

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

SL No.	Subject Code	Title	Teaching Dept.	Teaching (Theory/ lab (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory / Practical	I A	Total Marks
1	10MAT-31	Engineering Mathematics – III	Maths	04	100	25	125
2	10BT-32	Introduction to Unit Operations	BT/ChE	04	100	25	125
3	10BT-33	Human Physiology	BT	04	100	25	125
4	10BT-34	Biochemistry	BT	04	100	25	125
5	10BT-35	Microbiology	BT	04	100	25	125
6	10BT-36	Cell Biology & Genetics	BT	04	100	25	125
7	10BTL-37	Biochemistry Lab	BT	03	50	25	75
8	10BTL-38	Unit Operations Lab	BT/ChE/ME	03	50	25	75
Ttoal				30	700	200	900

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

SL No.	Subject Code	Title	Teaching Dept.	Teaching (Theory/ lab (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory / Practical	I A	Total Marks
1	10BT-41	Biostatistics and Biomodeling	BT	04	100	25	125
2	10BT-42	Biochemical Thermodynamics	BT/ChE/ME	04	100	25	125
3	10BT-43	Structural Biology	BT	04	100	25	125
4	10BT-44	Molecular Biology	BT	04	100	25	125
5	10BT-45	Basics of Computer Applications	BT/CSE/ISE/MCA	04	100	25	125
6	10BT-46	Bioprocess Principles & Calculations	BT/ChE	04	100	25	125
7	10BTL-47	Cell & Molecular Biology Lab	BT	03	50	25	75
8	10BTL-48	Microbiology Lab	BT	03	50	25	75
		Ttoal		30	700	200	900

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

Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory/ lab (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory / Practical	I A	Total Marks
1	10AL-51	Management and Entrepreneurship	MBA/Any Dept.	04	100	25	125
2	10BT-52	Biokinetics & Bioreaction Engg.	BT/ChE	04	100	25	125
3	10BT-53	Biosensors & Bioinstrumentation	BT/TT/ ML/BM	04	100	25	125
4	10BT-54	Immunotechnology	BT	04	100	25	125
5	10BT-55	Genetic Engg. & Applications	BT	04	100	25	125
6	10BT-56	Bioinformatics	BT	04	100	25	125
7	10BTL-57	Genetic Engineering and Immunotechnology Lab	BT	03	50	25	75
8	10BTL-58	Bioinformatics Lab	BT	03	50	25	75
Ttoal				30	700	200	900


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

Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory/ lab (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory / Practical	I A	Total Marks
1	10BT-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	25	125
6	10BT-66	Elective – A	BT/ChE/ME/CSE	04	100	25	125
7	10BTL-67	Bioprocess Control & Automation Lab	BT/ChE	03	50	25	75
8	10BTL-68	Biokinetics & Enzyme Technology Lab	BT	03	50	25	75
Ttotal				30	700	200	900

Elective A :

10BT-661	Animal BT
10BT-662	Plant BT
10BT-663	Microbial BT
10BT-664	Perl Programming
10BT-665	Transport Phenomena

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

Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory/ lab (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory / Practical	I A	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 :

10BT-751	Aqua Culture & Marine BT
10BT-752	Dairy BT
10BT-753	Forensic Science
10BT-754	Data structures with C
10BT-755	Bioreactor Design Concepts

Elective C :

10BT-761	Biochips & Micro array Technology
10BT-762	Biomaterials
10BT-763	Health Diagnostics
10BT-764	Fundamentals of OS & DBMS
10BT-765	CAD & MATLAB

**SCHEME OF TEACHING & EXAMINATION
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Sl. No.	Subject Code	Title	Teaching Dept.	Teaching (Theory/ lab (Hrs/Week)	Examination Scheme (Max. Marks)		
					Theory / Practical	I A	Total Marks
1	10BT-81	Project Management & IPR	BT/MBA/ME/TEM	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 :

10BT-831	Nano Bio-Technology
10BT-832	Lab to Industrial Scaling
10BT-833	Protein Engg. & Insilico Drug Design
10BT-834	Biomedical Instrumentation
10BT-835	Biomolecular Engineering

Elective E :

10BT-841	Environmental BT
10BT-842	Metabolic Engineering
10BT-843	Medical Informatics
10BT-844	Tissue Engineering
10BT-845	Facilitation, Validation & QC

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

III SEMESTER

Sl. No	Sub-Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				Theory	Pract.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
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)**

IV SEMESTER

Sl. No	Sub-Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				Theory	Pract.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
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 Laboratory	CSE/ISE	-	03	03	25	50	75
8	10CSL48	Microprocessors 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**

V SEMESTER

Sl. No	Sub-Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				Theory	Pract.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
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 Systems 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**

VI SEMESTER

Sl. No	Sub-Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				Theory	Pract.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
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	10CS63/ 10IS662	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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Elective -1 (Group A)

10CS661/10IS661
10CS662
10CS663/10IS663
10CS664/10IS664
10CS665
10CS666/10IS666

Operations Research
Signals and Systems
Data Compression
Pattern Recognition
Stochastic Models and Applications
Programming Languages


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B.E. COMPUTER SCIENCE AND ENGINEERING

VII SEMESTER

Sl. No	Sub-Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				Theory	Pract.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
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

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Elective -II (Group B)

10CS751/10IS751	Advanced Database Management systems
10CS752	Digital Signