ours	Examination						
		No		ectC o de	The		Theory	Practical /Drawing	Duration		ı 1y/Pract alMarks		ATo I sail Mark	Credits	
		1	151	ES51	Managementand Entrepreneurship Developmen	t	04		03	80	20		100	4	
		2	151	EC52	Digital SignalProcessing		04	(0	1	00 4	1	
3	15	EC53		VerilogH1	DL	04]	03	80		20	_	100	4	
4	15	EC54	Ļ	Informa	tionTheory_andCoding	04	1	03	80			20	1	00	4
5	15	XX552	Х	Professio	nalElective-1	03		03	80		20	1	100 3		
6	15	XX562	Х	OpenElecti	ive-1	03		03	80		20		100		3
7	15	ECL5	7	DSPLab			1I+2P	03	80		20			100	2
8	15	ECL5	8	HDLLab)		1I+2P	03	80			20	1	100	2
				T	OTAL	22	06	24		64	0	10	50	800	2

Profession	IElective -1	Open Elective -1*((ListofferedbyEC/TCBoard only)
15EC551	Nanoelectronics	15EC561	Automotive Electronics
15EC552	Switching&FiniteAutomataTheory	15EC562 (bjectOrientedProgrammingUsingC++
15EC553	OperatingSystem	15EC563	51 Microcontroller
15EC554	Electrical Engineering Materials		
15TE555	TransmissionLinesandWaveguides		

1. Professional Elective: Electiverelevanttochosenspecialization/branch.

2. *Ope nElec tive List: Forot herOpenElectivesofferedbyother Boards, refert he Schemeofot herBoards or Consolidated listinVTUWebsite

SCHEMEOFTEACHINGANDEXAMINATION

VISI	EМ	EST	ER									
		SL.	q		-	TeachingH /Week	ours	Examination			_	Credits
		No	ubjectCode	Title		Theory	Prac t ical /Drawing	Duration	Th eory/Pract icalMarks	I.A. Marks	To t alMarks	
		1	15EC61	DigitalCommunication	-	04		(i	8 2	2 1	l 00 4	
		2	15EC62	ARMMicrocontroller&Embedded System	s	04		03	80	20	100	4
3	15	TE6	3 Microwa	aveTheoryandAntennas	-	04		<u>د</u> ٤	3 2	1	00 4	
4	15	EC64	4 Compu	terCommunicationNetworks	04			03	80	20	100	4
5	15	XX65	X Professio	onalElective-2	03	7	03	80	20	100	3	
6	15	XX66	X OpenElec	tive-2	03		03	80	20	100	3	
7	15	ECL	67 Embed	de dC ontrollerLab		1I+2P	03	80	20	100	2	
8	15	TEL6	8 Microwa	aveandAntennas Lab		1I+2P	03	80	20	100	2	
				TOTAL	22	6	24	640	160	800	26	

+			
Professi	onal Elective -2	Open Elect	tive -2*(List offeredbxEC/TCBoard only)
15EC651	CellularMobileCommunication	15EC661	DataStructuresUsingC++
15EC652	Adaptive SignalProcessing	EC662	P wer Electronics
15EC653	ArtificialNeuralNetworks	EC663	I igital SystemDesign usingVerilog
15EC654	DigitalSwitchingSystems		
15TE65	5 ImageProcessing		

1. Professional Elective: Electiverelevanttochosenspecialization/branch.



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B.ETelecommunicationEngineering

2019-20

VIIISEMESTER

+	¥ 111,	SEMESTER								
ş	Sl.No.	Su		TeachingH /Week	ours	Examination				Credit
		bjectCode	Title	Theory	Practical /Drawing	Duration	I.A. Marks	Th eory /Practical Marks	To talMarks	
1	L	15EC81	Wireless Cellular andLTE4G Broadband	4	-	3	20	80	100	4
2	2	15EC82	FiberOpticsandNetworks	4	-	3	20	80	100	4
3	3	15XX83X	Professional Elective-5	3	-	3	20	80	100	3
4	1	15EC84	Intemship/Professional Practice	Industry	Oriented	3	50	50	100	2
5	5	15ECP85	ProjectWork	-	6	3	100	100	200	6
6	5	15ECS86	Seminar	-	4	-	100	-	100	1
			TOTAL	11	10	15	310	390	700	20

Profession	al Elective -5
15EC831	MicroElectroMechanicalSystems
15EC832	Speech Processing
15EC833	RadarEngineering
15EC834	MachineLearning
15TE835	ADHOCWirelessNetworks

1. Intemship / Professional Practice: Tobecarriedbetweenthe(6th and7thSemester)or(7th and8th Semester)Vacationperiod.

B.E Electronics & Communication Engineering / Telecommunication Engineering(CommontoElectronics&CommunicationandTelecommunicationEngineering) 2020-21

III SI	EMESTER	1								
SUNo			TeachingDepartment	Teaching	Hours/Week			mination		Credits
	CourseCode.	Title		Theory	Practical/Drawing	Duration inhours	SEE Marks	CIE Marks	TotalMarks	
1	17MAT31	EngineeringMathematics-III*	Maths	04		03	60	40	100	4
2	17EC32	ElectronicInstrumentation	EC	03		03	60	40	100	3
3	17EC33	AnalogElectronics	EC	04		03	60	40	100	4
4	17EC34	DigitalElectronics	EC	04		03	60	40	100	4
5	17EC35	NetworkAnalysis	EC	04		03	60	40	100	4
6	17EC36	EngineeringElectromagnetics	EC	04		03	60	40	100	4
7	17ECL37	AnalogElectronics Lab	EC	01- HourIn 02- HourPr		03	60	40	100	2
8	17ECL38	DigitalElectronics Lab	EC	01-Hour Ir HourPracti	nstruction02- ical	03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India,ProfessionalEthicsandHumanRights	Humanities	01		01	30	20	50	01
	TOTAL				y: sPractical:06hours	25	510	340	850	28

1. Kannada/ConstitutionofIndia_<u>ProfessionalEthicsandHumanRights:20</u>%ofthe programsoftheInstitutionhavetoteachKannada/ConstitutionofIndia_ProfessionalEthicsand<u>HumanRightsincycle</u> basedconceptduingIII andIV semeste

(i) * All lateral entry students (except B.Scc and idates) have to register for Additional Mathematics - I, which is 03 contact hours per week.

+	6.6		(exceptiblisee and dates in a verore gisterion	uunonanvianena	tites 1, which	isobcontactiou	sperweek.			
	1	17MATDIP31	AdditionalMathematics –I	Maths	03		03	60	 60	
									,	



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IL OF POTT

			TeachingDepartme	TeachingH	ours/Week		Exami	nation		Credits
SLNo.	CourseCode	Title	nt	Theory	Theory Practical/Drawing		SEE Marks	CIE Marks	TotalMarks	
1	17MAT41	EngineeringMathematics-IV*	Maths	04		03	60	40	100	4
2	17EC42	SignalsandSystems	EC	04		03	60	40	100	4
3	17EC43	ControlSystems	EC	04		03	60	40	100	4
4	17EC44	PrinciplesofCommunication Systems	EC	04		03	60	40	100	4
5	17EC45	LinearIntegratedCircuits	EC	04		03	60	40	100	4
6	17EC46	Microprocessor	EC	03		03	60	40	100	3
7	17ECL47	MicroprocessorLab.	EC	01-Hour Inst HourPractica		03	60	40	100	2
8	17ECL48	LinearICsandCommunicationLab	EC	01-Hour Inst HourPractica		03	60	40	100	2
9	17KL/CPH39/49	Kannada/ConstitutionofIndia, ProfessionalEthicsandHumanRights	Humanities	01		01	30	20	50	01
	1	TOTAL	1	Theory:	hoursPractical:06hours	25	510	340	850	28

1. Kannada/ConstitutionofIndia, ProfessionalEthicsandHumanRights: 50% of the programs of the Institution have to teachKannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of the Institution have to teach Kannada/Constitution of India, ProfessionalEthicsandHuman Rights: 50% of the programs of the Institution have to teach Kannada/Constitution of teach Kannada/Constitution 2. AuditCourse:

()*Allateralentrystudents(exceptB.Sccandidates)havetoregisterforAdditionalMathematics-II,whichis03 contacthoursperweek.

1	17MATDIP41	AdditionalMathematics-II	Maths	03	03	60	 60	-

V SEMESTER

			B.	E.:Electro	onics&Communication	nEngineering				
SL No	CourseCode	Title	TeachingDepartment	Teaching /Week	Hours	Examination				Credits
	sautsesaut.	The second secon		Theory	Practical/Drawing	Duration inhours	SEEMarks	CIE Marks	TotalMarks	
1	17ES51	Management and Entrepreneurship Dexelopment	EC	04		03	60	40	100	4
2	17EC52	DigitalSignalProcessing	EC	04		03	60	40	100	4
3	17EC53	VenlogHDL	EC	04		03	60	40	100	4
4	17EC54	InformationTheory&Coding	EC	04		03	60	40	100	4
5	17EC55X	ProfessionalElective-1	EC	03		03	60	40	100	3
6	17EC56X	OpenElective-1	EC	03		03	60	40	100	3
7	17ECL57	DSPLab.	EC	01-Hour I HourPrac	instruction02- tical	03	60	40	100	2
8	17ECL58	HDLLab.	EC	01-Hour I HourPrac	instruction02- tical	03	60	40	100	2
		TOTAL		Theory:	22hoursPractical:0	24	480	320	800	26

Professional	lElective-1	OpenElectiv	e – 1***(ListofferedbyEC/TCBoardonly)	
17EC551	Nanoelectronics	17EC561	AutomotiveElectronics	
17EC552	Switching&Finite Automata Theory	17EC562	ObjectOrientedProgrammingUsingC++	
17EC553	OperatingSystem	17EC563	8051Microcontroller	
17EC554	ElectricalEngineeringMaterials			
17EC555	MCD420MG			

***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:

Inecandidatehasnopre requisiteknowledge. Thecandidatehasstudiedsimilarcontentcourseduringprevioussemesters. 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 theguidanceofProgrammeCoordinator and Adviser.



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VI SEMESTER

B.E. Electronics&CommunicationEngineering

SL.No	CourseCode	Title	TeachingDepartme	I	eachingHours /Week	Examination					
				Theory	Practical/Drawing	Durationinhours	SEE Marks	CIE Marks	TotalMarks		
1	17EC61	DigitalCommunication	EC	04		03	60	40	100	4	
2	17EC62	ARMMicrocontroller&EmbeddedSystems	EC	04		03	60	40	100	4	
3	17EC63	VLSIDesign	EC	04		03	60	40	100	4	
4	17EC64	ComputerCommunicationNetworks	EC	04		03	60	40	100	4	
5	17EC65X	ProfessionalElective-2	EC	03		03	60	40	100	3	
6	17EC66X	OpenElective-2	EC	03		03	60	40	100	3	
7	17ECL67	EmbeddedControllerLab	EC	01-Hour Ir HourPracti	nstruction02- cal	03	60	40	100	2	
8	17ECL68	ComputerNetworksLab	EC	01-Hour Ir HourPracti	nstruction02- ical	03	60	40	100	2	
		TOTAL		Theory: 6hours	22hoursPractical:0	24	480	320	800	26	
Profes	sionalElective	2	OpenElective -2**	*(Listoffere	dbyEC/TCBoardonly)						
		obileCommunication	~~~	DataStructuresUsingC++							
17EC	652 Adaptive	SignalProcessing	17EC662 P	owerElectron	ics(notforE&Cstudents)						

17EC651	CellularMobileCommunication	17EC661	DataStructuresUsingC++
17EC652	AdaptiveSignalProcessing	17EC662	PowerElectronics(notforE&Cstudents)
17EC653	ArtificialNeuralNetworks	17EC663	Digital SystemDesignusingVerilog
17EC654	DigitalSwitchingSystems		

17EC655 Microelectronics

***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 installowed, if: The candidate has no pre-requisite knowledge.

 $The {\tt candidate} has studied similar content course during previous semesters.$

The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s) Registrationto openelectivesshall bedocumented und theguidance of ProgrammeCoordinatorandAdviser.

VII SEMESTER

			B.E.:E		&CommunicationE	ngineering				
SL.No			TeachingDepartme nt	Le	eachingHours /Week		Examina	tion		Credits
	CourseCode	Title		Theory	Practical/Drawing	Durationinhours	SEE Marks	CIE Marks	TotalMarks	
1	17EC71	MicrowaveandAntennas	EC	04		03	60	40	100	4
2	17EC72	DigitalImageProcessing	EC	04		03	60	40	100	4
3	17EC73	PowerElectronics	EC	04		03	60	40	100	4
4	17EC74X	ProfessionalElective-3	EC	03		03	60	40	100	3
5	17EC75X	ProfessionalElective-4	EC	03		03	60	40	100	3
6	17ECL76	AdvancedCommunicationLab.		01-Hour In HourPractio	istruction02- cal	03	60	40	100	2
7	17ECL77	XLSILab		01-Hour In HourPractio	nstruction02- ical	03	60	40	100	2
8	17ECP78	ProjectWorkPhase_I+Project workSeminar	EC		03		-	100	100	2
		TOTAL		Theory:18 hoursPrace Project:091	ticaland	21	420	380	800	24

÷				
	ProfessionalE	lective-3	ProfessionalEle	ective-4
	17EC741	MultimediaCommunication	17EC751	DSPAlgorithmsandArchitecture
	17EC742	BiomedicalSignalProcessing	17EC752	IOT andWirelessSensorNetworks

17EC743	RealTime Systems	17EC753	PattemRecognition
17EC744	Cryptography	17EC754	AdvancedComputerArchitecture
17EC745	CADforVLSI	17EC755	SatelliteCommunication

1. Project Phase – I and Project Seminar: Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on th reportcoveringLiteratureSurvey, Problem identification, Objectives and Methodology and Seminar presentationskill.



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VIII SEMESTER

SLNo	CourseCode		TeachingDepartme nt	ĩ	eachingHours /Week		Examina	tion		Credits
		Title		Theory	Practical/Drawing	Durationinhours	SEE Marks	CIE Marks	TotalMarks	
1	17EC81	WirelessCellular and LTE4GBroadband	EC	4	-	3	60	40	100	4
2	17EC82	FiberOptics&Networks	EC	4	-	3	60	40	100	4
3	17EC83X	ProfessionalElective-5	EC	3	-	3	60	40	100	3
4	17EC84	Internship/ProfessionalPractice	EC	Indust	ryOriented	3	50	50	100	2
5	17ECP85	ProjectWork	EC	-	6	3	100	100	200	6
6	17ECS86	Seminar	EC	-	4	-	-	100	100	1
		TOTAL			11 ojectand ::10hours	15	330	370	700	20

Profession	alElective-5
17EC831	MicroElectroMechanicalSystems
17EC832	SpeechProcessing
17EC833	RadarEngineering
17EC834	Machineleaming
17EC835	NetworkandCyberSecurity

 $\label{eq:linearised} Internship (Professional Practice: 4 Weeks internship to be completed between the (VI and VII semester vacation) and /or (VII and VII semester vacation) period.$



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EEE Department

2016-17

UG

SCHEME OF TEACHING & EXAMINATION

III SEMESTER

ELECTRICAL AND ELECTRONICS ENGINEERING

			Teaching	hours/week		Exan	nination	
Subject	Title	Teaching			Duration		Marks	
Code	1140	Dept.	Theory	Practical	in hours	I. A	Theory/ Practical	Total Marks
10MAT - 31	Engineering Mathematics - III	Mat	04		03	25	100	125
10ES - 32	Analog Electronic Circuits	a	04		03	25	100	125
10ES - 33	Logic Design	a	04		03	25	100	125
10ES - 34	Network Analysis	<u>a</u>	04		03	25	100	125
10EE-35	Electrical and Electronic Measurements And Instrumentation	E&EE	04		03	25	100	125
10EE - 36	Electric Power Generation	E&EE	04		03	25	100	125
10ESL - 37	Analog Electronics Lab	<u>a</u>		03	03	25	50	75
10ESL - 38	Logic Design Lab	a		03	03	25	50	75
		Total	24	06	24	200	700	900

Note : @ indicates concerned discipline. ES (for theory) & ESL (for Lab) in the subject code indicates that the subject is common to electrical and electronics stream consisting of EE/EC/IT/TC/ML/BM branches of engineering. EE indicates, subjects specific to E & EE branch only.



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IV SEMESTER ELECTRICAL AND ELECTRONICS ENGINEERING

Subject	Title	Teaching	Teaching	hours/week					
<u> </u>	Title	D	-		Duration		Marka		
Code		Dept.	heory	Practical	In hours	I. A	Theory/ Practical	Total Marks	
10MAT - 41	Engineering Mathematics - IV	Mat	04		03	25	100	125	
10ES- 42	Microcontrollers	8	04		03	25	25 100		
10ES - 43	Control Systems	8	04		03	25	100	125	
10EE - 44	Field Theory	E&EE	04		03	25	100	125	
10EE-45	Power Electronics	E&EE	04		03	25	100	125	
10EE - 46	Transformers and Induction Machines	E&EE	04		03	25	100	125	
10ESL - 47	Microcontrollers Lab	8		03	03	25	50	75	
10EEL - 48	Power Electronics Lab	E&EE		03	03	25	50	75	
		Total	24	06	24	200	700	900	

Note : @ indicates concerned discipline.ES (for theory) & ESL (for Lab) in the subject code indicates that the subject is common to electrical and electronics stream consisting of EE/EC/IT/TC/ML/BM branches of

engineering. EE indicates, subjects specific to E & EE branch only.

V SEMESTER

Teaching Hrs / Examination Week Subject Teaching S1. Duration Marks Title of the Subject No. Code Dept. Theory Practical Theory / IA Total (Hrs) Practical Management and 10AL51 100 01 a 4 3 25 125 -Entrepreneurship 02 10EE52 Signals and Systems E&EE 4 25 100 -3 125 03 10EE53 Transmission and Distribution E&EE 4 3 25 125 -100 D.C. Machines and Synchronous 10EE54 25 E&EE 3 100 125 04 4 -Machines 05 10EE55 Modern Control theory E&EE 4 _ 3 25 100 125 10EE56 E&EE 06 Linear IC's and Applications 4 -3 25 100 125 Measurements and Circuit 07 10EEL57 E&EE 3 3 25 75 -50 Simulation Laboratory Transformers and Induction 08 10EEL58 E&EE 3 3 25 50 75 _ Machines Laboratory 24 Total 24 06 200 700 900

ELECTRICAL AND ELECTRONICS ENGINEERING

@ Any Engineering department or department of Business study.



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ELECTRICAL AND ELECTRONICS ENGINEERING

				Teac	hing		Exam	ination	
S1.	Subject	Title of the Subject	Teaching	Hrs / V	Week		2		
No.	Code	The of the Subject	Dept.			Duration		Marks	
				Theory Practical		(Hrs)	IA	Theory / Practical	Total
		Power System							
1	10EE61		E&EE	4	-	3	25	100	125
		Analysis and Stability							
2	10EE62	Switchgear & Protection	E&EE	4	-	3	25	100	125
3	10EE63	Electrical Machine Design	E&EE	4	-	3	25	100	125
4	10EE64	Digital Signal Processing	E&EE	4	-	3	25	100	125
5	10EE65	Computer Aided Electrical Drawing	E&EE	1	3	3	25	100	125
6	10EE66X	Elective-I (Group A)	E&EE	4	-	3	25	100	125
7	10EEL67	D.C. Machines and Synchronous Machines Laboratory	E&EE	•	3	3	25	50	75
8	10EEL68	Control Systems Laboratory	E&EE	-	3	3	25	50	75
	Total			21	09	24	200	700	900

Elective-I (Group A) 10EE661-Opration Research 10EE662 - Advanced Power Electronics 10EE663 - Fuzzy Logic

10EE664 - Object Oriented Programming using C++ 10EE665 - Embedded Systems 10EE666 - Electrical Engineering Materials

VII SEMESTER

ELECTRICAL AND ELECTRONICS ENGINEERING

				1	ing Hrs / /eek		Exam	ination	
Sl. No.	Subject Code	Title of the Subject	Teaching Dept.			Duration		Marks	
110.	Code		Dept.	Theory	Practical	(Hrs)	IA	Theory / Practical	Total
1	10EE71	Computer Techniques in Power System Analysis	E&EE	4	•	3	25	100	125
2	10EE72	Electrical Power Utilization	E&EE	4	-	3	25	100	125
3	10EE73	High Voltage Engineering	E&EE	4	-	3	25	100	125
4	10EE74	Industrial Drives and Applications	E&EE	4	•	3	25	100	125
5	10EE75X	Elective-II (Group B)	E&EE	4	-	3	25	100	125
6	10EE76X	Elective-III (Group C)	E&EE	4	-	3	25	100	125
7	10EEL77	Relay and High Voltage Laboratory	E&EE	-	3	3	25	50	75
8	Power System Simulation		E&EE	-	3	3	25	50	75
	Total			24	06	24	200	700	900

Elective-II (Group B) 10EE751 - HVDC Transmission

10EE752 - Programmable Logic Controllers

10EE753 - Artificial Neural Network

10EE754 - Operating System

10EE755 - Digital System with VHDL

10EE756 - Testing and Commissioning of Electrical Equipment

Elective-III (Group C)

10EE761 - Power System Planning

10EE762 - Computer Control of Electrical Drives

10EE763 - Data Structure

10EE764 - VLSI Circuits and Design

10EE765 - Micro & Smart System Technology

10EE766 - Electromagnetic Compatibility



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VIII SEMESTER

ELECTRICAL AND ELECTRONICS ENGINEERING

~			-		ing Hrs / /eek		E	amination	
Sl. No.	Subject Code	Title of the Subject	Teaching Dept.			Duration		Marks	
110.	Code	Subject	Theory Practical		(Hrs)	IA	Theory / Practical	Total	
1	10EE81	Electrical Design, Estimation and Costing	E&EE	4	•	3	25	100	125
2	10EE82	Power System Operation and Control	E&EE	4	-	3	25	100	125
3	10EE83X	Elective-IV (Group D)	E&EE	4	-	3	25	100	125
4	10EE84X	Elective-V (Group E)	E&EE	4	-	3	25	100	125
5	10EEP85	Project Work	E&EE	-	6	3	100	100	200
6	10EES86	Seminar (on a latest topic relevant to the branch and independent of the project work)	E&EE	-	3	-	50	-	50
		Total		16	09	15	250	500	750

Elective-IV (Group-D)

10EE831 - Reactive Power Management

10EE832 - Flexible A.C. Transmission Systems (FACTS)

10EE833- Advanced Instrumentation System

10EE834 - AI Applications to Power Systems

10EE835 - Data Base Management Systems (DBMS)

10EE836 - Renewable Energy Sources

Elective-V (Group-E)

10EE841 - Power Systems Dynamics and Stability

10EE842 - Energy Auditing & Demand Side Management

10EE843 - Data communications and Networking

10EE844 - Electrical Distribution Systems

10EE845 - Insulation Engineering

10EE846 - Intellectual Property Rights

10EE847 - Electrical Power Quality



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2017-18

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI SCHEME OF TEACHING AND EXAMINATION - 2015-16 B.E. ELECTRICAL AND ELECTRONICS ENGINEERING CHOICE BASED CREDIT SYSTEM (CBCS)												
III SE	MESTER				Teaching	- U - mer						
				벌	/We			Exa	nination		1	
SL. No Subject Code Subject (Course) Subject Title Title No No<												
1 15MAT31 Core Subject Engineering Mathematics-III Mathematics 04 03 20 80 100 4												
2	15EE32	Core Subject	Electric Circuit Analysis	EEE	04		03	20	80	100	4	
3	15EE33	Core Subject	Transformers and Generators	EEE	04		03	20	80	100	4	
4	15EE34	Core Subject	Analog Electronic Circuits	EEE	04		03	20	80	100	4	
5	15EE35	Core Subject	Digital System Design	EEE	04		03	20	80	100	4	
6	15EE36	Foundation Course	Electrical and Electronic Measurements	EEE	04		03	20	80	100	4	
7	15EEL37	Laboratory	Electrical Machines Laboratory -1	EEE	01-Hour Ins 02-Hour Pra		03	20	80	100	2	
8	15EEL38	Laboratory	Electronics Laboratory	EEE	01-Hour Ins 02-Hour Pra		03	20	80	100	2	
Theory:24 hours 24 160 640 800 28 TOTAL Practical: 06 hours 24 160 640 800 28												

in a said discipline of study.

2. FoundationCourse: The courses based upon the content that leads to Knowledge enhancement.

			B.E. ELECTRICAL A			ING					
VSEME	CTER		CHOICE BAS	ED CREDIT SYS	TEM (CBCS)						
VOLME	SILK				Teaching Hou	urs/Week		Exc	mination		
Sl. No	Subject Code	Subject (Course)	Title	T caching Dept.	Theory	Practical/ Drawing	Duration in hours	LA. Marks	Theory/ Practical Marks	Total Marks	Credits
1	15MAT41	Core Subject	Engineering Mathematics-IV	Math - matics	04		03	20	80	100	4
2	15EE42	Core Subject	Power Generation and Economics	EEE	04		03	20	80	100	4
3	15EE 43	Core Subject	Transmission and Distribution	EEE	04		03	20	80	100	4
4	15EE 44	Core Subject	Electric Motors	EEE	04		03	20	80	100	4
5	15EE 45	Core Subject	Electromagnetic Field Theory	EEE	04		03	20	80	100	4
6	15EE 46	Foundation Course	Operational Amplifiers and Linear ICs	EEE	04		03	20	80	100	4
7	15EE L47	Laboratory	Electrical Machines Laboratory -2	EEE	01-Hour Instruc 02-Hour Practic		03	20	80	100	2
8	15EEL48	Laboratory	Op- amp and Linear ICs Laboratory	EEE	01-Hour Instruc 02-Hour Practic		03	20	80	100	2
		1		TOTAL	Theory:24 hour Practical: 06 he		24	160	640	800	2

2. Foundation Course: The courses based upon the content that leads to Knowledge enhancement



15EE554

Special Electrical Machines

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V SEMESTER												
V SEI	MESTER											
SI. No	Subject Code	Subject (Course)	Title		Teaching Department	Teach	ning Hours /Week Jass Draw CC Draw Draw Draw Draw	Duration in hours	Exami Practical Marte	rv. Warks	Total Marks	Credits
1	15EE51	Core Subject	Management and Entrepreneurship		EEE	04		03	80	20	100	4
2	15EE52	Core Subject	Microcontroller		EEE	04		03	80	20	100	4
3	15EE53	Core Subject	Power Electronics		EEE	04		03	80	20	100	4
4	15EE54	Core Subject	Signals and Systems					03	80	20	100	4
5	15EE55X	Professional Elective	Professional Electiv	rofessional Elective – I		03		03	80	20	100	3
6	15EE56Y	Open Elective	Open Elective - I	Open Elective - I		03		03	80	20	100	3
7	15EEL57	Laboratory	Microcontroller Lab	oratory	EEE		Instruction Practical	03	80	20	100	2
8	15EEL58	Laboratory	Power Electronics Laboratory		EEE		Instruction Practical	03	80	20	100	2
		•		Т	OTAL		22hours al: 06 hours	24	160	640	800	26
				1	Elective							
	P	rofessional Elec	tive	o)ffered l	by the De	Open Electiv partment of Electric		ectronic	s Enginee	ring	
	litto			Courses t Code 15E				Title				
15	15EE551 Introduction to Nuclear Power			15EE	561	Electro	nic Communication	systems				
1	5EE552	Electrical Eng	ineering Materials	15EE	562	Program	nmable Logic contr	ollers				
15	15EE553 Estimating and Costing			15EE	563	Renewable Energy Systems						
		E555 Esumating and Cosung										

15EE564

Business Communication



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	VI SEMESTER										
VI SE	Teaching Henry (Weak Framination										
				-	Tea	aching Hours /Week		Exami	nation		4
SI. No	Subject Code	Subject (Course)	Title	Teaching Department	Theory	Practical/ Drawing	Duration in hours	Theory/ Practical Marks	L.A. Marks	Total Marks	Credits
1	15EE61	Core Subject	Control Systems	EEE	04		03	80	20	100	4
2	15EE62	Core Subject	Power System Analysis - 1	EEE	04		03	80	20	100	4
3	15EE63	Core Subject	Digital Signal Processing	EEE	04		03	80	20	100	4
4	15EE64	Core Subject	Electrical Machine Design	EEE	04		03	80	20	100	4
5	15EE65X	Professional Elective	Professional Elective – II	EEE	03	-	03	80	20	100	3
6	15EE66Y	Open Elective	Open Elective - II	EEE	03	-	03	80	20	100	3
7	15EEL67	Laboratory	Control System Laboratory		02-I	Hour Instruction Hour Practical	03	80	20	100	2
8	15EEL68	Laboratory	Digital Signal Processing Laboratory	EEE		Iour Instruction Iour Practical	03	80	20	100	2
				TOTAL		ory:22 hours ctical: 06 hours	24	160	640	800	26
				Elective							
		Professional	Elective	Offere	l by fl	Open Ele he Department of Elect		Flectro	nics Eng	ineering	
	rses under 15EE65X		Title	Courses un Code 15EE	der	the partment of Lett	Tit				<u> </u>
15	5EE651	Computer Aid	led Electrical Drawing	15EE661		Artificial Neural Ne	tworks a	nd Fuzz	ry logic		
15	15EE652 Advanced Power Electronics			15EE662		Sensors and Transd	ucers				
15	15EE653 Energy Audit and Demand side Management			15EE663		Batteries and Fuel Cells for Commercial, Military and Space Applications				nd	
15	15EE654 Solar and Wind Energy			15EE664		Industrial Servo Control Systems					



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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

SCHEME OF TEACHING AND EXAMINATION - 2015-16

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING CHOICE BASED CREDIT SYSTEM (CBCS)

 TT C	123.4	THO:	TE	

15EE742

15EE743

15EE744

Utilization of Electrical Power

Carbon Capture and Storage

Power System Planning

VII SI	EMESTER										
				-		Hours/Week		Exa	mination		
SI. No	Course Code	Subject (Course)	Title	Teaching Department	Theory	Practical/ Drawing	Duration in hours	L.A. Marks	Theory/ Practical Marks	Total Marks	Credits
1	15EE71	Core Subject	Power System Analysis - 2	EEE	04	-	03	20	80	100	4
2	15EE72	Core Subject	Power System Protection	EEE	04	-	03	20	80	100	4
3	15EE73	Core Subject	High Voltage Engineering	EEE	04	-	03	20	80	100	4
4	15EE74X	Professional Elective	Professional Elective – III	EEE	04	-	03	20	80	100	3
5	15EE75Y	Professional Elective	Professional Elective – IV	EEE	04	-	03	20	80	100	3
6	15EEL76	Laboratory	Power system Simulation Laboratory	EEE	01-Hour In 02-Hour P		03	20	80	100	2
7	15EEL77	Laboratory	Rely and High Voltage Laboratory	EEE	8 01-Hour Instruction 02-Hour Practical		03	20	80	100	2
8	15EEP78	Project Phas	e – I + Seminar	EEE				100	-	100	2
			т	OTAL	Theory:24 Practical:		21	240	560	800	24
			Electiv	e							
	Professional Elective – III					Profession	al Elect	ive – IV			
	Courses under Title Code 15EE74X			Courses Code 18	s under SEE75Y			Title	•		
15EE				15EE7	51	FACTs and H	VDC 1	Tansmi	ssion		

15EE752

15EE753

15EE754

Testing and Commissioning of Power System

Spacecraft Power Technologies

Apparatus

Industrial Heating



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			CHOICE BASED C	REDIT	SYSTE	EM (CBCS)					
VIIIS	EMESTER										
					Teac	hing Hours /Week		Exami	ination		
SL No	Course Code	Subject (Course)	Title	Teaching Department	Theory	Practical/ Drawing	Duration in hours	LA. Marks	Theory/ Practical Marks	Total Marks	Credits
1	15EE81	Core Subject	Power System Operation and Control	EEE	04	-	03	20	80	100	4
2	15EE82	Core Subject	Industrial Drives and Applications	EEE	04	-	03	20	80	100	4
3	15EE83X	Professional Elective	Professional Elective – V	EEE	03	-	03	20	80	100	3
4	15EE84	Core Subject	Internship / Professional Practice	EEE	In	idustry Oriented	03	50	50	100	2
5	15EEP85	Core Subject	Project Work Phase -II	EEE		06	03	100	100	200	6
6	15EES86	Core Subject	Seminar	EEE		04		100		100	1
				TOTAL		ry:11 hours ical: 10 hours	15	310	390	700	20
			Professio	nal Electi	ve – V						\neg
	es under 15EE83X				Title						
15EE	831	Smart Grid									
15EE	832	-	Operation and Maintenance of Solar Electric Systems								
15EE	833	Ŭ,	Distributed Generation								
15EE	834	Power System in Emergencies									



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2018-19

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS)

B.E: ELECTRICAL AND ELECTRONICS ENGINEERING CHOICE BASED CREDIT SYSTEM (CBCS)

Ш	III SEMESTER												
SI.			Teaching	Teaching	Hours /Week				_	Credits			
No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks				
1	17MAT31	Engineering Mathematics-III (Core)	Mathematics	04		03	60	40	100	4			
2	17EE32	Electric Circuit Analysis (Core)	EEE	04		03	60	40	100	4			
3	17EE33	Transformers and Generators (Core)	EEE	04		03	60	40	100	4			
4	17EE34	Analog Electronic Circuits (Core)	EEE	04		03	60	40	100	4			
5	17EE35	Digital System Design (Core)	EEE	04		03	60	40	100	4			
6	17EE36	Electrical and Electronic Measurements (Foundation course)	EEE	03		03	60	40	100	3			
7	17EEL37	Electrical Machines Laboratory -1	EEE	01-Hour In 02-Hour P		03	60	40	100	2			
8	17EEL38	Electronics Laboratory	EEE		01-Hour Instruction 02-Hour Practical		60	40	100	2			
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01			
	TOTAL				r: 24hours al: 06 hours	25	510	340	850	28			

B.E: ELECTRICAL AND ELECTRONICS ENGINEERING CHOICE BASED CREDIT SYSTEM (CBCS)

SL			Teaching	Teaching H	ours /Week		Exami	nation		Credits
SI. No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics-IV (Core)	Mathematics	04		03	60	40	100	4
2	17EE42	Power Generation and Economics (Core)	EEE	04		03	60	40	100	4
3	17EE43	Transmission and Distribution (Core)	EEE	04		03	60	40	100	4
4	17EE44	Electric Motors (Core)	EEE	04		03	60	40	100	4
5	17EE45	Electromagnetic Field Theory (Core)	EEE	04		03	60	40	100	4
6	17EE46	Operational Amplifiers and Linear ICs (Foundation course)	EEE	03		03	60	40	100	3
7	17EEL47	Electrical Machines Laboratory -2	EEE	01-Hour Instru 02-Hour Pract		03	60	40	100	2
8	17EEL48	Op- amp and Linear ICs Laboratory	EEE		01-Hour Instruction 02-Hour Practical		60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
		•	TOTAL	Theory: 241 Practical: 06		25	510	340	850	28



V SEMESTER

THE OXFORD COLLEGE OF ENGINEERING

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SI.		Title	Teaching Department	Teaching	Hours /Week		Exami	nation		Credits
No	Course Code			Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EE51	Management and Entrepreneurship	EEE	04		03	60	40	100	4
2	17EE52	Microcontroller(Core)	EEE	04		03	60	40	100	4
3	17EE53	Power Electronics(Core)	EEE	04		03	60	40	100	4
4	17EE54	Signals and Systems(Core)	EEE	04		03	60	40	100	4
5	17EE55X	Professional Elective – I	EEE	03		03	60	40	100	3
6	17EE56Y	Open Elective - I	EEE	03		03	60	40	100	3
7	17EEL57	Microcontroller Laboratory	EEE	02-Hour I		03	60	40	100	2
8	17EEL58	Power Electronics Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
	TOTA				22hours : 06 hours	24	480	320	800	26

Professional	Elective-1		Open Electiv	e – 1*** (List offered by EEE Board only)
17EE551	Introduction to Nuclear Power		17EE561	Electronic Communication systems
17EE552	17EE552 Electrical Engineering Materials			Programmable Logic controllers
17EE553	Estimating and Costing		17EE563	Renewable Energy Systems
17EE554	Special Electrical Machines		17EE564	Business Communication

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2017-2018 Choice Based Credit System (CBCS) B.E: ELECTRICAL AND ELECTRONICS ENGINEERING CHOICE BASED CREDIT SYSTEM (CBCS)

VIS	EMESTER	CHOIC	CE BASED CR							
SI.	Course	Title	Teaching Department		ng Hours Veek		Examin	nation		Credits
No	Code			Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EE61	Control Systems(Core)	EEE	04		03	60	40	100	4
2	17EE62	Power System Analysis – 1(Core)	EEE	04	04		60	40	100	4
3	17EE63	Digital Signal Processing(Core)	EEE	04		03	60	40	100	4
4	17EE64	Electrical Machine Design(Core)	EEE	04		03	60	40	100	4
5	17EE65X	Professional Elective – II	EEE	03		03	60	40	100	3
6	17EE66Y	Open Elective - II	EEE	03		03	60	40	100	3
7	17EEL67	Control System Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17EEL68	Digital Signal Processing Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
			TOTAL	Theory:22hours Practical: 06 hours		Core Course	480	320	800	26

Professional I		Open Elective -	2*** (List offered by EEE Board only)
17EE651	Computer Aided Electrical Drawing	17EE661	Artificial Neural Networks and Fuzzy logic
17EE652	Advanced Power Electronics	17EE662	Sensors and Transducers
17EE653	Energy Audit and Demand side Management	17EE663	Batteries and Fuel Cells for Commercial, Military and Space Applications
17EE654	Solar and Wind Energy	17EE664	Industrial Servo Control Systems



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B.E: ELECTRICAL AND ELECTRONICS ENGINEERING CHOICE BASED CREDIT SYSTEM (CBCS)

	EMESTER		Teaching	Teaching	Hours /Week	l	Examina	ation	.	Credits
SI. No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EE71	Power System Analysis – 2(Core)	EEE	04		03	60	40	100	4
2	17EE72	Power System Protection(Core)	EEE	04		03	60	40	100	4
3	17EE73	High Voltage Engineering(Core)	EEE	04		03	60	40	100	4
4	17EE74X	Professional Elective – III	EEE	03		03	60	40	100	3
5	17EE75Y	Professional Elective – IV	EEE	03		03	60	40	100	3
6	17EEL76	Power system Simulation Laboratory	EEE	01-Hour Ii 02-Hour P		03	60	40	100	2
7	17EEL77	Rely and High Voltage Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17EEP78	Project Work Phase-I + Project work Seminar	EEE		03			100	100	2
	•	TOTAL	•	Theory:18 Practical 09 hours	8 hours and Project:	21	420	380	800	24

Professional		Professional E	
17EE741	Advanced Control Systems	17EE751	FACTs and HVDC Transmission
17EE742	Utilization of Electrical Power	17EE752	Testing and Commissioning of Power System Apparatus
17EE743	Carbon Capture and Storage	17EE753	Spacecraft Power Technologies
17EE744	Power System Planning	17EE754	Industrial Heating

B.E: ELECTRICAL AND ELECTRONICS ENGINEERING CHOICE BASED CREDIT SYSTEM (CBCS)

			Teaching	Teachin	g Hours /Week		Examin	ation		Credits
SI. No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17EE81	Power System Operation and Control (Core)	EEE	4	-	3	60	40	100	4
2	17EE82	Industrial Drives and Applications(Core)	EEE	4	-	3	60	40	100	4
3	17EE83X	Professional Elective-5	EEE	3	-	3	60	40	100	3
4	17EE84	Internship/ Professional Practice (Core)	EEE	Indus	stry Oriented	3	50	50	100	2
5	17EEP85	Project Work-II(Core)	EEE	-	6	3	100	100	200	6
6	17EES86	Seminar (Core)	EEE	-	4	-	-	100	100	1
		TOTAL			11 hours and Seminar:	15	330	370	700	20

Professiona	Elective -5
17EE831	Smart Grid
17EE832	Operation and Maintenance of Solar Electric
	Systems
17EE833	Integration of Distributed Generation
17EE834	Power System in Emergencies



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			VISVESVARAYA TECHNOL Scheme of Teaching tcome Based Education(OBE) a (Effective from the	and Examin and Choice Ba	ation ised C	2018 – redit	- 19 Systen					
III S	EMES	FER	1			ng Hour						
					/Week				Exam	ination		
SL No			Course Title	Teaching Department	Theory Lecture Tutorial		Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	Р	-	Ŭ	S 2	-	
1	BSC	18MAT31	Transform Calculus, Fourier Series and Numerical Techniques (Common to all Branches)	Mathematics	2	2		03	40	60	100	3
2	PCC	18EE32	Electric Circuit Analysis	EEE	3	2		03	40	60	100	4
3	PCC	18EE33	Transformers and Generators	EEE	3	0		03	40	60	100	3
4	PCC	18 EE 34	Analog Electronic Circuits	EEE	2	2		03	40	60	100	3
5	PCC	18 EE 35	Digital System Design	EEE	3	0		03	40	60	100	3
6	PCC	18 EE 36	Electrical and Electronic Measurements	EEE	3	0		03	40	60	100	3
7	PCC	18 EE L37	Electrical Machines Laboratory -1	EEE		2	2	03	40	60	100	2
8	PCC	18 EE L38	Electronics Laboratory	EEE		2	2	03	40	60	100	2
9 PSWC		18KVK39/49 18KAK39/49	Vyavaharika Kannada (Kannada for communication)/ Aadalitha Kannada (Kannada for Administration)	HSMC		2			100		100	1
9	HS		OR	HSMC							100	1
			Constitution of India, Professional	1	1			02	40	60	1	
		18CPC39	Ethics and Cyber Law		•			jective type questions				
			· · · · · · · · · · · · · · · · · · ·	I	16	10		24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					17	12	1	26	360	540	1	



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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)

IVS	EMEST	ER										
					Teachin	g Hours	/Week		Exami	nation		
SI. No		Course and Course code	Course Title	Teaching Department	Theory Lecture	Tutoria	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	Р		-		_	
1	BSC	18MAT41	Complex analysis, probability and statistical methods	Mathematics	2	2		03	40	60	100	3
2	PCC	18 EE42	Power Generation and Economics	EEE	3	0		03	40	60	100	3
3	PCC	18 EE43	Transmission and Distribution	EEE	3	2		03	40	60	100	4
4	PCC	18 EE44	Electric Motors	EEE	3	0		03	40	60	100	3
5	PCC	18 EE45	Electromagnetic Field Theory	EEE	2	2		03	40	60	100	3
6	PCC	18 EE46	Operational Amplifiers and Linear ICs	EEE	3	0		03	40	60	100	3
7	PCC	18 EEL47	Electrical Machines Laboratory -2	EEE		2	2	03	40	60	100	2
8	PCC	18 EEL48	Op- amp and Linear ICs Laboratory	EEE		2	2	03	40	60	100	2
		18KVK39/49	Vyavaharika Kannada (Kannada for communication)/			2			100			
9	HSMC	18KAK39/49	Aadalitha Kannada (Kannada for Administration)	HSMC		-			100		100	1
	H		OR	ļ								
		18CPC49	Constitution of India, Professional Ethics and Cyber Law		1			02	40	60		
			Edites and Cyber Law	Examination is by objective type questions TOTAL 16 10 24 420 480						\vdash		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					17	12		26	360	540	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	

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)

V SEI	MESTER		1		Teac	hing H	ours					
						Week			Exam	ination		
SI. No		rse and rse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Fotal Marks	Credits
					L	Т	Р		-			
1	PCC	18 EE51	Management and Entrepreneurship	EEE	3	0		03	40	60	100	3
2	PCC	18 EE52	Microcontroller	EEE	3	2		03	40	60	100	4
3	PCC	18 EE53	Power Electronics	EEE	3	2		03	40	60	100	4
4	PCC	18 EE54	Signals and Systems	EEE	3			03	40	60	100	3
5	PCC	18 EE55	Electrical Machine Design	EEE	3			03	40	60	100	3
6	PCC	18 EE56	High Voltage Engineering	EEE	3			03	40	60	100	3
7	PCC	18 EEL57	Microcontroller Laboratory	EEE		2	2	03	40	60	100	2
8	PCC	18 EEL58	Power Electronics Laboratory	EEE		2	2	03	40	60	100	2
9	HSMC	18CIV 59	Environmental Studies	Civil/ Environmental [Paper setting: Civil Engineering Board]	1			02	40	60	100	1
		•	·	TOTAL	18	10	04	26	360	540	900	25



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			VESVARAYA TECHNOLO Scheme of Teaching a e Based Education(OBE) an (Effective from the a	and Exan d Choice	nination Based	2018 Credit	- 19 t Systen								
VI SE	MESTER														
					Teachi	ng Hours		<u> </u>	Exam	ination					
SL No		se and se code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical Drawing	Duration in hours	CIE Marks	SEEMarks	Fotal Marks	Credits			
					L	Т	Р		-						
1	PCC	18 EE61	Control Systems	EEE	3	2		03	40	60	100	4			
2	PCC	18 EE62	Power System Analysis - 1	EEE	3	2		03	40	60	100	4			
3	PCC	18 EE63	Digital Signal Processing	EEE	3	2	-	03	40	60	100	4			
4	PEC	18 EE64X	Professional Elective - 1	EEE	3			03	40	60	100	3			
5	OEC	18 EE65X													
6	PCC	18 EEL66	Control System Laboratory	EEE	-	2	2	03	40	60	100	2			
7	PCC	18 EEL.67	Digital Signal Processing Laboratory	EEE	-	2	2	03	40	60	100	2			
8	MP	18 EEMP68	Mini-project		-	-	2	03	40	60	100	2			
9	Internship	-	Internship	To be carri and VIII se		ing the v	vacation/s	of VI an	d VII se	mesters	and /or \	IIV			
				TOTAL	15	10	06	24	320	480	800	24			
Note:	PCC: Profess	ional core, PEC	C: Professional Elective, OE: Open	i Elective, M	IP: Mini-p	oroject.									
			Professio	onal Electiw											
und	ourse code er18XX64X			Cot	ırse Title										
18 EE			on to Nuclear Power												
	18 EE642 Electrical Engineering Materials														
	18 EE643 Computer Aided Electrical Drawing														
18 EE	644	Embeddee	d System												
18 EE	8 EE645 Object Oriented Programming using C++														
	8 EE645 Object Oriented Programming using C++														



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		VISV	ESVARAYA TECHNOLO	GICAL	UNIVE	RSITY	. BELA	GAV				
			Scheme of Teaching									
		Outcom	e Based Education(OBE) an					CR	CS)			
		outcom	(Effective from the					(0.5	00)			
VILS	EMESTER		(Latecure from the	academic	jear 20	10 - 12	7					
111.3			1	1	Teachi	ing Hours	/Week	I	Exami	ination		
						_	2 -					1
SL	Cours	e and		Teaching Department	Theory Lecture	Tutorial	Practical Drawing	Duration in hours	Marks	SEE Marks	Total Marks	Credits
No	Course	code	Course Title	part	E H	Į.	Tac Dran	ê Ê	W	W	W	ě.
				De De			4	1	CIE	SEE	ota	-
					L	Т	Р	-	- T		-	
1	PCC	18 EE71	Power System Analysis - 2	EEE	2	2		03	40	60	100	3
2	PCC	18 EE72	Power System Protection	BBE	3		-	03	40	60	100	3
3	PEC	18 EE73X		EEE	3			03	40	60	100	3
4	PEC	18 EE74X		BBB	3		-	03	40	60	100	3
5	OEC	18 EE75X		BBB	3			03	40	60	100	3
6	PCC	18 EEL76		EEE		2	2	03	40	60	100	2
7	PCC	18 EEL77	Relay & HV lab	EEE		2	2	03	40	60	100	2
8	Project	18 EEP78	Project Work Phase - 1	BEE			2		100		100	1
9	Internship		Internship	(If not con							it shall b	в
			-	carried out							800	20
Nata	DCC: Destauries	DDC.	Professional Elective.	TOTAL	14	06	06	21	380	420	800	20
Note: 1	PUC. PIOIESSIO	arcore, PEC.	Professional Elective.									
<u> </u>			Professio	onal Elective	- 2							
Cours	e code under	Course Titl			-							
18XX7	73X											
18EE7	31	Solar and Wit	nd Energy									
18EE7		Sensors and T										
18 EE			Distribution Generation.									
18 EE			ntrol Systems									
18 EE	735	Reactive Pow	er Control in Electric Power Syster									
				nal Electives	i - 3							
	e code under	Course Titl	e									
18 EE												
18 EE			Drives and Application									
			of Electrical Power									
18 EE		PLC and S										
18 EE		Smart Grid	_									
18 EE	745	Artificial N	eural Network With Applications to l	Power System	15							



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			e man, engphneipa						, <u>,</u>	**				
	VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2018 – 19													
								(CDC)						
		Oute	ome Based Education(OBE)					(CBC:	5)					
VIIIS	EMESTER		(Effective from th	ie acadei	nic yea	r 2018-	- 19)							
VIII S	ENIEGIER		1	1	Teach	ing Hours	/Week	I	Exam	ination				
SL No		urse and Irse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits		
	PCC		Berne Sector Operation and		L	Т	P		40	(0)	100			
1		18EE81	Power System Operation and Control	EEE	3	-	-	03	40	60	100	3		
2	PEC	18EE82X	Professional Elective - 4	EEE	3			03	40	60	100	3		
3	Project	18EEP83	Project Work Phase - 2				2	03	40	60	100	8		
4 Seminar 18EES84 Technical Seminar 2 03 100 100 1 Completed during the vacation/s of VI and														
5	semesters.)													
	1		I	TOTAL	06		04	15	260	240	500	18		
Course	code	Course Ti		sional Elec	ctives - 4									
	18XX 82X													
18EE8			nd HVDC Transmission											
18EE8.			Estimation and Costing											
18EE8			Vehicles Technologies											
18EE83		-	stem Planning											
		Electrica	Power Quality											
 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 50:25:25.75. 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 50:25:25.75. The 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 50:25:25.75. The 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 50:25:25.75. The marks awarded for the project work phase -2. (ii) 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. 														
examin	ation (SEE) o	onducted sep	on to the project and the performa varately at the departments to which th ot pursued /completed the internship	he student/s	belong to	D.			-					

examination after satisfying the internship requirements. ued /completed the internship, shall be during s versity squ



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	B.E ELECTRIC Outcome Based Educati	SEMESTER -	e Based Credit Sy /I		
		OPEN ELECTIV	8 - A		
Course Code		18EE	65X	CIE Marks	40
Teaching Hours/	Week (L:T:P)	(3:0	:0)	SEE Marks	60
Credits		0	3	Ex am Hours	03
The syllabus on A similar court	has studied the same course during the pre- content of open elective is similar to that of rse, under any category, is prescribed in the ectives shall be documented under the guid	the Departmental cor higher semesters of t	e courses or profes he programme. 'oordinator/ Advis	or/Mentor.	
SI No			Course	Course	e Title
SI NO	Board and the Department offer Electives	ring the SI No	code under 18EE65X		
	Electrical and Electronics	1	18EE651	Industrial Servo Contr	rol Systems
	Engineering	2	18EE652	PLC and SCADA	
	Lagneening	3	18EE653	Renewable Energy Sy	stems
		4	18EE654	Testing and Commissi Equipment	ioning of Electrical

	AND ELECTRONICS ENGINEERI (OBE) and Choice Based Credit Syster		
	SEMESTER - VII		
	OPEN ELECTIVE - B		
Course Code	18EE75X	CIE Marks	40
Teaching Hours/Week (L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03
Students can select any one of the open electives offered		ffered by the parent De	partment (For syllabus,
please refer to the concerned Programme syllabus book of Selection of an open elective shall not be allowed if.	x VTU website vtu.ac.in may be visited.).		

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

B.E ELECTRICAL AND ELECTRONICS ENGINEERING Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

SEA	4ES	TER	- V	П	

	01001001	EK - Y			
	OPEN ELE	CTIV	E - B		
Course Code		18EE7	5X	CIE Marks	40
Teaching Hou	rs/Week (L:T:P)	(3:0:	0)	SEE Marks	60
Credits		03		Exam Hours	03
Selection of an o The candidat The syllabus A similar co	e concerned Programme syllabus book or VTU website vt open elective shall not be allowed if, e has studied the same course during the previous semeste content of open elective is similar to that of the Department urse, under any category, is prescribed in the higher semest lectives shall be documented under the guidance of Programmer openation of the programmer of the semest lectives shall be documented under the guidance of the programmer of the semest lectives shall be documented under the guidance of the programmer of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the semest lectives shall be documented under the guidance of the semest lectives shall be documented under the semest lectives semest lectives shall be documented under the semest lectives sem	rs of the ntal core ters of th	programme. courses or profess e programme.		
			Course	Course	l'itle
SI No	Board and the Department offering the Electives	SI No	code under 18EE75X		
		1	18EE751	Industrial Motors and	Control
	Electrical and Electronics	2	18EE752	Sensors and Transduc	ers
	Engineering	3	18EE753	Electric Vehicles	
		4	18EE754	Energy Conservation	and Audit



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			VISVESVARAYA TECHNOL Scheme of Teaching tcome Based Education(OBE) a (Effective from the	and Examin and Choice Ba	ation ased C	2018 – redit	- 19 Syster					
III S	EMES	TER	1	1								
					/Week	ng Hour	8		Exam	ination		
SL. Course and No Course Code			Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	Р	1 -	- U	~	-	
1	BSC	18MAT31	Transform Calculus, Fourier Series and Numerical Techniques (Common to all Branches)	Mathematics	2	2		03	40	60	100	3
2	PCC	18EE32	Electric Circuit Analysis	EEE	3	2		03	40	60	100	4
3	PCC	18EE33	Transformers and Generators	EEE	3	0		03	40	60	100	3
4	PCC	18 EE 34	Analog Electronic Circuits	EEE	2	2		03	40	60	100	3
5	PCC	18 EE 35	Digital System Design	EEE	3	0		03	40	60	100	3
6	PCC	18 EE 36	Electrical and Electronic Measurements	EEE	3	0		03	40	60	100	3
7	PCC	18 EE L37	Electrical Machines Laboratory -1	EEE		2	2	03	40	60	100	2
8	PCC	18 EE L38	Electronics Laboratory	EEE		2	2	03	40	60	100	2
	IC	18KV K39/49	Vyavaharika Kannada (Kannada for communication)/ Aadalitha Kannada (Kannada for			2			100			
9	HSMC	18KAK39/49	Administration)	HSMC							100	1
	Ŧ		OR									
		18CPC39 Constitution of India, Professional			1			02	40	60		
			Ethics and Cyber Law				is by ob					
					16	10	-	24	420	480		
				TOTAL	OR 17	OR 12	04	OR 26	OR 360	OR 540	900	24



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

					Teachin	g Hours	/Week		Exami	nation		
SI. No		Course and Course code	Course Title	Teaching Department	Theory Lecture	Tutoria	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Fotal Marks	Credits
					L	Т	Р		-			
1	BSC	18MAT41	Complex analysis, probability and statistical methods	Mathematics	2	2		03	40	60	100	3
2	PCC	18 EE42	Power Generation and Economics	EEE	3	0		03	40	60	100	3
3	PCC	18 EE43	Transmission and Distribution	EEE	3	2		03	40	60	100	4
4	PCC	18 EE44	Electric Motors	EEE	3	0		03	40	60	100	3
5	PCC	18 EE45	Electromagnetic Field Theory	EEE	2	2		03	40	60	100	3
6	PCC	18 EE46	Operational Amplifiers and Linear ICs	EEE	3	0		03	40	60	100	3
7	PCC	18 EEL47	Electrical Machines Laboratory -2	EEE		2	2	03	40	60	100	2
8	PCC	18 EEL48	Op- amp and Linear ICs Laboratory	EEE		2	2	03	40	60	100	2
		18KVK39/49	Vyavaharika Kannada (Kannada for communication)/			2			100			
9	HSMC	18KAK39/49	Aadalitha Kannada (Kannada for Administration)	HSMC		-					100	1
	Н		OR	1								
		18CPC49	Constitution of India, Professional Ethics and Cyber Law		1 Exam		 s by obje	02	40	60		
			Edites and Cyber Law	TOTAL	16	10	s by obje	24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					17	12	1 .	26	360	540		

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)

V SEI	MESTER		1	-	I							
						hing H Week	ours		Exam	ination		
SI. No		rse and rse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	Р		-			
1	PCC	18 EE51	Management and Entrepreneurship	EEE	3	0		03	40	60	100	3
2	PCC	18 EE52	Microcontroller	EEE	3	2		03	40	60	100	4
3	PCC	18 EE53	Power Electronics	EEE	3	2		03	40	60	100	4
4	PCC	18 EE54	Signals and Systems	EEE	3			03	40	60	100	3
5	PCC	18 EE55	Electrical Machine Design	EEE	3			03	40	60	100	3
6	PCC	18 EE56	High Voltage Engineering	EEE	3			03	40	60	100	3
7	PCC	18 EEL57	Microcontroller Laboratory	EEE		2	2	03	40	60	100	2
8	PCC	18 EEL58	Power Electronics Laboratory	EEE		2	2	03	40	60	100	2
9	HSMC	18CIV 59	Environmental Studies	Civil/ Environmental [Paper setting: Civil Engineering Board]	1			02	40	60	100	1
				TOTAL	18	10	04	26	360	540	900	25



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		VIS	VESVARAYA TECHNOLO Scheme of Teaching					GAV	[
		Outcom	e Based Education(OBE) an	nd Choice	Based	Credi	t Systen	n (CB	CS)					
			(Effective from the	academic	year 20	18 – 19	9)							
VI SI	EMESTER		1	1	Teachi	ng Hour	Week	·	Param	ination				
SL No		rse and se code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEEMarks	Fotal Marks	Credits		
	I PCC 18 EE61 Control Systems EEE 3 2 03 40 60 100 4													
		18 EE61	Control Systems	EEE	3	2		03				4		
2	PCC	18 EE62	Power System Analysis - 1	EEE	3	2	-	03	40	60	100	4		
3	PCC	18 EE63	Digital Signal Processing	EEE	3	2	-	03	40	60	100	4		
4	PEC	18 EE64X	Professional Elective - 1	EEE	3			03	40	60	100	3		
5	OEC	18 EE65X	Open Elective -A	EEE	3			03	40	60	100	3		
6	PCC	18 EEL66	Control System Laboratory	EEE	-	2	2	03	40	60	100	2		
7	PCC	18 EEL.67	Digital Signal Processing Laboratory	EEE	-	2	2	03	40	60	100	2		
8	MP	18 EEMP68	Mini-project		-		2	03	40	60	100	2		
9	Internship	-	Internship	To be carri and VIII se	emesters.	2								
				TOTAL	15	10	06	24	320	480	800	24		
Note:	PCC: Profess	ional core, PEO	C: Professional Elective, OE: Open			project.								
			Professi											
	ourse code er18XX64X			Co	irse Title									
18 EE		Introducti	ion to Nuclear Power											
18 EE	642	Electrical	Engineering Materials											
18 EE	643	Computer	r Aided Electrical Drawing											
18 EE	644	Embedde	d System											
18 EE	645	Object Or	iented Programming using C++											
Co und 18 EE 18 EE 18 EE 18 EE	ourse code ler18XX64X 6641 6642 6643 6644	Introducti Electrical Computer Embedde	Professi ion to Nuclear Power Engineering Materials r Aided Electrical Drawing d System	TOTAL Elective, M onal Elective	15 IP: Mini-j		06	24	320	480	800			



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	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)													
VILS	VII SEMESTER													
111.3			1	1	Teachi	ing Hours	/Week	I	Exami	ination				
						_	2 -					1		
SL	Cours	e and		Teaching Department	Theory Lecture	Tutorial	Practical Drawing	Duration in hours	Marks	SEE Marks	Total Marks	Credits		
No	Course	code	Course Title	part	E H	Į.	Tac Dran	ê Ê	W	W	W	ě.		
				De De			4	1	CIE	SEE	ota	-		
					L	Т	Р	-	- T		-			
1	PCC	18 EE71	Power System Analysis - 2	EEE	2	2		03	40	60	100	3		
2	PCC	18 EE72	Power System Protection	BBE	3		-	03	40	60	100	3		
3	PEC	18 EE73X		EEE	3			03	40	60	100	3		
4	PEC	18 EE74X		BBB	3		-	03	40	60	100	3		
5	OEC	18 EE75X		BBB	3			03	40	60	100	3		
6	PCC	18 EEL76		EEE		2	2	03	40	60	100	2		
7	PCC	18 EEL77	Relay & HV lab	EEE		2	2	03	40	60	100	2		
8	Project	18 EEP78	Project Work Phase - 1	BEE			2		100		100	1		
9	Internship		Internship	(If not con							it shall b	в		
			-	carried out							800	20		
Nata	DCC: Destauries	DDC.	Professional Elective.	TOTAL	14	06	06	21	380	420	800	20		
Note: 1	PUC. PIOIESSIO	arcore, PEC.	Professional Elective.											
<u> </u>			Professio	onal Elective	- 2									
Cours	e code under	Course Titl			-									
18XX7	73X													
18EE7	31	Solar and Wit	nd Energy											
18EE7		Sensors and T												
18 EE			Distribution Generation.											
18 EE			ntrol Systems											
18 EE	735	Reactive Pow	er Control in Electric Power Syster											
				nal Electives	i - 3									
	e code under	Course Titl	e											
18 EE														
18 EE			Drives and Application											
			of Electrical Power											
18 EE		PLC and S												
18 EE		Smart Grid	_											
18 EE	8 EE745 Artificial Neural Network With Applications to Power Systems													



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	Scheme of Teaching and Examination 2018 – 19 Outcome Based Education(OBE) and Choice Based Credit System (CBCS)													
	(Effective from the academic year 2018 – 19)													
VIIIS	VIII SEMESTER													
VIII S	ENIEGIER		1	1	Teach	ing Hours	/Week	I	Exam	ination				
SL No		urse and Irse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits		
	PCC		Berne Sector Operation and		L	Т	P		40	(0)	100			
1		18EE81	Power System Operation and Control	EEE	3	-	-	03	40	60	100	3		
2	PEC	18EE82X	Professional Elective - 4	EEE	3			03	40	60	100	3		
3	Project	18EEP83	Project Work Phase - 2				2	03	40	60	100	8		
4	Seminar	18EES84 Technical Seminar 2 03 100 100 1 Completed during the vacation/s of VI and												
5 Internship 18EE185 Internship VII semesters and /or VII and VIII 03 40 60 100 3 semesters.)														
TOTAL 06 - 04 15 260 240 500 18														
Course	code	Course Ti		sional Elec	ctives - 4									
	18XX 82X													
18EE8			nd HVDC Transmission											
18EE8.			Estimation and Costing											
18EE8			Vehicles Technologies											
18EE83		-	stem Planning											
		Electrica	Power Quality											
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. (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														
examin	 (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 													

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.



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Outcome Based Education (OBE) and Choice Based Credit System (CBCS) SEMESTER - VI												
OPEN ELECTIVE - A												
Course Code	18EE65X	CIE Marks	40									
Teaching Hours/Week (L:T:P)	(3:0:0)	SEE Marks	60									
Credits	03	Exam Hours	03									
Students can select any one of the open electives offered by please refer to the concerned Programme syllabus book or V Selection of an open elective shall not be allowed if, The candidate has studied the same course during the pro- The syllabus content of open elective is similar to that of A similar course, under any calegory, is prescribed in the Registration to electives shall be documented under the guidest and the statement of the same course of the second secon	"TU website vtu.ac.in may be visited evious semesters of the programme. If the Departmental core courses or p e higher semesters of the programme	1.). rofessional electives. 2.	vartment (For syllabus									

			Course	Course Title
SI No	Board and the Department offering the Electives	SI No	code under 18EE65X	
	Electrical and Electronics	1	18EE651	Industrial Servo Control Systems
	Engineering	2	18EE652	PLC and SCADA
	Engridering	3	18EE653	Renewable Energy Systems
		4	18EE654	Testing and Commissioning of Electrical Equipment

B.E ELECTRICAL AND ELECTRONICS ENGINEERING Outcome Based Education (OBE) and Choice Based Credit System (CBCS) SEMESTER - VII											
OPEN ELECTIVE - B											
18EE75X	CIE Marks	40									
(3:0:0)	SEE Marks	60									
Credits 03 Exam Hours 03											
)	DBE) and Choice Based Credit S SEMESTER - VII OPEN ELECTIVE - B 18EE75X	DBE) and Choice Based Credit System (CBCS) SEMESTER - VII OPEN ELECTIVE - B 18EE75X CIE Marks (3:0:0) SEE Marks									

please refer to the concerned Programme syllabus book or VTU website vtu.ac.in may be visited.). 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.

B.E ELECTRICAL AND ELECTRONICS ENGINEERING Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

	C1123.4	12422				
	SEM	ES1	EK	-	VШ	
_						

	SEN	ESTER - V	11		
	OPEN	ELECTIV	Е-В		
Course Code		18EE	75X	CIE Marks	40
Teaching Hour	s/Week (L:T:P)	(3:0:	0)	SEE Marks	60
Credits		03		Exam Hours	03
The candidat The syllabus A similar cou	pen elective shall not be allowed if, e has studied the same course during the previous set content of open elective is similar to that of the Dep rse, under any calegory, is prescribed in the higher s lectives shall be documented under the guidance of F	rtmental core emesters of th	courses or profess e programme.		
	1				
			Course	Cours	e Title
SI No	Board and the Department offering th Electives	e SI No	Course code under 18EE75X	Cours	æ Title
SI No			code under	Cours Industrial Motors a	
SI No	Electives		code under 18EE75X		nd Control
SI No			code under 18EE75X (18EE751)	Industrial Motors a	nd Control



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III SEMESTER													
					Teachi /Week	ng Hour	8		Exami	ination			
SL No			Course Title	Teaching Department	Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Fotal Marks	Credits	
					L	Т	Р	-	Ŭ	S	-		
1	BSC	18MAT31	Transform Calculus, Fourier Series and Numerical Techniques (Common to all Branches)	Mathematics	2	2		03	40	60	100	3	
2	PCC	18EE32	Electric Circuit Analysis	EEE	3	2		03	40	60	100	4	
3	PCC	18EE33	Transformers and Generators	EEE	3	0		03	40	60	100	3	
4	PCC	18 EE 34	Analog Electronic Circuits	EEE	2	2		03	40	60	100	3	
5	PCC	18 EE 35	Digital System Design	EEE	3	0		03	40	60	100	3	
6	PCC	18 EE 36	Electrical and Electronic Measurements	EEE	3	0		03	40	60	100	3	
7	PCC	18 EE L37	Electrical Machines Laboratory -1	EEE		2	2	03	40	60	100	2	
8	PCC	18 EE L38	Electronics Laboratory	EEE		2	2	03	40	60	100	2	
	0	18KV K39/49	Vyavaharika Kannada (Kannada for communication)/ Aadalitha Kannada (Kannada for	-		2			100				
9	HSMC	18KAK39/49	Administration)	HSMC							100	1	
	-		OR	4					10	60			
		18CPC39	Constitution of India, Professional Ethics and Cyber Law		1 Exan	 nination	 is by ob	02 jective t	40 vne ques	60 stions			
Lanes and Cyber Law						10		24 420 480					
				TOTAL	16 OR	OR	04	OR	OR	OR	900	24	
				101AL	17	12		26	360	540			



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

IVS	EMEST	EK			Teachin	2 Hours	/Week		Exami	nation		<u> </u>
SI. No		Course and Course code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	Р	-	-			
1	BSC	18MAT41	Complex analysis, probability and statistical methods	Mathematics	2	2		03	40	60	100	3
2	PCC	18 EE42	Power Generation and Economics	EEE	3	0		03	40	60	100	3
3	PCC	18 EE43	Transmission and Distribution	EEE	3	2		03	40	60	100	4
4	PCC	18 EE44	Electric Motors	EEE	3	0		03	40	60	100	3
5	PCC	18 EE45	Electromagnetic Field Theory	EEE	2	2		03	40	60	100	3
6	PCC	18 EE46	Operational Amplifiers and Linear ICs	EEE	3	0		03	40	60	100	3
7	PCC	18 EEL47	Electrical Machines Laboratory -2	EEE		2	2	03	40	60	100	2
8	PCC	18 EEL48	Op- amp and Linear ICs Laboratory	EEE		2	2	03	40	60	100	2
		18KVK39/49	Vyavaharika Kannada (Kannada for communication)/			2			100			
9	HSMC	18KAK39/49	Aadalitha Kannada (Kannada for Administration)	HSMC							100	1
	Н		OR									
		18CPC49	Constitution of India, Professional Ethics and Cyber Law		1 Exami		 s by obje	02	40	60		
Etnics and Cyber Law TOTA					16	10 10 1	s by obje	24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					17	12		26	360	540		- ·

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)

V SEI	MESTER		1	-	I							
						hing H Week	ours		Exam	ination		
SI. No		rse and rse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	Т	Р		-			
1	PCC	18 EE51	Management and Entrepreneurship	EEE	3	0		03	40	60	100	3
2	PCC	18 EE52	Microcontroller	EEE	3	2		03	40	60	100	4
3	PCC	18 EE53	Power Electronics	EEE	3	2		03	40	60	100	4
4	PCC	18 EE54	Signals and Systems	EEE	3			03	40	60	100	3
5	PCC	18 EE55	Electrical Machine Design	EEE	3			03	40	60	100	3
6	PCC	18 EE56	High Voltage Engineering	EEE	3			03	40	60	100	3
7	PCC	18 EEL57	Microcontroller Laboratory	EEE		2	2	03	40	60	100	2
8	PCC	18 EEL58	Power Electronics Laboratory	EEE		2	2	03	40	60	100	2
9	HSMC	18CIV 59	Environmental Studies	Civil/ Environmental [Paper setting: Civil Engineering Board]	1			02	40	60	100	1
				TOTAL	18	10	04	26	360	540	900	25



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			VESVARAYA TECHNOLO Scheme of Teaching e Based Education(OBE) ar	and Exan	ninatior	n 2018	- 19						
			(Effective from the										
VI S	EMESTER		1										
					Teachi	ing Hours			Examination				
SL No		rse and rse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical Drawing	Duration in hours	CIE Marks	SEEMarks	Fotal Marks	Credits	
					L	Т	Р	_	-		-		
1	PCC	18 EE61	Control Systems	BEE	3	2	-	03	40	60	100	4	
2	PCC	18 EE62	Power System Analysis - 1	EEE	3	2		03	40	60	100	4	
3	PCC	18 EE63	Digital Signal Processing	BEE	3	2		03	40	60	100	4	
4	PEC	18 EE64X	Professional Elective - 1	BBB	3			03	40	60	100	3	
5	OEC	18 EE65X	Open Elective -A	BBB	3			03	40	60	100	3	
6	PCC	18 EEL66	Control System Laboratory	EEE	-	2	2	03	40	60	100	2	
7	PCC	18 EEL67	Digital Signal Processing Laboratory	EEE	-	2	2	03	40	60	100	2	
8	MP	18 EEMP68	Mini-project				2	03	40	60	100	2	
9	Internship	-	Internship	To be carr and VIII s		ring the	vacation/s	of VI ar	nd VII se	emesters	and /or	VII	
			l	TOTAL	15	10	06	24	320	480	800	24	
							•						
Note:	PCC: Profes	stonal core, PE0	C: Professional Elective, OE: Oper	1 Elective, N	IP: Mini-	project.							
			Professi	onal Electiv	e -1								
-	ourse code ler18XX64X			Co	urse Title								
18 EE		Introducti	Introduction to Nuclear Power										
18 EF	3642		Engineering Materials										
18 EF	3643		r Aided Electrical Drawing										
18 EF	3644	Embedded System											
18 EF	3645	Object Or	Object Oriented Programming using C++										



THE OXFORD COLLEGE OF ENGINEERING (Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi. Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551 E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

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	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)													
VILS	VII SEMESTER													
111.3			1	1	Teachi	ing Hours	/Week	I	Exami	ination				
						_	2 -					1		
SL	Cours	e and		Teaching Department	Theory Lecture	Tutorial	Practical Drawing	Duration in hours	Marks	SEE Marks	Total Marks	Credits		
No	Course	code	Course Title	part	E H	Į.	Tac Dran	ê Ê	W	W	W	ě.		
				De De			4	1	CIE	SET .	ota	-		
					L	Т	Р	-	- T		-			
1	PCC	18 EE71	Power System Analysis - 2	EEE	2	2		03	40	60	100	3		
2	PCC	18 EE72	Power System Protection	BBE	3		-	03	40	60	100	3		
3	PEC	18 EE73X		EEE	3			03	40	60	100	3		
4	PEC	18 EE74X		BBB	3		-	03	40	60	100	3		
5	OEC	18 EE75X		BBB	3			03	40	60	100	3		
6	PCC	18 EEL76		EEE		2	2	03	40	60	100	2		
7	PCC	18 EEL77	Relay & HV lab	EEE		2	2	03	40	60	100	2		
8	Project	18 EEP78	Project Work Phase - 1	BEE			2		100		100	1		
9	Internship		Internship	(If not con							it shall b	в		
			-	carried out							800	20		
Nata	DCC: Destauries	DDC.	Professional Elective.	TOTAL	14	06	06	21	380	420	800	20		
Note: 1	PUC. PIOIESSIO	arcore, PEC.	Professional Elective.											
<u> </u>			Professio	onal Elective	- 2									
Cours	e code under	Course Titl			-									
18XX7	73X													
18EE7	31	Solar and Wit	nd Energy											
18EE7		Sensors and T												
18 EE			Distribution Generation.											
18 EE			ntrol Systems											
18 EE	735	Reactive Pow	er Control in Electric Power Syster											
				nal Electives	i - 3									
	e code under	Course Titl	e											
18 EE														
18 EE			Drives and Application											
			of Electrical Power											
18 EE		PLC and S												
18 EE		Smart Grid	_											
18 EE	8 EE745 Artificial Neural Network With Applications to Power Systems													



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			e man, engphneipa						, <u>,</u>	**			
		V	ISVESVARAYA TECHNO					AVI					
			Scheme of Teaching					(CDC)					
		Oute	ome Based Education(OBE)					(CBC:	5)				
VIIIS	EMESTER		(Effective from th	ie acadei	nic yea	r 2018-	- 19)						
VIII S	ENIEGIER		1	1	Teach	ing Hours	/Week	I	Exam	ination			
SL No	Contact or to the transmission in Distriction in Distriction in the contract of the contract o								CIE Marks	SEE Marks	Total Marks	Credits	
	DCC	PCC POWer System Operation and TUTE 2 02 40 60 100 2											
1		18EE81	8EE81 Control										
2	PEC	18EE82X		EEE	3								
3													
4	4 Seminar 18EES84 Technical Seminar 2 03 100 - 100 1 Completed during the vacation/s of VI and												
5	5 Internship 18EE185 Internship VII semesters and /or VII and VIII 03 40 60 100 3 semesters.)												
	1		I	TOTAL	06		04	15	260	240	500	18	
Course	code	Course Ti		sional Elec	ctives - 4								
	18XX 82X												
18EE8			nd HVDC Transmission										
18EE8.			Estimation and Costing										
18EE8			Vehicles Technologies										
18EE83		-	stem Planning										
	t Work	Electrica	Power Quality										
CIE pr (i) Sing membe The CI questio (ii) Int Particip The CI questio SEE fo (i) Sing	recedure for l gle discipline rs of the Depa E marks awar n and answer erdisciplinar vation of exter E marks awar n and answer or Project We	: The CIE m artment, one (ded for the p session in the y: Continuou nal guide/s, i ded for the p session in the ork Phase - 2 Contribution	arks shall be awarded by a commit of whom shall be the Guide. vroject work phase -2, shall be based e ratio 50:25:25. The marks awarded f us Internal Evaluation shall be grou if any, is desirable. vroject work phase -2, shall be based e ratio 50:25:25. The marks awarded f the n to the project and the performance of	on the eval for the proje p wise at t on the eval for the proje	luation of ect report the colleg luation of ect report	project v shall be ti e level v project v shall be ti	vork phase -2 Re he same for all th vith the participa vork phase -2 Re he same for all th	port, pro e batch ation of port, pro e batch	oject pre mates. all guid oject pre mates.	sentatio les of th sentatio	n skill a ne colle n skill a	and ge. and	
examin	ation (SEE) o	onducted sep	on to the project and the performa varately at the departments to which th ot pursued /completed the internship	he student/s	belong to	D.			-				

examination after satisfying the internship requirements. ued /completed the internship, shall be during s versity squ



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	B.E ELECTRIC Outcome Based Educati	SEMESTER -	e Based Credit Sy /I		
		OPEN ELECTIV	8 - A		
Course Code		18EE	65X	CIE Marks	40
Teaching Hours/	Week (L:T:P)	(3:0	:0)	SEE Marks	60
Credits		0	3	Ex am Hours	03
The syllabus on A similar court	has studied the same course during the pre- content of open elective is similar to that of rse, under any category, is prescribed in the ectives shall be documented under the guid	the Departmental cor higher semesters of t	e courses or profes he programme. 'oordinator/ Advis	or/Mentor.	
SI No			Course	Course	e Title
SI NO	Board and the Department offer Electives	ring the SI No	code under 18EE65X		
	Electrical and Electronics	1	18EE651	Industrial Servo Contr	rol Systems
	Engineering	2	18EE652	PLC and SCADA	
	Lagneening	3	18EE653	Renewable Energy Sy	stems
		4	18EE654	Testing and Commissi Equipment	ioning of Electrical

B.E ELECTRICAL AND ELECTRONICS ENGINEERING Outcome Based Education (OBE) and Choice Based Credit System (CBCS)									
SEMESTER - VII									
OPEN ELECTIVE - B									
Course Code	18EE75X	CIE Marks	40						
Teaching Hours/Week (L:T:P)	(3:0:0)	SEE Marks	60						
Credits	03	Exam Hours	03						
Students can select any one of the open electives offered	by other Departments expect those that are o	ffered by the parent De	partment (For syllabus,						
please refer to the concerned Programme syllabus book	or VTU website vtu.ac.in may be visited.).								
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

B.E ELECTRICAL AND ELECTRONICS ENGINEERING Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

ODE)	and	Choice	Dascu	Crequ
1	SEM	ESTER	- VII	

	SEMES	ГЕК - У	11		
	OPEN ELI	ECTIV	Е-В		
Course Code		18EE7	5X	CIE Marks	40
Teaching Hour	rs/Week (L:T:P)	(3:0:	0)	SEE Marks	60
Credits		03		Exam Hours	03
please refer to th Selection of an o The candidat The syllabus A similar cou	ect any one of the open electives offered by other Departm e concerned Programme syllabus book or VTU website v open elective shall not be allowed if, e has studied the same course during the previous semeste content of open elective is similar to that of the Departme arse, under any category, is prescribed in the higher semes lectives shall be documented under the guidance of Progr	tu.ac.in n rs of the ntal core ters of th	nay be visited.). programme. courses or profess e programme.	ional electives.	an maan (1 of Synabus)
			Course	Cours	æ Title
SI No	Board and the Department offering the Electives	SI No	code under 18EE75X		
		1	18EE751	Industrial Motors a	nd Control
	Electrical and Electronics	2	18EE752	Sensors and Transo	ducers
	Engineering	3	18EE753	Electric Vehicles	
		4	18EE754	Energy Conservati	on and Audit



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BT Department 2016 - 17

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

B.E.-BIOTECHNOLOGY

III	SEMESTE	R								
				Teaching Hours/Week						
Sl No.	Subject Code	Title	Teaching Dept.	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	Credits
1	15MAT-31	Mathematics-III	Mathematics	04		03	20	80	100	4
2	15BT-32	Unit Operations	BT/CHE	04		03	20	80	100	4
3	15BT-33	Biochemistry	BT	04		03	20	80	100	4
4	15BT-34	Microbiology	BT	04		03	20	80	100	4
5	15BT-35	Cell Biology and Genetics	BT	04		03	20	80	100	4
6	15BT-36	Basics of Computer Applications	BT/CSE/ISE/ MCA	04		03	20	80	100	4
7	15BTL-37	Unit Operations Lab	BT/CHE/ME		2L+1I	03	20	80	100	2
8	15BTL-38	Microbiology Lab	BT		2L+1I	03	20	80	100	2
		TOTAL		24	06	24	160	640	800	28

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

B.E.-BIOTECHNOLOGY

IVS	SEMESTE	R								
				Teaching Hours/Week		Examination				
Sl No.	Subject Code	Title	Teaching Dept.	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	Credits
1	15BT-41	Biostatistics and Biomodeling	Mathematics/ BT	04		03	20	80	100	4
2	15BT-42	Biochemical Thermodynamics	BT/CHE/ME	04		03	20	80	100	4
3	15BT-43	Molecular Biology	BT	04		03	20	80	100	4
4	15BT-44	Bioprocess Principles and Calculations	BT/CHE	04		03	20	80	100	4
5	15BT-45	Structural Biology	BT	04		03	20	80	100	4
6	15BT-46	Clinical Biochemistry	BT	04		03	20	80	100	4
7	15BTL-47	Cell and Molecular Biology Lab	BT		2L+1I	03	20	80	100	2
8	15BTL-48	Clinical Biochemistry Lab	BT		2L+1I	03	20	80	100	2
	TOTAL				06	24	160	640	800	28

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SCHEME OF TEACHING & EXAMINATION **V SEMESTER B. F. BIO-TECHNOLOGY**

SL	Subject		Teaching	Teaching (Theory/	Examination Scheme (Max. Marks)		
Na.	Code	Title	Dept.	lab (Hrs/Week)	Theory / Practical	. Marks)	Total Mark
1	10AL-51	Management and Estrepreneurship	MBA/Any Dept.	04	100	25	125
2	10BT-52	Biokinetics & Bioreaction Engg.	BTACLE	04	100	25	125
3	10BT-53	Bassensors & Bicenstrumentation	BT/TT/ ML/BM	04	100	25	125
4	10BT-54	Instancencheckogy	BT	04	100	25	125
5	1087-55	Genetic Logg & Applications	BT	04	100	25	125
6	10BT 56	Bicinformatica	BT	04	100	25	125
7	108TL-37	Genera: Engineering and Immunotechnology Lab	BT	03	50	25	75
	1081158	Bioinformatics Lab	BT	03	50	25	75
		Theal		30	700	200	900

SCHEME OF TEACHING & EXAMINATION VI SEMESTER B. E. BIO-TECHNOLOGY

-	Subject	Title	Teaching Dept.	Teaching (Theory/ lab (Hrs/Week)	Examination Scheme (Max. Marks)			
SI No					Theory / Practical	1.	Total Marks	
1	1087-61	Bioprocess Control & Automation	BT/ChE	04	100	25	125	
2	10BT-62	Clinical & Pharmaceutical Biotechnology	BT	04	100	25	125	
3	10BT-63	Enzyme Technology & Biotransformation	BT	04	100	25	125	
4	10BT-64	Genomics and Proteomics	BT	04	100	25	125	
5	10BT-65	Bioprocess Equipment Design & CAED	BT/ChE/ME	04	100	2.5	125	
st	10BT-66	Elective - A	BT/ChE/ME/CSE	04	100	25	125	
-	10BTL-67	Bioprocess Control & Automation Lab	BT/ChE	03	50	25	75	
-	10BTL-68	Biokinetics & Enzyme Technology Lab	BT	03	50	25	75	
-		Ttoal		30	700	20	0 90	

Elective A : Animal BT 10BT-661 10BT-662 Plant BT Microbial BT 10BT-663 Perl Programming 10BT-664 10BT-665

Transport Phenomena



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SCHEME OF TEACHING & EXAMINATION VII SEMESTER B. E. BIO-TECHNOLOGY

SI.	Subject		Teaching	Teaching (Theory/	Examination Scheme (Max. Marks)		
No.	Code	Title	Dept.	lab (Hrs/Week)	Theory / Practical	IA	Total Marks
1	10BT-71	Economics & Plant Design	BT/ChE	04	100	25	125
2	10BT-72	Upstream Process Technology	BT	04	100	25	125
3	10BT-73	Downstream Process Technology	BT/ChE	04	100	25	125
4	10BT-74	Food Biotechnology	BT	04	100	25	125
5	10BT-75	Elective - B	BT/ChE/CSE/ISE	04	100	25	125
6	10BT-76	Elective - C	BT/ChE/CSE/ISE	04	100	25	125
7	10BTL-77	Upstream processing Lab	BT	03	50	25	75
8	10BTL-78	Downstream processing Lab	BT/ChE	03	50	25	75
	· · · · · · · · · · · · · · · · · · ·	Total	- No	30	700	200	900

Elective B :		Elective C :	Disabira & Mirror and Thebraham
10BT-751	Aqua Culture & Marine BT	10BT-761	Biochips & Micro array Technology
10BT-752	Dairy BT	10BT-762	Biomaterials
10BT-753	Forensic Science	10BT-763	Health Diagnostics
10BT-754	Data structures with C	10BT-764	Fundamentals of OS & DBMS
10BT-755	Bioreactor Design Concepts	10BT-765	CAD & MATLAB

SCHEME OF TEACHING & EXAMINATION VIII SEMESTER B. E. BIO-TECHNOLOGY

SL.	Subject	1	Teaching	Teaching (Theory/	Examination Scheme (Max. Marks)		
No.	Code	Title	Dept.	lab (Hrs/Week)	Theory / Practical	IA	Total Mark
1	10BT-81	Project Management & IPR	BT/MBA/ME/IEM	04	100	25	125
2	10BT-82	Bioethics & Biosafety	BT	04	100	25	125
3	10BT-83	Elective - D	BT/ChE/BM	04	100	25	125
4	10BT-84	Elective - E	BT/ChE	04	100	25	125
5	10BT-85	Project Work	BT	15	100	100	200
6	10BT-86	Seminar	BT	09	-	50	50
		Total		40	500	250	750

Elective D :		Elective E :	
10BT-831	Nano Bio-Technology	10BT-841	Environmental BT
10BT-832	Lab to Industrial Scaling	10BT-842	Metabolic Engineering
10BT-833	Protein Engg. & Insilico Drug Design	10BT-843	Medical Informatics
10BT-834	Biomedical Instrumentation	10BT-844	Tissue Engineering
10BT-835	Biomolecular Engineering	10BT-845	Facilitation, Validation & QC

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2017-18

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

B.E.-BIOTECHNOLOGY

				Teaching Hours/Week		Examination				
Sl No.	Subject Code	Title	Teaching Dept.	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	Credits
1	15MAT-31	Mathematics-III	Mathematics	04		03	20	80	100	4
2	15BT-32	Unit Operations	BT/CHE	04		03	20	80	100	4
3	15BT-33	Biochemistry	BT	04		03	20	80	100	4
4	15BT-34	Microbiology	BT	04		03	20	80	100	4
5	15BT-35	Cell Biology and Genetics	BT	04		03	20	80	100	4
6	15BT-36	Basics of Computer Applications	BT/CSE/ISE/ MCA	04		03	20	80	100	4
7	15BTL-37	Unit Operations Lab	BT/CHE/ME		2L+1I	03	20	80	100	2
8	15BTL-38	Microbiology Lab	BT		2L+1I	03	20	80	100	2
		TOTAL		24	06	24	160	640	800	28

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

B.E.-BIOTECHNOLOGY

IVS	SEMESTER	R

		Title		Teaching	Hours/Week	Examination				
SI No.	Sl Subject No. Code		Teaching Dept.	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	Credits
1	15BT-41	Biostatistics and Biomodeling	Mathematics/ BT	04		03	20	80	100	4
2	15BT-42	Biochemical Thermodynamics	BT/CHE/ME	04		03	20	80	100	4
3	15BT-43	Molecular Biology	BT	04		03	20	80	100	4
4	15BT-44	Bioprocess Principles and Calculations	BT/CHE	04		03	20	80	100	4
5	15BT-45	Structural Biology	BT	04		03	20	80	100	4
6	15BT-46	Clinical Biochemistry	BT	04		03	20	80	100	4
7	15BTL-47	Cell and Molecular Biology Lab	BT		2L+1I	03	20	80	100	2
8	15BTL-48	Clinical Biochemistry Lab	BT		2L+1I	03	20	80	100	2
	TOTAL			24	06	24	160	640	800	28



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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-16 B.E. Eiotechnology

VI S	emester									
			Teaching Hours/Week			Examination				
Sl No.	Subject Code	Title	Lecture	Tutorial	Practical /Drawin g	Duratio n	I.A. Mark s	Theory /Practi cal Marks	Total Mark s	Credits
1	15BT61	Bio-business and Entrepreneurship	4	0	0	3	20	80	100	4
2	15BT62	Bioprocess Control and Automation	4	0	0	3	20	80	100	4
3	15BT63	Enzyme Technology and Biotransformation	4	0	0	3	20	80	100	4
4	15BT64	Bioprocess Equipment Design & CAED	4	0	0	4	20	80	100	4
5	15BT65X	Professional Elective - 2	3	0	0	3	20	80	100	3
6	15BT66X	Open Elective - 2	3	0	0	3	20	80	100	3
7	15BTL67	Bioprocess Control and Automation Lab	0	0	3	3	20	80	100	2
8	15BTL68	Biokinetics and Enzyme Technology Lab	0	0	3	3	20	80	100	2
		TOTAL	22	0	6	-	160	640	800	26

Professional Elective - 2		Open Elec	tive - 2
15BT651	Bio-molecular Engineering	15BT661	Biological Data Management
15BT652	Advanced Microbiology	15BT662	Nano BT
15BT653	Cell Culture Techniques	15BT663	GMP
15BT654	Economics and Plant Design		

SCHEME OF TEACHING & EXAMINATION VII SEMESTER B. E. BIO-TECHNOLOGY

SI. No.	Subject	Title	Teaching	Teaching (Theory/	Examination Scheme (Max. Marks)		
	Code		Dept.	lab (Hrs/Week)	Theory / Practical	IA	Total Marks
1	10BT-71	Economics & Plant Design	BT/ChE	04	100	25	125
2	10BT-72	Upstream Process Technology	BT	04	100	25	125
3	10BT-73	Downstream Process Technology	BT/ChE	04	100	25	125
4	10BT-74	Food Biotechnology	BT	04	100	25	125
5	10BT-75	Elective - B	BT/ChE/CSE/ISE	04	100	25	125
6	10BT-76	Elective - C	BT/ChE/CSE/ISE	04	100	25	125
7	10BTL-77	Upstream processing Lab	BT	03	50	25	75
8	10BTL-78	Downstream processing Lab	BT/ChE	03	50	25	75
-		Total		30	700	200	900

Elective B :		Elective C :	
10BT-751	Aqua Culture & Marine BT	10BT-761	Biochips & Micro array Technology
10BT-752	Dairy BT	10BT-762	Biomaterials
10BT-753	Forensic Science	10BT-763	Health Diagnostics
10BT-754	Data structures with C	10BT-764	Fundamentals of OS & DBMS
10BT-755	Bioreactor Design Concepts	10BT-765	CAD & MATLAB



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SCHEME OF TEACHING & EXAMINATION VIII SEMESTER B. E. BIO-TECHNOLOGY

SL Sc	Subject	iect	Teaching	Teaching (Theory/	Examination Scheme (Max. Marks)		
No.	Code	Title	Dept.	lab (Hrs/Week)	Theory / Practical	IA	Total Marks
1	10BT-81	Project Management & IPR	BT/MBA/ME/IEM	04	100	25	125
2	10BT-82	Bioethics & Biosafety	BT	04	100	25	125
3	10BT-83	Elective - D	BT/ChE/BM	04	100	25	125
4	10BT-84	Elective - E	BT/ChE	04	100	25	125
5	10BT-85	Project Work	BT	15	100	100	200
6	10BT-86	Seminar	BT	09	-	50	50
		Total		40	500	250	750

-

Ele	ctiv	e	D
10B	T-8	31	E

10BT-83

10BT-83 10BT-83 10BT-83

eD:		Elective E :	
31	Nano Bio-Technology	10BT-841	Environmental
32	Lab to Industrial Scaling	10BT-842	Metabolic Engi
33	Protein Engg. & Insilico Drug Design	10BT-843	Medical Inform
34	Biomedical Instrumentation	10BT-844	Tissue Engineer
35	Biomolecular Engineering	10BT-845	Facilitation, Val

BT rincering maties ering alidation & QC



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2018 - 19

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

B.E-BIOTECHNOLGY III ŞEMESTER Teaching Hours /Week Credits Teaching Exam nation SL No. CIE Course Code Title Department Practical/ Duration in SEE Total Theory Drawing Mark Mark Marks urs 1 17MAT31 Engineering Mathematics -III* Maths 04 03 60 40 100 4 BT/CHE 2 17BT32 Unit Operations 04 03 60 40 100 4 BT 3 17BT33 04 03 60 40 100 4 Biochemistry BT 17BT34 04 03 60 100 4 Microbiology 40 4 BT 17BT35 04 03 60 100 5 Cell Biology and Genetics 40 3 BT/CSE/ISE 17BT36 03 03 60 100 6 Basics of Computer Applications 40 4 /MCA BT/CHE/ME 01-Hour Instruction 02-Hour Practical 7 17BTL37 03 2 Unit Operation Laboratory 60 40 100 BT 01-Hour Instruction 8 17BTL38 Microbiology Laboratory 03 40 2 60 100 02-Hour Practical Kannada/Constitution of India, Professional Ethics and Human 9 17KL/CPH39/49 01 Humanities 01 01 30 20 50 Rights Theory: 24hours Practical: 06 hours TOTAL 25 510 340 850 28

 Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institu and Human Rights in cycle based concept during III and IV semesters. da/Constit ion have to teach K on of India, Profe Ethics

2. Audit Course: (i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – I. which is 03 contact hours per week.

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

IV SI	EMESTER		212 210120							
~				Teaching Ho	urs /Week		Exami	nation		Credits
SL N 0.	Course Code	Title	Teaching Department	Theory	Practical / Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17BT41	Biostatistics and Biomodeling	Mathematics/BT	04		03	60	40	100	4
2	17BT42	Biochemical Thermodynamics	BT/CHE/ME	04		03	60	40	100	3
3	17BT43	Molecular Biology	BT	04		03	60	40	100	4
4	17BT44	Bioprocess Principles & Calculations	BT/CHE	04		03	60	40	100	4
5	17BT45	Structural Biology	BT	04		03	60	40	100	4
6	17BT46	Clinical Biochemistry	BT	03		03	60	40	100	4
7	17BTL47	Cell and Molecular Biology Laboratory	BT	01-Hour Instru 02-Hour Practi		03	60	40	100	2
8	17BTL48	Clinical Biochemistry Laboratory	BT		01-Hour Instruction 02-Hour Practical		60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	0
			Theory: 24h Practical: 06 h		25	510	340	850	2 8	

B.E- BIOTECHNOLOGY

1. Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and



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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-16 B.E. Biotechnology

VI S	emester									
			Teach	ing Hours/	Week		Exami	nation		
Sl No.	Subject Code	Title	Lecture	Tutorial	Practical /Drawin g	Duratio n	I.A. Mark s	Theory /Practi cal Marks	Total Mark s	Credits
1	15BT61	Bio-business and Entrepreneurship	4	0	0	3	20	80	100	4
2	15BT62	Bioprocess Control and Automation	4	0	0	3	20	80	100	4
3	15BT63	Enzyme Technology and Biotransformation	4	0	0	3	20	80	100	4
4	15BT64	Bioprocess Equipment Design & CAED	4	0	0	4	20	80	100	4
5	15BT65X	Professional Elective - 2	3	0	0	3	20	80	100	3
6	15BT66X	Open Elective - 2	3	0	0	3	20	80	100	3
7	15BTL67	Bioprocess Control and Automation Lab	o	0	3	3	20	80	100	2
8	15BTL68	Biokinetics and Enzyme Technology Lab	o	o	3	3	20	80	100	2
		TOTAL	22	0	6	-	160	640	800	26

Professional	Elective - 2	Open Elec	tive - 2
15BT651	Bio-molecular Engineering	15BT661	Biological Data Management
15BT652	Advanced Microbiology	15BT662	Nano BT
15BT653	Cell Culture Techniques	15BT663	GMP
15BT654	Economics and Plant Design		

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-16 E.E. Biotechnology

			Teach	ning Hours/	Week		Exami	nation		
Sl No.	Subject Code	Title	Lecture	Tutorial	Practical /Drawin g	Duratio n	I.A. Mark s	Theory /Practi cal Marks	Total Mark s	Credits
1	15BT71	Fermentation Technology	4	0	0	3	20	80	100	4
2	15BT72	Genomics and Proteomics	4	0	0	3	20	80	100	4
3	15BT73	Plant BT	4	0	0	3	20	80	100	4
4	15BT74X	Professional Elective - 3	3	0	0	3	20	80	100	3
5	15BT75X	Professional Elective - 4	3	0	0	3	20	80	100	3
6	15BTL76	Fermentation Technology Lab	0	0	3	3	20	80	100	2
7	15BTL77	Plant BT lab	0	0	3	3	20	80	100	2
8	15BT78	Project Phase -1 + Seminar	-	-	-	3	100	-	100	2
		TOTAL	18	0	6	-	240	560	800	24

Professional	Elective - 3	Profession	al Elective - 4
15BT741	Health Informatics	15BT751	Diary BT
15BT742	Bioreactor Design Concepts	15BT752	Forensic Sciences
15BT743	Lab to Industrial Scaling	15BT753	Molecular Diagnostics
15BT744	Food BT	15BT754	Big Data Management



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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-16 B.E. Biotechnology

VIII	Semester									
			Teach	ing Hours/V	Week		Exami	nation		
Sl No.	Subject Code	Title	Lecture	Tutorial	Practical /Drawin g	Duratio n	I.A. Mark s	Theory /Practi cal Marks	Total Mark s	Credits
1	15BT81	Clinical and Pharmaceutical Biotechnology	4	o	0	3	20	80	100	4
2	15BT82	Regulatory affairs in BT industry	3	0	0	3	20	80	100	4
3	15BT83X	Professional Elective - 5	3	0	0	3	20	80	100	3
4	15BT84	Internship/Professional Practice	-	-	-	3	50	50	100	2
5	15BT85X	Project Work Phase 2	-	-	-	3	100	100	200	6
6	15BTL86	Seminar	-	-	-	3	100	-	100	1
		TOTAL	10	0	0	-	310	390	700	20

Professional	Elective - 5
15BT831	Protein Engineering and In-Silico Drug Design
15BT832	Metabolic Engineering
15BT833	Environmental BT



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2019-20

Course and ourse Code 18BT31 18BT32 18BT33 18BT34	Course Title Biostatistics Microbiology	Teaching Department	Teaching H	T Televial	Tractical/ Drawing	Dur cion in hours	CIE Marks	nation SEE Warks	Fotal Marks	Credits
18BT32 18BT33		Mathematics						w3	P .	
18BT33	Microbiology		3	1		03	40	60	100	3
18BT33		Biotech	4	0	-	03	40	60	100	4
	Unit Operations	Chemical/Biotech	3	1		03	40	60	100	3
	Introduction to Biomolecules	Biotech	3	1		03	40	60	100	3
18BT35	Cell Biology and Genetics	Biotech	3	0		03	40	60	100	3
18BT36	Python Programming	CSE	3	1		03	40	60	100	3
18BTL37	Microbiology Laboratory	Biotech		2	2	03	40	60	100	2
	Unit Operations Laboratory			2	2	03	40	60	100	2
18KVK39	Vyavaharika Kannada (Kannada for communication)/		-	2	-		100			
18KAK39									100	1
	OR	HSMC				40 40		100	· ·	
18CPC39	Constitution of India, Professional Ethics and Cyber Law									
					a 15 0y 00j			480		<u> </u>
		-								24
		TOTAL	20		04				900	24
	18BTL37 18BTL38 18KVK39 18KAK39 18CPC39 18CPC39 ic Science, PCC:	ISBTL37 Microbiology Laboratory ISBTL35 Unit Operations Laboratory ISEVEX39 Vavabarian Kannada (Kannada for communication)/ ISEVEX39 Asdalitha Kannada (Kannada for Administration) ISCPC39 Constitution of India, Professional Ethics and Cyber Law ic Science, PCC: Professional Core, HSMC: Humanity and Social Science, NC	185TL37 Microbiology Laboratory Biotech 185DTL35 Unit Operations Laboratory Chemical/Biotech 18KUK39 Vyavabarika Kannada (Kannada for communication)/ Chemical/Biotech 18KUK39 Asdalitha Kannada (Kannada for Administration) HSMC 18KOPC39 Constitution of India, Professional Ethics and Cyber Law HSMC TOTAL is Science, PCC: Professional Core, HSMC: Humanity and Social Science, NCMC: Non-credit man	1185TL37 Microbiology Laboratory Biotech 1185TL38 Unit Operations Laboratory Chemical Biotech 1185TL37 Vyavabarila Kannada (Kannada for communication)/ Chemical Biotech 1185CK39 Asdslitha Kannada (Kannada for Administration) 185CPC39 Constitution of India, Professional Ethics and Cyber Law 1 185CPC39 Constitution of India, Professional Ethics and Cyber Law 1 1 100 R 10 1 100 Constitution of India, Professional Ethics and Cyber Law 10 20 100 Constitution of India, Professional Ethics and Cyber Constitution of Constend constitution of Constitu	1185TL37 Microbiology Laboratory Biotech 2 1185TL38 Unit Operations Laboratory Chemical/Biotech 2 1185UK39 Vyavahartika Kannada (Kannada for communication)/ 2 2 1185UK39 Asdalitha Kannada (Kannada for Administration) 2 2 1185UK39 Constitution of India, Professional Ethics and Cyber Law HSMC 2 1185UK39 Constitution of India, Professional Ethics and Cyber Law HSMC 2 1185UK39 Constitution of India, Professional Ethics and Cyber Law 10 Examination 12 08 OR OR 08 01 01 12 01 01 02 10 01 01 02 01 01 02 10 10 03 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	1185TL37 Microbiology Laboratory Biotech 2 2 1185TL37 Unit Operations Laboratory Chemical/Biotech 2 2 1185TL37 Unit Operations Laboratory Chemical/Biotech 2 2 185TL37 Asdalitha Kannada (Kannada for communication)/ 2 2 185TL37 Asdalitha Kannada (Kannada for Administration) 2 2 18CPC39 Constitution of India, Professional Ethics and Cyber Law HSMC 2 18CPC39 Constitution of India, Professional Ethics and Cyber Law HSMC Examination is by obj 19 08 00 0 0 0 0	1185TL37 Microbiology Laboratory Biotech 2 2 0.3 1185TL38 Unit Operations Laboratory Chemical/Biotech 2 0.3 185U7L37 Vyrvahartika Kannada (Kannada for communication) Chemical/Biotech 2 0.3 185U7L37 Asdalitha Kannada (Kannada for Administration) 2 185U7L37 Constitution of India, Professional Ethics and Cyber Law HSMC 2 185U7L37 Constitution of India, Professional Ethics and Cyber Law HSMC 2 1 02 - - 2 - 185CPC39 Constitution of India, Professional Ethics and Cyber Law HSMC 2 - 2 - - 2 - - 2 - - - 2 - - - 2 - - - 2 -<	118TL37 Microbiology Laboratory Biotach - 2 2 0.3 40 118BTL38 Unit Operations Laboratory Chemical Biotach - 2 0.3 40 18RVR39 Vyavaharita Skannada (Kaanada for communication)/ Chemical Biotach - 2 2 0.3 40 18RVR39 Asdalitha Kannada (Kaanada for Administration) - 2 - - 100 18CPC39 Constitution of India, Professional Ethics and Cyber Law HSMC - 2 - - 100 18CPC39 Constitution of India, Professional Ethics and Cyber Law HSMC - 2 40 100 08 - - 02 40 100 08 - - 2 - - 100 18CPC39 Constitution of India, Professional Ethics and Cyber Law HSMC - - 2 40 100 08 08 04 04 26 360 100 08 <	118TL37 Microbiology Laboratory Biotech - 2 0.3 40 60 118BTL38 Unit Operations Laboratory Chemical Biotech - 2 0.3 40 60 118UTL39 Vyavabarila Ksanada for communication)/ Chemical Biotech - 2 0.3 40 60 18KUK39 Vyavabarila Ksanada for Administration) - 2 - - 100 - 18CPC39 Constitution of India, Professional Ethics and Cyber Law HSMC - 2 - 02 40 60 1 - - 02 40 60 - - 100 - - 100 - - 100 - - 100 - - 100 - - 100 - - 100 - - 100 - 100 - 100 - 100 - 100 - 100 - 100 10 - 100	IBBTL37 Microbiology Laboratory Biotech 2 2 0.3 40 60 100 18BTL35 Unit Operations Lboratory ChemicalBiotech 2 2 0.3 40 60 100 18KUK39 Vyavaharita Sunnada (Kannada for communication) ChemicalBiotech 2 2 0.3 40 60 100 18KUK39 Andalitha Kannada (Kannada for Administration) 2 100 0R OR 1 - 100 18CPC39 Constitution of India, Professional Ethics and Cyber Law HSMC 02 40 60 1 02 40 60 100 18CPC39 Constitution of India, Professional Ethics and Cyber Law HSMC 02 40 60 19 08 08 04 OR OR 04 08 04 20

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

			VISVESVARAYA TECHNO Scheme of Teaching and Ex Outcome Based Education(OB)	amination 2018 – 19 E) and Choice Based) I Credit Sy							
-		o Tromoro		the academic year 2	018 – 19)							
	MESTER	OTECHNOLO	GY									
IV SE	MESTER				Teaching He	www.Allock			Fram	ination		
					Teaching He	Jurs / Week	1		P. Sam	inabon		
SL No		ourse and surse Code	Course Title	Teaching De par tment	Theory Lecture	Tutorial	Practical/ Drawing	Der stion in hours	CIEMarks	SEE Marks	Total Marks	Credits
					L	т	P	1 -	- T		-	
1	PCC	18BT41	Stoichiometry	Chemical/Biotech	3	1		03	40	60	100	3
2	PCC	18BT42	Molecular Biology	Biotech	4	0		03	40	60	100	4
3	PCC	18BT43	Immunotechnology	Biotech	3	0		03	40	60	100	3
4	PCC	18BT44	Cell Culture Techniques	Biotech	3	0		03	40	60	100	3
5	PCC	18BT45	Biochemical Thermodynamics	Chemical/Biotech	3	1		03	40	60	100	3
6	PCC	18BT46	Clinical Biochemistry	Biotech	3	0		03	40	60	100	3
7	PCC	18BTL47	Biochemistry Laboratory	Biotech		2	2	03	40	60	100	2
8	PCC	18BTL48	Immunotechnology Laboratory	Biotech		2	2	03	40	60	100	2
		18KVK49	Vyavaharika Kannada (Kannada for communication)/						100			
1		18KAK49	Aadalitha Kannada (Kannada for Administration)			2	-	-	100			
9	HSMC			HSMC OR							100	1
1		18CPC49	Constitution of India, Professional Ethics and Cyber Law	OK	1			02	40	60	1	
1		1809049	Constitution of India, Professional Ethics and Cyber Law			Examinati	ion is by obj	ective type	questions		1	
					19	06		24	420	480		
1				TOTAL	OR	OR	04	OR	OR	OR	900	24
					20	08		26	360	540		
			fessional Core, HSMC: Humanity and Social Science, NCMC: Nor									
		rika Kannada (Ka	nnada for communication) is for non-Kannada speaking, reading ar	ad writing students and 18	KAK49 Aad	alitha Kann	ada (Kannad	a for Admin	nistration) is	for students	s who speak,	read and
write E	annada.											
			Course prescribed to lateral entry Diploma				ring prog					
10	NCMC	18MATDIP41	Additional Mathematics - II	Mathematics	02	01		03	40	60	100	0
classes prescri	The machine provide the second											

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



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B.E-BIOTECHNOLOGY

V SEMESTER

SI.		Title	Teaching	Teaching	Hours /Week		Exami	ination		Credits
No.	Course Code	110	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17BT51	Bio-Kinetics & Bioreaction Engineering	BT/CHE	04		03	60	40	100	4
2	17BT52	Genetic Engineering & Applications	BT	04		03	60	40	100	4
3	17BT53	Immunotechnology	BT	04	04		60	40	100	4
4	17BT54	Bioinformatics	BT	04		03	60	40	100	4
5	17BT55X	Professional Elective-1	BT/CHE	03		03	60	40	100	3
6	17BT56X	Open Elective-1	BT	03		03	60	40	100	3
7	17BTL57	Genetic Engineering & Immunotechnology Laboratory	BT	01- Hour I 02- Hour I	instruction Practical	03	60	40	100	2
8	17BTL58	Bioinformatics Laboratory	BT	01-Hour I 02-Hour I	Instruction Practical	03	60	40	100	2
			TOTAL		22hours : 06 hours	24	480	320	800	26
		rofessional Elective-1			*** (List offered	by Civil Engg	Board on	y)		
	1	7BT551 Microbial Biotechnology	17BT56	17BT561 Biology for Engineers						
	1	7BT552 Transport Phenomena	17BT56	2 Bion	naterials					

		open Litter.	
17BT551	Microbial Biotechnology	17BT561	Biology for Engineers
17BT552	Transport Phenomena	17BT562	Biomaterials
17BT553	Animal Biotechnology	17BT563	Biotechnology for Sustainable Environment
17BT554	Bioinstrumentation & Biosensors		

***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:

SCHEME OF TEACHING AND EXAMINATION 2017-2018

B.E-BIOTECHNOLOGY

VI	SEMESTER									
SL. No.	Course Code	Title	Teaching Department		ing Hours Week			Credits		
180.	Code			Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17BT61	Bio-business and Entrepreneurship	BT/MBA	04		03	60	40	100	4
2	17BT62	Bioprocess Control & Automation	BT/CHE	04		03	60	40	100	4
3	17BT63	Enzyme Technology & Biotransformation	BT	04		03	60	40	100	4
4	17BT64	Bioprocess Equipment Design & CAED	BT/CHE/ME	04		03	60	40	100	4
5	17BT65X	Professional Elective-2	BT/CHE	03		03	60	40	100	3
6	17BT66X	Open Elective-2	BT/CHE	03		03	60	40	100	3
7	17BTL67	Bioprocess Control & Automation Laboratory	BT/CHE	01- Hour Ir 02- Hour P		03	60	40	100	2
8	17BTL68	Biokinetics & Enzyme Technology Laboratory	BT/CHE	01- Hour Ir 02- Hour P		03	60	40	100	2
			TOTAL	Theory:22 Practical:		24	480	320	800	26

Professiona	l Elective-2		Open Elective -	- 2*** (List offered by Civil Engg Board only)
17BT651	Biomolecular Engineering		17BT661	Biological Data Management
17BT652	17BT652 Advanced Microbiology		17BT662	Nano Biotechnology
17BT653	Cell Culture Techniques		17BT663	Good Manufacturing Practices
17BT654	Economics and Plant Design			

***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 value studied by the studied by former studied by



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VII S	Semester									
			Teach	ning Hours/	Week		Exami	nation		
Sl No.	Subject Code	Title	Lecture	Tutorial	Practical /Drawin g	Duratio n	I.A. Mark s	Theory /Practi cal Marks	Total Mark s	Credits
1	15BT71	Fermentation Technology	4	0	0	3	20	80	100	4
2	15BT72	Genomics and Proteomics	4	0	0	3	20	80	100	4
3	15BT73	Plant BT	4	0	0	3	20	80	100	4
4	15BT74X	Professional Elective - 3	3	0	0	3	20	80	100	3
5	15BT75X	Professional Elective - 4	3	0	0	3	20	80	100	3
6	15BTL76	Fermentation Technology Lab	0	0	3	3	20	80	100	2
7	15BTL77	Plant BT lab	0	0	3	3	20	80	100	2
8	15BT78	Project Phase -1 + Seminar	-	-	-	3	100	-	100	2
		TOTAL	18	0	6	-	240	560	800	24

Professional	Elective - 3	Professional Elective - 4					
15BT741	Health Informatics	15BT751	Diary BT				
15BT742	Bioreactor Design Concepts	15BT752	Forensic Sciences				
15BT743			Molecular Diagnostics				
15BT744	Food BT	15BT754	Big Data Management				

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI CHOICE BASED CREDIT SYSTEM (CBCS) SCHEME OF TEACHING AND EXAMINATION 2015-16 B.E. Biotechnology

VIII Semester

			Teach	ning Hours/	Week		Exami	nation		
Sl No.	Subject Code	Title	Lecture	Tutorial	Practical /Drawin g	Duratio n	I.A. Mark s	Theory /Practi cal Marks	Total Mark s	Credits
1	15BT81	Clinical and Pharmaceutical Biotechnology	4	0	o	3	20	80	100	4
2	15BT82	Regulatory affairs in BT industry	3	0	0	3	20	80	100	4
3	15BT83X	Professional Elective - 5	3	0	0	3	20	80	100	3
4	15BT84	Internship/Professional Practice	-	-	-	3	50	50	100	2
5	15BT85X	Project Work Phase 2	-	-	-	3	100	100	200	6
6	15BTL86	Seminar	-	-	-	3	100	-	100	1
		TOTAL	10	0	0	-	310	390	700	20

Professional	Elective - 5
15BT831	Protein Engineering and In-Silico Drug Design
15BT832	Metabolic Engineering
15BT833	Environmental BT



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2020 - 21

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	ramme: B EMESTEI	IOTECHNO	LUGY									
1.51	EMESTE	x			Teaching H	Hours /Weel			Exam	ination		
il io			Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits	
		-			L	T	P					
1	BSC	18BT31	Biostatistics	Mathematics	3	1		03	40	60	100	3
2	PCC	18BT32	Microbiology	Biotech	4	0		03	40	60	100	
3	PCC	18BT33	Unit Operations	Chemical/Biotech	3	1	-	03	40	60	100	
	PCC	18BT34	Introduction to Biomolecules	Biotech	3	1	-	03	40	60	100	
	PCC	18BT35	Cell Biology and Genetics	Biotech	3	0		03	40	60	100	
i	PCC	18BT36	Python Programming	CSE	3	1		03	40	60	100	
	PCC	18BTL37	Microbiology Laboratory	Biotech		2	2	03	40	60	100	
	PCC	18BTL38	Unit Operations Laboratory	Chemical/Biotech		2	2	03	40	60	100	
		18KVK39 18KAK39	Vyavaharika Kannada (Kannada for communication)/ Aadalitha Kannada (Kannada for Administration)	-		2		-	100	-		
)	HSMC		OR	HSMC	· · · · ·						100	I .
				1	1			02	40	60	1	1
	1	18CPC39	Constitution of India, Professional Ethics and Cyber Law		1	Examinatio	n is by obj	ective type	questions		1	1
					19	08		24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	
					20	10		26	360	540		

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			Outcome Based Education(OB (Effective from	the academic year 2		stein (Cr	505)					
Progr:	amme: BI	OTECHNOLO	OGY									
IV SE	MESTER											
					Teaching Ho	urs/Week		Examination				-
SL No		Course and Course Title		Teaching	Theory Ledure	Tutorial	Practical/ Drawing	Duration in hours	CLE Marks	SEE Marks	Total Marks	Credits
					L	Т	P	-	Ŭ	~	-	
1	PCC	18BT41	Stoichiometry	Chemical/Biotech	3	1	_	03	40	60	100	3
2	PCC	18BT42	Molecular Biology	Biotech	4	0		03	40	60	100	4
3	PCC	18BT43	Immunotechnology	Biotech	3	0	-	03	40	60	100	3
4	PCC	18BT44	Cell Culture Techniques	Biotech	3	0		03	40	60	100	3
5	PCC	18BT45	Biochemical Thermodynamics	Chemical/Biotech	3	1	-	03	40	60	100	3
6	PCC	18BT46	Clinical Biochemistry	Biotech	3	0	-	03	40	60	100	3
7	PCC	18BTL47	Biochemistry Laboratory	Biotech		2	2	03	40	60	100	2
8	PCC	18BTL48	Immunotechnology Laboratory	Biotech		2	2	03	40	60	100	2
		18KVK49	Vyavaharika Kannada (Kannada for communication)/						100			
	1	18KAK49	Aadalitha Kannada (Kannada for Administration)	HSMC	- 2 -		-		100			
9	HSMC			OR							100	1
		18CPC49	Constitution of India, Professional Ethics and Cyber Law	OK	1		-	02	40	60		
			constrained of man, i forestonin banes and eyed ban				on is by obj					
					19 OR	06		24	420 OR	480		
			TOTAL			0R 08	04	OR 26	OR 360	OR 540	900	24



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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 H	lours/Wee	k		Exam	ination		
SL No		ourse and urse Code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	buration in hours	CIE Marks	SEE Marks	Total Marks	
					L	Т	P	-	Ŭ	~		
1	HSMC	18BT51	Bio-Business and Entrepreneurship	HSMC/Biotech	3	-	-	03	40	60	100	3
2	PCC	18BT52	Chemical Reaction Engineering	Chemical/Biotech	Chemical/Biotech 4 1 -		-	03	40	60	100	4
3	PCC	18BT53	Enzyme Technology & Biotransformation	Biotech	4		-	03	40	60	100	4
4	PCC	18BT54	Genomics & Proteomics	Biotech	3	1		03	40	60	100	3
5	PCC	18BT55	Bioanalytical Techniques	Biotech	3			03	40	60	100	
6	PCC	18BT56	Genetic Engineering & Applications	Biotech	3			03	40	60	100	1
7	PCC	18BTL57	Biokinetics & Enzyme Technology Laboratory	Chemical/Biotech	-	2	2	03	40	60	100	1
8	PCC	18BTL58	Genetic Engineering and Cell Culture Laboratory	Biotech	-	2	2	03	40	60	100	1
9	HSMC	18CTV59	Environmental Studies	Civil/ Environmental [Paper setting: Civil Engineering Board]	1 02 40 60 100 Examination is by objective type questions					100		
				TOTAL	21	06	04	26	360	540	900	2

			Outcome Based Education(OB (Effective from	E) and Choice Bas the academic year			(CBCS)					
rog	ramme: BIO	TECHNOLO		the nendeline year		/						
	EMESTER											
					Teaching H	ours /Week			Exam	ination		
SL No	Course and Course Code				Theory Ledure	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Fotal Marks	Credits
					L	Т	P	8	- U	8	Ĕ	
1	PCC	18BT61	Process Control & Automation	Chemical	4	1		03	40	60	100	4
2	PCC	18BT62	Bioprocess Equipment Design & CAED	Chemical	4	2		04	40	60	100	4
3	PCC	18BT63	Bioinformatics	Biotech	4	-		03	40	60	100	4
4	PEC	18BT64X	Professional Elective -1	Biotech	3			03	40	60	100	3
5	OEC	18BT65X	Open Elective -A	Biotech	3	-		03	40	60	100	3
6	PCC	18BTL66	Process Control & Automation Laboratory	Chemical	-	2	2	03	40	60	100	2
7	PCC	18BTL67	Bioinformatics Laboratory	Biotech		2	2	03	40	60	100	2
8	MP	18BTMP68	Mini-project	-	-	1	2	03	40	60	100	2
9	Internship		Internship		To be carried out during the vacation/s of VI and VII semesters and /or VII an semesters.						and V	
				TOTAL	18	08	06	25	320	480	800	24



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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2018 - 19 Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2018 - 19) Programme: BIOTECHNOLOGY VI SEMESTER (continued) SEE for Mini-project: SEE for Mim-project: (i) Single discipline: Contribution to the Mini-project and the performance of each group member shall be assessed individually in semester end examination (SEE) conducted at the department. (ii) Interdisciplinary: Contribution to the Mini-project and the performance of each group member shall be assessed individually in semester end examination (SEE) conducted separately at the departments to which the student's belongs to. Internship: All the student's belongs to. Internship: examination shall be considered during VIII semester and the prescribed credit shall be included in VIII semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as failed and shall have to complete during subsequent University examination after satisfying the internship shall be considered. internship requirements Professional Elective -1 Course code under18BT64X Course Title 18BT641: Food Process Engineering 18BT642: Phyto-Chemistry and Phyto-Harmones 18BT643: Human Physiology Open Elective –A 18BT651: Biology for Engineers (Modified) 18BT652:Biomaterials (Modified) 18BT653: Nano-biotechnology (Modified) Students can select any one of the open electives offered by other Departments expect those that are offered by the parent Department (Please refer to the list of open electives under 18BT65X).Selection of an open elective shall not be allowed if, • The candidate has studied the same course during the previous semesters of the programme · The syllabus content of open elective is similar to that of Departmental core courses or professional electives

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

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

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

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

B.E-BIOTECHNOLOGY

			Teaching	Teaching	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	17BT71	Fermentation Technology	BT/CHE	04		03	60	40	100	4
2	17BT72	Genomics & Proteomics	BT	04		03	60	40	100	4
3	17BT73	Plant Biotechnology	BT	04		03	60	40	100	4
4	17BT74X	Professional Elective-3	BT/CHE	03		03	60	40	100	3
5	17BT75X	Professional Elective-4	BT/CHE	03		03	60	40	100	3
6	17BTL76	Fermentation Technology Laboratory	BT/CHE	01-Hour I 02-Hour F		03	60	40	100	2
7	17BTL77	Plant Biotechnology Laboratory	BT		01-Hour Instruction 02-Hour Practical		60	40	100	2
8	17BTP78	Project Work Phase-I + Project work Seminar	BT		03			100	100	2
	•	TOTAL	•	Theory:1 Practical 09 hours	8 hours and Project:	21	420	380	800	24

Professional	Elective-3	Professiona	l Elective-4
17BT741	Health Informatics	17BT751	Dairy Biotechnology
17BT742	Bioreactor Design Concepts	17BT752	Forensic Science
17BT743	Lab to Industrial Scaling	17BT753	Molecular Diagnostics
17BT744	Food Biotechnology	17BT754	Big Data Management



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

B.E-BIOTECHNOLOGY

			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	17BT81	Clinical & Pharmaceutical Biotechnology	BT	4		3	60	40	100	4
2	17BT82	Regulatory affairs in Biotech Industry	BT/MBA	4	-	3	60	40	100	4
3	17BT83X	Professional Elective-5	BT	3	-	3	60	40	100	3
4	17BT84	Internship/ Professional Practice	BT	Indus	Industry Oriented		50	50	100	2
5	17BTP85	Project Work-II	BT	-	6	3	100	100	200	6
6	17BTS86	Seminar on current trends in Engineering and Technology	BT	-	4	-	-	100	100	1
	TOTAL				11 hours and Seminar:	15	330	370	700	20

Professi	onal Elective -5
17BT83	Protein Engineering and insilico drug design
17BT83	2 Metbolic Engineering
17BT83	³ Environmental Biotechnology

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2016-2017

B.E.MechanicalEngineering

			Tea	chingHours/V	Veek		Examina	tion		Credits
SI. No	Subject Code	Title	Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
	15MAT31	Engineering Mathematics	04			03	80	20	100	04
	15ME32	Materials Science	<mark>04</mark>			03	<mark>80</mark>	20	100	<mark>04</mark>
	15ME33	Basic Thermodynamics	<mark>03</mark>	<mark>02</mark>		03	<mark>80</mark>	20	100	<mark>04</mark>
	15ME34	Mechanics of materials	03	02		03	<mark>80</mark>	20	100	<mark>04</mark>
	15ME35A 15ME35B	<u>Metal casting & wielding</u> Machine tools and operations	<mark>04</mark>			03	80	20	100	<mark>04</mark>
	15ME36A 15ME36B	Computer aided machine drawing Mechanical Measurements and Metrology	02 04	-	<mark>04</mark>	03	80	20	100	<mark>03</mark>
	15ME37A 15ME37B	Materials testing lab Mechanical Measurements and Metrology lab	01		<mark>02</mark>	03	<mark>80</mark>	20	100	02
	15ME38A 15ME38B	Foundry and forging lab Machine shop	01		02	03	80	20	100	02
		TOTAL	22 24	04	08		640	160	800 ct	ivate ² Wi

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B.E.MechanicalEngineering

IVSEMESTER

Sl.No			Tea	achingHour	s/Week		Exan n	ninatio		Credits
	SubjectCo de	Titl e	Lectur e	Tutoria l	Practica l	Duration(Hours)	Theory/ Practica IMarks	I.A. Mark s	TotalMark s	
	15MAT41	EngineeringMathematics-III	04			03	80	20	100	04
	15ME42	KinematicsofMachinery	<mark>03</mark>	02		<mark>03</mark>	<mark>80</mark>	<mark>20</mark>	100	<mark>04</mark>
	15ME43	AppliedThermodynamics	03	02		<mark>03</mark>	<mark>80</mark>	<mark>20</mark>	100	04
	15ME44	Fluidmechanics	03	02		03	80	20	100	04
	15ME45A/ 15ME45B	MetalCastingandWelding MachineToolsandOperations	04			<mark>03</mark>	<mark>80</mark>	<mark>20</mark>	<mark>100</mark>	<mark>04</mark>
	15ME46A/ 15ME46B	ComputerAidedMachineDrawing MechanicalMeasurementsandMetrology	02 04		<mark>4</mark>	<mark>03</mark>	<mark>80</mark>	<mark>20</mark>	100	03
i	15MEL47A 15MEL47 B	Materials TestingLab/ MechanicalMeasurements andMetrologyLab	1		2	<mark>03</mark>	<mark>80</mark>	20	100	02
}	15MEL48A / 15MEL48B	FoundryandForgingLab MachineShop	1		2	<mark>03</mark>	80	20	100	02
TOTAL			19/21	06	08/04		640	160	800	27

VSEMESTER

			Tea	chingHours/	Week		Examina	ntion		Credits
SL No	Subject Code	Title	Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME51	ManagementandEngineeringEconomics	3	2	0	03	80	20	100	4
2	15ME52	DynamicsofMachinery	3	2	0	03	<mark>80</mark>	20	100	4
3	15ME53	TurboMachines	3	2	0	03	80	20	100	4
4	15ME54	DesignofMachineElements-I	3	2	0	03	80	20	100	4
5	15ME55X	ProfessionalElective-I	3	0	0	03	80	20	100	3
6	15ME56X	OpenElective-I	3	0	0	03	80	20	100	3
7	15MEL57	FluidMechanics&MachineryLab	1	0	2	03	80	20	100	2
8	15MEL58	EnergyLab	1	0	2	03	80	20	100	2
		TOTAL	21	06	04		640	160	800	26
Profe	ssionalElective	e-I	OpenElecti	ve-I						1
15ME	E551 Refri	gerationandAir-conditioning	15ME561		nTechniques					
15ME	2552 Theor	ryofElasticity	15ME562	Energyand	Environment					
15ME	E553 Huma	anResourceManagement	15ME563	Automation	andRobotics		i			
15ME	2554 NonT	FraditionalMachining	15ME564	ProjectMar	agemet					

VISEMESTER

			Teac	hingHours/V	Veek		Examin	ation		Credits
SI. No	Subject Code	Title	Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME61	FiniteElementAnalysis	3	2	0	03	80	20	100	4
2	15ME62	ComputerintegratedManufacturing	4	0	0	03	80	20	100	4
3	15ME63	HeatTransfer	3	2	0	<mark>03</mark>	80	20	100	4
4	15ME64	DesignofMachineElements-II	3	2	0	03	80	20	100	4
5	15ME65X	ProfessionalElective-II	3	0	0	03	80	20	100	3
6	15ME66X	OpenElective-II	3	0	0	03	80	20	100	3
7	15MEL67	HeatTransferLab	1	0	2	03	80	20	100	2
8	15MEL68	ModelingandAnalysisLab(FEA)	1	0	2	03	80	20	100	2
	I	TOTAL	21	6	04		640	160	800	26

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÷ VISVESVARAYATECHNOLOGICALUNIVERSITY, BELAGAVI SchemeofTeachingandExamination2016-17 OutcomeBasedEducation (OBE) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic year 2000) and ChoiceBasedCreditSystem (CBCS) (Effective from the academic ye016-17) VIISEMESTER Teaching Hours /Week xaminat Practical/ Drawing TeachingD partment Tutorial Theory TotalMarks SLN CourseaudCoursec CIE Marks Credits Duration SEEMarks Course Title ode т L P 3 4(PEC 15ME74X ProfessionalElective 03 40 60 100 OEC 15ME75X OpenElective-B 03 40 60 100 PCC 15MEL77 Computer IntegratedManufacturingLab 2 03 40 60 100 2 --2 DOV EMPL76 03 40 60 2 esign 2 ProjectWorkPhase-1 100 Project 18MEP78 100 (Ifnotcompletedduringthevacation of Vland VIIsemesters, its hallbe carried outduringthevacation of VII and VIIsemesters) 100 100 TOTAL 09 04 06 15 300 300 600 14 6 Internship ---Internship Open Elective Coursecodeunder18XX7 CourseTitle 5X 15ME751 Automotive 15ME752 Fracture me Course codeunder18XX75X 15ME754 CourseTitle Mechatronics Automotive Electronics Fracture mechanics 15ME753 Mechatronics onalElectives Profe Course codeunder18XX74X Coursecodeunder18XX7 CourseTitle CourseTitl 4X 15ME741 Design of thermal equipments 15ME743 **Financial management** 15ME742 Tribology 15ME744 Design for manufacturing

VIIISEMESTER

			Teac	ningHours/V	Veek		Examir	nation		Credits
SI. No	Subject Code	Title	Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME81	OperationsResearch	3	2	0	03	80	20	100	4
2	15ME82	AdditiveManufacturing	4	0	0	03	80	20	100	4
3	15ME83X	ProfessionalElective-V	3	0	0	03	80	20	100	3
4	15ME84	Internship/ProfessionalPractice	Inc	dustryOrient	ed	03	50	50	100	2
5	15ME85	ProjectPhase –II	-	6	-	03	100	100	200	6
6	15MES86	Seminar	-	4	-	-	-	100	100	1
		TOTAL	10	12	•		390	310	700	20
Pro	ofessionalEle	ctive-V								
15	ME831 C	ryogenics								
15	ME832 E	xperimentalStressAnalysis								
15	ME833 T	heoryofPlasticity								



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B.E.MechanicalEngineering

III SEMESTER

	육			Teachi	ingHours/	/Week		Examin	ation		
SI. No.	SubjectCode	Title	Teaching De partment	Lecture	Tutorial	Practical	Duration (Hours)	SEE Marks	CIE Marks	Total Marks	Credits
1	17MAT31	EngineeringMathematics-III	Maths	04			03	60	40	100	4
2	17ME32	MaterialsScience	ME	<mark>04</mark>			<mark>03</mark>	<mark>60</mark>	<mark>40</mark>	<mark>100</mark>	4
3	17ME33	BasicThermodynamics	ME	03	<mark>02</mark>		<mark>03</mark>	<mark>60</mark>	<mark>40</mark>	<mark>100</mark>	4
4	17ME34	Mechanics of Materials	ME	03	<mark>02</mark>		<mark>03</mark>	<mark>60</mark>	<mark>40</mark>	<mark>100</mark>	4
	17ME35A/	MetalCastingandWelding	ME	04			03	60	40	100	.
5	17ME35B	MachineToolsandOperations	ME				<u>U3</u>	60	40 40	<mark>100</mark>	4
		ComputerAidedMachineDrawing	ME	01		4	03			100	<u> </u>
6	17ME36A/ 17ME36B	MechanicalMeasurementsandMetrology	ME	03			0 <u>3</u>	<mark>60</mark>	<mark>40</mark>	<mark>100</mark>	3
	17MEL37A/	MaterialsTestingLab/	ME	_		_	_	_	_		
7	17MEL37B	MechanicalMeasurementsandMetrology Lab	ME	1		2	03	<mark>60</mark>	<mark>40</mark>	<mark>100</mark>	2
	17MEL38A/	FoundryandForgingLab	ME	1		2	03	60	40	100	2
8	17MEL38B	MachineShop/	ME	1		2	03	60	40	100	2

B.E.MechanicalEngineering

					IV SEN	IESTER					
			Treating	Teac	hingHours	/Week		Exam	ination		
SI.No	SubjectCode	Title	Teaching Department	Lecte	Tutorial	Practical	Duration (Hours)	SEEMarks	CIE Marks	TotalMarks	Credit
1	17MAT41	EngineeringMathematics-III	Maths.	04			03	60	40	100	04
2	17ME42	Kinematicsof Machinery	ME	03	02		<mark>03</mark>	<mark>60</mark>	<mark>40</mark>	100	<mark>04</mark>
3	17ME43	AppliedThermodynamics	ME	03	02		03	<mark>60</mark>	<mark>40</mark>	100	04
4	17ME44	Fluidmechanics	ME	03	02		03	60	40	100	04
5	17ME45A/	MetalCastingandWelding	ME	04			03	<mark>60</mark>	40	100	04
2	17ME45B	MachineToolsandOperations	ME	<mark>04</mark>			US US	ou bu	40	100	04
6	17ME46A/	ComputerAidedMachine Drawing	ME	01		<mark>4</mark>	03	60	40	100	03
0	17ME46B	Mechanica I Measurements and Metrology	ME	03				00	40	100	05
	17MEL47A/	MaterialsTestingLab/	ME								
7	17MEL47A	Mechanica I Measurements and MetrologyLab	ME	1		2	03	<mark>60</mark>	<mark>40</mark>	100	02
8	17MEL48A/	FoundryandForgingLab	ME			.	03	60	40	100	02
	17MEL48B	MachineShop/	ME	1		<u> </u>		00	40	100	V 2
9	17KL/CPH39/ 49	Kannada/ConstitutionofIndia, ProfessionalEthicsandHuman Rights	Humanities	1			01	30	20	50	1
		TOTAL		21/23	06	08/04		510	340	850	28

IV SEMESTER



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B.E.MechanicalEngineering

VSEMESTER

			Teachi	ngHours	Week		Examinatio	n		
Sl. No	SubjectCode	Title	Lecture	Tutorial	Practical	Duration(Hours)	SEEMarks	CIE Marks	Total Marks	Credits
1	17ME51	ManagementandEngineeringEconomics	3	2	0	<mark>03</mark>	<mark>60</mark>	<mark>40</mark>	100	4
2	17ME52	DynamicsofMachinery	3	2	0	<mark>03</mark>	<mark>60</mark>	<mark>40</mark>	<mark>100</mark>	4
3	17ME53	Turbo Machines	3	2	0	03	60	40	100	4
4	17ME54	DesignofMachineElements-I	3	2	0	<mark>03</mark>	<mark>60</mark>	<mark>40</mark>	100	4
5	17ME55X	Professional Elective-I	3	0	0	03	60	40	100	3
6	17ME56X	OpenElective-I	3	0	0	03	60	40	100	3
7	17MEL57	FluidMechanics&MachineryLab	1	0	2	03	60	40	100	2
8	17MEL58	EnergyLab	1	0	2	03	60	40	100	2
		TOTAL	20	08	04		480	320	60	40
	÷									

B.E.MechanicalEngineering

VI SEMESTER

			Teach	ingHours	Week	H	Examina	tion		Credits					
šl. No	SubjectCode	Title	Title		Title		Title		Tutorial	Practical	Duration(Hours)	SEE Marks	CIE Marks	TotalMarks	1
1	17ME61	FiniteElementAnalysis	3	2	0	03	60	<mark>40</mark>	100	4					
2	17ME62	ComputerintegratedManufacturing	4	0	0	03	60	40	100	4					
3	17ME63	HeatTransfer	3	2	Ö	03	<mark>60</mark>	<mark>40</mark>	100	4					
4	17ME64	DesignofMachineElements-II	3	2	0	03	60	40	100	4					
5	17ME65X	ProfessionalElective-II	3	0	0	03	60	40	100	3					
6	17ME66X	Open Elective-II	3	0	0	03	60	40	100	3					
7	17MEL67	HeatTransferLab	1	0	2	03	60	40	100	2					
8	17MEL68	ModelingandAnalysisLab(FEA)	1	0	2	03	60	40	100	2					
÷		TOTAL	21	6	04		480	320	60	40					

÷ VisvesvarayaTechnologicalUniversity,Belagavi B.E.inMechanicalEngineering meofTeachingandExamination Choice Based Credit 2017-SchemeofTeachingandExaminatic System (CBCS) VIISemester TeachingHours/Week Examination Credits SI.No Subject Title Duration SEE CIE Total Tutorial Lecture Practical Code (Hours) 03 Marks Marks Marks EnergyEngineering 1 17ME71 2 0 60 100 4 3 40 2 17ME72 FluidPowerSystems 03 60 40 100 4 0 0 4 3 17ME73 ControlEngineering 100 2 03 60 40 3 0 17ME74X ProfessionalElective-III 0 03 60 40 100 4 3 0 5 17ME75X ProfessionalElective-IV 0 03 60 40 100 3 3 0 6 17MEL76 DesignLab 03 60 <u>40</u> 100 0 2 2 1 7 17MEL77 CIMLab 0 03 <mark>60</mark> <u>40</u> 100 8 17MEP78 ProjectPhase-I 100 100 2 TOTAL 18 04 04 21 420 380 800 24

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2018-2019

		Outcome	VISVESVARAYATECHNOL SchemeofT ea ch ing a BasedEducation(OBE)andChoiceBasedC	ndExamination2	018-19			lemicye	ar2018-	-		
IISEA	MESTER			,	Teaching	Hours						
					/Week			1	Examinat	ion		
1.N		ourse dCourseCode	Course Title	Teachi ng Depa ribuent	a line a line	Tutorial	Practic al/Dra uing	Duratio n inho	CIEMarks	SEEMarks	FotalMark	84
					L	т	P	-	-		-	
1	BSC	18MAT31	Transformcalculus, four ierserie sandNumeric altechniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18ME32	altechniques Mechanics of Materials		3	2		03	<mark>40</mark>	<mark>60</mark>	100	4
3	PCC	18ME33	BasicThermodynamics		3	0		03	40	60	100	3
4	PCC	18ME34	MaterialScience		3	0		03	40	60	100	3
5	PCC	18ME35Aor 18ME35B	Metalcuttingandforming MetalCastingandWelding		3	0	-	<mark>03</mark>	<mark>40</mark>	<mark>60</mark>	100	3
6	PCC	18ME36Aor	ComputerAidedMachineDrawing/		<u> </u>	4						
		18ME36B	MechanicalMeasurementsandMetrology		3	0		03	<mark>40</mark>	<mark>60</mark>	100	3
7	PCC	18MEL37A or	MaterialTestinglab		_					-	100	
		18MEL37B	Mechanical Measurements and Metrology lab		-	-	4	03	<mark>40</mark>	<mark>60</mark>	100	2
8	PCC	18MEL38A	WorkshopendMachineShopPractice(Co nsists of Fitting.andMachining)			2	2	03	40	60	100	2
		18MEL38B	Foundry Forgingand Weldinglab	1								
	HSM	18KVK39/49	VyayaharikaKannada(Kannadaforcommunicat						100			Ac
0		18KAK39/49	AadalithaKannada(KannadaforAdministrat ion)	HSMC		2			100		100	Go
1	1		OR				•				1	~~~

WSF	MESTE		VISVESVARAYATECH SchemeofT each meBasedE ducation(OBE)andChoice	ingandExamination	n2018–1	9		1 the a cad	lemicye	6		
					Teachin /Week	gHours			Examina	tion		
SLN 0		ourse dCourseCode	Course Title	Teaching Department	Theory	Tutorial	Practical/ Draving	Duration	CTR Marks	SEEMarks	FotalMarks	Crolits
					L	Т	P	17	-	-	-	
1	BSC	18MAT41	Mathematics	Mathematics	2	2		03	40	60	100	3
2	PCC	18ME42	Applied Thermodynamics		3	2		03	40	60	100	4
3	PCC	18ME43	FluidMechanics		3	0		03	40	60	100	3
4	PCC	18ME44	Kinematic sof Machines		3	0		03	40	60	100	3
5	PCC	18ME45A 18ME45B	Metalcuttingandforming MetalCastingandWelding	_	3	0		03	40	<mark>60</mark>	100	3
6	PCC	18ME46Aor	ComputerAidedMachineDrawing/		1	4						
-		18ME46B	Mechanical Measurements and Metrology		3	0	-	03	<mark>40</mark>	<mark>60</mark>	100	3



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VSEM	ESTER	(Enec	tivefromtheacademicyear2018-	-13)														
					Tea	chingH /Week	ours	Examination										
SLN 0	Cour andCo	se oursecode	CourseTitle	TerdingDe partmont	Theory							Tutorial	Practical/ Draving	Duration inhours	CIEMarks	SEEMarks	TotalMarks	Credits
-	200	101 (75.1			L	T	P		40		100	ŀ.						
	PCC	18ME51	ManagementandEconomics		2	2		03		<mark>60</mark>	100	3						
2	PCC	18ME52	Design of MachineElementsI		3	2		03	<mark>40</mark>	<mark>60</mark>	100	4						
3	PCC	18ME53	DynamicsofMachines		3	2		03	<mark>40</mark>	<mark>60</mark>	100	4						
4	PCC	18ME54	TurboMachines		3			03	40	60	100	3						
5	PCC	18ME55	FluidPowerEngineering		3			03	40	60	100	3						
6	PCC	18ME56	Operations Management		3			03	40	60	100	3						
1	PCC	18MEL57	FluidMechanics/Machineslab			2	2	03	40	60	100	2						
8	PCC	18MEL58	EnergyConversionLab			2	2	03	40	60	100	2						
9	HSMC	18CIV59	EnvironmentalStudies	Civil/Environm ental [Papersetting: Civil EngineeringBoard]	1			02	40	60	100	1						
			•	TOTAL	18	10	04	26	360	540	900	25						

Activ

					Teachi	ng Hours	Week		Exami	nation			
0	Cours urseco	eandCo de	CourseTitle	Teaching D quarbucat	Theory Lecture	Tutorial	Practical/ Draving	Duration	CTE Marks	SERMarks	fotalMarks	Credits	
					L	T	Р		2		6		
	PCC	18ME61	FiniteElementMethods		3	2		03	<mark>40</mark>	<mark>60</mark>	100	4	
	PCC		Design of MachineElementsII		3	2		03	40	60	100	4	
	PCC	18ME62 18ME63 18ME64X 18ME65X 18MEL66 18MEL67 18MEMP68	HeatTransfer		3	2	-	03	<mark>40</mark>	<mark>60</mark>	100	4	
	PEC		ProfessionalElective-1		3			03	40	60	100	3	
	OEC	18ME65X	OpenElective-A		3			03	40	60	100	3	
	PCC	18MEL66	ComputerAidedModellingand lysis Lab	Ana		2	2	03	40	60	100	2	
	PCC		HeatTransferLab			2	2	03	40	60	100	2	
	MP	18MEMP68	Mini-project				2	03	40	60	100	2	
:	Internship		Internship	Tobeca	riedoutduri	igthevaca	tion/sofV	andVII se	mesters	and/or V.	IandVII	semesters.	
				TOTA	L 15	10	06	24	320	480	800	24	
te:P	CC:Professio	nakore,PEC:P	rofessionalElective,OE: OpenEl		ui-project. essionalElec	tive 1							
	codeunderl 8	CourseTitle		Coursecodeur		Cours	Title						
	X64X	Courseinne		XX64X	luerro	cours	ernie						
ME6	41	Non-Tradit	ionalMachining	18ME644		Vibra	tionsand	VoiseEng	ineering				
ME6	42	Refrigerati	onandAirconditioning	18ME645			ositeMat						
ME6	43	TheoryofEl		18ME646			reneurshi						
			-	0	penElectiv	-A							



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VISVESVARAYATECHNOLOGICALUNIVERSITY, BELAGAVI SchemeofT eaching and Examination 2018-19 OutcomeBasedEducation(OBE) andChoiceBasedCreditSystem(CBCS)(Effectivefromtheacademicyear2 018-19) VIISEMESTER Teaching Hours /Week xamination Practical/ Drawing Teaching! purtment Theory Tutorial **CIE Marks** SEEMarks **Fotal Marks** SLN Duration CourseandCoursec ode Creftin Course Title т P L 18ME71 40 60 3 PCC 18ME72 3 ----03 <mark>40</mark> 60 100 3 PEC 18ME73X ProfessionalElective-2 60 100 03 40 18ME74X 40 60 PEC ProfessionalElective-3 03 100 OEC 18ME75X OpenElective-B 03 40 60 100 PCC 18MEL76 Computer IntegratedManufacturingLab 40 2 03 60 --2 100 2 03 60 2 ProjectWorkPhase-1 18MEP78 100 Project 100 (If not completed during the vacation of VI and VII semesters, its hall be carried outduring the vacation of VII and VIII semesters) TOTAL 15 04 06 18 340 Internship Internship 8 ---340 360 700 20 Profes nalElective-2 Coursecodeunder18XX7 CourseTitle 3X 18ME731 DesignforM2 18ME732 Automation Course codeunder18XX73X 18ME734 CourseTitle TotalQualityManagement OperationsResearch DesignforManufacture AutomationandRobotic 18ME735 ComputationalFluidDynamics 18ME733 Profess 1alElectives-3 Coursecodeunder18XX7 CourseTitle Course codeunder18XX74X 18ME744 CourseTitle 4X 18ME741 AdditiveManufacturing EmergingSustainableBuildingCooling Mechatronics 18ME742 18ME745 ProjectManagement Technologies TheoryofPlasticity 18ME743

OpenElective-B

Go to F

		OutcomeBas	VISVESVARAYATECHN SchemeofT each i edE ducation(OBE)andChoiceB	ngandExamina	tion201	8-19		ntheacad	emicyea	ır		
VIIISE	MESTER			2010-19)								_
SLN 0	Course ode	andCoursec	CourseTitle	Teaching Department	L Teachin	ng Hours/	Practical/ Drawing	Duration	Examina	tion SHEW(arths	lotalMarks	Crelits
						т	P		- ⁻		•	
1	PCC	18ME81	EnergyEngineering		3			03	40	60	100	
2	PEC	18ME82X	ProfessionalElective-4		3			03	40	60	100	
3	Project	18MEP83	ProjectWorkPhase- 2				2	03	40	60	100	
4	Seminar	18MES84	TechnicalSeminar				2	03	100		100	
5	Internship	18XXI85	Internship	Complete ofVIand emesters	∕∐semeste	evacation ersand/orV	/s /IIandVIIIs	03	40	60	100	
				TOTAL	06		04	15	260	240	500	1
Note:1	CC:Professional	Core,PEC Profess		fessionalElectives	s-4							
	nder18XX82X	CourseTitle		Course codeund	ler18XX8	2X		CourseTit				
18ME		CNCMachine	Tools	18ME82	4			Automobi	ileEngine	ering		
18ME		Tribology		18ME82	5			ToolDesig				
18ME	823	Non-Destruct	iveTestingandEvaluation	18ME82	6			Fracture	fechanic	s		



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IISEN	MESTER				Teaching	Hours		1	Examinat	ion		
SLN 0		ourse dCourseCode	Course Title	Teachi ng Depa rhuont		Tutoria	Practic al/Dra uing	Duratio n inho CIEMarks		SKEMarba	TotalMark	8 i j
	200	10141701	Transformcalculus fourierseries and Numeric		L	T	P				100	
1	BSC	18MAT31	altechniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18ME32	Mechanics of Materials		3	2	-	03	40	60	100	4
3	PCC	18ME33 18ME34	BasicThermodynamics MaterialScience		1			03	40	60 60	100 100	
5	PCC	18ME35Aor	MaterialScience		2	U.			40	60	100	3
-	FCC	18ME35B	MetalCastingandWelding	1	3	0	-	03	40	00	100	1
6	PCC	18ME36Aor	ComputerAidedMachineDrawing/		<u> </u>	4						
		18ME36B	MechanicalMeasurementsandMetrology		3	Ö	1 -	<mark>03</mark>	<mark>40</mark>	<mark>60</mark>	100	3
7	PCC	18MEL37A	MaterialTestinglab			_	_			_		
		18MEL37B	MechanicalMeasurements andMetrologylab		-	2	2	<mark>03</mark>	<mark>40</mark>	60	100	2
8	PCC	18MEL38A	WorkshopandMachineShopPractice(Co nsists of Fitting.andMachining)			2	2	03	40	60	100	2
		18MEL38B	Foundry Forgingand Weldinglab	-								
		18KVK39/49	VyayaharikaKannada(Kannadaforcommunicat		+ +		-					
	HSMC	18KAK39/49	ion)/ AadalithaKannada(KannadaforAdministrat			2			100		100	1
9	H		ien) OR	HSMC							4	
			ConstitutionofIndia ProfessionalEthics	1				02	40	60	1	
		18CPC39	andCyber Law		Examir	ationisb	vobjectivet				1	
					17	10		24	420	480		Â
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					19	14	· · ·	26	360	540	1	GG

IVS	MEST	FR		ar2018–19)								
					Teachin /Week	gHours			Examin	ation		
SLN 0		Course andCourseCode	Course Title	Tarding Department	Theory Letture	Tutorial	Practical/ Drawing	Duration inhours	CIE Marks	S KEMarks Fotal Marks		Crelits
		1		1	L	Т	P					
1	BSC	18MAT41	Mathematics	Mathematics	2	2		03	40	60	100	3
2	PCC	18ME42	AppliedThermodynamics		3	2		03	40	60	100	4
3	PCC	18ME43	FluidMechanics		3	0		03	40	60	100	3
4	PCC	18ME44	Kinematic sof Machines		3	0		03	<mark>40</mark>	<mark>60</mark>	100	3
5	PCC	18ME45A 18ME45B	Metalcuttingandforming MetalCastingandWelding	-	3	0		<mark>03</mark>	<mark>40</mark>	<mark>60</mark>	100	3
6	PCC	18ME46Aor	ComputerAidedMachineDrawing/		1	4						
		18ME46B	Mechanical Measurements and Metrology		3	0		<mark>03</mark>	<mark>40</mark>	<mark>60</mark>	100 100	3
7	PCC	18MEL47A or	MaterialTestinglab				2	03	40	60	100	2
		18MEL47B	Mechanical Measurements and Metrologylab		-	•	-	00	40	ov	100	-
8	PCC	18MEL48A	Workshop and Machine ShopPractice(Consists ofFitting, and Machi ning)		-	2	2	<mark>03</mark>	<mark>40</mark>	<mark>60</mark>	100	2
		18MEL48B	Foundry Forgingand Weldinglab	1	1							



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VISVESVARAYATECHNOLOGICALUNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2019 – 20OutcomeBasedEducation(OBE)andChoiceBasedCreditSystem(CBCS) (Effectivefromth eacademicyear2018-19) VSEMESTER TeachingHours /Week Examination Teaching D partment CourseTitle Course andCoursecode Tutorial Practical/ Drawing Crolits SLN Theory TotalMarks Duration CHEMarks SEEMarks L т P ManagementandEconomics PCC 18ME51 2 <mark>60</mark> 2 03 40 100 3 ien of Machine Elem 18ME5 DynamicsofMachines 18ME5

		Outcome	VISVESVARAYATI SchemeofT BasedEducation(OBE)andCho	eachingar biceBased	1dE xam	ination	2019-20)		ntheaca	demic	year2
ISEN	IESTER											
					Teachin	g Hours/	Week		Exami	nation		
SI. No	Cour ursec	seandCo ode	CourseTitle	TeaduingD quartment	Theory Letture	Tutorial	Practical/ Draving		CIE Marks	SEEMarks	FotalMarks	Crelits
					L	Т	P	-	<u> </u>			
1	PCC	18ME61	FiniteElementMethods		3	2		03	<u>40</u>	<mark>60</mark>	100	4
2	PCC	18ME62	Design of MachineElementsII		3	2		03	40	60	100	4
3	PCC	18ME63	HeatTransfer		3	2		03	<mark>40</mark>	60	100	4
4	PEC	18ME64X	ProfessionalElective-1		3			03	40	60	100	3
5	OEC	18ME65X	OpenElective-A		3			03	40	60	100	3
6	PCC	18MEL66	ComputerAidedModellingandAna lysis Lab			2	2	03	40	60	100	2
7	PCC	18MEL67	HeatTransferLab			2	2	03	40	60	100	2
8	MP	18MEMP68	Mini-project				2	03	40	60	100	2
9	Internship		Internship	Tobecarri	edoutdurin	gthevaca	tion/sofVI	andVIIs	emesters	and/or V	IIandVII	Isemesters.
		1		TOTAL	15	10	06	24	320	480	800	24

	C)utcomeBas ed	VISVESVARAYATECHNOL SchemeofT eaching: IE ducation(OBE)andChoiceBased	andExaminat dCreditSyster	ion2019-	-20		neacade	micyear	2				
VIISE	MESTER			018–19)										
					Teaching	g Hours /W	eek		Examination					
SLN 0	CourseandCoursec ode		Course Title	TeadingD quartment	Theory		Practical/ Drawing	Duration inhours	CIE Marks	SEEMards	lotalMarks	Crolits		
					L	Т	P	1-	–	•	-			
1	PCC	18ME71	ControlEngineering		3			03	<mark>40</mark>	<mark>60</mark>	100	3		
2	PCC	18ME72	ComputerAidedDesignandManufact uring		3	3		03	<mark>40</mark>	<mark>60</mark>	100	3		
3	PEC	18ME73X	ProfessionalElective-2		3			03	40	60	100	3		
4	PEC	18ME74X	ProfessionalElective-3		3			03	40	60	100	3		
5	OEC	18ME75X	OpenElective-B		3			03	40	60	100	3		
6	PCC	18MEL76	Computer IntegratedManufacturingLab			2	2	03	<mark>40</mark>	<mark>60</mark>	<mark>100</mark>	2		
	PCC	18MEL77	DesignLab			2	2	03	40	60	100	2		
7	Project	18MEP78	ProjectWorkPhase-1				2		100		100	1		
8	Internship		Internship	(Ifnotcomple carriedoutdu	(If not completed during the vacation of VI and VII semesters, its hall be carried out during the vacation of VII and VIII semesters)									
			•	TOTAL	15	04	06	18	340	360	700	20		
			Dester	sionalElective-										
Course 3X	ecodeunder18XX7	CourseTitle	roles	Course codeunderl	-	CourseTitle								
ISME	731	DesignforMa	nufacture	18ME734		Total	DualityMa	nagement						
18ME		Automationa		18ME735		Opera	TotalQualityManagement OperationsResearch							
18ME	733	Computation	alFluidDynamics			+ -								
			Profes	sionalElectives	-3									
Course 4X	ecodeunder18XX7	CourseTitle		Course codeunderl	8XX74X	Cours	eTitle							
18ME	741	AdditiveMan	ufacturing	18ME744		Mecha	tronics							
18ME	742	EmergingSust Technologies	ainableBuildingCooling	18ME745		Proje	rtManagen	ıent						



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			VISVESVARAYATECHNO	LOGICALUN	IVERSI	TY,BEI	LAGAVI					
			SchemeofT each ing									
		OutcomeBas	edEducation(OBE)andChoiceBas				ectivefromt	heacad	amievaa			
		OutcomeDas	cullucation (OBE) and Choice Bas		cm(CD)	-s)(EII	cuvenomi	neacau	enneyea			
				2018–19)								
VIIIS	EMESTER											
					Teachi	ng Hours/	Week		Examina	tion		
	Cours	eandCoursec		Tending Department	2.8		글 말				2	2
SLN	ode	eaducourset	CourseTitle	13 8	houry	Putonial	i i ii	inhour	1 Ť	E		Credits
•				Tendung	F 3	- A	Practical/ Drawing	Duration	CIEMarks	SEEMarks	TotalMarks	8
				1 A				Ă	5	M.	E I	
					L	Т	P					
<u> </u>	PCC	18ME81	EnergyEngineering		3			03	<mark>40</mark>	<mark>60</mark>	100	3
2	PEC	18ME82X	ProfessionalElective-4		3			03	40	60	100	3
3	Project	18MEP83	ProjectWorkPhase-2				2	03	40	60	100	8
4	Seminar	18MES84	TechnicalSeminar				2	03	100		100	1

IIISEN	MESTER		VISVESVARAYATECHNOL SchemeofT ea chinga eBasedEducation(OBE)andChoiceBasedC	ndExamination	2020-21			lemicye	ar2018	-		
					Teaching /Week	Hours		1	Examinat	ion		Γ
SLN 0		ourse dCourseCode	Course Title	Teachi ngDena rhuent	and the state	Tutorial	Practic al/Dra uing	Duratio 11 inho	CIEMarks	SEEMarks	TotalMark	54
			Transformcalculus fourierseries and Numeric		L	Т	P					-
1	BSC	18MAT31	altechniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18ME32	Mechanics of Materials		3	2		03	40	60	100	4
3	PCC	18ME33	BasicThermodynamics		3	0		03	40	60	100	3
4	PCC	18ME34	MaterialScience		3	0		03	40	60	100	3
5	PCC	18ME35Aor 18ME35B	Metalcuttingandforming MetalCastingandWelding	-	3	0	-	03	40	60	100	3
6	PCC	18ME36Aor	ComputerAidedMachineDrawing/		1	4						+
-		18ME36B	MechanicalMeasurementsandMetrology		3	0	1 -	<mark>03</mark>	<mark>40</mark>	<mark>60</mark>	<mark>100</mark>	3
7	PCC	18MEL37A or	MaterialTestinglab									

WST	MESTE		neBasedEducation(OBE)andChoiceBas a	sed Cred itSyster ar2018–19)	n(CBCS)(Effec	tivefron	1 the a cad	lemicye	•		
v ar	MESTE	ax			Teaching /Week	gHours			Examina	tion		Τ
1.N		ourse dCourseCode	Course Title	Terding Departmen t	Lecture	1 Tutorial	Practical/ Draving	Duration inhours	CIEMarks	SEEMarks	TotalMarks	Crelits
1	BSC	18MAT41	Mathematics	Mathematics	2	2		03	40	60	100	3
2	PCC	18ME42	Applied Thermodynamics			2		03	40	60	100	4
3	PCC	18ME43	FluidMechanics		3	0		03	40	60	100	
4	PCC	18ME44	Kinematic sof Machines		3	Ö		03	40	60	100	
5	PCC	18ME45A 18ME45B	Metalcuttingandforming MetalCastingandWelding		3	a	-	03	40	60	100	
6	PCC	18ME46Aor	ComputerAidedMachineDrawing/		- I	4						-
		18ME46B	MechanicalMeasurements andMetrology		3	Q	-	03	<mark>40</mark>	<mark>60</mark>	100	3
1	PCC	18MEL47A or	MaterialTestinglab		- <mark></mark>	,	,	03	40	60	100	2
		18MEL47B	MechanicalMeasurements andMetrologylab			•	•			<u></u>		
8	PCC	18MEL48A	Workshop and Machine ShopPractice(Consists ofFitting, andMachi ning)		-	2	2	<mark>03</mark>	<mark>40</mark>	<mark>60</mark>	<mark>100</mark>	2
		18MEL48B	Foundry,ForgingandWeldinglab									
		18KVK49/49	VyayaharikaKannada(Kannadaforcommunic ation)			2			100			
,		18KAK49/49	AadalithaKannada(KannadaforAdministr ation)	HSMC					100		100	
	- Maria		OR									
	HSMC	18CPH49	ConstitutionofIndia,ProfessionalEthics andCyber Law		1			02 stypequest	40	60		



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VISVESVARAYATECHNOLOGICALUNIVERSITY, BELAGAV	Ί

					Te	week	ours		Examinat	ion		
51_N)	Cour andCo	se oursecode	CourseTitle	Teaching De purchant	Theory Lecture	Tutorial	Practical/ Drawing	Duration	CIEMarks	SERMarks	FotalMarks	Credits
					L	Т	P	1	-	-	F	
I	PCC	18ME51	ManagementandEconomics		2	2		03	<mark>40</mark>	<mark>60</mark>	100	3
2	PCC	18ME52	Design of MachineElementsI		3	2		03	40	60	100	4
3	PCC	18ME53	DynamicsofMachines		3	2		03	40	60	100	4
4	PCC	18ME54	TurboMachines		3			03	40	60	100	3
5	PCC	18ME55	FluidPowerEngineering		3			03	40	60	100	3
6	PCC	18ME56	OperationsManagement		3			03	40	60	100	3
7	PCC	18MEL57	FluidMechanics/Machineslab			2	2	03	40	60	100	2
8	PCC	18MEL58	EnergyConversionLab			2	2	03	40	60	100	2
9	HSMC	18CIV59	EnvironmentalStudies	Civil/Environmental [Papersetting: Civil EngineeringBoard]	1			02	40	60	100	1
	•	•	•	TOTAL	18	10	04	26	360	540	900	25

1.01.0	MESTER				Teachi	ng Hours	Week		Exami	ation			
SI. No	Course ursecod	eandCo le	CourseTitle	TendingD quarbnort	Theory Lecture	Tutorial	Practical/ Drawing	Duration inhours	CIE Marks	SREMarks	TotalMarks	Credits	
_					L	T	P				-		
2	PCC PCC	18ME61 18ME62	FiniteElementMethods Design of MachineElementsII		1	1		03	40 40	60 60	100 100	4	
4	PCC	18ME63	HeatTransfer			4		03	40	60	100		
4	PEC	18ME64X	ProfessionalElective-1					03	40	60	100	1	
5	OEC	18ME65X	OpenElective-A					03	40	60	100		
6	PCC	18MEL66	ComputerAidedModellingandA lvsis Lab	Ana		2	2	03	40	60	100	2	
7	PCC	18MEL67	HeatTransferLab			2	2	03	40	60	100	2	
8	MP	18MEMP68	Mini-project				2	03	40	60	100	2	
9	Internship		Internship	Tobecan	riedoutdurii	igthevaca	tion/sofV	andVIIs	emesters	and/or V.	llandVII	semesters.	
	1		1	TOTAL	15	10	06	24	320	480	800	24	
			rofessionalElective,OE: OpenEle	Profes	sionalElec								
Х	secodeunder18 X64X			Coursecodeun XX64X	derlð		eTitle						
8ME				I8ME644			tionsandl						
8ME				18ME645			ositeMat			7			
8ME	.643	TheoryofEl	asticity	18ME646	11 1		reneurshi	pDevelo	pment				
hida	ntscansalactanur	maoffhaonanala	ctives offered by other Departments		enElective		tDan artm	ant/Plass	arafartot	halistofo	nanalacti	vasundar (8X X65 X)	
		tiveshallnotbea		expectatosentat	leoneredo	ymeparer	mehan	enn(r reas	ererertor	lienstoro	penereou	ves anderr or rroo rry.	



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	MESTER				Teaching	Hours /W	eek		Examinat	ion		<u> </u>
SLN 0	Courseand ode	ICoursec	Course Title	TerchingD quartment	Inceny Lecture	Tutorial	d Draving	Duration	CIRMarks	SEEMarks	TotalMarks	Crolits
1	PCC	18ME71	ControlEngineering		-			03	40	60	100	
2	PCC	18ME72	ComputerAidedDesignandManufact uring		3		-	03	40	60	100	3
3	PEC	18ME73X	ProfessionalElective-2		3			03	40	60	100	3
4	PEC	18ME74X	ProfessionalElective-3		3			03	40	60	100	3
5	OEC	18ME75X	OpenElective-B		3			03	40	60	100	3
6	PCC	18MEL76	Computer IntegratedManufacturingLab			2	2	<mark>03</mark>	<mark>40</mark>	<mark>60</mark>	<mark>100</mark>	2
	PCC	18MEL77	DesignLab			2	2	03	<mark>40</mark>	60	100	2
7	Project	18MEP78	ProjectWorkPhase-1				2	-	100		100	1
8	Internship		Internship	(Ifnotcompl carriedoutdu	eted duringt ringthevac	hevacation ationo fVII	ofVlandVl andVlllsen	Isemesters, aesters)	,itshallbe			
	•		1	TOTAL	15	04	06	18	340	360	700	20
			Profes	sionalElective-	2							
Course 3X	ecodeunder18XX7	CourseTitle		Course codeunderl	8XX73X	Cours	eTitle					
18ME)		DesignforMa		18ME734			QualityMa					
18ME3		Automationa		18ME735		Opera	tionsRese	ırch				
18ME7	733	Computation	alFluidDynamics									
			Profes	sionalElectives	-3							
4X	ecodeunder18XX7	CourseTitle		Course codeunderl	8XX74X	Cours	eTitle					
18ME7		AdditiveMan		18ME744		Mecha	atronics					
18ME7	742		ainableBuildingCooling	18ME745		Proje	ctManagen	nent				
		Technologies										
18ME7	743	TheoryofPlas	ticity									

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			VISVESVARAYATECHN				LAGAVI					
			SchemeofT each ir	gandExamina	tion202	0-21						
		OutcomeBas	edEducation(OBE)andChoiceBa	sed Cred it Syst	em(CB)	CS)(Eff	ectivefron	theacad	emicyea	r		
				2018-19)								
VIIISE	MESTER											
					Teachi	ng Hours/	Week		Examina	tion		
SLN 0	Course ode	andCoursec	CourseTitle	Teaching Department	Theory Lecture	Tutorial	Practical/ Drawing	Duration	CIEMarks	SEEMarbs	l'otalMarks	Credits
					L	Т	P		_		•	
<u> </u>	PCC	18ME81	EnergyEngineering		3			03	<u>40</u>	60	100	
2	PEC	18ME82X	ProfessionalElective-4		3			03	40	60	100	
3	Project	18MEP83	ProjectWorkPhase-2				2	03	40	60	100	
4	Seminar	18MES84	TechnicalSeminar				2	03	100		100	
5	Internship	18XXI85	Internship	Complete of Vland emesters.	/II semeste	ersand/or\	√s ∕∐andVⅢs	03	40	60	100	
				TOTAL	06		04	15	260	240	500	
Note: F	CC:Professional	Core,PECProfess	sionalElective.									
			Pro	fessionalElectives	-4							
Course codeur	ader18XX82X	CourseTitle		Course codeund		2X		CourseTit	tle			
18ME	321	CNCMachine	Tools	18ME82	4			Automob	ileEngine	ering		
18ME	322	Tribology		18ME82	5			ToolDesig	n			
18ME	323	Non-Destruct	iveTestingandEvaluation	18ME82	6			Fracture	fechanic	5		



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CIVIL

SCHEME OF TEACHING & EXAMINATION BE CIVIL ENGINEERING III SEMESTER

				Teaching /we			Ex	amination	
SI. No	Subject Code	Title	Teaching Dept.	Th.	Pr.	Dur- ation	I.A. Max. Marks	Theory/ Pract. Max. Marks	Total Marks Max. Marks
1	10 MAT 31	Engineering Mathematics –III	Maths	4		3	25	100	125
2	10 CV 32	Building Materials and Construction Technology	Civil	4		3	25	100	125
3	10 CV 33	Strength of Materials	Civil	4		3	25	100	125
4	10 CV 34	Surveying - I	Civil	4		3	25	100	125
5	10 CV 35	Fluid Mechanics	Civil	4		3	25	100	125
6	10 CV 36-	Applied Engineering Geology	Civil/Geo.	4		3	25	100	125
7	10 CVL 37	Civil Engg. Material Testing Laboratory	Civil		3	3	25	50	75
8	10 CVL 38	Surveying Practice - I	Civil		3	3	25	50	75
			Total	22	08	24	200	700	900

2016-17

Activate Window:

SCHEME OF TEACHING & EXAMINATION BE CIVIL ENGINEERING IV SEMESTER

					hing /week		Exami	nation	
S. No	Subject Code	Title	Teaching Dept.	Th.	Pr.	Dur- ation	I.A. Max. Marks	Theory/ Pract. Max. Marks	Total Marks Max. Marks
1	10 MAT 41	Engineering Mathematics –IV	Maths	4		3	25	100	125
2	10 CV 42	Concrete Technology	Civil	4		3	25	100	125
3	10 CV 43	Structural Analysis - I	Civil	4		3	25	100	125
4	10 CV 44	Surveying – II	Civil	4		3	25	100	125
5	10 CV 45	Hydraulics and Hydraulic Machines	Civil	4		3	25	100	125
6	10 CV 46	Building Planning & Drawing	Civil	1	6	4	25	100	125
7	10 CVL 47	Surveying Practice-II Laboratory	Civil		3	3	25	50	75
8	10 CVL 48	Applied Engineering Geology Laboratory	Civil/Geo.		3	3	25	50	75
			Total	21	12	25	200	700	900



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

SL			Teaching		ng Hrs / eek		Exam	ination	
No.	Subject Code	Title of the Subject	Dept.			Duration		Marks	
			Dept.	Theory	Practical	(Hrs)	IA	Theory / Practical	Total
1	10 AL 51	Management & Entrepreneurship	Any Dept.	04	-	03	25	100	125
2	10 CV 52	Design of RCC Structural Elements	Civil	04		03	25	100	125
3	10 CV 53	Structural Analysis – II	Civil	04		03	25	100	125
4	10 CV 54	Geotechnical Engineering I	Civil	04		03	25	100	125
5	10 CV 55	Hydrology and Irrigation Engineering	Civil	04		03	25	100	125
6	10 CV 56	Transportation Engineering – I	Civil	04		03	25	100	125
7	1 <mark>0_CVL 57</mark>	Hydraulics and Hydraulic Machinery Lab.	Civil		03	03	25	50	75
8	10 CVL 58	Computer Aided Design Lab.	Civil		03	03	25	50	75
		TOTAL		24	06	24	200	700	900

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

SL.			Teaching		ing Hrs / /eek		Exam	ination	
No.	Subject Code	Title of the Subject	Dept.			Duration		Marks	
180.			Dept.	Theory	Practical	(Hrs)	IA	Theory / Practical	Total
1	10 CV 61	Environmental Engineering - I	Civil	04		03	25	100	125
2	10 CV 62	Design & Drawing of RC structures	Civil	02	03	04	25	100	125
3	10 CV 63	Transportation Engineering - II	Civil	04		03	25	100	125
4	10 CV 64	Geotechnical Engineering II	Civil	04		03	25	100	125
5	10 CV 65	Hydraulic Structures and Irrigation Design-Drawing	Civil	02	03	04	25	100	125
6	10_CV 66x	Elective-I (Group A)	Civil	04		03	25	100	125
7	10 CVL 67	Geotechnical Engineering. Lab.	Civil		03	03	25	50	75
8	10 CVL 68	Extensive Survey Viva Voce	Civil		03	03	25	50	75
		TOTAL		20	12	25	200	700	900

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

				Teaching l	Hrs / Week		Exa	mination	
SI.	Subject Code	Title of the Subject	Teaching			Duration		Marks	
No.	Subject Code		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



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

				Teaching H	rs / Week		Exa	mination	
SI.	Subject Code	Title of the Subject	Teaching	i I		Duration (Hrs)	Marks		
No.	Subject Code	The of the Subject	Dept.	Theory	Practical		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
		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 Construction Management & Engineering
- 10 CV 836 Construction Management & Engl Economics.

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



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B.E. CIVIL ENGINEERING

(Common to _____)

SL.				ng Hours / Veek		Exam	ination		Credits	
No No	Subject Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	LA. Marks	Total Marks		
1	15CV31	Engineering Mathematics – III	04		03	80	20	100	4	
2	15CV32	Strength of Materials	04		03	80	20	100	4	
3	15CV33	Fluid Mechanics	04		03	80	20	100	4	
4	15CV34	Basic Surveying	04		03	80	20	100	4	
5	15CV35	Engineering Geology	04		03	80	20	100	4	
6	15CV36	Building Materials and Construction	04		03	80	20	100	4	
7	15CVL37	Building Materials Testing Laboratory		1I+2P	03	80	20	100	2	
8	15CVL38	Basic Surveying Practice		1I+2P	03	80	20	100	2	
		TOTAL	24	6	24	640	160	800	28	

Note:

Core Subjects: 15CV31, 15CV32, 15CV33, 15CV34, 15CV35, 15CV36 Laboratory & Practice: 15CVL37, 15CVL38

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

B.E. CIVIL ENGINEERING

(Common to _____)

		Title	Teaching Hours / Week			Exa	mination		
SL No	Subject Code		Theory	Practical / Drawing	Duration	Theory/ Practical Marks	LA. Marks	Total Marks	Credits
1	15CV 41	Engineering Mathematics – IV	04		03	80	20	100	4
2	15CV42	Analysis of Determinate Structures	04		03	80	20	100	4
3	15CV43	Applied Hydraulics	04		03	80	20	100	4
4	15CV 44	Concrete Technology	04		03	80	20	100	4
5	15CV45	Basic Geotechnical Engineering	04		03	80	20	100	4
6	15CV46	Advanced Surveying	04		03	80	20	100	4
7	15CVL47	Fluid Mechanics and Hydraulic Machines Laboratory		1I+2P	03	80	20	100	2
8	15CVL48	Engineering Geology Laboratory		1I+2P	03	80	20	100	2
TOTAL			24	06	24	640	160	800	28

Note:

Core Subjects:	15CV 41, 15CV42, 15CV43, 15CV 44, 15CV45, 15CV46
Laboratory & Practice:	15CVL47, 15CVL48



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B.E. CIVIL ENGINEERING

	Subject		1	ching s /Week			Credits		
SL No.	Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	LA. Marks	Total Marks	
1	15CV51	Design of RC Structural Elements	04		03	80	20	100	4
2	15CV52	Analysis of Indeterminate Structures	04		03	80	20	100	4
3	15CV53	Applied Geotechnical Engineering	04		03	80	20	100	4
4	15CV54	Computer Aided Building Planning and Drawing	01	3D	03	80	20	100	4
5	15CV55X	Professional Elective-1	03		03	80	20	100	3
6	15CV56X	Open Elective-1	03		03	80	20	100	3
7	15CVL57	Geotechnical Engineering Laboratory		1I+2P	03	80	20	100	2
8	15CVL58	Concrete and Highway Materials Laboratory		1I+2P	03	80	20	100	2
		TOTAL	19	09	24	640	160	800	26

Professional Elective 1		Open Elective 1	
15CV551	Air pollution and Control	15CV561	Traffic Engineering
15CV552	Railways, Harbours, tunneling and Airports	15CV562	Sustainability Concepts in Engineering
15CV553	Masoury Structures	15CV563	Remote Sensing and GIS
15CV554	Theory of Elasticity	15CV564	Occupational Health and Safety
		15NC565	NCC

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

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

v	I SEMESTER								
	Subject		Teaching Hours /Week				Credits		
SL No.	Code	Title	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	LA. Marks	Total Marks	
1	15CV61	Construction Management and Entrepreneurship	04		03	80	20	100	4
2	15CV62	Design of Steel Structural Elements	04		03	80	20	100	4
3	15CV63	Highway Engineering	04		03	80	20	100	4
4	15CV64	Water Supply and Treatment Engineering	04		03	80	20	100	4
5	15CV65X	Professional Elective 2	03		03	80	20	100	3
6	15CV66X	Open Elective 2	03		03	80	20	100	3
7	15CVL67	Software Application Lab		1I+2P	03	80	20	100	2
8	15CVP68	Extensive Survey Project /Camp		1I+2P	03	80	20	100	2
		TOTAL	22	6	24	640	160	800	26

Professional Elect	ive-2	Open Elective-2				
15CV651	Solid Waste Management	15CV661	Water Resource Management			
15CV652	Matrix Method of Structural Analysis	15CV662	Environmental Protection and Management			
15CV653	Alternative Building Materials	15CV663	Numerical Methods and applications			
15CV654	Ground Improvement Techniques	15CV664	Finite Element Analysis			

B.E. CIVIL ENGINEERING



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B.E. CIVIL ENGINEERING

	TI SEMEST			aching rs /Week		Exam	ination		Credit	
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	
		TOTAL	18	9	21	240	560	800	24	
ofessiona	l Elective 3		Professio	nal Elective 4	I	•	•			
CV741	CV741 Design of Bridges				Urban Transportation and Planning					
CV742	CV742 Ground Water & Hydraulics				Prefabricated	Structures				
CV743	Design Con	cept of Building Services	15CV753 15CV754		Rehabilitation and Retrofitting of Structures					
5CV744 Structural Dynamics				-	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 BE CIVIL ENGINEERING

	Cablert			s /Week		Exa	nination		Credits
SL No.	Subject Code	Title	Theory	Practical/ Drawing	Duration	LA. 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	-	3	20	80	100	4
3	15CV83X	Professional Elective 5	3	-	3	20	80	100	3
4	15CV84	Internship/Professional Practice	Industr	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

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



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III SEMESTER

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

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 F: CIVIL ENGINEERING

SL.			Teaching	Teaching	Hours /Week		Exami	nation		Credits
No.	Course Code	Title	Department	Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics -III*	Maths	04		03	60	40	100	4
2	17CV32	Strength of Materials	Civil Engg.	04		03	60	40	100	4
3	17CV33	Fluid Mechanics	Civil Engg.	04		03	60	40	100	4
4	17CV34	Basic Surveying	Civil Engg.	04		03	60	40	100	4
5	17CV35	Engineering Geology	Civil Engg.	04		03	60	40	100	3
6	17CV36	Building Materials and Construction	Civil Engg.	03		03	60	40	100	4
7	17CVL37	Building Materials Testing Laboratory	Civil Engg.	01-Hour In 02-Hour Pr		03	60	40	100	2
8	17CVL38	Basic Surveying Practice	Civil Engg.	01-Hour In 02-Hour Pr		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
		TOTAL			: 24hours al: 06 hours	25	510	340	850	28

and Human Rights in cycle based concept during III and IV semesters.

2. Audit Course: (i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – I, which is 03 contact hours per week.

1 17MATDIP31 Additional Mathematics -I Maths 03 03 60		60 -	60	
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(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI 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 IV SEMESTER Teaching Teaching Hours /Week Examination Credits SL. Departu Course Code Title Practical/ Duration in SEE CIE Total No Theory Drawing fark Marks Marks urs 1 17MAT41 Engineering Mathematics -IV* Maths 04 03 60 40 100 4 Civil Engg 17CV42 Analysis of Determinate Structures 04 03 60 40 100 3 2 Civil Engg. 17CV43 03 60 100 Applied Hydraulics 04 40 4 3 Civil Engg. 4 17CV44 Concrete Technology 04 03 60 40 100 4 Civil Engg. 17CV45 Basic Geotechnical Engineering 04 40 4 5 03 60 100 Civil Engg. 6 17CV46 Advanced Surveying 03 03 60 40 100 4 Civil Engg. 01-Hour Instruction 2 17CVL47 Fluid Mechanics Laboratory 7 03 60 40 100 02-Hour Practical Civil Engg. 01-Hour Instruction 2 8 17CVL48 Engineering Geology Laboratory 03 60 40 100 02-Hour Practical Kannada/Constitution of India 9 17KL/CPH39/49 Humanities 01 01 30 20 50 01 Professional Ethics and Human Rights Theory: 24h urs TOTAL 25 510 340 850 28 Practical: 06 hours

1. Kannada/Constitution of India, Professional Ethics and Human Rights: 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

2.Audit Course:

(i) *All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics - II. which is 03 contact hours per week.

1	17MATDIP41	Additional Mathematics –II	Maths	03	03	60	 60	-

(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)



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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

SL.		Title	Teaching Department	Teaching	Hours /Week			Credits		
No.	Course Code			Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CV51	Design of RC Structural Elements	Civil Engg.	04		03	60	40	100	4
2	17CV52	Analysis of Indeterminate Structures	Civil Engg.	04		03	60	40	100	4
3	17CV53	Applied Geotechnical Engineering	Civil Engg.	04		03	60	40	100	4
4	17CV54	Computer Aided Building Planning and Drawing	Civil Engg.	04		03	60	40	100	4
5	17CV55X	Professional Elective-1	Civil Engg.	03		03	60	40	100	3
6	17CV56X	Open Elective-1	Civil Engg.	03		03	60	40	100	3
7	17CVL57	Geotechnical Engineering Laboratory	Civil Engg.	01-Hour I 02-Hour I	nstruction Practical	03	60	40	100	2
8	17CVL58	Concrete and Highway Materials Laboratory	Civil Engg.	01-Hour I 02-Hour I	instruction 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 Civil Engg Board only)
17CV551	Air pollution and Control	17CV561	Traffic Engineering
17CV552	Railways, Harbours, tunneling and Airports	17CV562	Sustainability Concepts in Engineering
17CV553	Masoury Structures	17CV563	Remote Sensing and GIS
17CV554	Theory of Elasticity	17CV563	Occupational Health and Safety
		17CV563	NCC

***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.

6



VI SEMIESTER

THE OXFORD COLLEGE OF ENGINEERING

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

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

SL	Course	Title	Teaching Department		ng Hours Veek		Examin	ation		Credits
No.	Code			Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17CV61	Construction Management and Entrepreneurship	Civil Engg.	04		03	60	40	100	4
2	17CV62	Design of Steel Structural Elements	Civil Engg.	04		03	60	40	100	4
3	17CV63	Highway Engineering	Civil Engg.	04		03	60	40	100	4
4	17CV64	Water Supply and Treatment Engineering	Civil Engg.	04		03	60	40	100	4
5	17CV65X	Professional Elective-2	Civil Engg.	03		03	60	40	100	3
6	17CV66X	Open Elective-2	Civil Engg.	03		03	60	40	100	3
7	17CVL67	Software Application Laboratory	Civil Engg.	01-Hour In 02-Hour P		03	60	40	100	2
8	17CVL68	Extensive Survey Project /Camp	Civil Engg.	01-Hour In 02-Hour P		03	60	40	100	2
			TOTAL	Theory:22 Practical:		24	480	320	800	26

Professional I	Elective-2	Open Elective	 - 2*** (List offered by Civil Engg Board only)
17CV651	Solid Waste Management	17CV661	Water Resource Management
17CV652	Matrix Method of Structural Analysis	17CV662	Environmental Protection and Management
17CV653	Alternative Building Materials	17CV663	Numerical Methods and Applications
17CV654	Ground Improvement Techniques	17CV664	Finite Element Analysis

***Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives).

The students can select any one of the open electives othered by any Department (Prease refer to consolidated list of V10 for open electives).
 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.

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B.E: CIVIL ENGINEERING

			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 In 02-Hour P		03	60	40	100	2
7	17CVL77	Computer Aided Detailing of Structures	Civil Engg.	01-Hour In 02-Hour P		03	60	40	100	2
8	17CVP78	Project Work Phase-I + Project work Seminar	Civil Engg.		03		-	100	100	2
		TOTAL	-	Theory:18 Practical 09 hours	and Project:	21	420	380	800	24

Professional E	Elective-3	Professional	Elective-4
17CV741	17CV741 Design of Bridges		Urban Transportation and Planning
17CV742	17CV742 Ground Water & Hydraulics		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. CTE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.



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B.E: CIVIL ENGINEERING

			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.	Inclus	try 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

	Elective -5
17CV831	Earthquake Engineering
17CV832	Hydraulic Structures
	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



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2

		IL ENGINE	ERING									
III SEM	ESTER		l	ı — —	Trachin	e Hours /	Und		Parat			·
SL No		urse and rse Code	Course Title	Teaching Department	Lescure Logan	T uteria Ila Lionus //	Practical 3	Duration in hours	OE Marks	instion SEE Warks	Fotal Marks	Credits
				_	L	т	P	•	•	8	F	
1	BSC	18MAT31	Transform Calculus, Fourier Series and Numerical Techniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18CV32	Strength of Materials	Civil Engg.	3	2	-	03	40	60	100	4
3	PCC	18CV33	Fluid Mechanics	Civil Engg.	3	0	-	03	40	60	100	3
4	PCC	18CV34	Building Materials and Construction	Civil Engg.	3	0	-	03	40	60	100	3
5	PCC	18CV35	Basic Surveying	Civil Engg.	3	0		03	40	60	100	3
6	PCC	18CV36	Engineering Geology	Geology	3	0		03	40	60	100	3
7	PCC	18CVL37	Computer Aided Building Planning & Drawing	Civil Engg.		2	2	03	40	60	100	2
8	PCC	18CVL38	Building Materials Testing Laboratory	Civil Engg.	-	2	2	03	40	60	100	2
		18KVK39	Vyavaharika Kannada (Kannada for communication)/									
			OR	1		2		-	100			1
0	HSMC	18KAK39	Aadalitha Kannada (Kannada for Administration)	HSMC							100	1
	1100010		OR	113010							100	•
		18CPC39	Constitution of India, Professional Ethics and Cyber	1	1		-	02	40	60		1
		1802039	Law			mination	is by obj	ective typ	e questi	ons		
					17	08		24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					18	10		26	360	540		
Notes DO	0. 0	DOC. T	Professional Core. HSMC: Humanity and Social Science.	2102.00	a	1						
			Kannada for communication) is for non-Kannada speaki					20 4-4-1	idea Mar	and a fee	annada fa	_
		r students who	o speak, read and write Kannada.		-					mada (F	AIIIIAGA 10	ſ
		Cour: 18MATDIP	se prescribed to lateral entry Diploma holders a 31 Additional Mathematics - I	dmitted to III Mathematics	[semeste	er of Eng	gineerin	ig progr	ams			

CIVIL ENGI ER Course and Course code	Course Tide	ng Kent		ing Hours /V			Eram	ination		
Course and	Course Tide	ng Ment					Exam	ination		<u> </u>
	Course Tide	21								
		Teaching	Theory Lecture	Tutorial	Practical	Duration in hours	CIE Marks	SEE Marks	Fotal Marks	Credits
			L	Т	P	-	Ŭ		F	
18MAT41	Complex Analysis, Probability And Statistical Methods	Mathematics	2	2	-	03	40	60	100	3
18CV42	Analysis of Determinate Structures	Civil Engg.	3	2	-	03	40	60	100	4
18CV43	Applied Hydraulics	Civil Engg.	3	0	-	03	40	60	100	3
			3	0	-					3
		Civil Engg.	3	0	-					3
		Civil Engg.	3	0	-					3
		Geology		2	2					2
	Fluid Mechanics and Hydraulic Machines Laboratory	Civil Engg.		2	2	03	40	60	100	2
18KVK39/49	Vyavaharika Kannada (Kannada for Communication)/									
	OR	1		2	-		100			1
18KAK30/40	Aadalitha Kannada (Kannada for Administration)								100	Ι.
	OR	HSMC							100	1
			1	-	-	02	40	60	1	1
18CPC39/49	Constitution of India, Professional Ethics and Cyber Law		I	vamination	a is by obje	ctive type	questions		1	1
		TOTAL	17	08		24	420	480		\vdash
			OR	OR	04	OR	OR	OR	900	24
			18	10		26	360	540		
	18CV42 18CV43 18CV44 18CV45 18CV45 18CV45 18CV47 18CV147 18CV148 18KVK39/49 18KAK39/49 18CPC39/49	18CV42 Analysis of Determinate Structures 18CV43 Applied Hydraulics 18CV44 Concrete Technology 18CV45 Advanced Surveying 18CV46 Water Supply & Treatment Engineering 18CV47 Engineering Geology Laboratory 18CVL47 Engineering Geology Laboratory 18CVL48 Fluid Mechanics and Hydraulic Machines Laboratory 18CVK39/49 Vyavaharika Kannada (Kannada for Communication)/ 0R 0R 18CPC39/49 Constitution of India, Professional Ethics and Cyber Law	18CV42 Analysis of Determinate Structures Civil Engg. 18CV43 Applied Hydraulics Civil Engg. 18CV44 Concrete Technology Civil Engg. 18CV45 Advanced Surveying Civil Engg. 18CV46 Water Supply & Treatment Engineering Civil Engg. 18CV47 Engineering Geology Laboratory Geology 18CV48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. 18CVL47 Engineering Geology Laboratory Civil Engg. 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. 18CVK39/49 Vyavaharika Kannada (Kannada for Communication)' OR 0R 0R ItsCPC39/49 Constitution of India, Professional Ethics and Cyber Law	18CV42 Analysis of Determinate Structures Civil Engg. 3 18CV43 Applied Hydraulics Civil Engg. 3 18CV44 Concrete Technology Civil Engg. 3 18CV45 Advanced Surveying Civil Engg. 3 18CV46 Water Supply & Treatment Engineering Civil Engg. 3 18CV45 Haid Mechanics and Hydraulic Machines Laboratory Geology 18CVL47 Engineering Geology Laboratory Geology 18CVL48 Fluid Mechanics and Hydraulic Machines Laboratory Civil Engg. 18CVL49 Vavaharika Kannada (Kannada for Communication)' 0R 18CPC39/49 Constitution of India, Professional Ethics and Cyber Law 1 TOTAL	ISCV42 Analysis of Determinate Structures Civil Engs. 3 0 ISCV43 Applied Hydraulics Civil Engs. 3 0 ISCV44 Concrete Technology Civil Engs. 3 0 ISCV45 Advanced Surveying Civil Engs. 3 0 ISCV46 Water Supply & Treatment Engineering Civil Engs. 3 0 ISCV45 Advanced Surveying Civil Engs. 3 0 ISCV46 Water Supply & Treatment Engineering Civil Engs. 3 0 ISCV47 Engineering Geology Laboratory Geology 2 ISCVL47 Engineering Geology Laboratory Civil Engs. 2 ISCVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engs. 2 ISCVK39/49 Vyavaharika Kannada (Kannada for Communication)/ 2 2 ISCVC39/49 Constitution of India, Professional Ethics and Cyber Law TOTAL 1 - ISCPC39/49 Constitution of India, Professional Ethics and Cyber Law TOTAL 17 08	18CV42 Analysis of Determinate Structures Civil Engg. 3 2 - 18CV43 Applied Hydraulics Civil Engg. 3 0 - 18CV44 Concrete Technology Civil Engg. 3 0 - 18CV44 Concrete Technology Civil Engg. 3 0 - 18CV45 Advanced Surveying Civil Engg. 3 0 - 18CV45 Water Supply & Treatment Engineering Civil Engg. 3 0 - 18CVL47 Engineering Geology Laboratory Geology - 2 2 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 2 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 2 18CVL39/49 Vaalatiha Kannada (Kannada for Administration) - - 2 - 0R - - 1 - - - 18CPC39/49 Constitution of India, Professional Ethics and Cyber Law	18CV42 Analysis of Determinate Structures Civil Engg. 3 2 - 03 18CV43 Applied Hydraulics Civil Engg. 3 0 - 03 18CV44 Concrete Technology Civil Engg. 3 0 - 03 18CV44 Concrete Technology Civil Engg. 3 0 - 03 18CV45 Advanced Surveying Civil Engg. 3 0 - 03 18CV46 Water Supply & Treatment Engineering Civil Engg. 3 0 - 03 18CVL47 Engineering Geology Laboratory Geology - 2 2 03 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 2 03 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 2 03 18EVK39/49 Vaadalitha Kannada (Kannada for Administration) - 2 - - - - 1 - 02 </td <td>18CV42 Analysis of Determinate Structures Civil Engg. 3 2 - 03 40 18CV43 Applied Hydraulics Civil Engg. 3 0 - 03 40 18CV44 Concrete Technology Civil Engg. 3 0 - 03 40 18CV45 Advanced Surveying Civil Engg. 3 0 - 03 40 18CV45 Water Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 18CV45 Water Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 18CVL47 Engineering Geology Laboratory Geology - 2 2 03 40 18CVL48 Faid Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 0 - 103 40 18KVK39/49 Vavaharika Kannada (Kannada for Administration) OR - 2 - - 100 18CPC39/49 Constitution</td> <td>ISCV42 Analysis of Determinate Structures Civil Engg. 3 2 - 03 40 60 ISCV43 Applied Hydraulics Civil Engg. 3 0 - 03 40 60 ISCV44 Concrete Technology Civil Engg. 3 0 - 03 40 60 ISCV45 Advanced Surveying Civil Engg. 3 0 - 03 40 60 ISCV45 Advanced Surveying Civil Engg. 3 0 - 03 40 60 ISCV45 Mater Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 60 ISCV45 Mater Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 60 ISCVL47 Engineering Kannada (Kannada for Communication)/ Geology - 2 2 03 40 60 ISKVK39/49 Vavaharika Kannada (Kannada for Administration) - 2 -</td> <td>ISCV41 Analysis of Determinate Structures Civil Engg 3 2 - 03 40 60 100 ISCV43 Applied Hydraulics Civil Engg 3 0 - 03 40 60 100 ISCV44 Concrete Technology Civil Engg 3 0 - 03 40 60 100 ISCV45 Advanced Surveying Civil Engg 3 0 - 03 40 60 100 ISCV45 Advanced Surveying Civil Engg 3 0 - 03 40 60 100 ISCV45 Advanced Surveying Civil Engg 3 0 - 03 40 60 100 ISCVL47 Engineering Geology Laboratory Civil Engg - 2 03 40 60 100 ISCVL48 Fhicit Mechanics and (Kannada for Communication)/ - 2 - - 100 - ISKVK39/49 Adalitha Kannada (Kannada for Administrati</td>	18CV42 Analysis of Determinate Structures Civil Engg. 3 2 - 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L Course and Course code Course Tide Image: Course Tide I	Drog	TO DO DO	CIVIL ENG		m the academic year 201	8 – 19)							
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a poc 18CV52 Analysis of Indeterminate Structures Civil Engg. 3 2 - 03 40 60 100 3 PCC 18CV53 Design of RC Structural Elements Civil Engg. 3 2 - 03 40 60 100 4 PCC 18CV54 Basic Geotechnical Engineering Civil Engg. 3 - - 03 40 60 100 5 PCC 18CV56 Municipal Wastewate Engineering Civil Engg. 3 - - 03 40 60 100 6 PCC 18CV56 Highway Engineering Civil Engg. 3 - - 03 40 60 100 7 PCC 18CV56 Highway Engineering Civil Engg. - 2 0.3 40 60 100 8 PCC 18CV58 Concrete and Highway Materials Laboratory Civil Engg. - 2 0.3 40 60 100						L	Т	P	-	Ŭ		-	
3 PCC 18CV53 Design of RC Structural Elements Civil Engg 3 2 03 40 60 100 4 PCC 18CV54 Basic Geotechnical Engineering Civil Engg 3 - 03 40 60 100 5 PCC 18CV56 Highway Engineering Civil Engg 3 - 03 40 60 100 6 PCC 18CV56 Highway Engineering Civil Engg 3 - 03 40 60 100 7 PCC 18CV56 Highway Engineering Civil Engg - 2 03 40 60 100 7 PCC 18CV157 Surveying Practice Civil Engg - 2 03 40 60 100 8 PCC 18CTV58 Concrete and Highway Materials Laboratory Civil Engg - 2 03 40 60 100 9 HSMC <td>1</td> <td>HSMC</td> <td>18CV51</td> <td>Construction Management & Entrepreneurship</td> <td>Civil Engg.</td> <td>2</td> <td>2</td> <td></td> <td>03</td> <td>40</td> <td>60</td> <td>100</td> <td>3</td>	1	HSMC	18CV51	Construction Management & Entrepreneurship	Civil Engg.	2	2		03	40	60	100	3
4 PCC 18CV54 Basic Geotechnical Engineering Civil Engg 3 - - 03 40 60 100 5 PCC 18CV55 Municipal Wastewate Engineering Civil Engg 3 - - 03 40 60 100 6 PCC 18CV56 Highway Engineering Civil Engg 3 - - 03 40 60 100 7 PCC 18CV56 Highway Engineering Civil Engg - 2 0.3 40 60 100 7 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engg - 2 0.3 40 60 100 8 PCC 18CTV59 Environmental Studies Civil Engineering - 2 0.3 40 60 100 9 HSMC 18CTV59 Environmental Studies [Paper setting Board; Civil Engineering] 1 - - 0.2 40 60 100 - </td <td>2</td> <td>PCC</td> <td>18CV52</td> <td>Analysis of Indeterminate Structures</td> <td>Civil Engg.</td> <td>3</td> <td>2</td> <td></td> <td>03</td> <td>40</td> <td>60</td> <td>100</td> <td>4</td>	2	PCC	18CV52	Analysis of Indeterminate Structures	Civil Engg.	3	2		03	40	60	100	4
5 PCC 18CV55 Municipal Wastewater Engineering Civil Engs 3 - - 03 40 60 100 6 PCC 18CV36 Highway Engineering Civil Engs 3 - - 03 40 60 100 7 PCC 18CV35 Surveying Practice Civil Engs - 0 2 03 40 60 100 8 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engs - 2 03 40 60 100 9 HSMC 18CIV59 Environmental Studies [Pager setting Board: Civil Engineering] 1 - - 02 40 60 100	3	PCC	18CV53	Design of RC Structural Elements	Civil Engg.	3	2	-	03	40	60	100	4
6 PCC 18CV36 Highway Engineering Civil Engg. 3 - - 03 40 60 100 7 PCC 18CVL57 Surveying Practice Civil Engg. - 2 03 40 60 100 8 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engg. - 2 0.3 40 60 100 9 HSMC 18CTV59 Environmental Studies Page-restring Board 1 - - 0.2 40 60 100	4	PCC	18CV54	Basic Geotechnical Engineering	Civil Engg.	3	-	-	03	40	60	100	3
7 PCC 18CVL57 Surveying Practice Civil Engg. - 2 2 03 40 60 100 8 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engg. - 2 0.3 40 60 100 9 HSMC 18CTV59 Environmental Studies [Paper setting Board] 1 - - 0.2 40 60 100	5		18CV55	Municipal Wastewater Engineering	Civil Engg.	3	-		03	40			3
8 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engine - 2 2 03 40 60 100 9 HSMC 18CIV59 Environmental Studies [Page setting Board: Civil Engineering] 1 - - 02 40 60 100	6		18CV56			3	-	-	03	40		100	3
9 HSMC 18CIV59 Environmental Studies (Paper setting Board: Civil Environmental (Paper setting Board: Civil Engineering)	7				Civil Engg.	-	2	2	03	40	60	100	2
9 HSMC 18CTV59 Environmental Studies [Paper setting Board: Civil Engineering] 1 - 02 40 60 100	8	PCC	18CVL58	Concrete and Highway Materials Laboratory		-	2	2	03	40	60	100	2
	9	HSMC	18CIV59	Environmental Studies	[Paper setting Board:	1	-		02	40	60	100	1
TOTAL 18 10 04 26 360 540 900 1					TOTAL	18	10	04	26	360	540	900	25

			VISVES	ARAYA TECH	NOLOGICA	L UNIVE	RSITY. BE	LAGAVI					
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SI.	Cour	se and			T eaching De partment	Theory	Tutorla	Practic al/ Drawin g	Duration in hours	Marks	SEE Marks	- 2	Credits
No	Cour	se code	Course	e Title	ard	et p	j≝ –	E E E	문리	Ma	Ma	Total Marks	rec
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		_				L	T	P		С	s		
1	PCC	18CV61	Design of Ste Elements	el Structural	Civil Engg,	3	2	-	03	40	60	100	4
2	PCC	18CV62	Applied Geote Engineering	chnical	Civil Engg,	3	2		03	40	60	100	4
3	PCC	18CV63	Hydrology and	d Irrigation	Civil	3	2		03	40	60	100	4
4	PEC		Engineering		Engg. Civil		_		_	40	60	100	_
*	FEC	18CV64X	Professional E	lective -1	Engg.	3	-	-	03	40	00	100	3
5	OEC	18CV65X	Open Elective	-A	Civil Engg,	3			03	40	60	100	3
6	PCC	18CVL66	Software Appl Laboratory	ication	Civil Engg.		2	2	03	40	60	100	2
7	PCC	18CVL67	Environmenta	-	Civil		2	2	03	40	60	100	2
<u> </u>			Engineering L	aboratory	Engg.		2	2					
8	EP	18CVEP68	Extensive Surv	vey project	Civil Engg,		2	2	03	40	60	100	2
9	Internship		Internship				luring the	vacation/s of	VI and	VII seme	sters and	/or VII a	and
					VIII seme	sters. 5	12	06	24	320	480	800	24
<u> </u>				10	JAL	5	12	06	24	320	480	800	24
Note:	PCC: Professio	onal core, PEC:	Professional El	ective, OE: Op	en Elective	, MP: Mi	ni-projec	rt.					
<u> </u>				Prof	essional El	ortive .1							
	Course co	de under 18CV	64X		contract Li	ceure-1							
		18CV641		Matrix Metho	od of Struct	ural Ana	lysis						



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			VISVESVARAYA TECHN					AVI				
			Scheme of Teach									
			Outcome Based Education(OBI	and Choice	Based C	Fredit 5	ystem	(CBCS)				
			(Effective from	the academic	year 201	.8 – 19)						
	unme: CIV		EERING									
VII SI	EMESTER											
					Teachi	ng Hours /	Week		Ers	mination		-
SL No		rse and rse code	Course Tide	Teaching Department	Theory Locture	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	fetal Marks	Credits
					L	Т	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	-		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.		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			n or VI	and VII ser	mesters, n	tsha∐ be	carried out d	uring the
			•	TOTAL	15	04	06	21	380	420	00	20
						· · · ·				·	•	<u> </u>
Note: PO	CC: Professionz	al core, PEC: P	rofessional Elective.									
-				ofessional Elective	2-2							
18CV73	code under 18		Course Title Theory of Elasticity									
18CV73			Air Pollution and Control									
	-	-										
18CV73	-	I	Pavement Materials & Construction									
18CV73		(Ground Water Hydraulics									
18CV73	5	1	Masonry Structures									
				fessional Elective	s-3							
	code under 18		ourse Title									
18CV74			arthquake Engineering									
18CV74			esign Concepts of Building Services									
18CV74	5	R	einforced Earth Structures									

			Outcome Based Education(O				ystem (O	BCS)				
				om the academic ye	ar 2018	- 19)						
		ENGINEER	ING									
JII SEN	MESTER					_						
					Teach	ng Hours	/Week		Es	amination		
SL No		urse and urse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical Drawing	Duration in hours	OE Marks	SEE Marks	fotal Marks	Credits
					L	Т	P		-		- F	
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
			I	TOTAL	06		18	15	260	240	500	18
iote: PC(C: Professional (Core, PEC: Profe	ssional Elective.									
				Professional Electives -	4							
	de under 18CV	/82X	Course Title									
8CV821 8CV822			Bridge Engineering									
			Prefabricated Structures									
8CV823			Advanced Foundation Engineering									
8CV824			Rehabilitation & Retrofitting									
8CV825			Pavement Design									

The CIE marks awarded for the project work phase -2, shall be based on the evaluation of project work phase -2 Keport, 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:

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		IL ENGINE	ERING									
III SEM	ESTER		l	ı — —	Trachin	e Hours /	Und		Parat			·
SL No		urse and rse Code	Course Title	Teaching Department	Lescure Los anno 1	T uteria Ila Lionus //	Practical 3	Duration in hours	OE Marks	instion SEE Warks	Fotal Marks	Credits
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1	BSC	18MAT31	Transform Calculus, Fourier Series and Numerical Techniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18CV32	Strength of Materials	Civil Engg.	3	2	-	03	40	60	100	4
3	PCC	18CV33	Fluid Mechanics	Civil Engg.	3	0	-	03	40	60	100	3
4	PCC	18CV34	Building Materials and Construction	Civil Engg.	3	0	-	03	40	60	100	3
5	PCC	18CV35	Basic Surveying	Civil Engg.	3	0		03	40	60	100	3
6	PCC	18CV36	Engineering Geology	Geology	3	0		03	40	60	100	3
7	PCC	18CVL37	Computer Aided Building Planning & Drawing	Civil Engg.		2	2	03	40	60	100	2
8	PCC	18CVL38	Building Materials Testing Laboratory	Civil Engg.	-	2	2	03	40	60	100	2
		18KVK39	Vyavaharika Kannada (Kannada for communication)/									
			OR	1		2		-	100			1
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	1100010		OR	113010							100	•
		18CPC39	Constitution of India, Professional Ethics and Cyber	1	1		-	02	40	60		1
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			Kannada for communication) is for non-Kannada speaki					20 4-4-1	idea Mar	and a fee	annada fa	_
		r students who	o speak, read and write Kannada.		-					mada (F	AIIIIAGA 10	ſ
		Cour: 18MATDIP	se prescribed to lateral entry Diploma holders a 31 Additional Mathematics - I	dmitted to III Mathematics	[semeste	er of Eng	gineerin	ig progr	ams			

CIVIL ENGI ER Course and Course code	Course Tide	ng Kent		ing Hours /V			Eram	ination		
Course and	Course Tide	ng Ment					Exam	ination		<u> </u>
	Course Tide	21								
		Teaching	Theory Lecture	Tutorial	Practical	Duration in hours	CIE Marks	SEE Marks	Fotal Marks	Credits
			L	Т	P	-	Ŭ	*	F	
18MAT41	Complex Analysis, Probability And Statistical Methods	Mathematics	2	2	-	03	40	60	100	3
18CV42	Analysis of Determinate Structures	Civil Engg.	3	2	-	03	40	60	100	4
18CV43	Applied Hydraulics	Civil Engg.	3	0	-	03	40	60	100	3
			3	0	-					3
		Civil Engg.	3	0	-					3
		Civil Engg.	3	0	-					3
		Geology		2	2					2
	Fluid Mechanics and Hydraulic Machines Laboratory	Civil Engg.		2	2	03	40	60	100	2
18KVK39/49	Vyavaharika Kannada (Kannada for Communication)/									
	OR	1		2	-		100			1
18KAK30/40	Aadalitha Kannada (Kannada for Administration)								100	Ι.
	OR	HSMC							100	1
			1	-	-	02	40	60	1	1
18CPC39/49	Constitution of India, Professional Ethics and Cyber Law		I	vamination	a is by obje	ctive type	questions		1	1
		TOTAL	17	08		24	420	480		\vdash
			OR	OR	04	OR	OR	OR	900	24
			18	10		26	360	540		
	18CV42 18CV43 18CV44 18CV45 18CV45 18CV45 18CV47 18CV147 18CV148 18KVK39/49 18KAK39/49 18CPC39/49	18CV42 Analysis of Determinate Structures 18CV43 Applied Hydraulics 18CV44 Concrete Technology 18CV45 Advanced Surveying 18CV46 Water Supply & Treatment Engineering 18CV47 Engineering Geology Laboratory 18CVL47 Engineering Geology Laboratory 18CVL48 Fluid Mechanics and Hydraulic Machines Laboratory 18CVK39/49 Vyavaharika Kannada (Kannada for Communication)/ 0R 0R 18CPC39/49 Constitution of India, Professional Ethics and Cyber Law	18CV42 Analysis of Determinate Structures Civil Engg. 18CV43 Applied Hydraulics Civil Engg. 18CV44 Concrete Technology Civil Engg. 18CV45 Advanced Surveying Civil Engg. 18CV46 Water Supply & Treatment Engineering Civil Engg. 18CV47 Engineering Geology Laboratory Geology 18CV48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. 18CVL47 Engineering Geology Laboratory Civil Engg. 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. 18CVK39/49 Vyavaharika Kannada (Kannada for Communication)' OR 0R 0R ItsCPC39/49 Constitution of India, Professional Ethics and Cyber Law	18CV42 Analysis of Determinate Structures Civil Engg. 3 18CV43 Applied Hydraulics Civil Engg. 3 18CV44 Concrete Technology Civil Engg. 3 18CV45 Advanced Surveying Civil Engg. 3 18CV46 Water Supply & Treatment Engineering Civil Engg. 3 18CV45 Haid Mechanics and Hydraulic Machines Laboratory Geology 18CVL47 Engineering Geology Laboratory Geology 18CVL48 Fluid Mechanics and Hydraulic Machines Laboratory Civil Engg. 18CVL49 Vavaharika Kannada (Kannada for Communication)' 0R 18CPC39/49 Constitution of India, Professional Ethics and Cyber Law 1 TOTAL	ISCV42 Analysis of Determinate Structures Civil Engs. 3 0 ISCV43 Applied Hydraulics Civil Engs. 3 0 ISCV44 Concrete Technology Civil Engs. 3 0 ISCV45 Advanced Surveying Civil Engs. 3 0 ISCV46 Water Supply & Treatment Engineering Civil Engs. 3 0 ISCV45 Advanced Surveying Civil Engs. 3 0 ISCV46 Water Supply & Treatment Engineering Civil Engs. 3 0 ISCV47 Engineering Geology Laboratory Geology 2 ISCVL47 Engineering Geology Laboratory Civil Engs. 2 ISCVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engs. 2 ISCVK39/49 Vyavaharika Kannada (Kannada for Communication)/ 2 2 ISCVC39/49 Constitution of India, Professional Ethics and Cyber Law TOTAL 1 - ISCPC39/49 Constitution of India, Professional Ethics and Cyber Law TOTAL 17 08	18CV42 Analysis of Determinate Structures Civil Engg. 3 2 - 18CV43 Applied Hydraulics Civil Engg. 3 0 - 18CV44 Concrete Technology Civil Engg. 3 0 - 18CV44 Concrete Technology Civil Engg. 3 0 - 18CV45 Advanced Surveying Civil Engg. 3 0 - 18CV45 Water Supply & Treatment Engineering Civil Engg. 3 0 - 18CVL47 Engineering Geology Laboratory Geology - 2 2 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 2 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 2 18CVL39/49 Vaalatiha Kannada (Kannada for Administration) - - 2 - 0R - - 1 - - - 18CPC39/49 Constitution of India, Professional Ethics and Cyber Law	18CV42 Analysis of Determinate Structures Civil Engg. 3 2 - 03 18CV43 Applied Hydraulics Civil Engg. 3 0 - 03 18CV44 Concrete Technology Civil Engg. 3 0 - 03 18CV44 Concrete Technology Civil Engg. 3 0 - 03 18CV45 Advanced Surveying Civil Engg. 3 0 - 03 18CV46 Water Supply & Treatment Engineering Civil Engg. 3 0 - 03 18CVL47 Engineering Geology Laboratory Geology - 2 2 03 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 2 03 18CVL48 Fhild Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 2 03 18EVK39/49 Vaadalitha Kannada (Kannada for Administration) - 2 - - - - 1 - 02 </td <td>18CV42 Analysis of Determinate Structures Civil Engg. 3 2 - 03 40 18CV43 Applied Hydraulics Civil Engg. 3 0 - 03 40 18CV44 Concrete Technology Civil Engg. 3 0 - 03 40 18CV45 Advanced Surveying Civil Engg. 3 0 - 03 40 18CV45 Water Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 18CV45 Water Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 18CVL47 Engineering Geology Laboratory Geology - 2 2 03 40 18CVL48 Faid Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 0 - 103 40 18KVK39/49 Vavaharika Kannada (Kannada for Administration) OR - 2 - - 100 18CPC39/49 Constitution</td> <td>ISCV42 Analysis of Determinate Structures Civil Engg. 3 2 - 03 40 60 ISCV43 Applied Hydraulics Civil Engg. 3 0 - 03 40 60 ISCV44 Concrete Technology Civil Engg. 3 0 - 03 40 60 ISCV45 Advanced Surveying Civil Engg. 3 0 - 03 40 60 ISCV45 Advanced Surveying Civil Engg. 3 0 - 03 40 60 ISCV45 Mater Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 60 ISCV45 Mater Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 60 ISCVL47 Engineering Kannada (Kannada for Communication)/ Geology - 2 2 03 40 60 ISKVK39/49 Vavaharika Kannada (Kannada for Administration) - 2 -</td> <td>ISCV41 Analysis of Determinate Structures Civil Engg 3 2 - 03 40 60 100 ISCV43 Applied Hydraulics Civil Engg 3 0 - 03 40 60 100 ISCV44 Concrete Technology Civil Engg 3 0 - 03 40 60 100 ISCV45 Advanced Surveying Civil Engg 3 0 - 03 40 60 100 ISCV45 Advanced Surveying Civil Engg 3 0 - 03 40 60 100 ISCV45 Advanced Surveying Civil Engg 3 0 - 03 40 60 100 ISCVL47 Engineering Geology Laboratory Civil Engg - 2 03 40 60 100 ISCVL48 Fhicit Mechanics and (Kannada for Communication)/ - 2 - - 100 - ISKVK39/49 Adalitha Kannada (Kannada for Administrati</td>	18CV42 Analysis of Determinate Structures Civil Engg. 3 2 - 03 40 18CV43 Applied Hydraulics Civil Engg. 3 0 - 03 40 18CV44 Concrete Technology Civil Engg. 3 0 - 03 40 18CV45 Advanced Surveying Civil Engg. 3 0 - 03 40 18CV45 Water Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 18CV45 Water Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 18CVL47 Engineering Geology Laboratory Geology - 2 2 03 40 18CVL48 Faid Mechanics and Hydraulic Machines Laboratory Civil Engg. - 2 0 - 103 40 18KVK39/49 Vavaharika Kannada (Kannada for Administration) OR - 2 - - 100 18CPC39/49 Constitution	ISCV42 Analysis of Determinate Structures Civil Engg. 3 2 - 03 40 60 ISCV43 Applied Hydraulics Civil Engg. 3 0 - 03 40 60 ISCV44 Concrete Technology Civil Engg. 3 0 - 03 40 60 ISCV45 Advanced Surveying Civil Engg. 3 0 - 03 40 60 ISCV45 Advanced Surveying Civil Engg. 3 0 - 03 40 60 ISCV45 Mater Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 60 ISCV45 Mater Supply & Treatment Engineering Civil Engg. 3 0 - 03 40 60 ISCVL47 Engineering Kannada (Kannada for Communication)/ Geology - 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L Course and Course code Course Tide Image: Course Tide I	Drog	TO DO DO	CIVIL ENG		m the academic year 201	8 – 19)							
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		·		ALLER O									
L T P II O 05 P 1 HSMC 18CV51 Construction Management & Entrepreneurship Civil Engg. 2 2						Teachin	g Hours	/Week		Eran	ination		
Image: Lemperature L T P L T P 1 HSMC 18CV51 Construction Management & Entrepreneurship Civil Engg. 2 2	SL No			Course Tide	Teaching Department	Theory Lecture		Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	fotal Marks	Oradits
a poc 18CV52 Analysis of Indeterminate Structures Civil Engg. 3 2 - 03 40 60 100 3 PCC 18CV53 Design of RC Structural Elements Civil Engg. 3 2 - 03 40 60 100 4 PCC 18CV54 Basic Geotechnical Engineering Civil Engg. 3 - - 03 40 60 100 5 PCC 18CV56 Municipal Wastewate Engineering Civil Engg. 3 - - 03 40 60 100 6 PCC 18CV56 Highway Engineering Civil Engg. 3 - - 03 40 60 100 7 PCC 18CV56 Highway Engineering Civil Engg. - 2 0.3 40 60 100 8 PCC 18CV58 Concrete and Highway Materials Laboratory Civil Engg. - 2 0.3 40 60 100						L	Т	P	-	Ŭ		-	
3 PCC 18CV53 Design of RC Structural Elements Civil Engg 3 2 03 40 60 100 4 PCC 18CV54 Basic Geotechnical Engineering Civil Engg 3 - 03 40 60 100 5 PCC 18CV56 Highway Engineering Civil Engg 3 - 03 40 60 100 6 PCC 18CV56 Highway Engineering Civil Engg 3 - 03 40 60 100 7 PCC 18CV56 Highway Engineering Civil Engg - 2 03 40 60 100 7 PCC 18CV157 Surveying Practice Civil Engg - 2 03 40 60 100 8 PCC 18CTV58 Concrete and Highway Materials Laboratory Civil Engg - 2 03 40 60 100 9 HSMC <td>1</td> <td>HSMC</td> <td>18CV51</td> <td>Construction Management & Entrepreneurship</td> <td>Civil Engg.</td> <td>2</td> <td>2</td> <td></td> <td>03</td> <td>40</td> <td>60</td> <td>100</td> <td>3</td>	1	HSMC	18CV51	Construction Management & Entrepreneurship	Civil Engg.	2	2		03	40	60	100	3
4 PCC 18CV54 Basic Geotechnical Engineering Civil Engg 3 - - 03 40 60 100 5 PCC 18CV55 Municipal Wastewate Engineering Civil Engg 3 - - 03 40 60 100 6 PCC 18CV56 Highway Engineering Civil Engg 3 - - 03 40 60 100 7 PCC 18CV56 Highway Engineering Civil Engg - 2 0.3 40 60 100 7 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engg - 2 0.3 40 60 100 8 PCC 18CTV59 Environmental Studies Civil Engineering - 2 0.3 40 60 100 9 HSMC 18CTV59 Environmental Studies [Paper setting Board; Civil Engineering] 1 - - 0.2 40 60 100 - </td <td>2</td> <td>PCC</td> <td>18CV52</td> <td>Analysis of Indeterminate Structures</td> <td>Civil Engg.</td> <td>3</td> <td>2</td> <td></td> <td>03</td> <td>40</td> <td>60</td> <td>100</td> <td>4</td>	2	PCC	18CV52	Analysis of Indeterminate Structures	Civil Engg.	3	2		03	40	60	100	4
5 PCC 18CV55 Municipal Wastewater Engineering Civil Engs 3 - - 03 40 60 100 6 PCC 18CV36 Highway Engineering Civil Engs 3 - - 03 40 60 100 7 PCC 18CV35 Surveying Practice Civil Engs - 0 2 03 40 60 100 8 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engs - 2 03 40 60 100 9 HSMC 18CIV59 Environmental Studies [Pager setting Board: Civil Engineering] 1 - - 02 40 60 100	3	PCC	18CV53	Design of RC Structural Elements	Civil Engg.	3	2	-	03	40	60	100	4
6 PCC 18CV36 Highway Engineering Civil Engg. 3 - - 03 40 60 100 7 PCC 18CVL57 Surveying Practice Civil Engg. - 2 03 40 60 100 8 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engg. - 2 0.3 40 60 100 9 HSMC 18CTV59 Environmental Studies Page-restring Board 1 - - 0.2 40 60 100	4	PCC	18CV54	Basic Geotechnical Engineering	Civil Engg.	3	-	-	03	40	60	100	3
7 PCC 18CVL57 Surveying Practice Civil Engg. - 2 2 03 40 60 100 8 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engg. - 2 0.3 40 60 100 9 HSMC 18CTV59 Environmental Studies [Paper setting Board] 1 - - 0.2 40 60 100	5		18CV55	Municipal Wastewater Engineering	Civil Engg.	3	-		03	40			3
8 PCC 18CVL58 Concrete and Highway Materials Laboratory Civil Engine - 2 2 03 40 60 100 9 HSMC 18CIV59 Environmental Studies [Page setting Board: Civil Engineering] 1 - - 02 40 60 100	6		18CV56			3	-	-	03	40		100	3
9 HSMC 18CIV59 Environmental Studies (Paper setting Board: Civil Environmental (Paper setting Board: Civil Engineering)	7				Civil Engg.	-	2	2	03	40	60	100	2
9 HSMC 18CTV59 Environmental Studies [Paper setting Board: Civil Engineering] 1 - 02 40 60 100	8	PCC	18CVL58	Concrete and Highway Materials Laboratory		-	2	2	03	40	60	100	2
	9	HSMC	18CIV59	Environmental Studies	[Paper setting Board:	1	-	1	02	40	60	100	1
TOTAL 18 10 04 26 360 540 900 1					TOTAL	18	10	04	26	360	540	900	25

			VISVESV	ARAYA TECH	NOLOGICA	L UNIVE	RSITY, BE	LAGAVI					
				CIV	VIL ENGINE	ERING							
				eme of Teach									
			Outcome Based						0				
VICE	MESTER			Effective from	i the acader	nic year .	2018 - 19)					
VI SE	ILSIEK		1		I	Tea	ching Ho	urs /Week	i —	Evam	ination		
SI.		se and	Course	Title	T eaching De partment	Theory	Tutoria	Practic al/ Drawin g	ion	Marks		- 3	Credits
No	Cours	se code	course	e fide	Teac				Duration in hours	CIE Ma	SEE Marks	Total Marks	g
						L	Т	P		<u> </u>	•.		
1	PCC	18CV61	Design of Ste Elements		Civil Engg,	3	2	-	03	40	60	100	4
2	PCC	18CV62	Applied Geote Engineering	chnical	Civil Engg.	3	2	-	03	40	60	100	4
3	PCC	18CV63	Hydrology and Engineering	l Irrigation	Civil Engg,	3	2	-	03	40	60	100	4
4	PEC	18CV64X	Professional E	lective -1	Civil Engg.	3			03	40	60	100	3
5	OEC	18CV65X	Open Elective	-A	Civil Engg.	3		-	03	40	60	100	3
6	PCC	18CVL66	Software Appl Laboratory	ication	Civil Engg.		2	2	03	40	60	100	2
7	PCC	18CVL67	Environmenta Engineering L	-	Civil Engg.		2	2	03	40	60	100	2
8	EP	18CVEP68	Extensive Surv	vey project	Civil Engg,		2	2	03	40	60	100	2
9	Internship		Internship		To be carr VIII seme		luring the	vacation/s of	VI and	VII seme	sters and	/or VII a	and
				T	OTAL 1	5	12	06	24	320	480	800	24
Note:	PCC: Professio	onal core, PEC:	Professional Ele	ective, OE: Op	en Elective	, MP: Mi	ni-projec	rt.					
	C	de under 18CV	C AV	Prof	essional El	ective -1							
	course co	18CV641	04A	Matrix Metho	od of Strevet	unal Arca	hueie						
		100/041		Platrix Pieuk	ou or acruet	ta ai Aila	iyata						



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			VISVESVARAYA TECHN	OLOGICAL	UNIVER	SITY, I	BELAG	AVI				
			Scheme of Teach									
			Outcome Based Education(OBI					(CBCS)				
			(Effective from				y stem	(0000)				
Progra	unme: CIV	IL ENGIN		the academic	year 201	0-17)						
	EMESTER		2212.10									
VII 51	LAILSILK		1	1	Teachi	ng Hours /	Week		Era	mination		1
				-		1						1
				Teaching	C 8	Futorial	Practical/ Drawing	.5	- 2	2	2	2
SL No		rse and ne code	Course Title	55	Theory		12 5	.5 1	Marks	Mark	Na Na	Credits
		Je coue		22	F 2	e -	26	Duration	B	SEE	fotal Marks	0
				-	L	т	P	4	5	58	_ <u>₽</u>	
					L	1	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	-		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.		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	and VII se	mesters, r	t shall be	carried out d	turing the
	•		•	TOTAL	15	04	06	21	380	420	00	20
Note: PC	CC: Professionz	al core, PEC:	Professional Elective.									
_				ofessional Electiv	e-2							
	code under 18	CV73X	Course Title									
18CV73			Theory of Elasticity									
18CV73	2		Air Pollution and Control									
18CV73	-		Pavement Materials & Construction									
18CV73			Ground Water Hydraulics									
18CV73	5		Masonry Structures									
				fessional Elective	5-3							
	code under 18		Course Title									
18CV74			Earthquake Engineering									
18CV74			Design Concepts of Building Services									
18CV74	3		Reinforced Earth Structures									

Program	070.77			and the second sec			ystem (C	200)				
		ENGINEER		om the academic y	ear 2018	- 19)						
		ENGINEER	ING									
шэел	MESTER			-	Teachi	ne Hours	Week		7	amination		
SL No		urse and urse code	Course Title	Teaching Department	Theory Lecture	Tutorial	Practical Drawing	Duration in hours	OE Marks	EE Marks	fotal Marks	Credits
					L	Т	P		-	~		
1	PCC	18CV81	Design of Pre-stressed Concrete	Civil Engg.	3	1		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
-												
iote: PO	C: Professional (Core, PEC: Profe	ssional Elective.									
				Professional Electives -	-4							
	ode under 18CV	82X	Course Title									
8CV821			Bridge Engineering									
8CV822			Prefabricated Structures									
			Advanced Foundation Engineering									
8CV823			Rehabilitation & Retrofitting									
			Reinfold and of red officing									

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 report shall be the same for all the batch mates.
(iii) 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 report shall be the same for all the batch mates.
SEE for Project Work Phase -2:



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• 1	Sub-Code	Subject Title			hing Week	Exa	aminat	ion	
0.	•		Teaching Dept.	Theory	Pract.	Duration (Hrs)		Theory/ Pract.Max Marks	Total Marks
	IOMAT31	Mathematics –III	Maths	4	T1/15-52	03	25	100	125
2	10AU32A/ 10AU32B	Material Science and, Metallurgy/Mechanical Measurements and Metrology	Auto	4		03	25	100	125
;	IOAU33	Basic Thermodynamics	·Auto	4	Collect and the	· 03	25	100	125
F	10AU34	Mechanics of Materials	Auto	4		03	25	100	125
5	10AU35	Manufacturing Process-I	Auto	4		03	25	100	125
5	10AU36A/ 10AU36B	Computer Aided M/o Drawing / Fluid Mechanics	Auto	1 4	3	03	25	100	125
7	10AUL37A/ 10AUL37B	Metallography and Material testing / Mechanical Measurements & Metrology Lab	Auto		3	03	25	50	. 75
	10AUL38A/ 10AUL38B	Foundry and Forging Laboratory/Machine Shop	Auto	*	3 -	03	25	50	• 75
1				24	9	annor to -	200	700	900



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Scheme of Teaching and Examination

IV Semester (Automobile Engineering)

SI No.	Sub-Code	-Code Subject Title		Teaching Hrs / Week		Examination			
INO.			Teaching Dept.	Theory	Pract.	Duration (Hrs)		Theory/ Pract.Max Marks	Total Marks
1	10MAT41	Mathematics-IV	Maths	4		03	25	100	125
2	10AU42A 10AU42B	Material Science and Metallurgy /Mechanical/ Measurements and Metrology	Auto	4	i bij	03	25	100	125
3	10AU43	Applied Thermodynamics	Auto	4	Tel La	03	25	100	125
4	10AU44	Kinematics of Machines	Auto	4		03	25	100	125
5	10AU45	Manufacturing Process-II	Auto	4		03	25	100	125
6	10AU46A/ 10AU46B	Computer Aided M/c Drawing/ Fluid Mechanics	Auto	1 4	3	03	25	100	125
7	10AUL47A/ 10AUL47B	Metallography and Material testing / Mechanical Measurements & Metrology Lab	Auto	H. H.	3	03	.25	50	75
	10AUL48A/ 10AUL48B	Foundry and Forging/ Laboratory/Machine Shop/	Auto		3	03	25	50	75
				24	9	2.7.12	200	700	900

Scheme of Teaching and Examination V Semester (Automobile Engineering)

SI	Sub-Code	Subject Title	242.43	Teac Hrs /	hing Week	Exa	Examination		
No.	Sub cout		Teaching Dept.	Theory	Pract.	Duration (Hrs)			Marks
1	10AU51	Management and Entrepreneurship	Auto	4		03	25	100	125
2	10AU52	Design of Machines Elements-I	Auto	4	1 Maria	03	25	100	125
3	10AU53	Automotive Engines and Components	Auto	4		03 .	25	100	125
4	10AU54	Dynamics of machines	Auto	4	1-1-2	03	25	100	125
5	10AU55	Auxiliary Systems of Automotive Engines	Auto	4		03	25	100	125
6	10AU56	Automotive Fuels & Combustion	Auto	4		03	25	100	12
7	10AUL57	Automobile Engg Lab- I	Auto		3	03	25	50	75
1. A.	10AUL58 .	Fuel Testing and Fluid Mechanics Lab	Auto		3	. 03	25		7:
-				24	06		200	0 700	



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SI	Sub-Code	Subject Title	• •		hing Week	Ex	aminat	ion	
No.			Teaching Dept.	Theory	Pract.	Duration (Hrs)	IA Max Marks	Theory/ Pract.Max Marks	Total Marks
1	10AU61	Automotive Chassis and Suspension	Auto	4		03	25	100	125
2	10AU62	Automotive Transmission	Auto	4	-	03	25	100	125
3	10AU63	Design of Machines Elements-II	Auto	4		03	25	100	125
4	10AU64	Auto Electrical & Electronic Systems	Auto	4		03	25	100	125
5	IOAU65	Heat and Mass Transfer	Auto	4	•	03	25	100	125
6	10AU66x	Elective -A	Auto	4		03	25	100	125
7 1	10AUL67	Automobile Engg Lab - II	Auto		3	03	25	50	75
8	10AUL68	Engine Testing lab	Auto	1	3	03	25	50	75
				24	06		200	700	900
	ve-I (Group								
LNO				and the state	and the second				
1	10AU6				and the second				
2	10AU6				3.0	1.12	1.44		1
3	10AU6			- Balling		197 - 18 - 19 - 19 - 19 - 19 - 19 - 19 - 19			
4	10AU60				1	A CARLON		1. 1. 1.	100
5	10AU66	55 Statistical Quality Con	ntrol and R	eliability					

SI	Sub-Code	Subject Title		Teac Hrs /	hing Week	Ex	aminat	ion	
No.			Teaching Dept.	Theory	Pract.	Duration (Hrs)		Theory/ Pract.Max Marks	Total Mark
1	10AU71	Operations Research	Auto	4	1. M. 1	03	25	100	125
2	10AU72	Vehicle Body Engineering and Safety	Auto	4		03	25	100	125
3	10AU73	Mechanical Vibration & Vehicle Dynamics	Auto	4		03	25	100	125
4	10AU74	Automotive Air Pollution and Control	Auto	4	1.	03	25	100	125
5	10AU75x	Elective – B	Auto	4		03	25	100	125
6	10AU76x	Elective - C	Auto	4		03	25	100	125
7	10AUL77	Service and Reconditioning Lab	Auto	Sec.	3	03	25	50	75
8	10AUL78	CAD/CAM/CAE Lab	Auto		3	03	25	50	75
			27315-10	-24	06		200	700	90
lecti	ve - II (Grou	ID-B)	Elective	-III (Gro	oup-C)				
		Subject Title	Sl. No. 5	Sub. Code	Subject	t Title			
1	10AU751	Vehicle Transport Management	. 1	10AU761		estructive			
2	10AU752	Two and Three Wheeled Vehicles	. 2	10AU762		conomics &		otive Cost E	stimat
3		Non Traditional Machining	3	10AU763		ced IC Eng		-	
4	10AU754	Computer Integrated Manufacturing	4	10AU764		ering Syste	em Des	sign	
5	10AU755	Total Quality Management	5	10AU765	Roboti	CS	-	-	





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SI	Sub-Code	Subject Title		Teaching Hrs / Week		Examination			
No.			Teaching Dept.	Theory	Pract.	Duration (Hrs)		Theory/ Pract.Max Marks	Total Marks
1	10AU81	Earth Moving Equipmentsand Tractors	Auto	4.		03	25	100	125
2	10AU82	Autotronics	Auto	4		03	25 .	100	125
3	10AU83x	Elective-D	Auto	4	11	03	25	100	125
4	10AU84x	Elective-E	Auto	4		03	25	100	125
5	10AU85	Project Work	Auto		. 6	03	100	100	200
6	10AU86	Seminar on Current Topic	Auto		3		50		50
			1000	16	9	15	250	500	750

* Students shall register for one subject in each group of Electives.

Electiv	e-IV (Gro		Elective-V(Group-E)				
		Subject Title			Subject Title		
		Tribology			Hybrid Vehicles		
		Simulation of IC Engine Processes	2		Control Engineering		
		Hydraulics and Pneumatics	.3		Nano Technology		
	10AU834	Alternative EnergySources for Automobiles	4	10AU844	Maintenance Engineering		



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Scheme of Teaching and Examination **III Semester (Automobile Engineering)** Teaching Examination Sub-Code Subject Title Hrs / Week L 0. IA Theory/ Teaching Theory Pract. Duration Max Pract Max Total Marks Dept. Marks (Hrs) Marks IOMAT31 4 100 125 Mathematics -III Maths 25 03 Material Science and Metallurgy/Mechanical Measurements and Metrology 10AU32A 4 03 25 100) Auto 125 10AU 4 03 25 100 125 **Basic Thermodynamics** Auto IOAU33 Mechanics of Materials Auto 4 03 25 100 125 10AU34 1 4 03 25 100 125 Manufacturing Process-J Auto 5 10AU35 5 Computer Aided M/o 1 3 10AU36A 03 25 100 125 Drawing / Fluid Mechanics Auto 4 10AU36B 3 25 75 03 50 Metallography and Material Auto 10AUL37A/ 10AUL37B testing / Mechanical Measurements & Metrology Lab 75 3 03 25 50 Foundry and Forging Auto 10AUL38A/ Laboratory/Machine Shop 10AUL38B 900 24 200 700 9

SI	Sub-Code	Subject Title		Teaching Hrs / Week		Examination			
No.			Teaching Dept.	Theory	Pract.	Duration (Hrs)		Theory/ Pract.Max Marks	Total Marks
1	10MAT41	Mathematics-IV	Maths	4		03	25	100	125
2	10AU42A 10AU42B	Material Science and Metallurgy /Mechanical/ Measurements and Metrology	Auto	4	. iti	03	25	100	125
3	10AU43	Applied Thermodynamics	Auto	4		03	25	100	125
4	10AU44	Kinematics of Machines	Auto	4		03	25	100	125
5	10AU45	Manufacturing Process-II	Auto	4		03	25	100	125
6	10AU46A/ 10AU46B	Computer Aided M/c Drawing/ Fluid Mechanics	Auto	1 4	3	03	25	100	125
7	10AUL47A/ 10AUL47B	Metallography and Material testing / Mechanical Measurements & Metrology Lab	Auto		3	03	25	50	75
	10AUL48A/ 10AUL48B	Foundry and Forging/ Laboratory/Machine Shop/	Auto		3	03	25	50	75
				24	9	200	200	700	900



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Scheme of Teaching and Examination V Semester (Automobile Engineering)

SI	Sub-Code		5660	Teaching Hrs / Week		Examination			
No.	Sub-Code		Teaching Dept.	Theory	Pract.	Duration (Hrs)		Theory/ Pract.Max Marks	Mark
1	10AU51	Management and Entrepreneurship	Auto	4		03	25	100	125
2	10AU52	Design of Machines Elements-I	Auto	4	THE YEAR	03	25	100	125
3	10AU53-	Automotive Engines and Components	Auto	4		03 .	25	100	125
4	10AU54	Dynamics of machines	Auto	4		03	25	100	125
5	10AU55	Auxiliary Systems of Automotive Engines	Auto	4		03	25	100	124
6	10AU56	Automotive Fuels & Combustion	Auto	4		03	25	100	12
7	10AUL57	Automobile Engg Lab- I	Auto	1.1	3	03	25	50	7:
8	10AUL58 .	Fuel Testing and Fluid Mechanics Lab	Auto		3	. 03	25	1.	7
-		Wiechames Eas		24	. 06		200	700	

SI	Sub-Code	Sub	ect Title			hing Week	Exa	aminat	ion		
No.				Teaching Dept.	Theory	Pract.	Duration (Hrs)	and the second	Theory/ Pract.Max Marks	Total Marks	
1	10AU61		motive Chassis and ension	Auto	4		03	25	100	125	
2	10AU62	Auto	motive Transmission	Auto	. 4		03	25	100	125	
3	10AU63	Desig	n of Machines Elements-II	Auto	4		03	25	100	125	
4	10AU64	Auto Syste	Electrical & Electronic	Auto	4		03	25	100	125	
5	10AU65	Heat	and Mass Transfer	Auto	4	•	03	25	100	125	
6	10AU66x	Electi	ve –A	Auto	4	1	03	25	100	125	
7	10AUL67	Auton	obile Engg Lab - II	Auto		3	03	25	50	75	
8 1	OAUL68	Engin	Testing lab	Auto		3	03	25	50	75	
					24	06		200	700	900	
Electi	ve–I (Grou	p-A)				and the second					
L No	Sub Co	ode	Subject Title		Sec. 1						
1	10AU6	61	CAD/CAM/CAE		1000	- Aller and	1			199	
2	10AU6	62	Automotive Air Cond	itioning		-	1.19				
3	10AU6	53-	Composite Materials		- And		9	2.40		•	
4	10AU60	54	Modeling and FEA			1 1 11	A start			100	
5	10AU665 Statistical Quality			lity Control and Reliability							



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SI	Sub-Code	Subject Title		Teac Hrs /	hing Week	Ex	aminat	ion	
No.			Teaching Dept.	Theory	Pract.	Duration (Hrs)	The rest states	Theory/ Pract.Max Marks	Total Marks
1	10AU71	Operations Research	Auto	4		03	25	100	125
2	10AU72	Vehicle Body Engineering and Safety	Auto	4		03	25	100	125
3	10AU73	Mechanical Vibration & Vehicle Dynamics	Auto	4		03	25	100	125
4	10AU74	Automotive Air Pollution and Control	Auto	4		03	25	100	125
5	10AU75x	Elective – B	Auto	4		03	25	100	125
6	10AU76x	Elective-C	Auto	4		03	25	100	125
7	10AUL77	Service and Reconditioning Lab	Auto	Ser.	3	03	25	50	75
8	10AUL78	CAD/CAM/CAE Lab	Auto		3	03	25	50	75
-				-24	06		200	700	900
Electi	ive - II (Gro	(n-B)	Elective	-III (Gro	oup-C)		100		
		Subject Title	Sl. No. 5	Sub. Code	Subject	Title	S.L.F.		
1	10AU751	Vehicle Transport Management	. 1	10AU761		estructive			
2	- 10AU752	Two and Three Wheeled Vehicles	. 2	10AU762	Engg. E	conomics &	Autom	otive Cost E	stimatio
3	10AU753	Non Traditional Machining	3	10AU763		ced IC Eng		100	
4	10AU754	Computer Integrated Manufacturing	4	10AU764		ering Syste	em Des	sign	20.20
5	10AU755	Total Quality Management	5	10AU765	Roboti	CS		-	

SI	Sub-Code	Subject Title		Teaching Hrs / Week		Examination			
No.			Teaching Dept.	Theory	Pract.	Duration (Hrs)		Theory/ Pract.Max Marks	Tota Mari
1	10AU81	Earth Moving Equipmentsand Tractors	Auto	4 .	4	03	25	100	125
2	10AU82	Autotronics	Auto	4		03	25 .	100	12
3	10AU83x	Elective-D	Auto	4		03	25	100	12
4	10AU84x	Elective-E	Auto	4		03	25	100	12
5	10AU85	Project Work	Auto		. 6	03	100	100	20
6	10AU86	Seminar on Current Topic	Auto		3		50		50
				16	9	15	250	500	75

Electiv	e-IV (Gro			e-V (Group	
SI. No.	Sub.Code	Subject Title			Subject Title
		Tribology	1		Hybrid Vehicles
2	10AU832	Simulation of IC Engine Processes	2		Control Engineering
		Hydraulics and Pneumatics	.3	10AU843.	Nano Technology .
	10AU834	Alternative EnergySources for Automobiles	4	10AU844	Maintenance Engineering



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2018-2019

B.E. Automobile Engineering

п	I SEMESTE	R					$\neg \neg$			
SI.	Subject		Teaching		ng Hours Veek		E	xamination		Credits
No	Code	Title	Dept.	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15MAT31	Engineering Mathematics-III	Mathematics	04		03	20	80	100	4
2	15AU32	Material Science and Metallurgy	Automobile	04		03	20	80	100	4
3	1 <mark>5AU33</mark>	Engineering Thermodynamics	Automobile	04		03	20	80	100	4
4	1 <mark>5AU34</mark>	Mechanics of Materials	Automobile	04		03	20	80	100	4
5	15AU35	Measurements and Metrology	Automobile	04		03	20	80	100	4
6	15AU36X	Elective	Automobile	03	\mathbb{Z}	03	20	80	100	3
7	15AUL37	Metallography & Material Testing Laboratory	Automobile	V	1I + 2P	03	20	80	100	2
8	15 AUL 38	Manufacturing Processes Laboratory-I	Automobile		1I + 2P	03	20	80	100	2
	-	TOTAL	$\langle \cdot \rangle$	23	06	24	160	640	800	27

Elective			
15 AU361	Manufacturing Process-I	15 AU363	Fuels and Lubricants
15 AU362	Automobile Manufacturing Techniques		

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B.E. Automobile Engineering

	0-11		Tables	Teaching Hours /Week			Ex	Examination			
Sl. No	Subject Code	Title	Teaching Dept.	Theory	Practical / Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks		
1	15MAT 41	Engineering Mathematics-IV	Mathematics	04		03	20	80	100	4	
2	15AU42	Fluid Mechanics	Automobile	04		03	20	80	100	4	
3	15AU43	Automotive Engines	Automobile	04		03	20	80	100	4	
4	1 <mark>5AU44</mark>	Kinematics of Machines	Automobile	04		03	20	80	100	4	
5	15AU45	Computer Aided Machine Drawing	Automobile	01	03	03	20	80	100	4	
6	15AU46X	Elective	Automobile	03		03	20	80	100	3	
7	15AUL47	Automotive Measurements and Metrology Lab	Automobile		1I + 2P	03	20	80	100	2	
8	15AUL48	Manufacturing Processes Laboratory-II	Automobile		1I + 2P	03	20	80	100	2	
		TOTAL		23	06	24	160	640	800	27	

Elective			$\vee \vee$
15AU461	Manufacturing Process-II	15AU462	Automotive Welding Technology
15AU463	Non-Traditional Machining		



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B.E. AUTOMOBILE ENGINEERING

V	SEMESTE	R	2.2.1101	0	E LIVGINI					
SI.	Subject		Taaahing		ng Hours Veek		Examin	ation		
No	Subject Code	Title	Teaching Dept.	Theory	Practical / Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	Credits
1	15AU51	Management and Entrepreneurship	Auto. Engg.	04		03	80	20	100	4
2	15AU52	Dynamics of Machines	Auto. Engg.	04+1T		03	80	20	100	4
3	1 <mark>5AU53</mark>	Design of Machine Elements-I	Auto. Engg.	04+ 1T		03	80	20	100	4
4	15AU54	Automotive Fuels and Combustion	Auto. Engg.	04		03	80	20	100	4
5	15AU55X	Professional Elective*	Auto. Engg.	03		03	80	20	100	3
6	15XX56X	Open Elective**	Concerned Branch	03		03	80	20	100	3
7	1 <mark>5AUL57</mark>	Automotive Engine Component Lab	Auto. Engg.		1I+2P	03	80	20	100	2
8	15 AUL58	Fluid Mechanics and Fuel Testing Lab	Auto. Engg.		1I+2P	03	80	20	100	2
		TOTAL		24	06		640	160	800	26

B.E. AUTOMOBILE ENGINEERING

VI	SEMESTER	2								
SI.	Subject		Teaching		ng Hours Veek		Examina	ition		
No	Subject Code	Title	Dept.	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	Credits
1	1 <mark>5AU61</mark>	Automotive Chassis & Suspension	Auto. Engg.	04		03	80	20	100	4
2	15AU62	Heat and Mass transfer	Auto. Engg.	04 +1T		03	80	20	100	4
3	15AU63	Design of Machine Elements-II	Auto. Engg.	04+ 1T		03	80	20	100	4
4	15AU64	Automotive Transmission	Auto. Engg.	04		03	80	20	100	4
5	15AU65X	Professional Elective	Auto. Engg.	03		03	80	20	100	3
6	15XX66X	Open Elective	Concerned branch	03		03	80	20	100	3
7	1 <mark>5AUL67</mark>	Automotive Chassis Components Lab	Auto. Engg.		1I+2P	03	80	20	100	2
8	15 AUL68	Engine Testing and Emission Measurement Lab.	Auto. Engg.		1I+2P	03	80	20	100	2
		TOTAL		24	06		640	160	800	26



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VII SEMESTER

					ng Hours Veek		Examin	ation		Credits
SI. No	Subject Code	Title	Teaching Dept.	Theory	Practical/ Drawing	Duration	Theory / Practic al Marks	I.A. Marks	Total Marks	
1	1 <mark>5AU71</mark>	Automotive Electrical and Electronic Systems	Auto. Engg.	04		03	80	20	100	4
2	1 <mark>5AU72</mark>	Automotive Engine Components Design and Auxiliary Systems	Auto. Engg	04		03	80	20	100	4
3	15AU73	Finite Element Modeling and Analysis	Auto. Engg	04		03	80	20	100	4
4	15AU74X	Professional Elective	Auto. Engg	03		03	80	20	100	3
5	15AU75X	Professional Elective	Auto. Engg	03		03	80	20	100	3
6	1 <mark>5AUL76</mark>	Automobile Scanning and Re-conditioning lab	Auto. Engg		1I+2P	03	80	20	100	2
7	15AUL77	Modeling and Analysis Lab	Auto. Engg		1I+2P	03	80	20	100	2
8	15 AUP78	Project Phase- I + Project seminar	Auto. Engg		03			100	100	2
		TOTAL		18	09		560	240	800	24

B.E. AUTOMOBILE ENGINEERING

VIII SEMESTER **Teaching Hours** Credits Examination /Week SI. Subject Teaching Title Theory Practical/ Duration Theory/ I.A. Total No Code Dept. Drawing Practical Marks Marks Marks Vehicle Body Auto. 1 15AU81 Engineering and 04 03 80 20 100 4 Engg. Safety Auto. 2 Mechanical Vibrations 15AU82 04 03 80 20 100 4 Engg Auto. 3 15AU83X Professional Elective 03 03 80 20 100 3 Engg. Internship/Professional Auto. Industry Oriented 4 15AU84 03 50 50 100 2 Practice Engg Auto. 6 5 15AUP85 Project work Phase II 03 100 100 6 200 Engg. Auto. 4 6 15AUS86 Seminar* 100 100 1 Engg TOTAL 11 10 390 310 700 20



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2019-2020

			В	.E. Autor	nobile Engi	neering	Â	$\langle \rangle$			
II	I SEMESTE	R								Credits	
SI.	Subject		Teaching		ing Hours Veek		Examination				
No	Code	Title	Dept.	Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks		
1	15MAT31	Engineering Mathematics-III	Mathematics	04		03	20	80	100	4	
2	15AU32	Material Science and Metallurgy	Automobile	04		03	20	80	100	4	
3	1 <mark>5AU33</mark>	Engineering Thermodynamics	Automobile	04		03	20	80	100	4	
4	1 <mark>5AU34</mark>	Mechanics of Materials	Automobile	04		03	20	80	100	4	
5	15AU35	Measurements and Metrology	Automobile	04		03	20	80	100	4	
6	15AU36X	Elective	Automobile	03	$\backslash \mathbb{Z}$	03	20	80	100	3	
7	15AUL37	Metallography & Material Testing Laboratory	Automobile	v	1I + 2P	03	20	80	100	2	
8	15 AUL 38	Manufacturing Processes Laboratory-I	Automobile		1I + 2P	03	20	80	100	2	
		TOTAL	$\overline{\mathbf{X}}$	23	06	24	160	640	800	27	
					1						
E	lective				17						

Elective			Y
15 AU361	Manufacturing Process-I	15 AU363	Fuels and Lubricants
15 AU362	Automobile Manufacturing Techniques		



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B.E. Automobile Engineering

IV SEM	ESTER		2121114		Ingineerin	-8	A' Y			
	Sechiard		Taabiaa		ig Hours eek		Examination			
Sl. No	Subject Code	Title	Teaching Dept.	TL	Practical	D. C	I.A.	Theory/ Description	Total Marks	
				Theory	Drawing	Duration	Marks	Practical Marks	I otal Marks	
1	15MAT 41	Engineering Mathematics-IV	Mathematics	04		03	20	80	100	4
2	15AU42	Fluid Mechanics	Automobile	04		03	20	80	100	4
3	15AU43	Automotive Engines	Automobile	04		03	20		100	4
4	1 <mark>5AU44</mark>	Kinematics of Machines	Automobile	04		03	20	80	100	4
5	15AU45	Computer Aided Machine Drawing	Automobile	01	03	03	20	80	100	4
6	15AU46X	Elective	Automobile	03		03	20	80	100	3
7	15AUL47	Automotive Measurements and Metrology Lab	Automobile	1	1I + 2P	03	20	80	100	2
8	15AUL48	Manufacturing Processes Laboratory-II	Automobile		1I + 2P	03	20	80	100	2
		TOTAL		23	06	24	160	640	800	27

Elective		\wedge	
15AU461	Manufacturing Process-II	15AU462	Automotive Welding Technology
15AU463	Non-Traditional Machining		
		ALL	

B.E. AUTOMOBILE ENGINEERING

SI.	Subject		Teaching		ng Hours Veek		Examin	ation		
51. No	Subject Code	Title	Teaching Dept.	Theory	Practical / Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	Credits
1	15AU51	Management and Entrepreneurship	Auto. Engg.	04		03	80	20	100	4
2	15AU52	Dynamics of Machines	Auto. Engg.	04+1T		03	80	20	100	4
3	1 <mark>5AU53</mark>	Design of Machine Elements-I	Auto. Engg.	04+ 1T		03	80	20	100	4
4	15AU54	Automotive Fuels and Combustion	Auto. Engg.	04		03	80	20	100	4
5	15AU55X	Professional Elective*	Auto. Engg.	03		03	80	20	100	3
6	15XX56X	Open Elective**	Concerned Branch	03		03	80	20	100	3
7	1 <mark>5AUL57</mark>	Automotive Engine Component Lab	Auto. Engg.		1I+2P	03	80	20	100	2
8	15 AUL58	Fluid Mechanics and Fuel Testing Lab	Auto. Engg.		1I+2P	03	80	20	100	2
		TOTAL		24	06		640	160	800	26



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VI SEMESTER

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SI.	Subject Code	Title	Teaching	Teaching Hours /Week						
No			Teaching Dept.	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	Credits
1	1 <mark>5AU61</mark>	Automotive Chassis & Suspension	Auto. Engg.	04		03	80	20	100	4
2	15AU62	Heat and Mass transfer	Auto. Engg.	04 +1T		03	80	20	100	4
3	15AU63	Design of Machine Elements-II	Auto. Engg.	04+ 1T		03	80	20	100	4
4	15AU64	Automotive Transmission	Auto. Engg.	04		03	80	20	100	4
5	15AU65X	Professional Elective	Auto. Engg.	03		03	80	20	100	3
6	15XX66X	Open Elective	Concerned branch	03		03	80	20	100	3
7	1 <mark>5AUL67</mark>	Automotive Chassis Components Lab	Auto. Engg.		1I+2P	03	80	20	100	2
8	15 AUL68	Engine Testing and Emission Measurement Lab.	Auto. Engg.		1I+2P	03	80	20	100	2
	TOTAL				06		640	160	800	26

B.E. AUTOMOBILE ENGINEERING

					ing Hours Veek		Credits			
SI. No	Subject Code	Title	Teaching Dept.	Theory	Practical/ Drawing	Duration	Theory / Practic al Marks	I.A. Marks	Total Marks	
1	1 <mark>5AU71</mark>	Automotive Electrical and Electronic Systems	Auto. Engg.	04		03	80	20	100	4
2	1 <mark>5AU72</mark>	Automotive Engine Components Design and Auxiliary Systems	Auto. Engg	04		03	80	20	100	4
3	15AU73	Finite Element Modeling and Analysis	Auto. Engg	04		03	80	20	100	4
4	15AU74X	Professional Elective	Auto. Engg	03		03	80	20	100	3
5	15AU75X	Professional Elective	Auto. Engg	03		03	80	20	100	3
6	1 <mark>5AUL76</mark>	Automobile Scanning and Re-conditioning lab	Auto. Engg		1I+2P	03	80	20	100	2
7	15AUL77	Modeling and Analysis Lab	Auto. Engg		1I+2P	03	80	20	100	2
8	15 AUP78	Project Phase- I + Project seminar	Auto. Engg		03			100	100	2
TOTAL				18	09		560	240	800	24



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B.E. AUTOMOBILE ENGINEERING

VII	I SEMESTE	ER								
SI.	Subject Code	Title	Teaching		ing Hours Veek		Credits			
51. No			Teaching Dept.	Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15AU81	Vehicle Body Engineering and Safety	Auto. Engg.	04		03	80	20	100	4
2	15AU82	Mechanical Vibrations	Auto. Engg	04		03	80	20	100	4
3	15AU83X	Professional Elective	Auto. Engg.	03		03	80	20	100	3
4	15AU84	Internship/Professional Practice	Auto. Engg	Industr	y Oriented	03	50	50	100	2
5	15AUP85	Project work Phase II	Auto. Engg.		6	03	100	100	200	6
6	1 <mark>5AUS86</mark>	S <mark>eminar</mark> *	Auto. Engg		4			100	100	1
		TOTAL		11	10		390	310	700	20



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B.E: Automobile Engineering

III	SEMESTER									
SI.			Teaching	Teaching	Hours /Week			Credits		
No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration inhours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics –III*	Maths	04		03	60	40	100	4
2	17AU32	Material Science and Metallurgy	Auto. Engg.	04		03	60	40	100	4
3	17AU33	Engineering Thermodynamics	Auto. Engg.	04		03	60	40	100	4
4	17AU34	Mechanics of Materials	Auto. Engg.	04		03	60	40	100	4
5	17AU35	Mechanical Measurements and Metrology	Auto. Engg.	04		03	60	40	100	4
6	17AU36	Manufacturing Process-I	Auto. Engg.	03		03	60	40	100	3
7	17AUL37	Metallography and Material Testing Laboratory	Auto. Engg.	01-Hour In 02-Hour Pr		03	60	40	100	2
8	17AUL38	Foundry and Forging Laboratory	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitutionof India, Professional Ethics and HumanRights	Humanities	01		01	30	20	50	01
	TOTAL				y:24hours al: 06 hours	25	510	340	850	28

IV CEMECTER

B.E: Automobile Engineering

	Course Code	Title	Teaching Department	Teaching H	ours /Week			Credits		
SI. No				Theory	Practical/ Drawing	Duration inhours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics –IV*	Maths	04		03	60	40	100	4
2	17AU42	Fluid Mechanics	Auto. Engg.	04		03	60	40	100	4
3	17AU43	Kinematics of Machines	Auto. Engg.	04		03	60	40	100	4
4	17AU44	Automotive Engines	Auto. Engg.	04		03	60	40	100	4
5	17AU45	Computer Aided Machine Drawing	Auto. Engg.	04		03	60	40	100	4
6	17AU46	Manufacturing Process -II	Auto. Engg.	03		03	60	40	100	3
7	17AUL47	Mechanical Measurement and Metrology Lab	Auto. Engg.	01-Hour Instru 02-Hour Pract		03	60	40	100	2
8	17AUL48	Machine Shop	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitutionof India, ProfessionalEthics and HumanRights	Humanities	01		01	30	20	50	01
			TOTAL	Theory:24hou Practical: 06		25	510	340	850	28



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B.E: Automobile Engineering

SI.		Title	Teaching Department	Teaching	Hours /Week		Exami	nation		Credits
No	Course Code			Theory	Practical/ Drawing	Duration inhours	SEE Marks	CIE Marks	Total Marks	
1	17AU51	Management of Entrepreneurship	Auto. Engg.	04		03	60	40	100	4
2	17AU52	Dynamics of Machines	Auto. Engg.	04		03	60	40	100	4
3	17AU53	Design of Machine Elements - I	Auto. Engg.	04		03	60	40	100	4
4	17AU54	Automotive Fuels and Combustion	Auto. Engg.	04		03	60	40	100	4
5	17AU55X	Professional Elective-1	Auto. Engg.	03		03	60	40	100	3
6	17AU56X	Open Elective-1	Auto. Engg.	03		03	60	40	100	3
7	17AUL57	Automotive Engine Components Lab	Auto. Engg.	01-Hour I 02-Hour I	nstruction Practical	03	60	40	100	2
8	17AUL58	Fluid Mechanics and Fuel testing Lab.	Auto. Engg.	01-Hour I 02-Hour I	nstruction Practical	03	60	40	100	2
			TOTAL	Theory:2 Practical	2hours : 06 hours	24	480	320	800	26

Professional	Elective-1	Open Electiv	/e – 1***
17AU551	CAD/CAM	17AU561	Automobile Engineering
17AU552	Vehicle Transport Management	17AU562	Alternative Energy Sources for Automobiles
17AU553	Automotive Air Conditioning and Refrigeration	17AU563	Non Traditional Machining
17AU554	Hydraulics and Pneumatics		

Acti

B.E: Automobile Engineering

SI.	Course	Title	Teaching Department		ng Hours Veek		Examii	nation		Credit
No	Code			Theory	Practical/ Drawing	Duration inhours	SEE Marks	CIE Marks	Total Marks	-
1	17AU61	Automotive Chassis & Suspension	Auto. Engg.	04		03	60	40	100	4
2	17AU62	Heat and Mass transfer	Auto. Engg.	04		03	60	40	100	4
3	17AU63	Design of Machine Elements-II	Auto. Engg.	04		03	60	40	100	4
4	17AU64	Automotive Transmission	Auto. Engg.	04		03	60	40	100	4
5	17AU65X	Professional Elective-2	Auto. Engg.	03		03	60	40	100	3
6	17AU66X	Open Elective-2	Auto. Engg.	03		03	60	40	100	3
7	17AUL67	Automotive Chassis Components Lab	Auto. Engg.	01-Hour In 02-Hour P		03	60	40	100	2
8	17AUL68	Engine Testing and Emission Measurement Lab.	Auto. Engg.	01-Hour II 02-Hour P		03	60	40	100	2
		1	TOTAL	Theory:22 Practical:		24	480	320	800	26



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B.E: Automobile Engineering

			Teaching	Teaching	Hours /Week		Examin	ation		Credits
SI. No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration inhours	SEE Marks	CIE Marks	Total Marks	
1	17AU71	Automotive Electrical and Electronic Systems	Auto. Engg.	04		03	60	40	100	4
2	17AU72	Automotive Engine Components Design and Auxiliary Systems	Auto. Engg.	04		03	60	40	100	4
3	17AU73	Finite Element Modeling and Analysis	Auto. Engg.	04		03	60	40	100	4
4	17AU74X	Professional Elective-3	Auto. Engg.	03		03	60	40	100	3
5	17AU75X	Professional Elective-4	Auto. Engg.	03		03	60	40	100	3
6	17AUL76	Automobile Scanning and Re-conditioning lab	Auto. Engg.	01-Hour In 02-Hour P		03	60	40	100	2
7)	17AUL77	Modeling and Analysis Lab	Auto. Engg.	01-Hour In 02-Hour P		03	60	40	100	2
8	17AUP78	Project Work Phase-I + Project work Seminar	Auto. Engg.		03			100	100	2
		TOTAL	-	Theory:18 Practical 09 hours	8 hours and Project:	21	420	380	800	24

Professional	Elective-3	Professional El	ective-4
17AU741	Earthmoving Equipment & Tractors	17AU751	Control Engineering
17AU742	Computer Integrated Manufacturing	17AU752	Engineering Economy
17AU743	Tribology	17AU753	Operations Research
17AU744	Engineering System Design	17AU754	Two and Three wheeled Vehicle

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B.E:Automobile Engineering

VII	I SEMESTEI	R								
			Teaching	Teachin	g Hours /Week		Examin	ation		Credits
SI. No	Course Code	Title	Department	Theory	Practical/ Drawing	Duration inhours	SEE Marks	CIE Marks	Total Marks	
1	17AU81	Vehicle Body Engineering and Safety	Auto. Engg.	4	-	3	60	40	100	4
2	17AU82	Mechanical Vibrations	Auto. Engg.	4	-	3	60	40	100	4
3	17AU83X	Professional Elective-5	Auto. Engg.	3	-	3	60	40	100	3
4	17AU84	Internship/ Professional Practice	Auto. Engg.	Indus	stry Oriented	3	50	50	100	2
5	1 <mark>7AUP85</mark>	Project Work-II	Auto. Engg.	-	6	3	100	100	200	6
6	17AUS86	Seminar		-	4	-	-	100	100	1
		TOTAL		Theory: Project a 10 hours	and Seminar:	15	330	370	700	20



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MT

2016-17

2018-19

_			VISVESVARAYATECHNOLOGI SchemeofTeaching OutcomeBasedEducation(OBE)andCho (Effectivefromtheacade	andExamina iceBasedCre	tion201 ditSyste	8 – 19						
Program	me:Mech	natronics En	ngineering									
IIISEMI	ESTER											
				par	Teachin	gHours/V			Exam	ination		
Sl. No	Cou Code	rseandCourse	CourseTitle	TeachingDepar tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	Fotal Marks	Credits
					L	Т	Р	п	<u> </u>	s	F	
1	BSC	18MAT31	TransformCalculus,FourierSeriesandNumerical Techniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT32	Material science and Technology	MTE Engg	3	2		03	40	60	100	4
3	PCC	18MT33	Mechanics of materials	MTE Engg	3	0		03	40	60	100	3
4	PCC	18MT34	Control Systems	MTE Engg	3	0		03	40	60	100	3
5	PCC	18MT35	Analog and Digital Electronics	MTE Engg		0		03	40	60	100	3
6	PCC		Computer Organization	MTE Engg		0		03	40	60	100	3
7	PCC	18MTL37	Machine shop and material Testing lab	MTE Engg		2	2	03	40	60	100	2
8	PCC	18MTL38	Analog and digital electronics lab	MTE Engg		2	2	03	40	60	100	2
		18KVK39	VyavaharikaKannada(Kannadaforcommunication)/ OR	_		2			100			
9	HSMC	18KAK39	AadalithaKannada(KannadaforAdministration)	HSMC							100	1
2	1101010		OR	1151410							100	1
		18CPC39	$Constitution of India, Professional Ethics and Cyber\ Law$	1	1 - Fxa	 mination		02 tivetype	40	60		
					17	08	isoyoojet	24	420	480		
				TOTAL	OR	OR	04	- ŐR	-420 OR	OR	900	24
				101.11	18	10	1 1	26	360	540	200	



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Note:BSC:BasicScience,PCC:ProfessionalCore,HSMC:HumanifyandSocialScience	e NCMC:Non-creditmar	idatoryco	ourse.									
18 KVK 39 Vy ava harika Kannada (Kannada for communication) is for non-Kannada speaking, reading and writing students and 18 KAK 39 A adali tha Kannada (Kannada for Communication) and the set of t												
Administration)isforstudentswhospeak.readandwriteKannada												
${f Courseprescribed}$ to lateral entry Diplomaholders admitted to III semester of Engineering programs												
10 NCMC 18MATDIP31 AdditionalMathematics-I Mathematics 02 01 03 40 60 100 0												
(a) The mandatory non - credit courses Additional Mathematics I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester												
of RE/B. Tach programs, shall attend the classes during the respective semestary to complete all the formalities of the course and appear for the University examination Incase any												

student failstoregisterforthesaidcourse/failstosecurethe minimum 40% of the prescribed CIE marks, he/sheshall bedeemedto have secured F

grade. In such a case, the student shave to fulfill the requirements during subsequents emester/sto appear for SEE.(b) These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

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

 $\label{eq:construction} Solution of the second statement of the second state$

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

Over and above the academic grades, every Day College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme.Students transferred from other Universitiesto fifth semesterare required to earn 50 ActivityPointsfromthe yearofentryto VTU. The ActivityPointsearned shallbereflected on thestudent's eighth semester Grade Card. The activities can be can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimumhours' requirement should be fulfilled. Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical

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

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2018 – 19) Programme: MECHATRONICS ENGINEERING IV SEMESTER

				par	Teach	ingHours/W			Exan	ination		
SL No		ourseandCourse de	CourseTitle	TeachingDepa tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CTEMarks	SEE Marks	TotalMarks	74.70
					L	Т	Р	-		•.	-	
1	BSC	18MAT41	$\label{eq:complexAnalysis} ComplexAnalysis, Probability And Statistical Methods$	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT42	Fluid mechanics and machines	MTEEngg.	3	2		03	40	60	100	4
3	PCC	18 MT 4	Microcontroller	MTEEngg.	3	0		03	40	60	100	3
4	PCC	18 MT 44	Manufacturing technology	MTEEngg.	3	0		03	40	60	100	3
5	PCC	18 MT 45	Theory of Machines	MTEEngg.		0		03	40	60	100	3
6	PCC	18 MT 46	Instrumentation and measurements	MTEEngg.	3	0		03	40	60	100	3
7	PCC	18 MT L47	FM and pneumatic – Laboratory	MTEEngg.		2	2	03	40	60	100	2
8	PCC	18 MT L48	Microcontroller - Laboratory(BV	MTEEngg.		2	2	03	40	60	100	2
9	HSMC	18KVK39/49 18KAK39/49	VyavaharikaKannada(KannadaforCommunication)/ OR AadalithaKannada(KannadaforAdministration)	HSMC		2			100		100	1
			OR	1101110							100	'
		18CPC39/49	Constitution of India, Professional Ethics and Cyber Law		1	 Examinatio	 nisbyobjec	02 tivetypequ	40 estions	60		
				TOTAL	17	08		24	420	480		
					OR	OR	04	OR	OR	OR	900	24
					18	10		26	360	540		

Note:BSC:BasicScience.PCC:ProfessionalCore.HSMC:HumanityandSocialScience.NCMC:Non-creditmandatorycourse. 18KVK39/49VyavaharikaKannada(Kannadaforcommunication)isfornon-Kannadaspeaking,readingandwritingstudentsand18KAK39/49AadalithaKannada(KannadaforAdministration)isfor studentswhospeak,readandwriteKannada.

Course prescribed to lateral entry Diplomaholders admitted to III semester of Engineering programs
 International Mathematics
 In course/fails to secure the minimum 40% of the prescribed CIE marks, he/she shallbe deemed to have secured Fgrade. Insuch a case, the students have to fulfill the requirements during subsequent s ester/s to appear for SEE.

(b)TheseCoursesshallhotbeconsideredforvertical progression, but completion of the courses shall be mandatory for the award of degree.

Course sprescribed to lateral entry B. Sc degree holders admitted to III semester of Engineering programs and the set of the set oLateralentrantstudentsfrom B. Sc. Stream, shallclearthenon-credit courses Engineering Graphics and Elements of CivilEngineering and Mechanics of the First Year Engineering Programme. These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

AICTEactivityPoints: In casestudentsfailtoearn the prescribedactivityPoints. EighthsemesterGradeCard shall beissuedonlyafterearningthereouiredactivityPoints. Studentsshall be admitted

fortheawardofdegreeonlyafter thereleaseoftheEighthsemesterGradeCard.



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				Jar	Teachin	gHours/			Exam	ination		
L lo	Co	urseandCourse le	CourseTitle	T eachingDepar tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credife
					L	Т	Р		-			
1	HSMC	18MT51	Technological Innovation Management And Entrepreneurship	MteEngg	2	2		03	40	60	100	3
2	PCC	18 MT52	Design and analysis of Machine Elements	MteEngg	3	2		03	40	60	100	4
3	PCC	18 MT53	Virtual Instrumentation	MteEngg	3	2		03	40	60	100	4
4	PCC	18 MT54	Hydraulics and Pneumatics	MteEngg	3			03	40	60	100	2
5	PCC	18 MT55	Micro and Smart Systems Technology	MteEngg	3			03	40	60	100	-
5	PCC	18 MT56	Technology Wireless Networks &Communication	MteEngg	3			03	40	60	100	
7	PCC	18 MTL57	Virtual Instrumentation Laboratory	MteEngg		2	2	03	40	60	100	1
S	PCC	18 MTL58	MSST -Laboratory	MteEngg		2	2	03	40	60	100	1
)	HSMC	18CIV59	EnvironmentalStudies	Civil/Environmental [PapersettingBoard: CivilEngineering]	1			02	40	60	100	
		•		TOTAL	18	10	04	26	360	540	900	2

Note:PCC:ProfessionalCore.HSMC:HumanityandSocialScience.

AICTEactivityPoints: In casestudentsfailtoearn the prescribedactivityPoints, EighthsemesterGradeCard shall beissuedonlyafterearningtherequiredactivityPoints. Studentsshall be admitted for the available admitted

VISEN	IESTER				0							
				t	Tea	chingHou	ırs/Week		Exami	nation		
SI. No		rse and secode	CourseTitle	Teaching Department	Theory Lecture	Tutoria I	Practic al/Dra wing	Duration inhours	CIEMarks	SEEMarks	Total Marks	Credits
				-	L	Т	Р		0	s		
1	PCC	18MT61	PLC & SCADA	MTE Engg	3	2		03	40	60	100	4
2	PCC	18MT62	Power Electronics	MTE Engg	3	2		03	40	60	100	4
3	PCC	18MT63	Computer Aided Machine Drawing	MTE Engg	3	2		03	40	60	100	4
4	PEC	18MT642	ProfessionalElective-1	MTE Engg	3			03	40	60	100	3
5	OEC	18MT653	OpenElective-A	MTE Engg	3			03	40	60	100	3
б	PCC	18MTL66	PLC and SCADA- Laboratory	MTE Engg		2	2	03	40	60	100	2
7	PCC	18MTL67	Power electronics - Laboratory	MTE Engg		2	2	03	40	60	100	2



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											-			
8	MP	18MTEP68	Mını-project	Engg.						03	40	60	100	2
9	Internship		Internship			carriedo mesters		ingtheva	cation/sof	VlandVIIs	emestersa	nd/orVI	and	
	TOTAL 15 12 06 24 320 480 800 24													
Note;	Note:PCC:Professionalcore.PEC:ProfessionalElective.OE:OpenElective.MP:Mini-project.													
				Prof	ession	alElecti	ve-1							
	Coursecodeunder18MT64X													
		18 MT641		Modeling Ar	nd Sim	ulatio								

18 MT642	Rapid Prototyping
18 MT643	Artificial neural network
18 MT644	Satellite Communication
18 MT645	Computer Integrated Manufacturing
	OpenElective-A
Coursecodeunder18MT65X	
18 MT651	Robotics and Automation,
18 MT652	Process 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).

Selectionofanopenelectiveshallnotbeallowed if,

 $\bullet \ \ \, {\rm The candidate has studied the same course during the previous semesters of the programme.}$

- $\bullet \ \ The syllabus content of open elective is similar to that of the Departmental core courses or professional electives.$
- $\bullet A similar course, under any category, is prescribed in the higher semesters of the programme. \\$

 $Registration to electives shall be documented under the guidance of {\tt ProgrammeCoordinator/Advisor/Mentor}.$

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 creditshall 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 earningtherequiredactivityPoints.StudentsshallbeadmittedfortheawardofdegreeonlyafterthereleaseoftheEighthsemester GradeCard.



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VIISE	MESTER											
	Con	rseandCourse		TeachingDepar tment	Theory Lecture	ingHours/\ .e	Q	nin s		mination	urks	lits
Sl. No	code		CourseTitle	Teac	T The	H Tutoria	Hractica rawing	Durationin hours	CIEMarks	SEE Marks	TotaMarks	Credits
1	PCC	18MT71	Industri	MTE Engg	3			03	40	60	100	3
			Ribotic									
2	PCC	18MT72	Thermal Engineering	MTE Engg	3			03	40	60	100	
3	PEC	18MT733	Professional Elective – 2	MTE Engg	3			03	40	60	100	-
4	PEC	18MT743	Professional Elective – 3	MTE Engg	3			03	40	60	100	1
5	OEC	18MT755	Open Elective -B	MTE Engg	3			03	40	60	100	4
6	PCC	18MTL7(Robotics Lab	MTE Engg	-	2	2	03	40	60	100	1
7	PCC	18MTL77	Thermal -Laboratory	MTE Engg		2	2	03	40	60	100	2
8	Project	18MTP78	ProjectWorkPhase-1	MTE Engg (Ifnotcompleted	 Iduringthev		2 /JandVIIe	 emerterr its	100 hallbecara	 riedoutdurin	100 nthe	1
9	Internship		Internship	vacationofVIIa	ndVIIIseme	sters)	14114 113	cincatera,ita	nanoccan	lieuoutaurin	guie	
				TOTAL		04	06	21	380	420	00	20
Note:PC	C:Professional	core PEC:Profe	ssionalElective.									
				ProfessionalElectiv	re-2							
	odeunder18C		ourseTitle									
18MT73			utomation In Process Control									
18MT732			ignal Process									
18MT73	-	R	eal Time Systems									
18MT734			OOPS using C++									
18MT73:	2	A	nalytical Instrumentation	ProfessionalElectiv	ar 3							
Coursec	odeunder18C	V74X Co	ourseTitle	TORSSOMALLICUT	63-0							
18MT74	1		inite element analysis.									
18MT74 18MT74			Iachine Learning Irtificial Intelligence									
101/11/4		А	dimetal menigence									
18MT74	4	_	Digital Image Processing									
18MT74			Aechanical vibration									
	-			OpenElective-H	3							
	codeunder18C		ourseTitle	•								
18MT75			Biomedical Signal Processing									
18MT75	2	N	lechatronics system design									
 Selection Theo Thes Asim 	nofanopenelect andidatehasstu yllabuscontent iilarcourse.und	tiveshallnotbeal diedthesamecou ofopenelectivei: eranycategory.i	ctives offered by other Departments expect the lowed if, urseduring the previous semesters of the prog ssimilar to that of the Departmental core cours sprescribed in the high ersemesters of the prog ated under the guidance of Programme Coordi	ramme. sesorprofessionalelectiv rramme.		<u>tment(</u> Ple	aserefertot	helistofope	nelectives	aunder 18XX	(75 X).	
than 4 st	n the ability/ab tudents. In extr	aordinary cases	ent/sand recommendationsofthementor,asj , like the funded projects requiring student							dentorto agr	oup having n	ot more
(v)Singl Guide.	ediscipline:Th		llbeawarded byacommitteeconsistingofthe									
project p (vi) Inte The CIE	resentation sk rdisciplinary; marks awarde	Il and question ContinuousInter I for the project	rkphase-1.shallbebased ontheevaluation of and answer session in the ratio 50:25:25.7 malEvaluationshall begroupwiseatthecolle work phase-1, shall be based on the evalu	The marks awarded for egelevelwiththeparticipa lation of project work p	the Project 1 ationof allgu hase-1 Rep	report sha uides of th ort (cover	ll be the sa ecollege.F ing Literat	me for all t articipation ure Survey,	he batch n 10f externa , Problem	nates. alguide/s,if a identificatio	ıny,is desirabl n, Objectives	e.
Internsl	hip:Allthestude	entsadmittedtoII	n skill and question and answer session in HyearofBE/B.Techshallhavetoundergomar IIIsemesterandtheprescribedcreditshallbeir	ndatoryinternshipof4we	eksduringth	nevacation	ofVIandV	IIsemesters	and/orVII	andVIII sen	oaten mates. 1esters.AUniv	versity

examinationshallbeconsidered during VIII semesterandheprescribed creditshallbeincluded in VIII semester Internship shallbeconsidered ashead of passing and shallbeconsidered for the award of degree. Those, who do not take-up/complete the internship shallbedeclared failand shall have to complete during subsequent University examination after satisfying the internship requirements.

 $\label{eq:Altorian} Altor EactivityPoints: In cases tudents fail to earn the prescribed activityPoints. Eighthsemester Grade Cardshall be issued only after earning the required activityPoints. Students shall be admitted for the award of degree only after the release of the Eighthsemester Grade Card.$



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VIUSEMESTED

VIIISEME				e	Teachi	ingHour	/Week		E	xamination		
Sl. No	Cot code	urseandCourse 2	CourseTitle	TeachingDep rtment	н Theory Lecture	H Tutorial	Hractical/D rawing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
1	PCC	18MT81	Automotive Electronics & Hybrid Vehicles	MTEEngg.	3			03	40	60	100	3
2	PEC	18MT82X	ProfessionalElective-4	MTEEngg	3			03	40	60	100	3
3	Project	18MTP83	ProjectWorkPhase-2	MTEEngg			16	03	40	60	100	8
4	Seminar	18MTS84	TechnicalSeminar	MTEEngg			2	03	100		100	1
5	Internship	18MTI85	Internship	Completedduring semestersand/orV	the vacatior HandVIIIse	/sofVIa mesters	ndVII .)	03	40	60	100	3
				TOTAL	06		18	15	260	240	500	18
Note:PCC:	ProfessionalCon	e PEC Profession										
				ofessionalElectives	-4							
Coursecod 18MT821	leunder18MT82	2X	CourseTitle Operation Research.									
18MT822			Communication system									
18MT823			Digital Control System									
18MT824			Management Information Systems									
18MT825			Radar Engineering									

ProjectWork

ProjectWork CIE procedure for Project Work Phase-2: (v) Single discipline; The CIE marksshall 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 report shall be the same for all the batch mates. (v) Interdisciplinary: Continuous Internal Evaluation shall be group wise at the college level with the participation of all guides of the continuous Internal 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 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 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 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

SEEforProject WorkPhase-2:

2017-18

2018-19

			VISVESVARAYATECHNOLOGI SchemeofTeaching OutcomeBasedEducation(OBE)andChoi (Effectivefromtheacader	ndExamina ceBasedCre	tion201 ditSyste	8 – 19						
8		atronics E1	igineering									
IISEME	STER			6	.							
SL No	Cou Code	rseandCourse	CourseTitle	TeachingDepar tment	Teachin Lecture Lecture	gHours/W Later Later L	Practical/Dr	Durationin hours	CIEMarks	SEE Marks	TotaMarks	Credits
				-	L	Т	Р	Á	5	SE	Τ°	
1	BSC	18MAT31	TransformCalculus,FourierSeriesandNumerical Techniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT32	Material science and Technology	MTE Engg	3	2		03	40	60	100	4
3	PCC	18MT33	Mechanics of materials	MTE Engg	3	0		03	40	60	100	3
4	PCC	18MT34	Control Systems	MTE Engg	3	0		03	40	60	100	3
5	PCC	18MT35	Analog and Digital Electronics	MTE Engg		0		03	40	60	100	3
6	PCC	18MT36	Computer Organization	MTE Engg		0		03	40	60	100	3
7	PCC	18MTL37	Machine shop and material Testing lab	MTE Engg		2	2	03	40	60	100	2
8	PCC	18MTL38	Analog and digital electronics lab	MTE Engg		2	2	03	40	60	100	2
		18KVK39	VyavaharikaKannada(Kannadaforcommunication)/ OR			2			100			
9	HSMC	18KAK39	AadalithaKannada(KannadaforAdministration)	HSMC							100	1
		18CPC39	ConstitutionofIndia,ProfessionalEthicsandCyber Law		1 Exa	 minationi	 isbyobjec	02 tivetypeo	40 uestions	60		
	1	1	1		17	08	ГÍ	24	420	480		
				TOTAL	OR 18	OR 10	04	OR 26	OR 360	OR 540	900	2



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Note:BSC:BasicScience, PCC:ProfessionalCore, HSMC:HumanityandSocialScience, NCMC:Non-creditmandatorycourse 18KVK39VyavaharikaKannada(Kannadaforcommunication)isfornon-Kannadaspeaking,reading and writingstudents and 18KAK39AadalithaKannada(Kannadafor Administration)isforstudents who speak read and writeKannada.

Course prescribed to lateral entry Diplomaholders admitted to III semester of Engineering programsNCMC 18MATDIP31

 10
 NCMC
 18MATDIP31
 Additional/Mathematics-I
 Mathematics
 02
 01
 ...
 03
 40
 60
 100
 0

 (a)The mandatory non - credit courses Additional/Mathematics I and II prescribed for III and IV semesters respectively, to thelateral entry Diploma holders admittedto III semester
 of BE/B.
 Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. Incase, any student failstoregisterforthesaidcourse/failstosecurethe minimum 40% of the prescribed/CIEmarks, he/sheshall bedeemedtohave securedF

grade.Insuchacase.thestudentshavetofulfilltherequirementsduringsubsequentsemester/stoappearforSEE.

(b)TheseCoursesshallnotbeconsideredforverticalprogression.butcompletionofthecoursesshallbemandatoryfortheawardofdegree.

Course sprescribed to lateral entry B. Sc degree holders admitted to III semester of Engineering programs and the semester of the semigroup of the semigroup

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

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

Programme, Model Internsing Guidelines): Over and above the academic grades, every Day College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other Universities to fifth semesterare required to earn 50 ActivityPointsfromthe yearofentryto VTU. The ActivityPointseamed shallbereflected on thestudent's eighth semester Grade Card. The activities can be can be spread over the years, anytime during the semester weekends andholidays, as per the liking and convenience of the studentfrom the year of entry to the programme. However, minimumhours' requirement should be fulfilled. Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression

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

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

				ar	Teach	ingHours/W	/eek		Exam	ination		
SI. No		ourseandCourse de	CourseTitle	TeachingDepar tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	FotalMarks	
					L	Т	Р	-	Ŭ	•.		
1	BSC	18MAT41	$Complex {\it Analysis}, Probability {\it AndStatistical Methods}$	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT42	Fluid mechanics and machines	MTEEngg.	3	2		03	40	60	100	4
3	PCC	18 MT 4	Microcontroller	MTEEngg.	3	0		03	40	60	100	3
4	PCC	18 MT 44	Manufacturing technology	MTEEngg.	3	0		03	40	60	100	91
5	PCC	18 MT 45	Theory of Machines	MTEEngg.		0		03	40	60	100	3
6	PCC	18 MT 46	Instrumentation and measurements	MTEEngg.	3	0		03	40	60	100	3
7	PCC	18 MT L47	FM and pneumatic - Laboratory	MTEEngg.		2	2	03	40	60	100	2
8	PCC	18 MT L48	Microcontroller - Laboratory(BV	MTEEngg.		2	2	03	40	60	100	2
9		18KVK39/49	VyavaharikaKannada(KannadaforCommunication)/									
			OR			2			100			
	HSMC	18KAK39/49	AadalithaKannada(KannadaforAdministration)	HSMC							100	
	naivic		OR	name							100	1 1
		1000000000			1			02	40	60	1	
		18CPC39/49	Constitution of India, Professional Ethics and Cyber Law		I	Examinatio	nisbyobjec	tivetypequ	estions		1	
	•		•	TOTAL	17	08		24	420	480		
				[OR	OR	04	OR	OR	OR	900	2
					18	10	1	26	360	540	1	1

Note: BSC: BasicScience, PCC: ProfessionalCore, HSMC: HumanityandSocialScience, NCMC: Non-creditmandatorycourse. 18KVK39/49Vyavaharikkamada(KrannadaForcommunication)isfornon-Kannadaspeaking_readingandwritingstudentsand18KAK39/49AadalithaKannada(KannadaforAdministration)isfor studentswhospeak_readandwriteKannada.

 CourseprescribedtolateralentryDiplomaholdersadmittedtoIIIsemesterofEngineeringprograms

 10
 NCMC
 18MATDIP41
 AdditionalMathematics-II
 Mathematics
 02
 01
 - 03
 40
 60
 100
 I00
 appear for SEE. (b)TheseCoursesshallnotbeconsideredforverticalprogression.butcompletionoffhecoursesshallbemandatoryfortheawardofdegree.

Course sprescribed to lateral entry B. Sc degree holders admitted to III semester of Engineering programs and the semester of the semiconductive semiconduLateralentrantstudentsfromB.Sc.Stream_shallcleartheone-reditcoursesEngineeringGraphicsand ElementosCivilEngineeringand MechanicsoftheFirstYearEngineering Programme. TheseCoursesshall notbeconsideredforverticalprogression_butcompletionofthecoursesshallbemandatoryfortheawardofdegree.

AICTE activity Points: In cases tudents fail to earn the prescribed activity Points, Eighthsemester Grade Card shall be issued only after earning the required activity Points. Students shall be admitted for the avardof degree only after the release of the Eighthsemester Grade Card.



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				Jar	Teachin	gHours/			Exam	ination		
L lo	Co	urseandCourse le	CourseTitle	T eachingDepar tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credife
					L	Т	Р		-			
1	HSMC	18MT51	Technological Innovation Management And Entrepreneurship	MteEngg	2	2		03	40	60	100	3
2	PCC	18 MT52	Design and analysis of Machine Elements	MteEngg	3	2		03	40	60	100	4
3	PCC	18 MT53	Virtual Instrumentation	MteEngg	3	2		03	40	60	100	4
4	PCC	18 MT54	Hydraulics and Pneumatics	MteEngg	3			03	40	60	100	2
5	PCC	18 MT55	Micro and Smart Systems Technology	MteEngg	3			03	40	60	100	-
5	PCC	18 MT56	Technology Wireless Networks &Communication	MteEngg	3			03	40	60	100	
7	PCC	18 MTL57	Virtual Instrumentation Laboratory	MteEngg		2	2	03	40	60	100	1
S	PCC	18 MTL58	MSST -Laboratory	MteEngg		2	2	03	40	60	100	1
)	HSMC	18CIV59	EnvironmentalStudies	Civil/Environmental [PapersettingBoard: CivilEngineering]	1			02	40	60	100	
		•		TOTAL	18	10	04	26	360	540	900	2

Note:PCC:ProfessionalCore.HSMC:HumanityandSocialScience.

AICTEactivityPoints: In casestudentsfailtoearn the prescribedactivityPoints, EighthsemesterGradeCard shall beissuedonlyafterearningtherequiredactivityPoints. Studentsshall be admitted for the available admitted

VISEN	IESTER				0							
				t	Tea	chingHou	ırs/Week		Exami	nation		
SI. No		rse and secode	CourseTitle	Teaching Department	Theory Lecture	Tutoria I	Practic al/Dra wing	Duration inhours	CIEMarks	SEEMarks	Total Marks	Credits
				-	L	Т	Р		0	s		
1	PCC	18MT61	PLC & SCADA	MTE Engg	3	2		03	40	60	100	4
2	PCC	18MT62	Power Electronics	MTE Engg	3	2		03	40	60	100	4
3	PCC	18MT63	Computer Aided Machine Drawing	MTE Engg	3	2		03	40	60	100	4
4	PEC	18MT642	ProfessionalElective-1	MTE Engg	3			03	40	60	100	3
5	OEC	18MT653	OpenElective-A	MTE Engg	3			03	40	60	100	3
б	PCC	18MTL66	PLC and SCADA- Laboratory	MTE Engg		2	2	03	40	60	100	2
7	PCC	18MTL67	Power electronics - Laboratory	MTE Engg		2	2	03	40	60	100	2



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											-			
8	MP	18MTEP68	Mını-project		Eng			-	-	03	40	60	100	2
9	Internship		Internship		Tobec VIIIse			ingthevad	cation/sof	/landVIIse	mestersa	nd/orVI	land	
				T	OTAL	15		12	06	24	320	480	800	24
Note:	PCC:Profession	alcore,PEC:Pro	fessionalElecti	ve.OE:OpenEl	lective,	MP:Mi	ni-pro	oject.						
				Prof	fession	alElect	ive-1							
	Coursecou	leunder18MT6	4X											
		18 MT641		Modeling Ar	nd Sim	ulatio								

18 MT642	Rapid Prototyping
18 MT643	Artificial neural network
18 MT644	Satellite Communication
18 MT645	Computer Integrated Manufacturing
	OpenElective-A
Coursecodeunder18MT65X	
18 MT651	Robotics and Automation,
18 MT652	Process 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).

Selectionofanopenelectiveshallnotbeallowed if,

 $\bullet \ \ \ The candidate has studied the same course during the previous semesters of the programme.$

- $\bullet \ \ The syllabus content of open elective is similar to that of the Departmental core courses or professional electives.$
- $\bullet A similar course, under any category, is prescribed in the higher semesters of the programme. \\$

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

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 creditshall 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 earningtherequiredactivityPoints.StudentsshallbeadmittedfortheawardofdegreeonlyafterthereleaseoftheEighthsemester GradeCard.



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VIISEN	MESTER											
				par	Teach	ingHours/	Week		Exa	mination		
Sl. No	Cour code	rseandCourse	CourseTitle	TeachingDepar tment	Theory Lecture	Tutorial	Practical/D rawing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
					L	Т	Р					
1	PCC	18MT71	Industri al Ribotic s	MTE Engg	3			03	40	60	100	3
2	PCC	18MT72	Thermal Engineering	MTE Engg	3			03	40	60	100	
3	PEC	18MT735	Professional	MTE Engg	3			03	40	60	100	
4	PEC	18MT743	Elective – 2 Professional		3			03	40	60	100	
4	FEC	18//11/42	Elective – 3	MTE Engg	2			05	40	ou	100	i i i
5	OEC	18MT753	Open Elective -B	MTE Engg	3			03	40	60	100	-
6	PCC	18MTL7¢	Robotics Lab	MTE Engg		2	2	03	40	60	100	
7	PCC	18MTL77	Thermal -Laboratory	MTE Engg		2	2	03	40	60	100	2
8	Project	18MTP78	ProjectWorkPhase-1	MTE Engg			2		100		100	1
9	Internship		Internship	(Ifnotcomplete			VIandVIIs	emesters,its	hallbecan	riedoutdurin	gthe	
	internanp	-	Internantp	vacationofVIIa								
				TOTAL	15	04	06	21	380	420	00	20
N-4-DCV	C.D	DEC.D.	essionalElective.									
Note:PU		COLE FEX. FIGH		rofessionalElectiv								
Coursec	deunder18C	738	CourseTitle	rolessionalElectiv	/6-2							
18MT731			Automation In Process Control									
18MT732			Signal Process									
18MT733		R	Real Time Systems									
18MT734			OOPS using C++									
18MT735	5	A	Analytical Instrumentation									
Courseco	odeunder18C	V74X C	ourseTitle	rofessionalElectiv	63-0							
18MT74			inite element analysis.									
18MT74			Machine Learning									
18MT74	3	P	Artificial Intelligence									
18MT74			Digital Image Processing									
18MT74	3	N	Mechanical vibration	0 5	n							
Converse	odeunder18C	V75V	CourseTitle	OpenElective-l	0							
18MT75			Siomedical Signal Processing									
18MT75			Mechatronics system design									
101/11/2	-		accuration of system design									
		I										
 Selection Theorem Theorem Asim 	nofanopenelect andidatehasstu yllabuscontent ularcourse, und	tiveshallnotbeal diedthesameco ofopenelectivei eranycategory.	ctivesofferedbyotherDepartmentsexpectthoseth llowedif, urseduringtheprevioussemestersofthe programm issimilarto thatoftheDepartmentalcorecourseson isprescribediuthehighersemestersoftheprogramm ntedundertheguidanceofProgrammeCoordinator	ne. professionalelectiv ne.		tment(Ple	asereferto	thelistofope	nelectives	sunder 18XJ	(75X).	
than 4 st CIEproc (v)Single Guide.	n the ability/ab udents. In extra cedureforProj ediscipline:Th	aordinary cases ectWorkPhas eCIE markssha	ent/sand recommendationsofthementor <u>asingled</u> s, like the funded projects requiring students fro e-1: allbeawarded byacommitteeconsistingoftheHeac orkphase-1 <u>.shallbebased</u> ontheevaluationofthepr	m different discip doftheconcerned E	lines, the pro Departmenta	oject stude ndtwo ser	ent strengt uorfaculty	h can be 5 c membersof	or 6. theDepart	ment, oneof	whom shall b	e the
project p (vi) Inter The CIE andMeth Internsh	resentation ski rdisciplinary; marks awardeo odology), proj nip:Allthestudo	II and question ContinuousInte I for the project ect presentation entsadmittedtoI	rxpnase - <u>snalpepased</u> ontheevaluationorthepr and answer session in the ratio 50:25:25. The m <u>rmalEvaluationshall</u> begroupwiseatthecollegelev t work phase -1, shall be based on the evaluation n skill and question and answer session in the ra IlyearofBE/B. Techshallhavetoundergomandato IIIsemesterandtheprescribedcreditshallbeinclud	narks awarded for velwiththeparticip n of project work p atio 50:25:25.The pryinternshipof4we	the Project i ationof allgu hase-1 Rep marks awar eeksduringth	report shai uides of th ort (cover ded for the nevacation	ll be the sa accollege.F ing Literat e project re aofVlandV	ume for all t Participation ture Survey eport shall t 'Ilsemesters	he batch r 10f extern: , Problem 0e the sam ;and/orVII	nates. alguide/s,if identification e for all the	any,is desirab on, Objectives batch mates.	le.

and shallbeconsidered fortheaward ofdegree. Those, who do nottake-up/complete the internship shallbedeclared failand shall have to complete during subsequent University examination after satisfying the internship requirements.

 $\label{eq:Altorian} Altor Experimentation of the second structure of the sec$



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				pa	Teachi	ingHour	s/Week		E	xamination		
SL No	Cou code	urseandCourse	CourseTitle	TeachingDep rtment	Theory Lecture	H Tutorial	Heractical/D	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
1	PCC	18MT81	Automotive Electronics & Hybrid Vehicles	MTEEngg.	3			03	40	60	100	3
2	PEC	18MT82X	ProfessionalElective-4	MTEEngg	3			03	40	60	100	3
3	Project	18MTP83	ProjectWorkPhase-2	MTEEngg			16	03	40	60	100	8
4	Seminar	18MTS84	TechnicalSeminar	MTEEngg			2	03	100		100	1
5	Internship	18MTI85	Internship	Completedduring semestersand/orV	the vacatior HandVIIIse	sofVIa mesters	ndVII .)	03	40	60	100	3
	•		•	TOTAL	06		18	15	260	240	500	18
Note:PCC	:ProfessionalCo	re PEC:Profession										
				rofessionalElectives	-4							
Coursecoo 18MT821	deunder18MT8	2X	CourseTitle									
			Operation Research.									
18MT822			Communication system									
18MT823			Digital Control System									
18MT824			Management Information Systems									
18MT825			Radar Engineering									

ProjectWork CIE procedureforProjectWorkPhase-2: (v)Singlediscipline;TheCIE marksshallbe awarded byacommitteeconsistingoftheHeadoftheconcerned Departmentandtwo seniorfacultymembersoftheDepartment, oneofwhomshallbe the Guide. TheCIEmarksawardedfor theprojectworkphase-2_shallbebasedoutheeyaluationoftrojectworkphase -2Report,projectpresentationskilland questionand answersessionintheratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates. (v)Interdisciplinary: ContinuousInternalEvaluationshallbegroupwiseatthecollegelevelwiththeparticipationofallguidesofthecollege.Participation ofexternalguide's_ifany_isdesirable. 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.Themarksawardedfortheprojectreportshallbethesameforallthebatchmates.

SEEforProject WorkPhase-2:

2018-19

Program	meMeel	natronics Er	VISVESVARAYATECHNOLOGI SchemeofTeaching OutcomeBasedEducation(OBE)andChoi (Effectivefromtheacader	ndExamina ceBasedCre	tion201 ditSyste	8 – 19						
IISEMI		atronics Er	igineering									
IISEMI	LSIEK			1	Teachin	gHours/W	eek		Exam	ination		
SL No	Cou Code	rseandCourse	CourseTitle	TeachingDepar tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
					L	Т	Р	п	~	s	Ē	
1	BSC	18MAT31	TransformCalculus,FourierSeriesandNumerical Techniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT32	Material science and Technology	MTE Engg	3	2		03	40	60	100	4
3	PCC	18MT33	Mechanics of materials	MTE Engg	3	0		03	40	60	100	3
4	PCC	18MT34	Control Systems	MTE Engg	3	0		03	40	60	100	3
5	PCC		Analog and Digital Electronics	MTE Engg		0		03	40	60	100	3
6	PCC		Computer Organization	MTE Engg		0		03	40	60	100	3
7	PCC	18MTL37	Machine shop and material Testing lab	MTE Engg		2	2	03	40	60	100	2
8	PCC	18MTL38	Analog and digital electronics lab	MTE Engg		2	2	03	40	60	100	2
		18KVK39	VyavaharikaKannada(Kannadaforcommunication)/ OR			2			100			
9	HSMC	18KAK39	AadalithaKannada(KannadaforAdministration)	HSMC							100	1
-			OR									·
		18CPC39	ConstitutionofIndia,ProfessionalEthicsandCyber Law		1 Exa	 minationi	 isbvobjec	02 tivetypeo	40 juestions	60		
	-				17	08		24	420	480		-
				TOTAL	OR	OR	04	OR	OR	OR	900	2
					18	10	1 1	26	360	540		



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Note:BSC:BasicScience,PCC:ProfessionalCore,HSMC:HumanifyandSocialScience	e NCMC:Non-creditmar	idatoryco	ourse.						
18KVK39VyavaharikaKannada(Kannadaforcommunication)isfornon-Kannadaspe	aking,readingandwriting	studentsa	and18KAK	39Aada	lithaKann	ada(Kar	nadafor		
Administration)isforstudentswhospeak readandwriteKannada									
CourseprescribedtolateralentryDiplomah	oldersadmittedtoIIIs	emester	ofEngin	eeringp	rograms				
10 NCMC 18MATDIP31 AdditionalMathematics-I	Mathematics	02	01		03	40	60	100	0
(a)The mandatory non - credit courses AdditionalMathematics I and II prescribed it									
of RE/B. Tech programs, shall attend the classes during the respective semesters to	complete all the formalit	ties of th	A CONTRA 3	nd annes	r forthe I	Iniversit	u evami	nation Inc	1200 0 201

grade. In such a case, the student shave to fulfill the requirements during subsequents emester/sto appear for SEE.

(b) These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

student failstoregisterforthesaidcourse/failstosecurethe minimum 40% of the prescribed CIE marks, he/sheshall bedeemedto have secured F

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

 $\label{eq:construction} Solution of the second statement of the second state$

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

Over and above the academic grades, every Day College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme.Students transferred from other Universitiesto fifth semesterare required to earn 50 ActivityPointsfromthe yearofentryto VTU. The ActivityPointsearned shallbereflected on thestudent's eighth semester Grade Card. The activities can be can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimumhours' requirement should be fulfilled. Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical

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

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2018 – 19) Programme: MECHATRONICS ENGINEERING IV SEMESTER

				Dar	Teach	ingHours/W	eek		Exan	ination		
SI. No		ourseandCourse de	CourseTitle	TeachingDepa tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	÷
		_			L	Т	Р	-	Ŭ	•.		
1	BSC	18MAT41	Complex Analysis, Probability And Statistical Methods	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT42	Fluid mechanics and machines	MTEEngg.	3	2		03	40	60	100	
3	PCC	18 MT 4	Microcontroller	MTEEngg.	3	0		03	40	60	100	1
4	PCC	18 MT 44	Manufacturing technology	MTEEngg.	3	0		03	40	60	100	
5	PCC	18 MT 45	Theory of Machines	MTEEngg.		0		03	40	60	100	3
6	PCC	18 MT 46	Instrumentation and measurements	MTEEngg.	3	0		03	40	60	100	01
7	PCC	18 MT L47	FM and pneumatic – Laboratory	MTEEngg.		2	2	03	40	60	100	1
8	PCC	18 MT L48	Microcontroller - Laboratory(BV	MTEEngg.		2	2	03	40	60	100	2
9		18KVK39/49 18KAK39/49	VyavaharikaKannada(KannadaforCommunication)/ OR AadalithaKannada(KannadaforAdministration)			2			100			
	HSMC	10111111033143	OR	HSMC							100	1
		18CPC39/49	ConstitutionofIndia, Professional Ethics and CyberLaw		1	 Examinatio	 nisbvobjec	02 tivetypequ	40 estions	60		
				TOTAL	17	08		24	420	480		<u> </u>
					OR	OR	04	OR	OR	OR	900	2
					18	10		26	360	540		

Note:BSC:BasicScience.PCC:ProfessionalCore.HSMC:HumanityandSocialScience.NCMC:Non-creditmandatorycourse. 18KVK39/49VyavaharikaKannada(Kannadaforcommunication)isformon-Kannadaspeaking,readingandwritingstudentsand18KAK39/49AadalithaKannada(KannadaforAdministration)isfor studentswhospeak,readandwriteKannada.

Course prescribed to lateral entry Diplomaholders admitted to III semester of Engineering programs
 International Mathematics
 In course/fails to secure the minimum 40% of the prescribed CIE marks he/she shallbe deemed to have secured Fgrade. Insuch a case, the students have to fulfill the requirements during subsequent se ester/s to appear for SEE.

(b)TheseCoursesshallhotbeconsideredforvertical progression, but completion of the courses shall be mandatory for the award of degree.

Course sprescribed to lateral entry B. Sc degree holders admitted to III semester of Engineering programs and the set of the set oLateralentrantstudentsfrom B. Sc. Stream, shallclearthenon-credit courses Engineering Graphics and Elements of CivilEngineering and Mechanics of the First Year Engineering Programme. These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

AICTEactivityPoints: In casestudentsfailtoearn the prescribedactivityPoints. EighthsemesterGradeCard shall beissuedonlyafterearningthereouiredactivityPoints. Studentsshall be admitted

fortheawardofdegreeonlyafter thereleaseoftheEighthsemesterGradeCard.



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				TeachingDepar nent	Teachin	gHours/			Exam	ination		
L lo	Co	urseandCourse le	eandCourse CourseTitle		Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credife
					L	Т	Р		-			
1	HSMC	18MT51	Technological Innovation Management And Entrepreneurship	MteEngg	2	2		03	40	60	100	3
2	PCC	18 MT52	Design and analysis of Machine Elements	MteEngg	3	2		03	40	60	100	4
3	PCC	18 MT53	Virtual Instrumentation	MteEngg	3	2		03	40	60	100	4
4	PCC	18 MT54	Hydraulics and Pneumatics	MteEngg	3			03	40	60	100	2
5	PCC	18 MT55	Micro and Smart Systems Technology	MteEngg	3			03	40	60	100	-
5	PCC	18 MT56	Technology Wireless Networks &Communication	MteEngg	3			03	40	60	100	
7	PCC	18 MTL57	Virtual Instrumentation Laboratory	MteEngg		2	2	03	40	60	100	1
S	PCC	18 MTL58	MSST -Laboratory	MteEngg		2	2	03	40	60	100	1
)	HSMC	18CIV59	EnvironmentalStudies	Civil/Environmental [PapersettingBoard: CivilEngineering]	1			02	40	60	100	
		•		TOTAL	18	10	04	26	360	540	900	2

Note:PCC:ProfessionalCore.HSMC:HumanityandSocialScience.

AICTEactivityPoints: In casestudentsfailtoearn the prescribedactivityPoints, EighthsemesterGradeCard shall beissuedonlyafterearningtherequiredactivityPoints. Studentsshall be admitted for the available admitted

VISEM	IESTER		```									
				t	Tea	chingHou	ırs/Week		Exami	nation		
Sl. No		se and secode	CourseTitle	Teaching Department	Theory Lecture	Tutoria I	Practic al/Dra wing	Duration inhours	CIEMarks	SEEMarks	Total Marks	Credits
				-	L	Т	P		0	s		
1	PCC	18MT61	PLC & SCADA	MTE Engg	3	2		03	40	60	100	4
2	PCC	18MT62	Power Electronics	MTE Engg	3	2		03	40	60	100	4
3	PCC	18MT63	Computer Aided Machine Drawing	MTE Engg	3	2		03	40	60	100	4
4	PEC	18MT642	ProfessionalElective-1	MTE Engg	3			03	40	60	100	3
5	OEC	18MT653	OpenElective-A	MTE Engg	3			03	40	60	100	3
6	PCC	18MTL66	PLC and SCADA- Laboratory	MTE Engg		2	2	03	40	60	100	2
7	PCC	18MTL67	Power electronics - Laboratory	MTE Engg		2	2	03	40	60	100	2



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											-			
8	MP	18MTEP68	Mını-project		Eng			-	-	03	40	60	100	2
9	Internship		Internship		Tobec VIIIse			ingthevad	cation/sof	/landVIIse	mestersa	nd/orVI	land	
				T	OTAL	15		12	06	24	320	480	800	24
Note:	PCC:Profession	alcore,PEC:Pro	fessionalElecti	ve.OE:OpenEl	lective,	MP:Mi	ni-pro	oject.						
				Prof	fession	alElect	ive-1							
	Coursecou	leunder18MT6	4X											
		18 MT641		Modeling Ar	nd Sim	ulatio								

18 MT642	Rapid Prototyping
18 MT643	Artificial neural network
18 MT644	Satellite Communication
18 MT645	Computer Integrated Manufacturing
	OpenElective-A
Coursecodeunder18MT65X	
18 MT651	Robotics and Automation,
18 MT652	Process 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).

Selectionofanopenelectiveshallnotbeallowed if,

 $\bullet \ \ \ The candidate has studied the same course during the previous semesters of the programme.$

- $\bullet \ \ The syllabus content of open elective is similar to that of the Departmental core courses or professional electives.$
- $\bullet A similar course, under any category, is prescribed in the higher semesters of the programme. \\$

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

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 creditshall 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 earningtherequiredactivityPoints.StudentsshallbeadmittedfortheawardofdegreeonlyafterthereleaseoftheEighthsemester GradeCard.



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VIISE	MESTER											
				ar	Teachi	ingHours/	Week		Exa	amination		
SL No	Cour code	rseandCourse	CourseTitle	TeachingDepar tment	Theory Lecture	Tutorial	Practical/D rawing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
					L	Т	Р					
1	PCC	18MT71	Industri al Ribotic s	MTE Engg	3			03	40	60	100	3
2	PCC	18MT72	Thermal Engineering	MTE Engg	3			03	40	60	100	1
2	PEC	18MT733	Professional	MTE Engg	3			03	40	60	100	
4	PEC	18MT745	Elective – 2 Professional	MTE Engg	3			03	40	60	100	
5	OEC	18MT755	Elective – 3	MTE Ener				03	40	60	100	 _
2	OEC	18//11/52	Open Elective -B	MTE Engg	3			03	40	OL	100	÷
6	PCC	18MTL76	Robotics Lab	MTE Engg		2	2	03	40	60	100	1
7	PCC	18MTL77	Thermal –Laboratory	MTE Engg		2	2	03	40	60	100	2
8	Project	18MTP78	ProjectWorkPhase-1	MTE Engg			2		100		100	1
9	Internship		Internship	(Ifnotcomplete	dduringthev	acationof	VIandVIIs	emesters,its	hallbecan	riedoutdurin	gthe	7
				vacationofVIIa TOTAL		sters) 04	06	21	380	420	00	20
				IUIAL	15	04	00	21	380	420	00	20
Note:PC	C:Professional	core PEC: Profe	essionalElective.									
1.010	**************			rofessionalElectiv	re-2							
Coursec	odeunder18C	V73X C	CourseTitle	- oreosionalEreett								
18MT731			Automation In Process Control									
18MT732			Signal Process									
18MT733			Real Time Systems									
18MT734		1	OOPS using C++									
18MT73			Analytical Instrumentation									
18/01/5.)	F		rofessionalElectiv	·							
Courses	odeunder18C	74X C	ourseTitle	onssionarEneenv	03-0							
courses	oucunuer roe	()4A 0	oursernite									
18MT74	1	IE	finite element analysis.									
18MT74			Machine Learning									
18MT74			Artificial Intelligence									
	-	-	a mongenee									
18MT74			Digital Image Processing									
18MT74	.5	Ν	Mechanical vibration		_							
				OpenElective-	В							
	odeunder18C		CourseTitle									
18MT75			Biomedical Signal Processing									
18MT75	2	I	Mechatronics system design									
Selection Theo Thes Asim	nofanopenelect andidatehasstu yllabuscontent iilarcourse, und	tiveshallnotbea diedthesameco ofopenelective eranycategory	ctivesofferedbyotherDepartmentsexpectthoseth llowedif, uurseduringtheprevioussemestersofthe programm issimilarto thatoftheDepartmentalcorecoursesor isprescribediuthehighersemestersoftheprogramm ntedundertheguidanceofProgrammeCoordinator	ne. professionalelectiv ne.	ves.	tment(Ple	asereferto	thelistofope	nelectives	aunder 18XX	(75X).	
than 4 st CIEpro (v)Singl Guide. TheCIEr	n the ability/ab udents. In extra cedureforProj ediscipline:Th marksawardedi	aordinary cases ectWorkPhas eCIE markssha fortheprojectwo	allbeawarded byacommitteeconsistingoftheHead orkphase-1.shallbebased ontheevaluationofthepr	m different discip doftheconcerned I rojectworkphase -	lines, the pro Departmenta 1 Report (co	oject stude ndtwo ser veringLite	ent strengt iiorfaculty eratureSur	h can be 5 c membersof vey,Probler	or 6. theDepart nidentific	ment, oneof ation,Object	whom shall b	e the
(vi) Inte The CIE andMeth Internsh	rdisciplinary; marks awarded lodology), proj hip:Allthestude	ContinuousInte l for the projec ect presentation entsadmittedtoI	a and answer session in the ratio 50:25:25.The n emalEvaluationshall begroupwiseatthecollegele t work phase-1, shall be based on the evaluation n skill and question and answer session in the ra IllyearofBE/B.Techshallhavetoundergomandato Tillsemesterandtheprescribedcreditshallbeinclud	velwiththeparticip a of project work p atio 50:25:25.The pryinternshipof4wo	ationof allgu phase-1 Rep marks award eeksduringth	uides of th ort (cover ded for the nevacation	ecollege.F ing Literat project re ofVlandV	Participation ture Survey, eport shall b 'IIsemesters	of extern: , Problem oe the sam ;and/orVII	alguide/s,if : identifications ide for all the	on, Objectives batch mates.	5

examinationshallbeconductedduring VIIIsemesterandtheprescribedcreditshallbeincludedin VIIIsemester.Internshipshallbeconsideredasaheadofpassing and shallbeconsidered fortheaward ofdegree. Those, who do nottake-up/completetheinternship shallbedeclared failand shall haveto completeduringsubsequentUniversityexamination after satisfying the internship requirements.

 $\label{eq:Altorian} Altor Experimentation of the second structure of the sec$



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				pa	Teachi	ingHour	s/Week		E	xamination		
Sl. No	Co cod	urseandCourse e	CourseTitle	TeachingDep rtment	H Theory Lecture	H Tutorial	H Practical/D rawing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
1	PCC	18MT81	Automotive Electronics & Hybrid Vehicles	MTEEngg.	3			03	40	60	100	3
2	PEC	18MT82X	ProfessionalElective-4	MTEEngg	3			03	40	60	100	3
3	Project	18MTP83	ProjectWorkPhase-2	MTEEngg			16	03	40	60	100	8
4	Seminar	18MTS84	TechnicalSeminar	MTEEngg			2	03	100		100	1
5	Internship	Completedduring semestersand/orV	the vacation HandVIIIse	i/sofVIa mesters	ndVII .)	03	40	60	100	3		
				TOTAL	06		18	15	260	240	500	18
Note:PCC	ProfessionalCo	re.PEC:Profession										
				rofessionalElectives	-4							
	deunder18MT8	2X	CourseTitle									
18MT821			Operation Research.									
18MT822			Communication system									
18MT823			Digital Control System									
18MT824			Management Information Systems									
			Radar Engineering									

ProjectWork CIE procedureforProjectWorkPhase-2: (v)Singlediscipline;TheCIE marksshallbe awarded byacommitteeconsistingoftheHeadoftheconcerned Departmentandtwo seniorfacultymembersoftheDepartment, oneofwhomshallbe the Guide. TheCIEmarksawardedfor theprojectworkphase-2_shallbebasedoutheeyaluationoftrojectworkphase -2Report,projectpresentationskilland questionand answersessionintheratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates. (v)Interdisciplinary: ContinuousInternalEvaluationshallbegroupwiseatthecollegelevelwiththeparticipationofallguidesofthecollege.Participation ofexternalguide's_ifany_isdesirable. 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.Themarksawardedfortheprojectreportshallbethesameforallthebatchmates.

SEEforProject WorkPhase-2:

2019-20

Program	nme:Mec	hatronics E1	VISVESVARAYATECHNOLOGI SchemeofTeaching OutcomeBasedEducation(OBE)andChoi (Effectivefromtheacader ngineering	andExamina iceBasedCre	tion201 ditSyste	9 - 20						
IIISEMI	ESTER											
				par	Teachin	gHours/W	eek		Exam	ination		
SL No	Co Cod	urseandCourse le	CourseTitle	TeachingDepar tment	Theory Lecture	Tutorial	Practical/D1 awing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
					L	Т	Р	_	•	•.	Ľ	
1	BSC	18MAT31	TransformCalculus,FourierSeriesandNumerical Techniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT32	Material science and Technology	MTE Engg	3	2		03	40	60	100	4
3	PCC	18MT33	Mechanics of materials	MTE Engg	3	0		03	40	60	100	3
4	PCC	18MT34	Control Systems	MTE Engg	3	0		03	40	60	100	3
5	PCC	18MT35	Analog and Digital Electronics	MTE Engg		0		03	40	60	100	3
6	PCC	18MT36	Computer Organization	MTE Engg		0		03	40	60	100	3
7	PCC	18MTL37	Machine shop and material Testing lab	MTE Engg		2	2	03	40	60	100	2
8	PCC	18MTL38	Analog and digital electronics lab	MTE Engg		2	2	03	40	60	100	2
		18KVK39	VyavaharikaKannada(Kannadaforcommunication)/ OR			2			100			
		18KAK39	AadalithaKannada(KannadaforAdministration)									



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0	HSMC		OR	TIC) (C							100	1
9	HSMC	18CPC39	ConstitutionofIndia,ProfessionalEthicsandCyber Law	1	1			02	40	60	100	1
		1001 055			Exa	minationi	isbyobje	tivetypeq	luestions			
			•		17	08		24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					18	10	1	26	360	540		
Note:BSC	BasicScie	nce PCC Prof	essionalCore HSMC:HumanityandSocialScience NCM	C:Non-creditmar	idatoryco	urse.						
			annadaforcommunication)isfornon-Kannadaspeaking,re peak readandwriteKannada	adingandwriting	studentsa	nd18KAF	C39Aada	lithaKanr	ada(Kar	madafor		
		C	ourseprescribedtolateralentryDiplomaholdersa	dmittedtoIIIs	emester	ofEngin	eeringp	rograms	5			
10	NCMC	18MATDIP	31 AdditionalMathematics-I	Mathematics	02	01		03	40	60	100	0
(a)The man	ndatory no	1 – credit cou	rses AdditionalMathematics I and II prescribed for III an	d IV semesters re	espective	ly, to thel	ateral en	ry Diplor	na holde	rs admit	tedto III s	emester

of BE/B. Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. Incase, any student failstoregisterforthesaidcourse/failstosecurethe minimum 40% of the prescribed CIE marks, he/sheshall bedeemedto have secured F

grade.Insuchacase.thestudentshavetofulfilltherequirementsduringsubsequentsemester/stoappearforSEE. (b)TheseCoursesshallnotbeconsideredforverticalprogression.butcompletionoffhecoursesshallbemandatoryfortheawardofdegree.

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

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

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

Programme, Model Internship Guidelines): Over and above the academic grades, every Day College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme.Students transferred from other Universitiesto fifth semesterare required to earn 50 ActivityPointsfrom the yearofentry to VTU. The ActivityPointsearned shallbereflected on thestudent's eighth semester Grade Card. The activities can be can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimumhours' requirement should be fulfilled. Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression

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

Progra	(amme: MEC	Dutcome Bas CHATRONICS EI	VISVESVARAYA TECHNOLO Scheme of Teaching ed Education(OBE) and Choice Based Crec NGINEERING	OGICAL UNIV and Examination lit System (CBC	ERSITY on 2019 - CS) (Effe	7, BELA - 20 ctive fro	GAVI om the a	cademi	c year 2	019 – 2	0)	
IV SE	MESTER											
	1			1 2 1	Teach	ingHours/W	leek		Exan	ination		
SL No		ourseandCourse de	CourseTitle	TeachingDepar tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Cradite
					L	Т	Р	п	Ŭ	0	г	
1	BSC	18MAT41	$\label{eq:complexAnalysis} ComplexAnalysis, ProbabilityAndStatisticalMethods$	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT42	Fluid mechanics and machines	MTEEngg.	3	2		03	40	60	100	4
3	PCC	18 MT 4	Microcontroller	MTEEngg.	3	0		03	40	60	100	3
4	PCC	18 MT 44	Manufacturing technology	MTEEngg.	3	0		03	40	60	100	3
5	PCC	18 MT 45	Theory of Machines	MTEEngg.		0		03	40	60	100	3
6	PCC	18 MT 46	Instrumentation and measurements	MTEEngg.	3	0		03	40	60	100	-
7	PCC	18 MT L47	FM and pneumatic – Laboratory	MTEEngg.		2	2	03	40	60	100	1 2
8	PCC	18 MT L48	Microcontroller - Laboratory(BV	MTEEngg.		2	2	03	40	60	100	2
9		18KVK39/49	VyavaharikaKannada(KannadaforCommunication)/ OR			2			100			
	HSMC	18KAK39/49	AadalithaKannada(KannadaforAdministration)	HSMC							100	1
			OR									1
		18CPC39/49	ConstitutionofIndia,ProfessionalEthicsandCyberLaw		1			02	40	60	1	
						Examinatio	nisbyobjec			(00		
				TOTAL	17 OR	08 OR	04	24 OR	420 OR	480 OR	900	2
				ł	18	10	04	26	360	540	900	1 4

Note: BSC: BasicScience, PCC: ProfessionalCore, HSMC: HumanityandSocialScience, NCMC:Non-creditmandatorycourse. 18KVK39/49VyavaharikaKannada(Kannadaforcommunication)isformon-Kannadaspeaking, readingandwritingstudentsand18KAK39/49AadalithaKannada(KannadaforAdministration)isfor studentswhospeak, readandwriteKannada.

 CourseprescribedtolateralentryDiplomaholdersadmittedtoIIIsemesterofEngineeringprograms

 10
 NCMC
 18MATDIP41
 AdditionalMathematics-II
 Mathematics
 02
 01
 - 03
 40
 60
 100

 (a)The mandatory non – credit courses AdditionalMathematics I and II prescribedfor III and IV semesters respectively, to thelateral entry Diploma holders admittedto III semester of BE/B.Tech
 programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. In case, any student fails to register for the said course fails to secure the minimum 40% of the prescribed CIE marks, he shall be deemed to have secured F grade. In such a case, the students have to fulfill the requirements during subseque ester/s to appear for SEE. (b)TheseCoursesshallnotbeconsideredforverticalprogression.butcompletionoffhecoursesshallbemandatoryfortheawardofdegree.

Course sprescribed to lateral entry B.Sc degree holders admitted to III semester of Engineering programsLateralentrantstudentsfrom B.Sc. Stream, shallclearthenon-creditcoursesEngineeringGraphicsand ElementsofCivilEngineering TheseCoursesshall notbeconsidered forvertical progression, but completion of the courses shall be mandatory for the award of degree. eeringand MechanicsoftheFirstYearEngineering Programme

AICTE activity Points: In cases tudents fail to earn the prescribed activity Points, Eighthsemester Grade Card shall be issued only after earning the required activity Points. Students shall be admitted for the avardof degree only after the release of the Eighthsemester Grade Card.



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VISVESVARAYATECHNOLOGICALUNIVERSITY,BELAGAVI SchemeofTeachingandExamination2019–20 OutcomeBasedEducation(OBE)andChoiceBasedCreditSystem(CBCS)

(Effective from the academic year 2019-20)

	MESTER	•		a a	Teachin	gHours/			Exam	ination		
1. To		CourseandCourse code CourseTitle		TeachingDepa tment	T Lecture	H Tutorial	Hractical/Dr awing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
1	HSMC	18MT51	Technological Innovation Management And Entrepreneurship	MteEngg	2	2		03	40	60	100	3
2	PCC	18 MT52	Design and analysis of Machine Elements	MteEngg	3	2		03	40	60	100	4
3	PCC	18 MT53	Virtual Instrumentation	MteEngg	3	2		03	40	60	100	4
4	PCC	18 MT54	Hydraulics and Pneumatics	MteEngg	3			03	40	60	100	3
5	PCC	18 MT55	Micro and Smart Systems Technology	MteEngg	3			03	40	60	100	3
5	PCC	18 MT56	Wireless Networks &Communication	MteEngg	3			03	40	60	100	3
7	PCC	18 MTL57	Virtual Instrumentation Laboratory	MteEngg		2	2	03	40	60	100	2
3	PCC	18 MTL58	MSST -Laboratory	MteEngg		2	2	03	40	60	100	2
)	HSMC	18CIV59	EnvironmentalStudies	Civil/Environmental [PapersettingBoard: CivilEngineering] TOTAL	1			02	40	60 540	100	1

Note:PCC:ProfessionalCore,HSMC:HumanityandSocialScience

VICEN	IESTER		VISVESVARAYATECI CI SchemeofTeac OutcomeBasedEducation((Effective from	VILENGINEE chingandExar OBE)andCho	RING ninatior iceBased	2019-20 CreditSy	stem(CBCS)					
VISEP	ILJIEK				Tea	chingHou	urs/Week		Exami	nation		
SI. No		rse and secode	CourseTitle	Teaching Department	Theory Lecture	Tutoria 1	Practic al/Dra wing	Duration inhours	CIEMarks	SEEMarks	Total Marks	Credits
					L	Т	Р		5	S		
1	PCC	18MT61	PLC & SCADA	MTE Engg	3	2		03	40	60	100	4
2	PCC	18MT62	Power Electronics	MTE Engg	3	2		03	40	60	100	4
3	PCC	18MT63	Computer Aided Machine Drawing	MTE Engg	3	2		03	40	60	100	4
4	PEC	18MT642	ProfessionalElective-1	MTE Engg	3			03	40	60	100	3
5	OEC	18MT653	OpenElective-A	MTE Engg	3			03	40	60	100	3
б	PCC	18MTL66	PLC and SCADA- Laboratory	MTE Engg		2	2	03	40	60	100	2
7	PCC	18MTL67	Power electronics - Laboratory	MTE Engg		2	2	03	40	60	100	2



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		ProfessionalElective-1 deunder18MT64X																					
8	MP	18MTEP68	Mini-project			_		4	-	03	40	60	100	2									
9	Internship		Internship					ingtheva	cation/sofVlar	ndVIIsei	nestersa	nd/orVII	and										
				TC	DTAL	15		12	06	24	320	480	800	24									
Note:	TOTAL 15 12 06 24 320 480 800 24 e:PCC:Professionalcore,PEC:ProfessionalElective,OE:OpenElective,MP:Mini-project.																						
				Prof	essiona	lElectiv	/e-1																
	Courseco	leunder18MT6	4X																				
		18 MT641		Modeling Ar	nd Sim	ılatio																	

18 MT642	Rapid Prototyping
18 MT643	Artificial neural network
18 MT644	Satellite Communication
18 MT645	Computer Integrated Manufacturing
	OpenElective-A
Coursecodeunder18MT65X	
18 MT651	Robotics and Automation,
18 MT652	Process 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).

Selectionofanopenelectiveshallnotbeallowed if,

- $\bullet \ \ The syllabus content of open elective is similar to that of the Departmental core courses or professional electives.$
- $\bullet \ A similar course, under any category, is prescribed in the higher semesters of the programme.$

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 theprescribedcreditshallbeincludedin VIIIsemester.Internship shallbe consideredasaheadofpassing and shallbeconsideredfor 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 earningtherequiredactivityPoints.StudentsshallbeadmittedfortheawardofdegreeonlyafterthereleaseoftheEighthsemester GradeCard.

VIISEMESTER

				oar	Teach	ingHours/	Week		Exa	mination		
Sl. No	Cou code	rseandCourse	e CourseTide	TeachingDepar tment	Theory Lecture	H Tutorial	e Practical/D rawing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
1	PCC	18MT71	Industri al Ribotic s	MTE Engg	3			03	40	60	100	3
2	PCC	18MT72	Thermal Engineering	MTE Engg	3			03	40	60	100	1
3	PEC	18MT733	Professional Elective – 2	MTE Engg	3			03	40	60	100	1
4	PEC	18MT745	Professional Elective – 3	MTE Engg	3			03	40	60	100	1
5	OEC	18MT753	Elective – 3 Open Elective –B	MTE Engg	3			03	40	60	100	1
6	PCC	18MTL76	Robotics Lab	MTE Engg		2	2	03	40	60	100	1
7	PCC	18MTL77		MTE Engg		2	2	03	40	60	100	2
8	Project	18MTP78	ProjectWorkPhase-1	MTE Engg			2		100		100	1
9	Internship		Internship	(Ifnotcompleter vacationofVIIa	dduringthev ndVIIIseme	acationof esters)	VIandVIIs	emesters,its	hallbecari	iedoutdurin	gthe	
				TOTAL	15	04	06	21	380	420	00	20
Note:PC	CC:Professional	core PEC Pr	ofessionalElective.		-							
~	codeunder18C	1997	CourseTitle	ProfessionalElectiv	/e-2							
		v /3X	Automation In Process Control									
18MT73 18MT73			Signal Process									
	-		4 F									
18MT73			Real Time Systems									
18MT73			OOPS using C++									
18MT73	5		Analytical Instrumentation									
~			а	ProfessionalElectiv	es-3							
Course	codeunder18C	V74X	CourseTitle									

Coursecodeunder18CV74X CourseTitl



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E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org 18MT741 Finite element analysis 18MT742 Machine Learning 18MT743 Artificial Intelligence

18MT744	Digital Image Processing
18MT745	Mechanical vibration
	OpenElective-B
Coursecodeunder18CV75X	CourseTitle
18MT751	Biomedical Signal Processing
18MT752	Mechatronics system design
	electivesofferedbyotherDepartmentsexpectthosethatareofferedbytheparentDepartment(Pleaserefertothelistofopenelectivesunder 18XX75X).
Selectionofanopenelectiveshallnot	
 Thecandidatehasstudiedthesame 	ecourseduringtheprevioussemestersofthe programme.
	iveissimilarto thatoftheDepartmentalcorecoursesorprofessionalelectives.
	ry.isprescribedinthehighersemestersoftheprogramme.
Registrationtoelectivesshallbedocu	mentedundertheguidanceofProgrammeCoordinator/Advisor/Mentor.
Projectwork:	

Projection: Based on the ability/abilitiesofthestudent/sand recommendationsofthementor, asingledisciplineora multidisciplinaryprojectcan beassigned to an individual studentor to agroup 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. CIEprocedureforProjectWorkPhase-1: (vii) Singlediscipline:TheCIE marksshallbeawarded by a committee consisting of the Acoustic Communication of the Cavid 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), IneClEmarksawardedfortheprojectvorkphase-1_shallbebased onthevaluationoftheprojectvorkphase-1 Keport (coveringLiteratureSurvey,Problemidentification,Objectivesand Methodolog project presentation skill and question and answer session in the ratio 50:25:25. The marks awarded for the project presentation skill be that mates. (viii) Interdisciplinary;ContinuousInternalEvaluationshall begroupviseatthecollegelevelwiththeparticipation of allguides of thecollege Participation of externalguide/s,if any, is desirable. The ClEmarks 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 andMethodology), 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:AllthestudentsadmittedtoIIIyearofBE/B. Techshallhavetoundergomandatoryinternshipof4weeksduringthevacationofVlandVIIIsemestersand/orVIIandVIII semesters.AUniversity examinationshallbeconductedduring VIIIsemesterscribedcreditshallbeincludedinVIIIsemester Internshipshallbeconsidereddsaheadofpassing and aballheaveidened fortheproject heaven the project heave the project heaven and beind metal.

and shallbeconsidered fortheaward ofdegree. Those, who do nottake-up/complete the internship shallbedeclared failand shall have to complete during subsequent University examination after satisfying the internship requirements.

VIIISEMESTER

		Hybrid Vehicles 18MT82X ProfessionalElective-4 tt 18MTP83 ProjectWorkPhase-2 tar 18MTS84 TechnicalSeminar		pa	Teachi	ngHour	s/Week	Examination							
Sl. No			CourseTitle	TeachingDe rtment	H Theory Lecture	H Tutorial	H Practical/D rawing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits			
1	PCC	18MT81	Automotive Electronics & Hybrid Vehicles	MTEEngg.	3			03	40	60	100	3			
2	PEC	18MT82X	ProfessionalElective-4	MTEEngg	3			03	40	60	100	3			
3	Project	18MTP83	ProjectWorkPhase-2	MTEEngg			16	03	40	60	100	8			
4	Seminar	18MTS84	TechnicalSeminar	MTEEngg			2	03	100		100	1			
5	Internship	18MTI85	Internship	Completedduring semestersand/orV	the vacation IIandVIIIse	i/sofVIa mesters	ndVII .)	03	40	60	100	3			
				TOTAL	06		18	15	260	240	500	18			

Note:PCC:ProfessionalCore.PEC:ProfessionalElective

	ProfessionalElectives-4
Coursecodeunder18MT82X	CourseTitle
18MT821	Operation Research.
18MT822	Communication system
18MT823	Digital Control System
18MT824	Management Information Systems
18MT825	Radar Engineering

ProjectWork

 CIEprocedureforProjectWorkPhase-2:

 (vii)
 Singlediscipline:TheCIE marksshallbe awarded byacommitteeconsistingoftheHeadoftheconcerned Departmentandtwo seniorfacultymembersoftheDepartment, oneofwhom

 (ii) Singlediscipline: 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 presentations kill and question and answerses so in interaction 50:25:25. The marks

1 nev_1:marksawardedtor theprojectworkphase-2, shallbebasedontheevaluationofprojectworkphase -2Report, project presentationskilland questionand answersessionintheratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates. (viii) Interdisciplinary: ContinuousInternalEvaluationshallbegroupwiseatthecollegelevelwiththeparticipationofallguidesofthecollege Participation ofexternalguide/s, ifany isdesirable. 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. ThemarksawardedfortheprojectreportshallbethesameforalIthebatchmates.

SEEforProject WorkPhase-2:

2020-21



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VISVESVARAYATECHNOLOGICALUNIVERSITY.BELAGAVI

			SchemeofTeaching		-		5411					
			5				~~~)					
						ш(СБ						
D				nicyear2020	- 21)							
Program	ime:Meci	natronics Ei	igineering									
IIISEMI	ESTER											
				par	Teachin	gHours/W	Veek		Exam	ination		
SL No			CourseTitle	TeachingDer tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	TotalMarks	Credits
		Schemeof OutcomeBasedEducation(OBE (Effectivefrom Mechatronics Engineering R CourseandCourse Code Code CourseTitle			L	Т	Р	I	0	01	L	
1	BSC	18MAT31	TransformCalculus,FourierSeriesandNumerical Techniques	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT32	Material science and Technology	MTE Engg	3	2		03	40	60	100	4
3	PCC			MTE Engg	3	0		03	40	60	100	3
4	PCC	18MT34	Control Systems	MTE Engg	3	0		03	40	60	100	3
5	PCC			MTE Engg		0		03	40	60	100	3
6	PCC			MTE Engg		0		03	40	60	100	3
7	PCC			MTE Engg		2	2	03	40	60	100	2
8	PCC	18MTL38	Analog and digital electronics lab	MTE Engg		2	2	03	40	60	100	2
		18KVK39	VyavaharikaKannada(Kannadaforcommunication)/						100			
			OK			2			100			

9	HSMC	18KAK39	AadalithaKannada(KannadaforAdministration)	HSMC							100	1
			OR									
		18CPC39	ConstitutionofIndia,ProfessionalEthicsandCyber Law		1			02	40	60		
		1001055			Exa	minationi	isbyobje	ctivetypeq	questions			
			·		17	08		24	420	480		
				TOTAL	OR	OR	04	OR	OR	OR	900	24
					18	10	1	26	360	540		
Note:BSC	BasicScie	nce PCC Prot	fessionalCore.HSMC:HumanityandSocialScience.NCM0	:Non-creditmar	idatoryco	ourse.						
18KVK39	Vyavahari	kaKannada(K	annadaforcommunication)isfornon-Kannadaspeaking.rea	adingandwriting	studentsa	nd18KAK	39Aada	lithaKanr	1ada(Kai	nnadafor		
Administra	ation)isfors	tudentswhos	peak.readandwriteKannada	., .,								

 CourseprescribedtolateralentryDiplomaholdersadmittedtoIIIsemesterofEngineeringprograms

 10
 NCMC
 18MATDIP31
 AdditionalMathematics-I
 Mathematics
 02
 01
 - 03
 40
 60
 100
 0

 (a)The mandatory non – credit courses AdditionalMathematics I and II prescribed for III and IV semesters respectively, to thelateral entry Diploma holders admittedto III semester of BE/B. Tech programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the University examination. Incase, any student failstoregisterforthesaidcourse/failstosecurethe minimum 40% of the prescribedCIEmarks, he/sheshall bedeemedtohave securedF

 $\label{eq:constraint} grade Insuchacase, the students have to fulfill the requirements during subsequents emester / sto appear for SEE. (b) These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.$

Course sprescribed to lateral entry B. Sc degree holders admitted to III semester of Engineering programs and the second set of the second second second set of the second seco

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

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

Programme, Model Internsing Guidelines): Over and above the academic grades, every Day College regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Programme.Students transferred from other Universities to fifth semesterare required to earn 50 ActivityPointsfromthe yearofentryto VTU. The ActivityPointsearned shallbereflected on thestudent's eighth semester Grade Card. The activities can be can be spread over the years, anytime during the semester weekends andholidays, as per the liking and convenience of the studentfrom the year of entry to the programme. However, minimumhours' requirement should be fulfilled.Activity Points (non-credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.

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



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IV SEMESTER

	MLOILIC											
				par	Teach	ingHours/W	/eek		Exan	ination		
SI. No	C 00	ourseandCourse de	CourseTitle	TeachingDepar tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	TotaMarks	Credits
					L	Т	Р		-	•.		
1	BSC	18MAT41	$\label{eq:complexAnalysis} Complex \\ Analysis, \\ Probability \\ And \\ Statistical \\ Methods$	Mathematics	2	2		03	40	60	100	3
2	PCC	18MT42	Fluid mechanics and machines	MTEEngg.	3	2		03	40	60	100	4
3	PCC	18 MT 4	Microcontroller	MTEEngg.	3	0		03	40	60	100	3
4	PCC	18 MT 44	Manufacturing technology	MTEEngg.	3	0		03	40	60	100	3
5	PCC	18 MT 45	Theory of Machines	MTEEngg.		0		03	40	60	100	3
6	PCC	18 MT 46	Instrumentation and measurements	MTEEngg.	3	0		03	40	60	100	3
7	PCC	18 MT L47	FM and pneumatic – Laboratory	MTEEngg.		2	2	03	40	60	100	2
8	PCC	18 MT L48	Microcontroller - Laboratory(BV	MTEEngg.		2	2	03	40	60	100	2
9		18KVK39/49	VyavaharikaKannada(KannadaforCommunication)/									
			OR			2			100			
	HSMC	18KAK39/49	AadalithaKannada(KannadaforAdministration)	HSMC							100	1
	1101010		OR	1101010							1 100	•
		18CPC39/49	ConstitutionofIndia.ProfessionalEthicsandCyberLaw		1			02	40	60]	
		100105545	oonstaatonomaa, rorossionarbancoundo joerbaw			Examinatio	nisbyobjec					
				TOTAL	17 OR	08 OR		24 OR	420 OR	480 OR	000	
					18	10	04	26	360	540	900	24
					10	10		20	500	240		4
Note:	BSC BasicS	cience PCC:Profe	ssionalCore.HSMC:HumanityandSocialScience.NCMC:Non-	creditmandatorycour	SP.							
18KV	K39/49Vya		Kannadaforcommunication)isfornon-Kannadaspeaking.readii			9/49Aadal	ithaKannao	la(Kannad	aforAdmin	istration)is	for	
			CourseprescribedtolateralentryDiplomaholo	lersadmittedtoIIIs	semesterof	Engineer	ingprogra	ms				
10	NCMC	18MATDIP41	AdditionalMathematics-II	Mathematics	02	01		03	40	60	100	0
										•		

(a)The mandatory non - credit courses <u>Additional/Mathematics</u> I and II prescribedfor III and IV semesters respectively to the lateral entry Diploma holders <u>admitted to III</u> semester of BE/<u>B. Tech</u> programs shall attend the classes <u>dwingthe</u> respectives emesters to complete all the formalities of the course (fails to secure the minimum 40% of the prescribed CIE marks he/she shall be deemed to have secured Fgrade. Insuch a case the students have to fulfill the requirements during subsequent semester/s to some the SEC. appear for SEE. (b)TheseCoursesshallnotbeconsideredforverticalprogression.butcompletionoffhecoursesshallbemandatoryfortheawardofdegree.

Coursesprescribed to lateralentry B.Scdegree holders admitted to III semester of Engineering programs Lateralent rantstudents from B.Sc. Stream, shall clear the non-credit courses Engineering Graphics and Elements of Civil Engineering and Mechanics of the First Year Engineering Programme These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory for the award of degree.

AICTEactivityPoints: In cases tudents fail to earn the prescribed activityPoints, EighthsemesterGradeCard shall be issued only after earning the required activityPoints. Students shall be admitted for the available of the earning the required activity Points. Students shall be admitted for the available of the earning the required activity Points. Students shall be admitted for the earning the required activity Points. Students shall be admitted for the earning the required activity Points. Students shall be admitted for the earning the required activity Points. Students shall be admitted for the earning the ea

VSEMESTER

				ar and a set	Teachin	gHours/			Exam	ination		
l. In	C.	ourseandCourse le	CourseTitle	LeschineDenar tment	Theory Lecture	Tutorial	Practical/Dr awing	Durationin hours	CIEMarks	SEE Marks	100 100 100 100 100 100 100 100 100 100	Credits
					L	Т	Р				.,	
1	HSMC	18MT51	Technological Innovation Management And Entrepreneurship	MteEngg	2	2		03	40	60	100	3
2	PCC	18 MT52	Design and analysis of Machine Elements	MteEngg	3	2		03	40	60		4
3	PCC	18 MT53	Virtual Instrumentation	MteEngg	3	2		03	40	60		4
4	PCC	18 MT54	Hydraulics and Pneumatics	MteEngg	3			03	40	60	100	3
5	PCC	18 MT55	Micro and Smart Systems Technology	MteEngg	3			03	40	60	100	3
6	PCC	18 MT56	Wireless Networks &Communication	MteEngg	3			03	40	60	100	3
7	PCC	18 MTL57	Virtual Instrumentation Laboratory	MteEngg		2	2	03	40	60	100	2
8	PCC	18 MTL58	MSST -Laboratory	MteEngg		2	2	03	40	60	100	2
9	HSMC	18CIV59	EnvironmentalStudies	Civil/Environmental [PapersettingBoard: CivilEngineering]	1			02	40	60	100	1
		•	•	TOTAL	18	10	04	26	360	540	900	25
AICT	EactivityP	oints:In casestuc	IC:HumanityandSocialScience. lentsfailtoeam the prescribedactivityPoints, Eighthsemeste eleaseoffheEighthsemesterGradeCard.									-



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					Teac	hingHou	uts/Week	Exan	nination				
SI. No	Course Course		CourseTitle	Teaching Department	Theory Lecture	Tutoria 1	Practic al/Dra wing	Duration inhours CIEMarks	SEEMarks	Total Marks	Credits		
					L	Т	Р	<u> </u> ⊔, 3	S				
1	PCC	18MT61	PLC & SCADA		MTE Engg	3	2		03	40	60	100	4
2	PCC	18MT62	Power Electronics		MTE Engg	3	2		03	40	60	100	4
3	PCC	18MT63	Computer Aided Mach Drawing	ine	MTE Engg	3	2		03	40	60	100	4
4	PEC	18MT642	ProfessionalElective-1		MTE Engg	3			03	40	60	100	3
5	OEC	18MT653	OpenElective-A		MTE Engg	3			03	40	60	100	3
6	PCC	18MTL66	PLC and SCADA- Laboratory		MTE Engg		2	2	03	40	60	100	2
7	PCC	18MTL67	Power electronics - Laboratory		MTE Engg		2	2	03	40	60	100	2
8	MP	18MTEP68	Mini-project		MTE Engg.		2	2	03	40	60	100	2
9	Internship		Internship		Tobecarrie VIIIsemest		ngthevacatio	n/sofVlandVlls	emesters	and/orVI	land		
				TC	TAL 1	5	12	06	24	320	480	800	24

 ProfessionalElective-1

 Coursecodeunder18MT64X
 18 MT641

 18 MT641
 Modeling And Simulatio

	· · · · · · · · · · · · · · · · · · ·						
18 MT642	Rapid Prototyping						
18 MT643	Artificial neural network						
18 MT644	Satellite Communication						
18 MT645	Computer Integrated Manufacturing						
OpenElective-A							
Coursecodeunder18MT65X							
18 MT651	Robotics and Automation,						
18 MT652	Process 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).

Selectionofanopenelectiveshallnotbeallowed if,

Thecandidatehasstudiedthesamecourseduringtheprevioussemestersoftheprogramme.

ThesyllabuscontentofopenelectiveissimilartothatoftheDepartmentalcorecoursesorprofessionalelectives.

Asimilar 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.

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 theprescribedcreditshallbeincludedin VIIIsemester.Internship shallbe consideredasaheadofpassing and shallbeconsideredfor 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

earming the required activity Points. Students shall be admitted for the award of degree only after the release of the Eighth semester and the release of the release of the Eighth semester and the release of the relea

GradeCard.



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VIISEMESTER.	

				ted	Teachi	ingHours/V			Exa	mination		
SL No	Com code	rseandCourse.	CourseIitle	LeachingDenat Lineat	T Lecture	H Tutorial	Hractical/D	Durationiu hours	CIEMarks	SEE Marks	LotalMarks	Curdity
1	PCC	18MT71	Industri al Ribotic	MTE Engg	3			03	40	60	100	3
2 3	PCC PEC	18MT72 18MT733	Thermal Engineering Professional Elective – 2	MTE Engg MTE Engg	3			03 03	40 40	6(6(100 100	
4	PEC	18MT745	Professional Elective – 3	MTE Engg	3			03	40	60	100	1
5	OEC	18MT755	Open Elective -B	MTE Engg	3			03	40	60	100	11
<mark>6</mark> 7	PCC PCC	18MTL7(18MTL77	Robotics Lab Thermal –Laboratory	MTE Engg MTE Engg		2	2	03 03	40 40	60 60	100 100	2
8	Project	18MTP78	ProjectWorkPhase-1	MTE Engg			2		100		100	1
9	Internship		Internship	(Ifnotcompleted vacationofVIIa	ndVIIIseme	sters)		-		-		
	G D A · 1	DEC D	1171 4	TOTAL	15	04	06	21	380	420	00	2
ote:PC	C:Professional	core,PEC:Profe	essionalElective.	ProfessionalElectiv	e-2							
	odeunder18C		CourseTitle									
8MT73 8MT73			Automation In Process Control									
8MT73			Real Time Systems									
8MT73			OOPS using C++									
8MT73	5	A	Analytical Instrumentation									
Coursec	odeunder18C	74X C	ourseTitle	ProfessionalElectiv	es-3							
8MT74			inite element analysis.									
18MT74			Digital Image Processing									
18MT74	0	Ν	Mechanical vibration	OpenElective-B								
	codeunder18C		lourseTitle									
18MT75 18MT75			Biomedical Signal Processing									
101/11/5	2	1	lechatronics system design									
Selection Theo Thes Asim	nofanopenelect andidatehasstu yllabuscontent ularcourse, und	iveshallnotbeal diedthesameco ofopenelectivei aranycategory.i	tivesofferedbyotherDepartmentsexpectil lowedif, urseduringtheprevioussemestersofthe pro similarto thatoftheDepartmentalcorecou isprescribedinthehighersemestersofthepro ntedundertheguidanceofProgrammeCoord	gramme. Irsesorprofessionalelective ogramme.		ment(Plea	serefertotk	nelistofoper	nelectivesu	mder 18XX7	⁷⁵ X).	
than 4 st CIEpro (i) Singl Guide. TheCIE project p (ii) Inte The CIE andMeth Internsl examina	n the ability/abi tudents. In extra cedureforProj ediscipline:Th marksawardedf presentation ski rdisciplinary:(marks awarded jodology), proj pip:Allthestude tionshallbecom	ordinary cases ectWorkPhase eCIE markssha ortheprojectwo II and question ContinuousInte for the project ect presentation intsadmittedtoII ductedduringVI	ent/sand recommendationsofthementor.ac , like the funded projects requiring studer -1: Ilbeawarded byacommitteeconsistingofth rkphase-1.shallbebased ontheevaluationc and answer session in the ratio 50:25:25 malEvaluationshall begroupwiseatthecol work phase-1, shall be based on the eva skill and question and answer session ir IlyearofBE/B. Techshallhavetoundergom Illsemesterandtherprescribedcristhalbe legree. Those, who do nottake-un/comple	nts from different discipli heHeadoftheconcerned Dro oftheprojectworkphase - 1 . The marks awarded for the leselexelywiththeparticipa luation of project work pl the ratio 50.25:25. The n andatory internshipof4weet includedin VIIIsemester. 1	nes, the pro epartmentan Report (<u>cox</u> he Project re tionof allgu lasse-1 Repo larks award eksduringthe nternshipshi	ject studer eringLiter eport shall ides of the rt (coverin ed for the evacationo allbeconsi	nt strength orfacultym atureSury be the sar college Pa ng Literatu project rep ofVIandVI deredasah	can be 5 o nembersoft ev.Problem ne for all th uticipation re Survey, port shall b Isemesters eadofpassir	r 6. heDepartm he batch m of external Problem i e the same and/orVIIz	tion.Objectiv ates. guide/s.if ar dentification for all the b mdVIII semu	hom shall be resand Metho wis desirable objectives atch mates. esters AUniv	e the odolog e. ersity



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VIIISEMESTER Weel Teac nati TeachingDep ntwent Practical/D rawing Theory Lecture Tutorial ndCourse SEE Marks **Total**Marks Cou code Durationin bours CUEMarks SL No CourseTitle Credits Т Р Automotive Electronics & Hybrid Vehicles ProfessionalElective-4 ProjectWorkPhase-2 TachnicalSaminar 40 100 PCC 18MT81 MTEEngg 03 60 ---PEC 18MT82X MTEEngg 40 60 100 03 MTEEngg MTEEngg Completedduringthe vacation/soft/Iano semestersand/or/Iland/III/semesters.) Project Semina 18MTP83 18MTS84 16 60 100 100 03 03 40 100 Technical he vacation/sofVlandVll 18MTI85 Internship 03 40 60 100 5 Internship 3 260 240 500 TOTAL 15 18 06 Note:PCC:ProfessionalCore.PEC:ProfessionalElective ProfessionalElectives-4 Coursecodeunder18MT82X CourseTitle

18MT821	Operation Research.
18MT822	Communication system
18MT823	Digital Control System
18MT824	Management Information Systems
18MT825	Radar Engineering

ProjectWork 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 report shall be the same for all the batch mates. (ii) Interdisciplinary: Continuous Internal Evaluation shall be group with the project report shall be the same for all the batch mates. (iii) Interdisciplinary: Continuous Internal Evaluation shall be group with 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 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 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

SEEforProject WorkPhase-2:



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PG MTECH

2016-17 PG-MTECH-EEE

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI SCHEME OF TEACHING AND EXAMINATION - 2016-17 M.Tech POWER EECRTONICS (EPE) CHOICE BASED CREDIT SYSTEM (CBCS) (Total number of credits prescribed for the programme - 85)

				Teaching l	Hours /Week		Exami	nation				
SL No	Course Code		Title		Practical/ Field work/ Assignment	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	Credits		
1	16EEE11	Applied N	lathematics	04		03	20	80	100	4		
2	16EPE12		niconductor 1d Components	04		03	20	80	100	4		
3	16EPE13	Power Electronic Converters		04		03	20	80	100	4		
4	16EPE14	Modelling and Design of Controllers		04		03	20	80	100	4		
5	16EPE15X	Elective -1		03		03	20	80	100	3		
6	16EPEL16	Power Electronics Laboratory - 1		-	3	03	20	80	100	2		
7	16EPE17	Seminar		-	3	-	100	-	100	1		
	-	OTAL		19	06	18	220	480	700	22		
Num	ber of credits co	ompieted a	the end of I sen		ctive - 1							
Cour	rse Code under 1	6EPE15X				Title						
	16EPE151		Embedded Syst	edded Systems								
	16EPE152	Power System I	Harmonics									
	16EPE153		Advanced Cont	Control Systems								
	16EPE154		EMC in Power	Electronics								



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(Total number of credits prescribed for the programme - 85)

			Teaching	Hours /Week		Exami	nation		
SL No	Course Code	Title	Theory	Practical/ Field work/ Assignment	Duration in hours	LA. Marks	Theory/ Practical Marks	Total Marks	Credits
1	16EPE21	Electric Drives	04		03	20	80	100	4
2	16EPE22	Switched - Mode Power Supplies	04		03	20	80	100	4
3	16EPE23	Modelling and Analysis of Electrical Machines	04		03	20	80	100	4
4	16EPE24	FACTS Controllers	04		03	20	80	100	4
5	16EPE25X	Elective - 2	03		03	20	80	100	3
6	16EPEL26	Power Electronics Laboratory - 2	-	3	03	20	80	100	2
7	16EPE27	Seminar	-	3	-	100	-	100	1
	TO	TAL	19	06	18	220	480	700	22

Elective - 2							
Course Code under 16EPE25X	Title						
16EPE251	Converters for Solar and Wind Power Systems						
16EPE252	Uninterruptible Power Supply						
16EPE253	Power Quality Problems and Mitigation						
16EPE254	Hybrid Electric Vehicles						

Note: 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.



16EPE424

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(Total number of credits prescribed for the programme - 85)

		Title			ing Hours Week	Examination				
SL No	Course Code				Practical/ Field work/ Assignment	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	Credits
1				04		03	20	80	100	4
2	16EPE42X	Elective - 3		03		03	20	80	100	3
3	16EPE43	Evaluation of Project phase - 2					50	-	50	3
4	16EPE44	Evaluation of Viva-Voce	of Project and			-		100 + 100	200	10
		TOTAL		07		06	90	360	450	20
			the end of IV ser		+ 22 + 21 + 20					
Cou	rse Code under	16EPE42X				Title				
	16EPE42	21	Digital Power El	ectronics						
	16EPE42	22	MPPT in Solar S	ystems						
	16EPE42	. <mark>3</mark>	Multi-Terminal I	DC Grids						

Multilevel Converters for Industrial Applications



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2017-18 PG-MTECH-EEE

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI SCHEME OF TEACHING AND EXAMINATION - 2016-17 M.Tech POWER EECRTONICS (EPE) CHOICE BASED CREDIT SYSTEM (CBCS) (Total number of credits prescribed for the programme - 85)

I SE	MESTER									
			Teaching l	Hours /Week		Exami	nation			
SL No	Course Code	Title	Theory	Practical/ Field work/ Assignment	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	Credits	
1	16EEE11	Applied Mathematics	04		03	20	80	100	4	
2	16EPE12	Power Semiconductor Devices and Components	04		03	20	80	100	4	
3	3 16EPE13 Power Electron Converters		04		03	20	80	100	4	
4	16EPE14	Modelling and Design of Controllers	04		03	20	80	100	4	
5	16EPE15X	Elective -1	03		03	20	80	100	3	
6	16EPEL16	Power Electronics Laboratory - 1	-	3	03	20	80	100	2	
7	16EPE17	Seminar	-	3	-	100	-	100	1	
	-	OTAL	19	06	18	220	480	700	22	
Num	ber of credits c	ompleted at the end of I ser	nester: 22							
			Elec	ctive - 1						
Cou	rse Code under 1	6EPE15X			Title					
	16EPE151	Embedded Sys	tems							
	16EPE152	Power System	er System Harmonics							
	16EPE153	Advanced Con	Control Systems							
	16EPE154	EMC in Power	Electronics							
		I							+	



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(Total number of credits prescribed for the programme - 85)

			Teaching	Hours /Week		Exami	nation		
II SEI SI. No 1 2 3 4 5 6	Course Code	Title	Theory	Practical/ Field work/ Assignment	Duration in hours	LA. Marks	Theory/ Practical Marks	Total Marks	Credits
1	16EPE21	Electric Drives	04		03	20	80	100	4
2	16EPE22	Switched - Mode Power Supplies	04		03	20	80	100	4
3	16EPE23	Modelling and Analysis of Electrical Machines	04		03	20	80	100	4
4	16EPE24	FACTS Controllers	04		03	20	80	100	4
5	16EPE25X	Elective - 2	03		03	20	80	100	3
6	16EPEL26	Power Electronics Laboratory - 2	-	3	03	20	80	100	2
7	16EPE27	Seminar	-	3	-	100	-	100	1
	TO	TAL	19	06	18	220	480	700	22

Elective - 2							
Course Code under 16EPE25X	Title						
16EPE251	Converters for Solar and Wind Power Systems						
16EPE252	Uninterruptible Power Supply						
16EPE253	Power Quality Problems and Mitigation						
16EPE254	Hybrid Electric Vehicles						

Note: 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.



16EPE424

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI SCHEME OF TEACHING AND EXAMINATION - 2016-17 M.Tech POWER EECRTONICS (EPE) CHOICE BASED CREDIT SYSTEM (CBCS)

(Total number of credits prescribed for the programme - 85)

		Title			ing Hours Week	Examination				
SL No	Course Code				Practical/ Field work/ Assignment	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	Credits
1				04		03	20	80	100	4
2	16EPE42X	Elective - 3		03		03	20	80	100	3
3	16EPE43	Evaluation of Project phase - 2					50	-	50	3
4	16EPE44	Evaluation of Viva-Voce	of Project and			-		100 + 100	200	10
		TOTAL		07		06	90	360	450	20
			the end of IV ser		+ 22 + 21 + 20					
Cou	rse Code under	16EPE42X				Title				
	16EPE42	21	Digital Power El	ectronics						
	16EPE42	22	MPPT in Solar S	ystems						
	16EPE42	. <mark>3</mark>	Multi-Terminal I	DC Grids						

Multilevel Converters for Industrial Applications



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2018-19 PG-MTECH-EEE

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI SCHEME OF TEACHING AND EXAMINATION - 2016-17 M.Tech POWER EECRTONICS (EPE) CHOICE BASED CREDIT SYSTEM (CBCS) (Total number of credits prescribed for the programme - 85)

				Teaching I	Hours /Week	Examination					
SL No Course Code		Title		Theory	Practical/ Field work/ Assignment	Duration in hours	LA. Marks	Theory/ Practical Marks	Total Marks	Credits	
1	16EEE11	Applied Mathematics		04		03	20	80	100	4	
2	16EPE12	Power Semiconductor Devices and Components		04		03	20	80	100	4	
3	16EPE13	Power Electronic Converters		04		03	20	80	100	4	
4	16EPE14	Modelling and Design of Controllers		04		03	20	80	100	4	
5	16EPE15X	Elective -1		03		03	20	80	100	3	
6	16EPEL16	Power Electronics Laboratory - 1		-	3	03	20	80	100	2	
7 16EPE17 Seminar			-	3	-	100	-	100	1		
TOTAL			19	06	18	220	480	700	2		
			t the end of I sen		ctive - 1						
Cour	rse Code under 1	6EPE15X				Title					
16EPE151 Embedded Syst			ems								
16EPE152 Power System I			n Harmonics								
16EPE153 Advanced Cont				rol Systems							
	16EPE154		EMC in Power	Electronics							



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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI SCHEME OF TEACHING AND EXAMINATION - 2016-17 M.Tech POWER EECRTONICS (EPE) CHOICE BASED CREDIT SYSTEM (CBCS)

(Total number of credits prescribed for the programme - 85)

SL No			Teaching	Hours /Week	Examination				
	Course Code	Title	Theory	Practical/ Field work/ Assignment	Duration in hours	LA. Marks	Theory/ Practical Marks	Total Marks	Credits
1	16EPE21	Electric Drives	04		03	20	80	100	4
2	16EPE22	Switched - Mode Power Supplies	04		03	20	80	100	4
3	16EPE23	Modelling and Analysis of Electrical Machines	04		03	20	80	100	4
4	16EPE24	FACTS Controllers	04		03	20	80	100	4
5	16EPE25X	Elective - 2	03		03	20	80	100	3
6	16EPEL26	Power Electronics Laboratory - 2	-	3	03	20	80	100	2
7	16EPE27	Seminar	-	3	-	100	-	100	1
	TO	TAL	19	06	18	220	480	700	22

Elective - 2						
Course Code under 16EPE25X	Title					
16EPE251	Converters for Solar and Wind Power Systems					
16EPE252	Uninterruptible Power Supply					
16EPE253	Power Quality Problems and Mitigation					
16EPE254	Hybrid Electric Vehicles					

Note: 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.



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

M.Tech.- Structural Engineering

S1. No.			Teachin	g Hours /Week	Examination				Credit
	Subject Code	Title	Theory	Practical/ Field Work/ Assignment	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16CSE11	Computational Structural Mechanics	4	-	3	20	80	100	4
2	16CSE12	Advanced Design of RC Structures	4	-	3	20	80	100	4
3	16CSE13	Mechanics of Deformable Bodies	4	-	3	20	80	100	4
4	16CSE14	Structural Dynamics	4	-	3	20	80	100	4
5	16 CSE15X	Elective-I	3	-	3	20	80	100	3
6	16CSEL16	Structural Engineering Lab-1		3	3	20	80	100	2
7	16CSE17	Seminar	-	3	-	100	-	100	1
	1	TOTAL	19	6	18	220	480	700	22

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

M.Tech.- Structural Engineering

			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	16CSE21	Advanced Design of Steel Structures	4	-	3	20	80	100	4
2	16CSE22	Earthquake Resistance Structures	4	-	3	20	80	100	4
3	16CSE23	Finite Elements Method of Analysis	4	-	3	20	80	100	4
4	16CSE24	Design Concepts of Substructures	4	-	3	20	80	100	4
5	16CSE25X	Elective-II	3	-	3	20	80	100	3
6	16CSEL26	Structural Engineering Lab-2		3	3	20	80	100	2
7	16CSE27	Seminar	-	3	-	100	-	100	1
		TOTAL	19	6	18	220	480	700	22



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M.Tech.- Structural Engineering

			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		Seminar / Presentation on							
	16CSE31	Internship (After 8 weeks from the	-	-	-	25	-	25	
		date of commencement)							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

			Teaching	g Hours /Week		Exam	ination		Credit
S1. No.	Subject Code Title 16CSE41 Design of Concrete Bridges		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

2017-18



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

M.Tech.- Structural Engineering

			Teachin	g Hours /Week		Exami	nation		Credit
Sl. No.	Subject Code	Title	Theory	Practical/ Field Work/ Assignment	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	16CSE11	Computational Structural Mechanics	4	-	3	20	80	100	4
2	16CSE12	Advanced Design of RC Structures	4	-	3	20	80	100	4
3	16CSE13	Mechanics of Deformable Bodies	4	-	3	20	80	100	4
4	16CSE14	Structural Dynamics	4	-	3	20	80	100	4
5	16 CSE15X	Elective-I	3	-	3	20	80	100	3
6	16CSEL16	Structural Engineering Lab-1		3	3	20	80	100	2
7	16CSE17	Seminar	-	3	-	100	-	100	1
		TOTAL	19	6	18	220	480	700	22

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

M.Tech.- Structural Engineering

	I I SEMEST	ER							
			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	16CSE21	Advanced Design of Steel Structures	4	-	3	20	80	100	4
2	16CSE22	Earthquake Resistance Structures	4	-	3	20	80	100	4
3	16CSE23	Finite Elements Method of Analysis	4	-	3	20	80	100	4
4	16CSE24	Design Concepts of Substructures	4	-	3	20	80	100	4
5	16CSE25X	Elective-II	3	-	3	20	80	100	3
6	16CSEL26	Structural Engineering Lab-2		3	3	20	80	100	2
7	16CSE27 Seminar		-	3	-	100	-	100	1
		TOTAL	19	6	18	220	480	700	22



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M.Tech.- Structural Engineering

			Teachir	ng Hours /Week		Exami	nation		Credit
Sl. No.	Subject Code	Title	Theory	Practical/Field Work/ Assignment	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	Seminar / Presentation on								
	16CSE31 Internship (After 8 weeks from the		-	-	-	25	-	25	
	date of commencement)								20
2	16CSE32	Report on Internship	-	-	-	25	-	25	20
3	16CSE33	Evaluation and Viva-Voce of		-			50	50	
	TOUSESS	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

			Teaching	g Hours /Week		Exam	ination		Credit
S1. No.	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

2018-19



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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)

	I SI	EMESTI	0R								
						aching rs /Week		Exam	ination		
	SI. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
	1	PCC	18CSE11	Computational Structural Mechanics	04		03	40	60	100	4
ſ	2	PCC	18CSE12	Advanced Design of RC Structures	04		03	40	60	100	4
	3	PCC	18CSE13	Mechanics of Deformable Bodies	04		03	40	60	100	4
	4	PCC	18CSE14	Structural Dynamics	04		03	40	60	100	4
	5	PCC	18CSE15	Special Concrete	04		03	40	60	100	4
ſ	6	PCC	18CSEL16	Structural Engineering Lab-1	-	04	03	40	60	100	2
ſ	7	PCC	18RMI17	Research Methodology and IPR	02		03	40	60	100	2
				TOTAL	22	04	21	280	420	700	24

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

Internship: All the students 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 for 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 takeup/complete the internship shall be declared as failed and have to complete during the subsequent University examination after satisfying the internship requirements.



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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)

11 8	EMEST	ER								
					aching rs/Week		Ехап	ination		
SI. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	PCC	18CSE21	Advanced Design of Steel Structures	04		03	40	60	100	4
2	PCC	18CSE22	Finite Element Method of Analysis	04		03	40	60	100	4
3	PCC	18CSE23	Earthquake Resistance Structures	04		03	40	60	100	4
4	PEC	18CSE24X	Professional elective 1	04		03	40	60	100	4
5	PEC	18CSE25X	Professional elective 2	04		03	40	60	100	4
6	PCC	18CSEL26	Structural Engineering Lab-2		04	03	40	60	100	2
7	PCC	18CSE27	Technical Seminar		02		100		100	2
			TOTAL	20	06	18	340	360	700	24
Not	e: PCC: P	rofessional core,	PEC: Professional Elective.							
		Profess	sional Elective 1		Pr	ofessio	nal E	lective	2	
Cod	Course Course title Code under 18CSE24X		Course title	u	rse Code inder SE25X		C	ourse ti	tle	
180	CSE241	Advanced Des	ign of Pre-stressed Concrete Structures	180	CSE251	Advar	nced Sti	ructural	Analysi	s
180	CSE242	Stability of Str	uctures	180	CSE252	Desig	n of Hi	gh Rise	Structu	res
180	CSE243	Design of Prec	ast & Composite Structures	180	CSE253	Desig	n of Inc	ustrial S	Structur	es



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		VISVES	VARAYA TECHNOLOG Scheme of Teaching and					LAGA	VI		
			M.Tech Name of th				- 19				
		Outcome l	Based Education(OBE) and				Syster	n (CE	(CS)		
ш	SEMEST		based Education(ODE) and	Chi	ice base	crean	Syster	n (en	(05)		
					Teachin /We			Exam	ination		
SI. 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		(Complete the interve vacation of semesters and III sen	ning f I and II and /or II	03	40	60	100	6
			OTAL		12	02	12	260	240	500	20
Not	e: PCC: Pr		PEC: Professional Elective.								
Co	urse Code	Profession	al elective 3	Co	urse Code	PTOI	essional	electiv	/e 4		
	under CSE32X		Course title		under BCSE33X			Cours	e title		
18	CSE321	Design Conce	epts of Substructures	18	BCSE331	Fracture	Mecha	nics apj	plied to	concrete	
18	CSE322	Repair and R	ehabilitation of Structures	18	SCSE332	Design of	of Maso	nry Str	uctures		
18	CSE323	Theory of Pla	ites and Shells	18	SCSE333	Design of	of Form	work			
18	CSE324	Optimization	Techniques	18	3CSE334	Compos	ite mate	rials			

Note

		VISVES	VARAYA TECHNOLOGI Scheme of Teaching and I			-	LAG	AVI				
M.Tech Name of the programme (CSE)												
Outcome Based Education(OBE) and Choice Based Credit System (CBCS)												
IV SEMESTER												
Teaching Hours /Week Examination												
SL No	Course	Course Code	Course Title	Thony	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		
Not	Note:											

1. Project Phase-2:

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.

2019-20



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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)

	I SI	EMESTI	0R								
						aching rs /Week		Exam	ination		
	SI. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
	1	PCC	18CSE11	Computational Structural Mechanics	04		03	40	60	100	4
	2	PCC	18CSE12	Advanced Design of RC Structures	04		03	40	60	100	4
	3	PCC	18CSE13	Mechanics of Deformable Bodies	04		03	40	60	100	4
	4	PCC	18CSE14	Structural Dynamics	04		03	40	60	100	4
	5	PCC	18CSE15	Special Concrete	04		03	40	60	100	4
	6	PCC	18CSEL16	Structural Engineering Lab-1	-	04	03	40	60	100	2
	7	PCC	18RMI17	Research Methodology and IPR	02		03	40	60	100	2
ļ				TOTAL	22	04	21	280	420	700	24

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

Internship: All the students 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 for 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 takeup/complete the internship shall be declared as failed and have to complete during the subsequent University examination after satisfying the internship requirements.



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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)

II S	SEMEST	ER								
					aching rs/Week		Ехап	ination		
SI. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	PCC	18CSE21	Advanced Design of Steel Structures	04		03	40	60	100	4
2	PCC	18CSE22	Finite Element Method of Analysis	04		03	40	60	100	4
3	PCC	18CSE23	Earthquake Resistance Structures	04		03	40	60	100	4
4	PEC	18CSE24X	Professional elective 1	04		03	40	60	100	4
5	PEC	18CSE25X	Professional elective 2	04		03	40	60	100	4
6	PCC	18CSEL26	Structural Engineering Lab-2	1	04	03	40	60	100	2
7	PCC	18CSE27	Technical Seminar	1	02		100		100	2
			TOTAL	20	06	18	340	360	700	24
Not	e: PCC: P	rofessional core,	PEC: Professional Elective.							
		Profess	sional Elective 1		Pr	ofessio	nal E	lective	2	
Cod	Course de under CSE24X		Course title	u	rse Code inder SE25X		C	ourse ti	tle	
180	CSE241	Advanced Des	ign of Pre-stressed Concrete Structures	180	CSE251	Advar	nced Sti	ructural	Analysi	s
180	CSE242	Stability of Str	uctures	180	CSE252	Desig	n of Hi	gh Rise	Structu	res
180	CSE243	Design of Prec	ast & Composite Structures	180	CSE253	Desig	n of Inc	ustrial S	Structur	es



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_	VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI										
		VISVES	VARAYA TECHNOLOG Scheme of Teaching and					LAGA	VI		
			M.Tech Name of th				- 19				
		Outcome l	Based Education(OBE) and				Syster	n (CE	(CS)		
ш	SEMEST		based Education(ODE) and	Chi	ice base	crean	Syster	n (en	(05)		
					Teachin /We			Exam	ination		
SI. 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		(Complete the interve vacation of semesters and III sen	ning f I and II and /or II	03	40	60	100	6
			OTAL		12	02	12	260	240	500	20
Not	e: PCC: Pr		PEC: Professional Elective.								
Co	urse Code	Profession	al elective 3	Co	urse Code	PTOI	essional	electiv	/e 4		
	under CSE32X		Course title		under BCSE33X			Cours	e title		
18	CSE321	Design Conce	epts of Substructures	18	BCSE331	31 Fracture Mechanics applied to c			concrete		
18	CSE322	Repair and R	18	SCSE332	Design of Masonry Structures						
18	CSE323	Theory of Pla	18CSE333 Design of Formwork								
18	CSE324	Optimization	Techniques	18	SCSE334	Compos	ite mate	rials			

Note

IV	SEMEST	Outcome	VARAYA TECHNOLOGI Scheme of Teaching and I M.Tech Name of the Based Education(OBE) and C	Examinati programm	ion – 201 e (CSE)	8 - 19							
SL No													
1	1 Project 18CSE41 Project work phase -2 04 03 40 60 100 20												
Net	TOTAL 04 03 40 60 100 20												

1. Project Phase-2:

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.

2020-21



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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)

I SI	EMESTI	0R								
					aching rs/Week		Exam	ination		
SI. No	Course	Course Code	Course Title	Theory	Practical/ Field work/ Assignment	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	PCC	18CSE11	Computational Structural Mechanics	04		03	40	60	100	4
2	PCC	18CSE12	Advanced Design of RC Structures	04		03	40	60	100	4
3	PCC	18CSE13	Mechanics of Deformable Bodies	04		03	40	60	100	4
4	PCC	18CSE14	Structural Dynamics	04		03	40	60	100	4
5	PCC	18CSE15	Special Concrete	04		03	40	60	100	4
6	PCC	18CSEL16	Structural Engineering Lab-1	-	04	03	40	60	100	2
7	PCC	18RMI17	Research Methodology and IPR	02		03	40	60	100	2
	-		TOTAL	22	04	21	280	420	700	24

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

Internship: All the students 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 for 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 takeup/complete the internship shall be declared as failed and have to complete during the subsequent University examination after satisfying the internship requirements.



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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)

11 8	SEMESTER									
					aching rs/Week		Ехап	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	18CSE21	Advanced Design of Steel Structures	04		03	40	60	100	4
2	PCC	18CSE22	Finite Element Method of Analysis	04		03	40	60	100	4
3	PCC	18CSE23	Earthquake Resistance Structures	04		03	40	60	100	4
4	PEC	18CSE24X	Professional elective 1	04		03	40	60	100	4
5	PEC	18CSE25X	Professional elective 2	04		03	40	60	100	4
6	PCC	18CSEL26	Structural Engineering Lab-2		04	03	40	60	100	2
7	PCC	18CSE27	Technical Seminar		02		100		100	2
			TOTAL	20	06	18	340	360	700	24
Not	e: PCC: P	rofessional core,	PEC: Professional Elective.							
		Profess		Pr	ofessio	nal E	lective	2		
Cod	Course le under CSE24X		Course title	u	rse Code inder SE25X					
180	CSE241	Advanced Des	ign of Pre-stressed Concrete Structures	180	CSE251	Advanced Structural Analysis				
180	CSE242	uctures	180	CSE252	Design of High Rise Structures					
180	CSE243	Design of Prec	ast & Composite Structures	180	SE253	Desig	n of Inc	ustrial S	Structur	es



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	VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination – 2018 - 19													
							- 19							
		Outcome	M.Tech Name of the				Custor							
ш	SEMEST		Based Education(OBE) and	Cno	ice Based	Credit	Syster	n (Cr	s(5)					
					Teachin /W			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		(Complete the interve vacation o semesters and III sen	ning f I and II and /or II	03	40	60	100	6			
		-	OTAL		12	02	12	260	240	500	20			
Not	e: PCC: Pr		PEC: Professional Elective. al elective 3				ssional							
	urse Code under CSE32X	Frotession	Course title		urse Code under CSE33X	From	essional	Cours						
-	CSE321	Design Conce	epts of Substructures	-	CSE331	Fracture	Mecha	nics ap	plied to	concrete	;			
18	CSE322	Repair and R	ehabilitation of Structures	- 18	CSE332	Design of Masonry Structures								
18	CSE323	Theory of Pla	ites and Shells	18CSE333 Design of Formwork										
18	CSE324	Optimization	Techniques	18	CSE334	Compos	ite mate	rials						
				тосологи оришании тесницио										

Not

	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	IV SEMESTER													
	Teaching Hours /Week Examination													
SL No														
1	1 Project 18CSE41 Project work phase -2 04 03 40 60 100 20													
	TOTAL 04 03 40 60 100 20													
	Notes													

Note:

1. Project Phase-2:

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.



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MBA

2016 - 2017

SCHEME OF TEACHING AND EXAMINATION MASTER OF BUSINESS ADMINISTRATION

			18	EMESTER						
		Category	Teaching	hours / week		Duration	Mark	ts for		
Subject Code	Title of the Subject		Lecture	Practical / Field Work / Assignment *	Total	of Exam (Hours)	іа	Exam	Total Marks	Credits
16MBA11_	Management & Organizational Behaviour	Core Course	3_	2	5	3_	20	80_	100	4
16MBA12	Managerial Economics	Core Course	3	2	5	3	20	80_	100	4
16MBA13	Accounting for Managers	Core Course	3	2	5	3	20	80	100	4
16MBA14	Quantitative Methods	Core Course	3	2	5	3	20	80	100	4
16MBA15	Marketing Management	Core Course	3	2	5	3_	20	80	100	4
16MBA16	Managerial Communications	Core Course	3	2	5	3	20	80	100	4
	Total		18	12	30		120	480	600	24

* Practical /Field Work / Assignment is a part of contact hours for the faculty and must be considered in the workload.

		Category	Teaching	hours / week			Mark	s for		
Subject Code	Title of the Subject		Lecture	Practical / Field Work / Assignment *	Total	Duration of Exam (Hours)	IA	Exam	Total Marks	Credits
16MBA21	Human Resource Management	Core Course	<u>3</u> _	2	5	<u>3</u> _	2 <u>0</u>	<mark>80</mark>	1 <u>00</u>	4
16MBA22	Financial Management	Core Course	3	2	5	3	20	80	100	4
16MBA23	Research Methods	Core Course	3_	2	5	3	20	80	100	4
16MBA24	Business Law and Policy	Core Course	3	2	5	3	20	80	100	4
16MBA25	Strategic Management	Core Course	3	2	- 5	3	20	80	100	4
16MBA26	Entrepreneurship Development	Core Course	3	2	5	3	20	80	100	4
	Total		18	12	30		120	480	600	24

* Practical /Field Work / Assignment is a part of contact hours for the faculty and must be considered in the workload.



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> III SEMESTER (Core Specialisation)

			Category	Te	aching hours / wee	k		Mar	ks for		
	Subject Code	Human		Later	Practical / Field Work /	Total	Duration of Exam	ы	Press	Total Marks	Credits
Marketing	Finance	Resource		Lecture	Assignment **	Total	(Hours)	IA	Exam	Marks	
16MBAMM301	16MBAFM301	16MBAHR301	Foundation Course	3_	2	5	3_	20	80_	100	3_
16MBAMM302	16MBAFM302	16MBAHR302	Foundation Elective	3	2	5	3	20	80	100	3
16MBAMM303	16MBAFM303	16MBAHR303	Elective	3	2	5	3	20	80	100	3
16MBAMM304	16MBAFM304	16MBAHR304	Foundation Course	3	2	5	3	20	80	100	3
16MBAMM305	16MBAFM305	16MBAHR305	Foundation Elective	3	2	5	3	20	80	100	3
16MBAMM306	16MBAFM306	16MBAHR306	Elective	3	2	5	3	20	80	100	3
	16MBAIN307		Internship *	0	8	8	-	50	50	100	4
			Industrial Visit	0	0	0	0	0	00	00	0
				18	12	30		120	480	700	22

^a Internship will be carried out by students after second semester during vacation and the report submitted by the students will be assessed internally during the third semester. Total number of teaching hours per week is excluding internship workload.

** Practical /Field Work / Assignment is a part of contact hours for the faculty and must be considered in the workload. Industrial visit is a mandatory activity with zero credits

III SEMESTER

(Core Specialisation Subjects)

Mark	eting Specialisation	F	inance Specialisation	Hur	nan Resource Specialisation
Subject Code	Title of the Subject	Subject Code	Title of the Subject	Subject Code	Title of the Subject
16MBAMM301	Consumer Behavior	16MBAFM301	Principles & Practices of Banking	16MBAHR301	Industrial Relations & Legislations
16MBAMM302	Retail Management.	16MBAFM302	Investment Banking & Financial Services	16MBAHR302	Recruitment & Selection
16MBAMM303	Services Marketing	16MBAFM303	Investment Management	16MBAHR303	Compensation & Benefits
16MBAMM304	Marketing Research	16MBAFM304	Advanced Financial Management	16MBAHR304	Learning & Development
16MBAMM305	Business Marketing	16MBAFM305	Cost Management	16MBAHR305	Knowledge Management
16MBAMM306	Supply Chain Management	16MBAFM306	Strategic Credit Management	16MBAHR306	Conflict & Negotiation Management



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IV SEMESTER (Core Specialisation)

			Category	Te	aching hours / we	ek.		Mar	rks for		
Marketing	Subject Code Finance	Human		Lecture	Practical / Field Work /	Total	Duration of Exam	ІА	Exam	Total Marks	Credits
		Resource			Assignment **		(Hours)				
16MBAMM401	16MBAFM401	16MBAHR401	Foundation Course	3	2	5	3	20	80	100	3
16MBAMM402	16MBAFM402	16MBAHR402	Foundation Elective	3	2	5	3	20	80	100	3
16MBAMM403	16MBAFM403	16MBAHR403	Elective	3	2	5	3	20	80	100	3
16MBAMM404	16MBAFM404	16MBAHR404	Foundation Course	3	2	5	3	20	80	100	3
16MBAMM405	16MBAFM405	16MBAHR405	Foundation Elective	3	2	5	3	20	80	100	3
16MBAMM406	16MBAFM406	16MBAHR406	Elective	3	2	5	3	20	80	100	3
-	16MBAPR407		Project Work *	0	8	8		50	150	200	12
										800	30

* Project work will be carried out after third semester and shall be evaluated during fourth semester. The internal assessment will be made for 50 marks. In the examination, the total marks of 150 shall be allotted as follows: 50 marks each for report evaluation by internal and external examiners respectively and remaining 50 marks for the viva voce examination, jointly assessed by internal and external examiners.

** Practical /Field Work / Assignment is a part of contact hours for the faculty and must be considered in the workload.

IV SEMESTER (Core Specialisation Subjects)

Mar	rketing Specialisation		F	inancial Specialisation		Hur	nan Resource Specialisation
Subject Code	Title of the Subject		Subject Code	Title of the Subject		Subject Code	Title of the Subject
16MBAMM401	Sales Management		16MBAFM401	Mergers, Acquisitions & Corporate Restructuring		16MBAHR401	Public relations
16MBAMM402	Integrated Marketing Communication		16MBAFM402	Risk Management and Insurance		16MBAHR402	Workplace Ethics & Value Systems
16MBAMM403	E-Marketing.		16MBAFM403_	Tax Management		16MBAHR403	International Human Resource Management
16MBAMM404	Strategic Brand Management	1	16MBAFM404	International Financial Management	1	16MBAHR404	Organisation Change and Development
16MBAMM405	Rural Marketing	1	16MBAFM405	Financial Derivatives	1	16MBAHR405	Strategic Talent Management
16MBAMM406	International Marketing Management		16MBAFM406	Corporate Valuation		16MBAHR406	Personal Growth & Interpersonal Effectiveness



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2017 -2018

SCHEME OF TEACHING AND EXAMINATION MASTER OF BUSINESS ADMINISTRATION

				EMESTER							
		Category	Teaching	hours / week		Duration	Mark	s for			
Subject Code	Title of the Subject		Lecture	Practical / Field Work / Assignment *	Total	of Exam (Hours)	іл	Exam	Total Marks	Credits	
16MBA11_	Management & Organizational Behaviour	Core Course	3_	2	5	3_	20	80_	100	4.	
16MBA12	Managerial Economics	Core Course	3	2	5	3	20	80	100	4	
16MBA13	Accounting for Managers	Core Course	3	2	5	3	20	80	100	4	
16MBA14	Quantitative Methods	Core Course	3	2	5	3	20	80	100	4	
16MBA15	Marketing Management	Core Course	3	2	5.	3_	20	80	100	4	
16MBA16	Managerial Communications	Core Course	3	2	5	3	20	80	100	4	
	Total		18	12	30		120	480	600	24	

* Practical /Field Work / Assignment is a part of contact hours for the faculty and must be considered in the workload.

		Category	Teaching	hours / week		Mark	s for			
Subject Code	Title of the Subject		Lecture	Practical / Field Work / Assignment *	Total	Duration of Exam (Hours)	IA	Exam	Total Marks	Credits
16MBA21	Human Resource Management	Core Course	<u>3</u> _	2	5	<u>3</u> .	2 <u>0</u>	<mark>80</mark>	1 <u>00</u>	4
16MBA22	Financial Management	Core Course	3	2	5	3	20	80	100	4
16MBA23	Research Methods	Core Course	3_	2	5	3_	20	80	100	4
16MBA24	Business Law and Policy	Core Course	3	2	5	3	20	80	100	4
16MBA25	Strategic Management	Core Course	3	2	- 5	3	20	80	100	4
16MBA26	Entrepreneurship Development	Core Course	3	2	5	3.	20	80	100	4
	Total		18	12	30		120	480	600	24

* Practical /Field Work / Assignment is a part of contact hours for the faculty and must be considered in the workload.



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> III SEMESTER (Core Specialisation)

			Category	Te	aching hours / wee	•k		Mar	ks for		
	Subject Code				Practical /		Duration of Exam			Total	Credits
Marketing	Finance	Human Resource		Lecture	Field Work / Assignment **	Total	(Hours)	IA	Exam	Marks	Creats
16MBAMM301	16MBAFM301	16MBAHR301	Foundation Course	3_	2	5_	3_	20	80_	100	3_
16MBAMM302	16MBAFM302	16MBAHR302	Foundation Elective	3	2	5	3	20	80	100	3
16MBAMM303	16MBAFM303	16MBAHR303	Elective	3	2	5	3	20	80	100	3
16MBAMM304	16MBAFM304	16MBAHR304	Foundation Course	3	2	5	3	20	80	100	3
16MBAMM305	16MBAFM305	16MBAHR305	Foundation Elective	3	2	5	3	20	80	100	3
16MBAMM306	16MBAFM306	16MBAHR306	Elective	3	2	5	3	20	80	100	3
	16MBAIN307		Internship *	0	8	8	-	50	50	100	4
			Industrial Visit	0	0	0	0	0	00	00	0
				18	12	30		120	480	700	22

^a Internship will be carried out by students after second semester during vacation and the report submitted by the students will be assessed internally during the third semester. Total number of teaching hours per week is excluding internship workload.

** Practical /Field Work / Assignment is a part of contact hours for the faculty and must be considered in the workload. Industrial visit is a mandatory activity with zero credits

III SEMESTER

(Core Specialisation Subjects)

Mark	eting Specialisation	F	inance Specialisation	Human Resource Specialisation				
Subject Code	Title of the Subject	Subject Code	Title of the Subject	Subject Code	Title of the Subject			
16MBAMM301	Consumer Behavior	16MBAFM301	Principles & Practices of Banking	16MBAHR301	Industrial Relations & Legislations			
16MBAMM302	Retail Management.	16MBAFM302	Investment Banking & Financial Services	16MBAHR302	Recruitment & Selection			
16MBAMM303	Services Marketing	16MBAFM303	Investment Management	16MBAHR303	Compensation & Benefits			
16MBAMM304	Marketing Research	16MBAFM304	Advanced Financial Management	16MBAHR304	Learning & Development			
16MBAMM305	Business Marketing	16MBAFM305	Cost Management	16MBAHR305	Knowledge Management			
16MBAMM306	Supply Chain Management	16MBAFM306	Strategic Credit Management	16MBAHR306	Conflict & Negotiation Management			



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IV SEMESTER (Core Specialisation)

			Category	Te	aching hours / wee	ek 🛛		Ma	rks for		
Marketing	Subject Code Finance	Human		Lecture	Practical / Field Work /	Total	Duration of Exam (Hours)	IA	Exam	Total Marks	Credits
		Resource			Assignment **		(Hours)				
16MBAMM401	16MBAFM401	16MBAHR401	Foundation Course	3	2	5	3	20	80	100	3
16MBAMM402	16MBAFM402	16MBAHR402	Foundation Elective	3	2	5	3	20	80	100	3
16MBAMM403	16MBAFM403	16MBAHR403	Elective	3	2	5	3	20	80	100	3
16MBAMM404	16MBAFM404	16MBAHR404	Foundation Course	3	2	5	3	20	80	100	3
16MBAMM405	16MBAFM405	16MBAHR405	Foundation Elective	3	2	5	3	20	80	100	3
16MBAMM406	16MBAFM406	16MBAHR406	Elective	3	2	5	3	20	80	100	3
-	16MBAPR407		Project Work *	0	8	8		50	150	200	12
										800	30

* Project work will be carried out after third semester and shall be evaluated during fourth semester. The internal assessment will be made for 50 marks. In the examination, the total marks of 150 shall be allotted as follows: 50 marks each for report evaluation by internal and external examiners respectively and remaining 50 marks for the viva voce examination, jointly assessed by internal and external examiners.

** Practical /Field Work / Assignment is a part of contact hours for the faculty and must be considered in the workload.

IV SEMESTER (Core Specialisation Subjects)

Mar	keting Specialisation	F	inancial Specialisation		Hur	nan Resource Specialisation
Subject Code	Title of the Subject	Subject Code	Title of the Subject		Subject Code	Title of the Subject
16MBAMM401	Sales Management	16MBAFM401	Mergers, Acquisitions & Corporate	1	16MBAHR401	Public relations
	-		Restructuring			
16MBAMM402	Integrated Marketing	16MBAFM402	Risk Management and Insurance	1	16MBAHR402	Workplace Ethics & Value Systems
	Communication		-			
16MBAMM403	E-Marketing	16MBAFM403	Tax Management	1	16MBAHR403	International Human Resource
	-		-			Management
16MBAMM404	Strategic Brand Management	16MBAFM404	International Financial Management		16MBAHR404	Organisation Change and Development
16MBAMM405	Rural Marketing	16MBAFM405	Financial Derivatives	1	16MBAHR405	Strategic Talent Management
16MBAMM406	International Marketing	16MBAFM406	Corporate Valuation	1	16MBAHR406	Personal Growth & Interpersonal
	Management					Effectiveness



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2018 - 2019

I SEMESTER

		Category	Teaching h	hours / week		Duration	Marks	for		
Subject Code	Title of the Subject		Lecture	Practical Component	Total Hours	of Exam (Hours)	CIE	SEE	Total Marks	Credits
18 <mark>MBA11</mark>	Management & Organizational Behavior	Core Course	4	-	4	3	40	60	100	4
18MBA12	Managerial Economics	Core Course	4		4	3	40	60	100	4
18MBA13	Accounting for Managers	Core Course	4	-	4	3	40	60	100	4
18MBA14	Business Statistics & Analytics	Core Course	4	-	4	3	40	60	100	4
18MBA15	Marketing Management	Core Course	4	-	4	3	40	60	100	4
18MBA16	Managerial Communications	Core Course	4	-	4	3	40	60	100	4
	Total		24		24		240	360	600	24

Note:

1. Each course content has indicative case studies which can be dealt in the class by the course instructor. In addition to this the course instructor may use an extra case from Harvard/Case Centre. The student cannot assume the same cases will be part of the question paper.

One Industrial Visit per Semester is Mandatory. The Department shall insist on report submission by each student and shall maintain this as a documentary proof. The format of the report shall be prescribed by the department.
 Course instructors are free to set the Course outcome and map with the Programme Outcome, subsequently

attainment level may be calculated.

			II S	EMESTER						
		Category	Teaching	hours / week		Durati	Marks for		Total	
Subject Code	Title of the Subject		Lecture	Practical Component	Total	on of Exam Hours	CIE	SEE	Mark s	Credits
18MBA21	Human Resource Management	Core Course	4	-	4	3	40	60	100	4
18MBA22	Financial Management	Core Course	4	-	4	3	40	60	100	4
18MBA23	Research Methodology	Core Course	4	-	4	3	40	60	100	4
18MBA24	Legal and Business Environment	Core Course	4	-	4	3	40	60	100	4
18MBA25	Strategic Management	Core Course	4	-	4	3	40	60	100	4
18MBA26	Entrepreneurship Development	Core Course	4	-	4	3	40	60	100	4
	Total		24	-	24	-	240	360	600	24

SCHEME OF TEACHING AND EXAMINATION MASTER OF BUSINESS ADMINISTRATION

Note:

Each course content has indicative case studies which can be dealt in the class by the course instructor. In addition to 1. this the course instructor may use an extra case from Harvard/Case Centre. The student cannot assume the same

cases will be part of the question paper.
One Industrial Visit per Semester is Mandatory. The Department shall insist on report submission by each student and shall maintain this as a documentary proof. The format of the report shall be prescribed by the department.

3. Course instructors are free to set the Course outcome and map with the Programme Outcome, subsequently attainment level may be calculated.



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			ш	SEMEST	ER						
			Category	Teac	hing hours / w	eek		Marl	ks for		
Marketing	Subject Code Finance	Human Resource		Lecture	Practical Component	Total	Duration of Exam Hours	CIE	SEE	Total Marks	Credit
18MBAMM301	18MBAFM301	18MBAHR301	Elective Course	3	2	5	3	40	60	100	4
18MBAMM302	18MBAFM302	18MBAHR302	Elective Course	3	2	5	3	40	60	100	4
18MBAMM303	18MBAFM303	18MBAHR303	Elective Course	3	2	5	3	40	60	100	4
18MBAMM304	18MBAFM304	18MBAHR304	Elective Course	3	2	5	3	40	60	100	4
18MBAMM305	18MBAFM305	18MBAHR305	Elective Course	3	2	5	3	40	60	100	4
18MBAMM306	18MBAFM306	18MBAHR306	Elective Course	3	2	5	3	40	60	100	4
	18MBAOS307		Organization Study	0	8	8		50	50	100	4
			Industrial Visit	-	-	-	-	-	-	-	-
				18	20	38	-	290	410	700	28

2

attainment level may be calculated.

III SEMESTER

(Core Specialization Subjects)

Marketing	Specialization	Finance	Specialization		Human Res	ource Specialization
Subject Code	Title of the Subject	Subject Code	Title of the Subject]	Subject Code	Title of the Subject
18MBAMM301	Consumer Behavior	18MBAFM301	Banking and Financial Services		18MBAHR301	Recruitment & Selection
18MBAMM302	Retail Management	18MBAFM302	Investment Management		18MBAHR302	HR Analytics
18MBAMM303	Services Marketing	18MBAFM303	Direct Taxation		18MBAHR303	Compensation & Reward System
18MBAMM304	Marketing Research & Analytics	18MBAFM304	Advanced Financial Management		18MBAHR304	Learning & Development
18MBAMM305	Business Marketing	18MBAFM305	Cost Management		18MBAHR305	Industrial Relations & Legislations
18MBAMM306	Supply Chain Management	18MBAFM306	Project Appraisal Planning & Control		18MBAHR306	Conflict & Negotiation Management



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			(0	Core Speci	alisation)			_		_	_
			Category	Teac	ching hours / we	ek		Ma	rks for		
Marketing	Subject Code Finance	Human Resource		Lecture	Practical Component	Total	Duration of Exam Hours	CIE	SEE	Total Marks	Credits
18MBAMM401	18MBAFM401	18MBAHR401	Elective Course	3	-	3	3	40	60	100	3
18MBAMM402	18MBAFM402	18MBAHR402	Elective Course	3	-	3	3	40	60	100	3
18MBAMM403	18MBAFM403	18MBAHR403	Elective Course	3	-	3	3	40	60	100	3
18MBAMM404	18MBAFM404	18MBAHR404	Elective Course	3		3	3	40	60	100	3
18MBAMM405	18MBAFM405	18MBAHR405	Elective Course	3	-	3	3	40	60	100	3
18MBAMM406	18MBAFM406	18MBAHR406	Elective Course	3	-	3	3	40	60	100	3
	18MBAPR407		Project Work *			12		50	150	200	6
			Industrial Visit	-	-	-	-	-	-	-	-
				18	0	30		290	510	800	24

IV SEMESTER

Note: Course instructors are free to set the Course outcome and map with the Programme Outcome, subsequently attainment level may be calculated.

Project work(Six Weeks) will be carried out after third semester and shall be evaluated during fourth semester.

Marketin	g Specialization	Financia	al Specialization		Human Reso	ource Specialization
Subject Code	Title of the Subject	Subject Code	Title of the Subject		Subject Code	Title of the Subject
18MBAMM401	Sales Management	18MBAFM401	Mergers, Acquisitions & Corporate Restructuring		18MBAHR401	Public Relations
18MBAMM402	Integrated Marketing Communication	18MBAFM402	Risk Management and Insurance		18MBAHR402	Organizational Leadership
18MBAMM403	Digital and Social Media Marketing	18MBAFM403	Indirect Taxation		18MBAHR403	International Human Resource Management
18MBAMM404	Strategic Brand Management	18MBAFM404	International Financial Management		18MBAHR404	Organization Change and Development
18MBAMM405	Rural Marketing	18MBAFM405	Financial Derivatives		18MBAHR405	Strategic Talent Management
18MBAMM406	International Marketing Management	18MBAFM406	Corporate Valuation		18MBAHR406	Personal Growth & Interpersonal Effectiveness

IV SEMESTER (Core Specialization Subjects)

IV SEMESTER



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2019 - 2020

I SEMESTER

		Category	Teaching	hours / week		Duration	Marks	for		
Subject Code	Title of the Subject		Lecture	Practical Component	Total Hours	of Exam (Hours)	CIE	SEE	Total Marks	Credits
18MBA11	Management & Organizational Behavior	Core Course	4	-	4	3	40	60	100	4
18MBA12	Managerial Economics	Core Course	4	-	4	3	40	60	100	4
18MBA13	Accounting for Managers	Core Course	4	-	4	3	40	60	100	4
18MBA14	Business Statistics & Analytics	Core Course	4	-	4	3	40	60	100	4
18MBA15	Marketing Management	Core Course	4	-	4	3	40	60	100	4
18MBA16	Managerial Communications	Core Course	4	-	4	3	40	60	100	4
	Total		24	-	24	-	240	360	600	24

Note:

1. Each course content has indicative case studies which can be dealt in the class by the course instructor. In addition to this the course instructor may use an extra case from Harvard/Case Centre. The student cannot assume the same cases will be part of the question paper.

One Industrial Visit per Semester is Mandatory. The Department shall insist on report submission by each student and shall maintain this as a documentary proof. The format of the report shall be prescribed by the department.
 Course instructors are free to set the Course outcome and map with the Programme Outcome, subsequently

attainment level may be calculated.



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SCHEME OF TEACHING AND EXAMINATION MASTER OF BUSINESS ADMINISTRATION

		Category	Teaching	hours / week		Durati	Mark	s for	Total		
Subject Code	Title of the Subject		Lecture	Practical Component	Total	on of Exam Hours	CIE	SEE	Mark s	Credits	
18MBA21	Human Resource Management	Core Course	4	-	4	3	40	60	100	4	
18MBA22	Financial Management	Core Course	4	-	4	3	40	60	100	4	
18MBA23	Research Methodology	Core Course	4	-	4	3	40	60	100	4	
18MBA24	Legal and Business Environment	Core Course	4	-	4	3	40	60	100	4	
18MBA25	Strategic Management	Core Course	4	-	4	3	40	60	100	4	
18MBA26	Entrepreneurship Development	Core Course	4	-	4	3	40	60	100	4	
	Total		24	-	24	-	240	360	600	24	

Note:

1. Each course content has indicative case studies which can be dealt in the class by the course instructor. In addition to this the course instructor may use an extra case from Harvard/Case Centre. The student cannot assume the same cases will be part of the question paper.

 One Industrial Visit per Semester is Mandatory. The Department shall insist on report submission by each student and shall maintain this as a documentary proof. The format of the report shall be prescribed by the department.

3. Course instructors are free to set the Course outcome and map with the Programme Outcome, subsequently attainment level may be calculated.

			Category	Teacl	hing hours / w	eek		Marl	ks for		
Marketing	Subject Code Finance	Human Resource		Lecture	Practical Component	Total	Duration of Exam Hours	CIE	SEE	Total Marks	Credit
18MBAMM301	18MBAFM301	18MBAHR301	Elective Course	3	2	5	3	40	60	100	4
18MBAMM302	18MBAFM302	18MBAHR302	Elective Course	3	2	5	3	40	60	100	4
18MBAMM303	18MBAFM303	18MBAHR303	Elective Course	3	2	5	3	40	60	100	4
18MBAMM304	18MBAFM304	18MBAHR304	Elective Course	3	2	5	3	40	60	100	4
18MBAMM305	18MBAFM305	18MBAHR305	Elective Course	3	2	5	3	40	60	100	4
18MBAMM306	18MBAFM306	18MBAHR306	Elective Course	3	2	5	3	40	60	100	4
	18MBAOS307		Organization Study	0	8	8		50	50	100	4
			Industrial Visit	-	-	-	-	-	-	-	-
				18	20	38	-	290	410	700	28

III SEMESTER

2





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III SEMESTER

(Core Specialization Subjects)

Marketing	Specialization	Finance Specialization			Human Res	ource Specialization
Subject Code	Title of the Subject	Subject Code	Title of the Subject		Subject Code	Title of the Subject
18MBAMM301	Consumer Behavior	18MBAFM301	Banking and Financial Services		18MBAHR301	Recruitment & Selection
18MBAMM302	Retail Management	18MBAFM302	Investment		18MBAHR302	HR Analytics
			Management			
18MBAMM303	Services Marketing	18MBAFM303	Direct Taxation		18MBAHR303	Compensation &
	Services Marketing		Direct Taxation			Reward System
18MBAMM304	Marketing Research	18MBAFM304	Advanced Financial		18MBAHR304	Learning &
	& Analytics		Management			Development
18MBAMM305	Business Marketing	18MBAFM305	Cost Management		18MBAHR305	Industrial Relations &
	business marketing		Cost Management			Legislations
18MBAMM306	Supply Chain	18MBAFM306	Project Appraisal	1	18MBAHR306	Conflict & Negotiation
	Management		Planning & Control			Management



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(Core Specialisation

			Category	Teac	ching hours / we	ek		Mar	rks for		
Marketing	Subject Code Finance	Human Resource		Lecture	Practical Component	Total	Duration of Exam Hours	CIE	SEE	Total Marks	Credits
18MBAMM401	18MBAFM401	18MBAHR401	Elective Course	3		3	3	40	60	100	3
18MBAMM402	18MBAFM402	18MBAHR402	Elective Course	3	-	3	3	40	60	100	3
18MBAMM403	18MBAFM403	18MBAHR403	Elective Course	3	-	3	3	40	60	100	3
18MBAMM404	18MBAFM404	18MBAHR404	Elective Course	3	-	3	3	40	60	100	3
18MBAMM405	18MBAFM405	18MBAHR405	Elective Course	3	-	3	3	40	60	100	3
18MBAMM406	18MBAFM406	18MBAHR406	Elective Course	3	-	3	3	40	60	100	3
	18MBAPR407		Project Work *			12		50	150	200	6
			Industrial Visit	-	-	-	-	-	-	-	-
				18	0	30	-	290	510	800	24

Note: Course instructors are free to set the Course outcome and map with the Programme Outcome, subsequently attainment level may be calculated.

Project work(Six Weeks) will be carried out after third semester and shall be evaluated during fourth semester.

IV SEMESTER

(Core Specialization Subjects)

Marketin	g Specialization	Financia	I Specialization	Human Reso	ource Specialization
Subject Code	Title of the Subject	Subject Code	Title of the Subject	Subject Code	Title of the Subject
18MBAMM401	Calas Managament	18MBAFM401	Mergers, Acquisitions	18MBAHR401	Public Relations
18MBAMM401	Sales Management	18MBAF M401	& Corporate Restructuring	18MBAHR401	
18MBAMM402	Integrated Marketing Communication	18MBAFM402	Risk Management and Insurance	18MBAHR402	Organizational Leadership
18MBAMM403	Digital and Social Media Marketing	18MBAFM403	Indirect Taxation	18MBAHR403	International Human Resource Management
18MBAMM404	Strategic Brand Management	18MBAFM404	International Financial Management	18MBAHR404	Organization Change and Development
18MBAMM405	Rural Marketing	18MBAFM405	Financial Derivatives	18MBAHR405	Strategic Talent Management
18MBAMM406	International Marketing Management	18MBAFM406	Corporate Valuation	18MBAHR406	Personal Growth & Interpersonal Effectiveness

IV SEMESTER



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2020 - 2021

SCHEME OF TEACHING AND EXAMINATION

	VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examinations – 2020 - 21 MASTER OF BUSINESS ADMINISTRATION Choice Based Credit System (CBCS) and Outcome Based Education(OBE) I SEMESTER											
				Teaching I	Iours /Week		Exami	nation				
SL No	S Course Code		Course Title	Theory	Practical component	Duration in hours	CIE Marks	SEE Marks	T otal Marks	Credits		
1	PCC	20MBA11	Management & Organizational Behavior	03	02	03	40	60	100	4		
2	PCC	20MBA12	Managerial Economics	03	02	03	40	60	100	4		
3	PCC	20MBA13	Accounting for Managers	03	02	03	40	60	100	4		
4	PCC	20MBA14	Business Statistics	03	02	03	40	60	100	4		
5	PCC	20MBA15	Marketing Management	03	02	03	40	60	100	4		
6	PCC	20MBA16	Managerial Communication	03	02	03	40	60	100	4		
			TOTAL	18	12	18	240	360	600	24		

Note:

PCC: Professional Core Course

Practical /Field Work / Assignment are part of contact hours for the faculty and must be considered in the workload. Four credit courses are designed for 50 hours Teaching – Learning process.

- Note:
 - Each course has a theory component of 3hrs (3credits) and a practical component of 2hrs (1credit). The time-table allotment for each course should be 5hrs (3+2). For the practical component it is mandatory to maintain a record.
 - 2. 20% of marks should be allocated for application oriented questions in the **Semester End Examination (SEE)** question paper based on practical component.
 - Each course content has indicative case studies which can be dealt in the class by the course instructor. In addition to
 this the course instructor may use an extra case from Harvard/Case Centre. The student cannot assume the same cases
 will be part of the SEE question paper.
 - 4. One industrial visit per semester is mandatory. The department shall insist on report submission by each student and shall maintain this as a documentary proof. The format of the report shall be prescribed by the department.

 Students and course instructor/s to involve either individually or in groups to interact together to enhance the learning and application skills.

6. Practical component:

Students should interact with industry (small, medium and large) to understand their problems or foresee what can be undertaken for study in the form of research/ testing / projects and for creative and innovative methods for guidance and to solve the identified problem.

7. The students shall

(a) Gain confidence in modeling of management systems.



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	VIEWEEVADAVA TECHNOLOGICAL UNIVERSITY BELACAV												
	VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI												
	Scheme of Teaching and Examinations – 2020 - 21 MASTER OF PUSINESS ADMINISTRATION												
	MASTER OF BUSINESS ADMINISTRATION Choice Based Cardit System (CRCS) and Onterma Based Education(ORE)												
	Choice Based Credit System (CBCS) and Outcome Based Education(OBE) II SEMESTER												
	II SEMESTER Teaching Hours /Week Examination												
				Teaching H	ours /Week		Examir	ation					
SL No	Course	Course Code	Course Title	Theory	Practical Component	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits			
1	PCC 20MBA21 Human Resource Management 03 02 03 40 60 100 4 PCC 20MBA22 Eigeneigh Management 02 02 03 40 60 100 4												
2													
3													
4	PCC												
5	PCC	20MBA25	Strategic Management	03	02	03	40	60	100	4			
6	PCC	20MBA26 Entrepreneurship & Legal 03 02 03 40 60 100								4			
		Т	OTAL	18	12	18	240	360	600	24			
Pra Fou	ctical /Fie r credit c		urse ignment are part of contact hours igned for 50 hours Teaching – Le			ust be c	onside	red in t	the wo	rkload.			
Not													
		nent for each c	eory component of 3hrs (3credits) ourse should be 5hrs (3+2). For the										
		of marks shou onent.	ld be allocated for application orier	ited question	is in the SE	E Questi	ion Pap	er, base	ed on p	ractical			
	 Each course content has indicative case studies which can be dealt in the class by the course instructor. In addition to this the course instructor may use an extra case from Harvard/Case Centre. The student cannot assume the same cases will be part of the question paper. 												
	4. One industrial visit per semester is mandatory. The department shall insist on report submission by each student and shall maintain this as a documentary proof. The format of the report shall be prescribed by the department.												
	Internship (four weeks) to be carried out by students after second semester during vacation and the report submitted by the students be assessed internally during the third semester.												

	VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI											
			Scheme of Te	eaching and Exam	inations –	2020 - 21						
				OF BUSINESS AD								
	Choice Based Credit System (CBCS) and Outcome Based Education(OBE)											
	III SEMESTER(Core Courses and Specialisation Courses)											
	Course Code Teaching Hours /Week Examination											
SL No	Course	Marketing	Finance	Human Resource	Theory	Practical Component	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits	
1	PCC	20MBA301*	20MBA301*	20MBA301*	03	02	03	40	60	100	4	
2	PCC	20MBA302*	20MBA302*	20MBA302*	03	02	03	40	60	100	4	
3	PEC	20MBAMM303	20MBAFM303	20MBAHR303	03	02	03	40	60	100	4	
4	PEC	20MBAMM304	20MBAFM304	20MBAHR304	03	02	03	40	60	100	4	
5	PEC	20MBAMM305	20MBAFM305	20MBAHR305	03	02	03	40	60	100	4	
6	PEC	20MBAMM306	20MBAFM306	20MBAHR306	03	02	03	40	60	100	4	
7	PCC	20MBA IN 307	20MBA IN 307	20MBA IN 307	-	08	-	40	60	100	4	
		TOTAL			18	20	18	280	420	700	28	
Pra Fou * In	C: Professi ctical /Fiel r credit co terdiscipli	d Work / Assignmourses are designed	for 50 hours Teacl	Elective Course. Eact hours for the facu hing – Learning proce engineering faculty/se	-55.		ered in t	he wor	kload.			
Not	 Each course has a theory component of 3hrs (3credits) and a Practical component of 2hrs (1credit). The time-table allotment for each course should be 5hrs (3+2). For the practical component it is mandatory to maintain a practical record. 20% of marks should be allocated for application oriented questions in the SEE Question Paper, based on practical component. One industrial visit per Semester is mandatory. The Department shall insist on report submission by each student and shall maintain this as a documentary proof. The format of the report shall be prescribed by the department. Each course content has indicative case studies which can be dealt in the class by the course instructor. In addition to this the course instructor may use an extra case from Harvard/Case Centre. The student cannot assume the same cases will be part of the question paper. Foreiget (six weeks) to be carried out by students after third semester and the report submitted by the students during the fourth 											

Project (six weeks) to be carried out by students after third semester and the report submitted by the students during the fourth semester.



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Cho	VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examinations – 2020 - 21 MASTER OF BUSINESS ADMINISTRATION Choice Based Credit System (CBCS) and Outcome Based Education(OBE)												
			IESTER										
	1771-1 C -1	Core	Courses		1911-1 - C - 1								
Subject Code	Title of the Subject	Subject Code	Title of the Subject	Subject Code	Title of the Subject								
20MBA301	Emerging Exponential Technologies	20MBA301	Emerging Exponential Technologies	20MBA301	Emerging Exponential Technologies								
20MBA302	Technology & Operational Strategy	20MBA302	Technology & Operational Strategy	20MBA302	Technology & Operational Strategy								
		Specialisat	ion Courses										
Mark Professional El		Fina Professional El			iman Elective Courses								
Subject Code	Title of the Subject	Subject Code	Title of the Subject	Subject Code	Title of the Subject								
20MBAMM303	Services Marketing	20MBAFM 303	Investment Management	20MBAHR303	Recruitment & Selection								
20MBAMM304	Marketing Research & Analytics	20MBAFM304	Direct Taxation	20MBAHR304	Human Resource Analytics								
20MBAMM305	Consumer Behaviour	20MBAFM305	Banking and Financial Services	20MBAHR305	Industrial Relations and Labour Laws								
20MBAMM306	Retail Management	20MBAFM306	Advanced Financial Management	20MBAHR306	Compensation & Reward System								
20MBAIN307	Internship	20MBAIN307	Internship	20MBAIN307	Internship								

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Scheme of Teaching and Examinations – 2020 - 21
MASTER OF BUSINESS ADMINISTRATION
Choice Based Credit System (CBCS) and Outcome Based Education(OBE)

	IV SEMESTER (Specialisation Courses)											
sı			Specialisation Courses	i	Teaching Hou							
· N o	N 0 0 1 PEC 2	Marketing	Finance	Human Resource	Theory	Practical Component	Duration in hours	CIE Marks	SEE Marks	T otal Marks	Credits	
1	PEC	20MBAMM401	20MBAFM401	20MBAHR401	03	-	03	40	60	100	3	
2	PEC	20MBAMM402	20MBAFM402	20MBAHR402	03	-	03	40	60	100	3	
3	PEC	20MBAMM403	20MBAFM403	20MBAHR403	03	-	03	40	60	100	3	
4	PEC	20MBAMM404	20MBAFM404	20MBAHR404	03	-	03	40	60	100	3	
5	PEC	20MBAMM405	20MBAFM405	20MBAHR405	03	-	03	40	60	100	3	
6	PEC	20MBAMM406	20MBAFM406	20MBAHR406	03	-	03	40	60	100	3	
7	PCC	20MBAPR407	20MBAPR407	20MBAPR407	-	12	-	40	60	100	6	
		TOTAL			18	12	18	280	420	700	24	

Note:

PEC: Professional Elective Course.

Practical/Field Work/Assignment are part of contact hours for the faculty and must be considered in the workload. Three credit courses are designed for 40 hours Teaching – Learning process.

Note:

1. Each Course has a theory component of 3hrs (3credits). The Time-Table allotment for each course should be 3hrs.

2. 20% of marks should be allocated for application oriented questions in the SEE Question Paper, based on practical component.



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Marketing 5	Specialization		Financial S	pecialization		Human Resou	rce Specialization					
Subject Code	Title of the Subject		Subject Code	Title of the Subject	1	Subject Code	Title of the Subject					
20MBAMM401	B2B Marketing Management		20MBAFM401	Risk Management and Insurance	1	20MBAHR401	Organizational Leadership					
20MBAMM402	Logistics and Supply Chain Management		20MBAFM402	Financial Derivatives	1	20MBAHR402	Personal Growth & Interpersonal Effectiveness					
20MBAMM403	Digital Marketing Management		20MBAFM403	Indirect Taxation		20MBAHR403	International Human Resource Management					
20MBAMM404	Strategic Brand Management		20MBAFM404	Mergers, Acquisitions & Corporate Restructuring		20MBAHR404	Organization Change and Development					
20MBAMM405	Agri Business Marketing		20MBAFM405	Corporate Valuation	1	20MBAHR405	Human Recourse Audit					
20MBAMM406	International Marketing Management		20MBAFM406	International Financial Management		20MBAHR406	Management Consulting for Business Excellence					
20MBAPR407	Project Report		20MBAPR407	Project Report		20MBAPR407	Project Report					
					1							



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MCA

I SEMESTER

S.	Subject		Teachi	ng Hrs /		Examir	nation	
No.	Code	Title	Week	- ·				
			Theory	Practical	Duration		Marks	
						IA	Exam	Total
1	13MCA11	Problem Solving using C	04	-	03	50	100	150
2	13MCA12	Discrete Mathematics Structure	04	-	03	50	100	150
3	13MCA13	Fundamentals of Computer Organization	04	-	03	50	100	150
4	13MCA14	Introduction to Unix	04	-	03	50	100	150
5	13MCA15	Introduction to Web Technologies	04		03	50	100	150
6	13MCA16	C Programming Laboratory	-	03	03	50	50	100
7	13MCA17	Unix Programming Laboratory	-	03	03	50	50	100
8	13MCA18	Web Programming Laboratory	-	03	03	50	50	100
		Total	20	09		400	650	1050

II SEMESTER

S.	Subject	Title	Teachin	ig Hrs /		Exan	ni		
No	Code		Theory	Practica	Duration		Mar		
				1			ks	L .	
						IA	Exam	Total	
1	13MCA21		04	-	03	50	100	150	
2	13MCA22	Object Oriented Programming	04	-	03	50	100	150	
		using C++							
3	13MCA23	Operating Systems	04	-	03	50	100	150	
4	13MCA24	System Programming	04	-	03	50	100	150	
5	13MCA25	Database Management Systems	04	-	03	50	100	150	
6	13MCA26	Data Structures Using C Lab	-	03	03	50	50	100	
7	13MCA27	Database Laboratory	-	03	03	50	50	100	
8	13MCA28	OOP Using C++ Laboratory	-	03	03	50	50	100	
	Total		20	09		400	650	1050	



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III SEMESTER

S.	Subject	Title	Teachin	g Hrs /		Exa	aminati	
No	Code		Theory	Practical	Duration		Mar	
•						IA	Exam	Total
1	13MCA31	Computer Networks	04	-	03	50	100	150
2	13MCA32	Programming using Java	04	-	03	50	100	150
3	13MCA33	Software Engineering	04	-	03	50	100	150
4	13MCA34	Computer Graphics	04	-	03	50	100	150
5	13MCA35	Elective-I	04	-	03	50	100	150
6	13MCA36	Java Programming Lab	-	03	03	50	50	100
7	13MCA37	Computer Graphics Lab	-	03	03	50	50	100
8	13MCA38	Computer Networks Lab	-	03	03	50	50	100
	TOTAL		20	09		40	650	1050

Elective-1	
13MCA351	UNIX system Programming
13MCA352	Advanced Topics in DBMS
13MCA353	Basics of MIS & E-Commerce
13MCA354	Operations Research
13MCA355	Principles of User Interface Design
13MCA356	Probability Statistics & Numerical Methods

IV SEMESTER

S.	Subject	Title	Teachi	ng Hrs /		Exai	ninati	
No	Code		Theory	Practical	Duration		Ma	r
•						IA	Exa	Total
1	13MCA41	Analysis & Design of	04	-	03	50	100	150
2	13MCA42	Advanced Java Programming	04	-	03	50	100	150
3	13MCA43	Advanced Web Programming	04	-	03	50	100	150
4	13MCA44	Elective-2	04	-	03	50	100	150
5	13MCA45	Elective-3	04	-	03	50	100	150
6	13MCA46	Algorithms Lab	-	03	03	50	50	100
7	13MCA47	Advanced Java Lab	-	03	03	50	50	100
8	13MCA48	Mini Project-I	-	03	03	50	50	100
	TOTAL		20	09		400 650 1050		

Electiv		Elec	ctive 3
13MCA441	Advanced Computer Networks	13MCA451	Cryptography & Network Security
13MCA442	Data Warehousing & Data Mining	13MCA452	Network Management
13MCA443			NOSQL
	Communications		
13MCA444	Software Testing and Practices	13MCA454	Software Architectures
13MCA445	Theory of Computation (FAFL)	13MCA455	Enterprise Resource Planning (ERP)
13MCA446	Digital Image Processing	13MCA456	Mobile Applications



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V SEMESTER

S. No.	Subject	Title	Teaching	Hrs /		Examir	natio	
	Code		Theory	Practical	Duration		Marks	
						IA	Exam	Total
1	13MCA51	Object-Oriented Modeling and	04	-	03	50	100	150
		Design Patterns						
2	13MCA52	System Simulation and Modeling	04	-	03	50	100	150
	13MCA53	Programming using C#.& .NET	04	-	03	50	100	150
4	13MCA54	Elective-4	04	-	03	50	100	150
5	13MCA55	Elective-5	04	-	03	50	100	150
6	13MCA56	Software Design Laboratory	-	03	03	50	50	100
7	13MCA57	.Net Laboratory	-	03	03	50	50	100
8	13MCA58	Mini Project -II	-	03	03	50	50	100
		Tota	20	09		400	650	1050

	Elective-4	Ele	ective-5
13MCA541	Mobile and Adhoc Sensor Networks	13MCA551	Cloud Computing
13MCA542	Parallel Computing	13MCA552	Web2.0 and Rich Internet Applications
13MCA543	Multimedia systems	13MCA553	Information Retrieval & Search Engines
	Pattern Recognition	13MCA554	Soft Computing
13MCA545	Services Oriented Architecture	13MCA555	Storage Area Network
13MCA546	Compiler Design	13MCA556	Software Project Management

VI SEMESTER

S. No.	Subject Code	Title	Teac Hrs/V	hing Week	Examination				
			/	Practical	Duration		Marks		
						IA	Dissertation	Viva	Total
1	13MCA61	Project	-	03	03	50	125	75	250

2017-18

I SEMESTER

S.	Subject		Teachi	ng Hrs /		Examir	nation		
No.	Code	Title	Week						
			Theory	Practical	Duration		Marks		
						IA	Exam	Total	
1	13MCA11	Problem Solving using C	04	-	03	50	100	150	
2	13MCA12	Discrete Mathematics Structure	04	-	03	50	100	150	
3	13MCA13	Fundamentals of Computer Organization	04	-	03	50	100	150	
4	13MCA14	Introduction to Unix	04	-	03	50	100	150	
5	13MCA15	Introduction to Web Technologies	04		03	50	100	150	
6	13MCA16	C Programming Laboratory	-	03	03	50	50	100	
7	13MCA17	Unix Programming Laboratory	-	03	03	50	50	100	
8	13MCA18	Web Programming Laboratory	-	03	03	50	50	100	
		Total	20	09		400	650	1050	



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II SEMESTER

S.	Subject	Title	Teachir	g Hrs /		Exan	ni		
No	Code		Theory	Practica	Duration		Mar		
				1			ks		
						IA	Exam	Total	
1	13MCA21		04	-	03	50	100	150	
2	13MCA22	Object Oriented Programming	04	-	03	50	100	150	
		using C++							
3	13MCA23	Operating Systems	04	-	03	50	100	150	
4	13MCA24		04	-	03	50	100	150	
5	13MCA25	Database Management Systems	04	-	03	50	100	150	
6	13MCA26	Data Structures Using C Lab	-	03	03	50	50	100	
7	13MCA27	Database Laboratory	-	03	03	50	50	100	
8	13MCA28	OOP Using C++ Laboratory	-	03	03	50	50	100	
	Total		20	09		400	650	1050	

III SEMESTER

S.	Subject	Title	Teachin	g Hrs /	rs /		Examinati		
No	Code		Theory	Practical	Duration		Ma	r	
•						IA	Exam	Total	
1	13MCA31	Computer Networks	04	-	03	50	100	150	
2	13MCA32	Programming using Java	04	-	03	50	100	150	
3	13MCA33	Software Engineering	04	-	03	50	100	150	
4	13MCA34	Computer Graphics	04	-	03	50	100	150	
5	13MCA35	Elective-I	04	-	03	50	100	150	
6	13MCA36	Java Programming Lab	-	03	03	50	50	100	
7	13MCA37	Computer Graphics Lab	-	03	03	50	50	100	
8	13MCA38	Computer Networks Lab	-	03	03	50	50	100	
	TOTAL		20	09		40	650	1050	

Elective-1	
13MCA351	UNIX system Programming
13MCA352	
13MCA353	Basics of MIS & E-Commerce
13MCA354	Operations Research
13MCA355	Principles of User Interface Design
13MCA356	Probability Statistics & Numerical Methods

IV SEMESTER



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S.	Subject	Title	Teachi	ng Hrs /		Exai	ninati	
No	Code		Theory	Practical	Duration		Ma	r
•						IA	Exa	Total
1	13MCA41	Analysis & Design of	04	-	03	50	100	150
2	13MCA42	Advanced Java Programming	04	-	03	50	100	150
3	13MCA43	Advanced Web Programming	04	-	03	50	100	150
4	13MCA44	Elective-2	04	-	03	50	100	150
5	13MCA45	Elective-3	04	-	03	50	100	150
6	13MCA46	Algorithms Lab	-	03	03	50	50	100
7	13MCA47	Advanced Java Lab	-	03	03	50	50	100
8	13MCA48	Mini Project-I	-	03	03	50	50	100
	TOTAL		20	09		400	650	1050

Electiv	ve-2	Elec	ctive 3
13MCA441	Advanced Computer Networks	13MCA451	Cryptography & Network Security
13MCA442	Data Warehousing & Data Mining	13MCA452	Network Management
13MCA443	13MCA443 Mobile Computing and Wireless		NOSQL
	Communications		-
13MCA444	Software Testing and Practices	13MCA454	Software Architectures
13MCA445	Theory of Computation (FAFL)	13MCA455	Enterprise Resource Planning (ERP)
13MCA446	Digital Image Processing	13MCA456	Mobile Applications

V SEMESTER

S. No.	Subject	Title	Teaching Hrs /			Examir	natio	
	Code		Theory Practical		Duration	ation Marks		
						IA	Exam	Total
1	13MCA51	Object-Oriented Modeling and	04	-	03	50	100	150
		Design Patterns						
2	13MCA52	System Simulation and Modeling	04	-	03	50	100	150
	13MCA53	Programming using C#.& .NET	04	-	03	50	100	150
4	13MCA54	Elective-4	04	-	03	50	100	150
5	13MCA55	Elective-5	04	-	03	50	100	150
6	13MCA56	Software Design Laboratory	-	03	03	50	50	100
7	13MCA57	.Net Laboratory	-	03	03	50	50	100
8	13MCA58	Mini Project -II	-	03	03	50	50	100
		Tota	20	09		400	650	1050

	Elective-4	Ele	ctive-5
13MCA541	Mobile and Adhoc Sensor Networks	13MCA551	Cloud Computing
13MCA542	Parallel Computing	13MCA552	Web2.0 and Rich Internet Applications
13MCA543	Multimedia systems	13MCA553	Information Retrieval & Search Engines
13MCA544	Pattern Recognition	13MCA554	Soft Computing
13MCA545	Services Oriented Architecture	13MCA555	Storage Area Network
13MCA546	Compiler Design	13MCA556	Software Project Management



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VI SEMESTER

S. No.	Subject Code	Title	Teac Hrs/V		Examination				
			Theory	Practical	Duration Marks				
						IA	Dissertation	Viva	Total
1	13MCA61	Project	-	03	03	50	125	75	250

2018-19

I Semest	er					CRED	T BASED	
Subject			aching rs/week	Duratio n of	Marks for		Total	CREDIT
Code	Name of the Subject	Lectur e	Practical / Assignmen t	Exam in Hours	CIE	SEE	Mark s	S
16MCA1 1	Data structures using C	4	-	3	20	80	100	4
16MCA1 2	Unix Programming	4	-	3	20	80	100	4
16MCA1 3	Web Technologies	4	-	3	20	80	100	4
16MCA1 4	Computer Organization	4	-	3	20	80	100	4
16MCA1 5	Discrete Mathematical Structures	4	-	3	20	80	100	4
16MCA1 6	Data structures using CLaboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
16MCA1 7	UnixProgramming Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
16MCA1 8	Web ProgrammingLaborator y		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
	Total	20	09	24	16 0	64 0	800	26



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om	oct	or	

CREDIT BASED II Semester Marks Teaching hours/week Duration Subject for Total Name of the Subject CREDITS of Exam Code Practical / Marks Lecture in Hours CIE SEE Assignment Python 16MCA21 4 4 ---3 20 80 100 Programming 16MCA22 Object oriented programming using 4 --3 20 80 100 4 C++ Database 16MCA23 Management 4 3 20 80 100 4 --Systems 16MCA24 OperatingSystems 4 3 20 80 100 4 ---System Software 16MCA25 4 3 20 80 4 ---100 Python 3(2 hrs lab+1 2 Programming 3 20 80 100 16MCA26 --hr instruction) Laboratory Object oriented 3 3(2 hrs lab+ 1 2 programming using C++ laboratory 16MCA27 20 80 100 --hr instruction) DBMSLaboratory 3 3(2 hrs lab+ 1 2 16MCA28 hr 20 80 100 --instruction) Total 20 09 24 160 640 800 26



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III Semes	ter CREDIT	BASED						
Subject	Name of the	Teachin	g hours/week	Duration	Marl	ks for	Total	
Code	Subject	Lecture	Practical / Assignment	of Exam in Hours	CIE	SEE	Marks	CREDITS
16MCA31	Computer Networks	4		3	20	80	100	4
16MCA32	Java Programming	4		3	20	80	100	4
16MCA33	Analysis and Design of Algorithms	4		3	20	80	100	4
16MCA34	Software Engineering	4		3	20	80	100	4
16MCA35	Elective 1	3		3	20	80	100	3
16MCA36	Computer Networks Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
16MCA37	Java Programming Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
16MCA38	Analysis and Design of Algorithms Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
	Tota	l 19	09	24	160	640	800	25
			Elective- 1					
16MCA351	Intelle	ctual Proper	ty Rights					
16MCA352	Enterp	rise Resour	ce Planning(ERP)				
16MCA353	MIS &	E-Commerc	be					
16MCA354	Cyber	Security						





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IV Semester CREDIT BASED											
		Teaching h	ours/week	Duratio	Ma	rks for	Total				
Subject Code	Name of the Subject	Lecture	Practical / Assignmen t	n of Exam in Hours	CIE	SEE	Mark	CREDIT S			
16MCA4 1	Advanced Java Programming	4		3	20	80	100	4			
16MCA4 2	Advanced Web Programming	4		3	20	80	100	4			
16MCA4 3	Software Testing and Practices	4		3	20	80	100	4			
16MCA4 4	Elective-2	3		3	20	80	100	3			
16MCA4 5	Elective-3	3		3	20	80	100	3			
16MCA4 6	Advanced Java Programming Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2			
16MCA4 7	Advanced Web ProgrammingLaborat ory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2			
16MCA4 8	Software Testing Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2			

16MCA4 9	Seminar			2	2		50		50	1	
		Total	18	1	1	24	21 0	640	850	25	
	F	lective -2					Ele	ctive-3			
16MCA441 Advanced Computer Networks			Computer		16MC	CA451	451 Wireless Communication and Mobile Technologies				
16MCA44	2	Data Ware Mining	housing and	Data	16MC	16MCA452 Big Data Analytics					
16MCA44	3	Software A	Architecture		16MCA453 Software Quality						



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V Semest	ter				C	RED	IT BA	SED			
Subject		Teaching h	ours/w	eek		tion		rks or	Total		
Code	Name of the Subject	Lecture	Pract Assign	ical / ment	of E	ours	CIE	SEE	Marks	CREDIT	
16MCA51	Object-Oriented Modeling and Design Patterns	4		-	11	3	20	80	100	4	
16MCA52	Programming Using C# & .NET	4	-	-	1	3	20	80	100	4	
16MCA53	Mobile Applications	4	-	-	111	3	20	80	100	4	
16MCA54	Elective-4	3	-	-	1	3	20	80	100	3	
16MCA55	Elective-5	3	-	-	414	3	20	80	100	3	
16MCA56	Software Design Laboratory		1	s lab+ hr ction)		3	20	80	100	2	
16MCA57	.Net Laboratory	-	1	s lab+ hr ction)	(1) (1)	3	20	80	100	2	
16MCA58	Mini Project : Mobile Applications Development using Android/iOS/Windows etc.		1 instru	s lab+ hr ction+ ontact)	11	}	20	80	100	3	
16MCA59	Seminar		:	2	-	-	50	-	50	1	
	Total	18	1	2	2	4	210	640	850	26	
	Elective-4						Elect	tive-5			
16MCA541	Web2.0 and Rich Internet	Applications		16MC	A551	Softv	ware D	are Defined Networks			
16MCA542	Cloud Computing			16MC.	A552	Inter	rnet of	net of Things(IoT)			
16MCA543	Artificial Intelligence			16MC	A553	A553 Service Oriented Architecture				ture	
16MCA544	Storage Area Networks			16MC.	A554		ware P ageme	roject			

VI Semest	er				CRED	DIT BAS	ED				
			Evaluation								
Subject	Name of the	Inter	nal	External	Tetal	Currelles					
Code	Subject	Presentation	Report Evaluation	Dissertation Evaluation	Viva	Total	Credits				
16MCA61	Internship	50	50	-	-	100	02				
16MCA62	Project Work	75	5	125	100	300	20				
T	otal	17	5	125	100	400	22				
	Grand Total (I to VI Semesters): 4500 Marks : 150 Credits										



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Guidelines: 16MCA61: Internship

- The students shall undergo internship for 6 weeks during the vacation immediately after the 5th semester examination.
- The internship shall be carried out in industry/R&D labs or institutions.
- Internship should be presented along with the report by the end of 6 weeks and shall be evaluated
- by the internal panel for 50 marks each. 16MCA62: Project Work

Synopsis

- Synopsis of the project must be submitted before the end of the first month of 6th semester
 - The synopsis of the project must include:
 - a) Problem formulation and literature survey.
 - b) Details of the required tools and technologies for the development of project.
 - c) Write up shall not exceed 15 pages.
- Internal assessment for synopsis presentation and evaluation of the synopsis by the internal examiner/guide is for 20 marks.

Dissertation

 The project shall be carried out in the same institution or in industry/R&D labs based on software tools and technologies learnt in MCA course/internship for minimum period of 16 weeks.

- Internal assessment shall be evaluated by the internal panel/guide for 55 marks.
 - a) For continuous evaluation of project work by the internal examiner/guide with progress reports is for 10 marks each. (3 progress reports x 10 marks= 30)
 b) Final presentation for the entire project is evaluated for 25 marks.
- The internal examiners (Project Guide with at least 2 years experience) and the external growing shall be experienced by the University for the first experience.
- examiners shall be appointed by the University for the final evaluation of the project. Internal and external examiners shall carry out the evaluation of Dissertation report for 125

Internal and external examiners shall carry out the evaluation of Dissertation report for 125
marks individually. The average of the marks allotted by the internal and external examiners shall
be the final marks for the project Dissertation report evaluation.

- The project presentation and Viva-voce shall be evaluated jointly by both the internal and external examiners for 100 marks.
- The student should be encouraged to present/publish the part/outcome of the project as an
 article in the conferences/journals.

2019-20



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I Semester CREDIT BASED										
Subject			aching rs/week	Duratio n of		arks or	Total	CREDIT		
Code	Name of the Subject	Lectur e	Practical / Assignmen t	Exam in Hours	CIE	SEE	Mark s	S		
16MCA1 1	Data structures using C	4		3	20	80	100	4		
16MCA1 2	Unix Programming	4		3	20	80	100	4		
16MCA1 3	Web Technologies	4		3	20	80	100	4		
16MCA1 4	Computer Organization	4		3	20	80	100	4		
16MCA1 5	Discrete Mathematical Structures	4		3	20	80	100	4		
16MCA1 6	Data structures using CLaboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2		
16MCA1 7	UnixProgramming Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2		
16MCA1 8	Web ProgrammingLaborator y		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2		
	Total	20	09	24	16 0	64 0	800	26		

II Semes	ter		CREDIT BASI	ED				
Subject	Name of the Subject	Teaching	g hours/week	Duration of Exam		rks or	Total	CREDITS
Code	Name of the Subject	Lecture	Practical / Assignment	in Hours	CIE	SEE	Marks	CREDITS
16MCA21	Python Programming	4		3	20	80	100	4
16MCA22	Object oriented programming using C++	4	-	3	20	80	100	4
16MCA23	Database Management Systems	4		3	20	80	100	4
16MCA24	OperatingSystems	4	-	3	20	80	100	4
16MCA25	System Software	4		3	20	80	100	4
16MCA26	Python Programming Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
16MCA27	Object oriented programming using C++ laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
16MCA28	DBMSLaboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
	Total	20	09	24	160	640	800	26



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III Semes	ter CREDIT	BASED						
Subject	Name of the	Teachin	g hours/week	Duration	Marl	ks for	Total	
Code	Subject	Lecture	Practical / Assignment	of Exam in Hours	CIE	SEE	Marks	CREDITS
16MCA31	Computer Networks	4		3	20	80	100	4
16MCA32	Java Programming	4		3	20	80	100	4
16MCA33	Analysis and Design of Algorithms	4		3	20	80	100	4
16MCA34	Software Engineering	4		3	20	80	100	4
16MCA35	Elective 1	3		3	20	80	100	3
16MCA36	Computer Networks Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
16MCA37	Java Programming Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
16MCA38	Analysis and Design of Algorithms Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2
	Total	19	09	24	160	640	800	25
			Elective- 1					
16MCA351	Intellec	tual Proper	ty Rights					
16MCA352	Enterp	ise Resour	ce Planning(ERP)				
16MCA353	MIS & I	E-Commerc	æ					
16MCA354	Cyber S	ecurity						





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IV Semester CREDIT BASED											
		Teaching h	ours/week	Duratio	Ma	rks for	Total				
Subject Code	Name of the Subject	Lecture	Practical / Assignmen t	n of Exam in Hours	CIE	SEE	Mark	CREDIT S			
16MCA4 1	Advanced Java Programming	4		3	20	80	100	4			
16MCA4 2	Advanced Web Programming	4		3	20	80	100	4			
16MCA4 3	Software Testing and Practices	4		3	20	80	100	4			
16MCA4 4	Elective-2	3		3	20	80	100	3			
16MCA4 5	Elective-3	3		3	20	80	100	3			
16MCA4 6	Advanced Java Programming Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2			
16MCA4 7	Advanced Web ProgrammingLaborat ory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2			
16MCA4 8	Software Testing Laboratory		3(2 hrs lab+ 1 hr instruction)	3	20	80	100	2			

16MCA4 9	Seminar			:	2		50		50	1
		Total	18	1	1	24	21 0	640	850	25
	I	lective -2					Ele	ctive-3		
16MCA44	16MCA441 Advanced Computer Networks				16MC	ICA451 Wireless Communication and Mobile Technologies				
16MCA44	2	Data Ware Mining	ehousing and Data		16MCA452 Big Data Analytics					
16MCA44	3	Software A	Architecture		16MCA453 Software Quality					



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V Semest	er				c	RED	IT BA	SED		
Subject		Teaching h	ours/w	eek	Dura			rks or	Total	
Code	Name of the Subject	Lecture	Pract Assign	ical / ment	of Ex in He		CIE	SEE	Marks	CREDITS
16MCA51	Object-Oriented Modeling and Design Patterns	4			3	1	20	80	100	4
16MCA52	Programming Using C# & .NET	4	-	-	3		20	80	100	4
16MCA53	Mobile Applications	4	-	-	3	1	20	80	100	4
16MCA54	Elective-4	3	-	-	3	1	20	80	100	3
16MCA55	Elective-5	3	-	-	3	1	20	80	100	3
16MCA56	Software Design Laboratory		1	s lab+ hr ction)	3	1	20	80	100	2
16MCA57	.Net Laboratory		1	s lab+ hr ction)	3	1	20	80	100	2
16MCA58	Mini Project : Mobile Applications Development using Android/iOS/Windows etc.		instru	s lab+ hr ction+ ontact)	3	1	20	80	100	3
16MCA59	Seminar		:	2	-		50		50	1
	Total	18	1	2	2	4	210	640	850	26
	Elective-4						Elec	tive-5		
16MCA541	Web2.0 and Rich Internet	Applications		16MC.	A551	Softv	vare Defined Networks			
16MCA542	Cloud Computing			16MC.	A552	Inter	met of	Thing	s(IoT)	
16MCA543	Artificial Intelligence			16MC	A553	Servi	ice Ori	iented	Architect	ure
16MCA544	Storage Area Networks			16MC.	A554		vare P ageme	roject nt		

VI Semest	er				CRED	DIT BASED				
	Name of the		Evaluation	n						
Subject		Inter	External		Tetel	Credits				
Code	Subject	Presentation	Report Evaluation	Dissertation Evaluation	Viva	Total	Credits			
16MCA61	Internship	50	50	-	-	100	02			
16MCA62	Project Work	75	5	125	100	300	20			
1	otal	17	175 125			400	22			
	Grand Total (I to VI Semesters): 4500 Marks : 150 Credits									



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Synopsis

- Synopsis of the project must be submitted before the end of the first month of 6th semester
 - The synopsis of the project must include:
 - a) Problem formulation and literature survey.
 - b) Details of the required tools and technologies for the development of project.
 - c) Write up shall not exceed 15 pages.
 - Internal assessment for synopsis presentation and evaluation of the synopsis by the internal examiner/guide is for 20 marks.

Dissertation

 The project shall be carried out in the same institution or in industry/R&D labs based on software tools and technologies learnt in MCA course/internship for minimum period of 16 weeks.

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 - a) For continuous evaluation of project work by the internal examiner/guide with progress reports is for 10 marks each. (3 progress reports x 10 marks= 30)
 b) Final presentation for the entire project is evaluated for 25 marks.
- The internal examiners (Project Guide with at least 2 years experience) and the external
- examiners shall be appointed by the University for the final evaluation of the project.
 Internal and external examiners shall carry out the evaluation of Dissertation report for 125
- marks individually. The average of the marks allotted by the internal and external examiners shall be the final marks for the project Dissertation report evaluation.
- The project presentation and Viva-voce shall be evaluated jointly by both the internal and external examiners for 100 marks.
- The student should be encouraged to present/publish the part/outcome of the project as an
 article in the conferences/journals.

2020-2021

I SEMESTER

SI.			Traching	Tea	hing Hours /	Week	A 1	Exami	nation		
No	Course Code	Title	Teaching Department	Theory (L)	Practical (P)	Tutorial (T)	Duration in hours	SEE Marks	CIE Marks	Total Marks	Credits
1	18MCA11	Object Oriented Programming with C++	MCA	03	-	- 7	03	60	40	100	03
2	18MCA12	Unix and Shell Programming	MCA	03	-	< - V	03	60	40	100	03
3	18MCA13	Web Technologies	MCA	03	-	\cdot	03	60	40	100	03
4	18MCA14	Software Engineering	MCA	03		-	03	60	40	100	03
5	18MCA15	Computer Organization	MCA	03	1 - 1	-	03	60	40	100	03
6	18MCA16	C++ Programming Lab	MCA	. •	03	01	03	60	40	100	02
7	18MCA17	Unix and Shell Programming Lab	MCA	5	03	01	03	60	40	100	02
8	18MCA18	Web Technologies Lab	MCA	· •	03	01	03	60	40	100	02
		TOTAL				15hours 1:09 hours ruction:03h	ours	480	320	800	21



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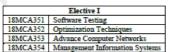
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II SEMESTER

SL.			Teaching	Tea	hing Hours /	Week		Exami	nation		
No	Course Code	Title	Teaching Department	Theory (L)	Practical (P)	Tutorial (T)	Duration in hours	SEE Marks	CIE Marks	Total Marks	Credits
1	18MCA21	Programming using Java	MCA	03	-	-	03	60	40	100	03
2	18MCA22	Data Structures using C++	MCA	03	-	- ,	03	60	40	100	03
3	18MCA23	Discrete Mathematical Structures and Statistics	MCA/ Mathematics	03	-	1	03	60	40	100	03
4	18MCA24	Computer Networks	MCA	03	-		03	60	40	100	03
5	18MCA25	Operating Systems	MCA	03	-		× 03	60	40	100	03
6	18MCA26	Java Programming Lab	MCA		03	01	03	60	40	100	02
7	18MCA27	Data Structures Lab	MCA	1	03	01	03	60	40	100	02
8	18MCA28	Computer Networks Lab	MCA	2	03	01	03	60	40	100	02
9	18MCA29	Mini Project	MCA	Y	02	02	03	60	40	100	02
		TOTAL	26			15hours 1:11 hours ruction:05ho	ours	540	360	900	23

III SEMESTER

				Tea	hing Hours /	Week		Exami	nation		
SL. No	Course Code	Title	Teaching Department	Theory (L)	Practical (P)	Tutorial (T)	Duration in hours	SEE Marks	CIE Marks	Total Marks	Credits
1	18MCA31	Database Management System	MCA	03	-	-	03	60	40	100	03
2	18MCA32	Programming using Python	MCA	03	-		03	60	40	100	03
3	18MCA33	Design and Analysis of Algorithms	MCA	03	-	< · \	03	60	40	100	03
4	18MCA34	System Software	MCA	03	-		03	60	40	100	03
5	18MCA35X	Elective 1	MCA	03	1.4	-	03	60	40	100	03
6	18MCA36	DBMS Lab	MCA	7	03	01	03	60	40	100	02
7	18MCA37	Python Programming Lab	MCA	. 6	03	01	03	60	40	100	02
8	18MCA38	Algorithms Lab	MCA	5	03	01	03	60	40	100	02
TOTAL					Theory: 15hours Practical: 09 hours Tutorial/Instruction: 03hours			480	320	800	21



IV SEMESTER

SI.			Teaching	Teac	hing Hours /	Week		Exami	nation		
No	Course Code	Title	Department	Theory (L)	Practical (P)	Tutorial (T)	Duration in hours	SEE Marks	CIE Marks	Total Marks	Credits
1	18MCA41	Advanced Java Programming	MCA	03	-	-	03	60	40	100	03
2	18MCA42	Advanced Web Programming	MCA	03	-	-	03	60	40	100	03
3	18MCA43	Object Oriented Modeling and Design	MCA	03	-	- ,	03	60	40	100	03
4	18MCA44X	Elective II	MCA	03	-	1	03	60	40	100	03
5	18MCA45X	Elective III	MCA	03	-	1 - 1	03	60	40	100	03
6	18MCA46	Professional Communication & Report Writing	MCA	02		V	03	60	40	100	02
7	18MCA47	Advanced Java Programming Lab	MCA	- 0	03	01	03	60	40	100	02
8	18MCA48	Advanced Web Programming Lab	MCA	-	03	01	03	60	40	100	02
9	18MCA49	Object Oriented Modeling and Design Lab	MCA	5	03	01	03	60	40	100	02
	TOTAL					17hours 1: 09 hours ruction: 03ho	ars	540	360	900	23

	Tutoria	l/Instruction:	03hours		
	Elective II		Elective III	1	
18MCA441	Wireless Communication and Mobile Technologies	18MCA451	Enterprise Resource	Planning (EI	(P)
18MCA442	Cyber Security	18MCA452	Data Warehousing	and Data Mini	ing
18MCA443	Internet of Things(IoT)	18MCA453	Advanced Database	Management	Systems
18MCA444	Cloud Computing	18MCA454	Big Data Analytics		



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V SEMESTER

SL.			Teaching	Tea	ching Hours /	Week		Exami	nation		_
No	Course Code	Title	Department	Theory (L)	Practical (P)	Tutorial (T)	Duration in hours	SEE Marks	CIE Marks	Total Marks	Credits
1	18MCA51	Programming using C#.net	MCA	03	-		03	60	40	100	03
2	18MCA52	Mobile Applications	MCA	03	-		03	60	40	100	03
3	18MCA53	Machine Learning	MCA	03	-	-	03	60	40	100	03
4	18MCA54X	Elective IV	MCA	03	-	()	03	60	40	100	03
5	18MCA55X	Elective V	MCA	03	-	1 - \	03	60	40	100	03
6	18MCA56	C#.net Lab	MCA	-	03	01	03	60	40	100	02
7	18MCA57	Mobile Applications Lab	MCA	-	03	01	03	60	40	100	02
8	18MCA58	Mini Project	MCA		04	02	03	60	40	100	03
		TOTAL		rS!		15hours 1: 10 hours ruction: 04ho	ours	480	320	800	22

	E	lective IV	Elective V				
1	18MCA541	Multimedia Systems	18MCA551	System Simulation and Modeling			
	18MCA542	Computer Graphics	18MCA552	Principles of User Interface Design			
	18MCA543	Image Processing	18MCA553	Software Architecture			
	18MCA544	Parallel Computing	18MCA554	Storage Area Networks			

VI SEMESTER

SL.			Teaching	Tea	hing Hours /	Week		Exami	nation		Credits
No	Course Code	Title	Department	Theory	Practical	Tutorial	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	18MCA61	Internship	MCA	-	-	-	/		100	100	4
2	18MCA62	Seminar	MCA	-	-	-	- f	<u> </u>	100	100	2
3	18MCA63	Major Project	MCA	-	-	1-14	03	60	40	100	16
	TOTAL								240	300	22
-										-	



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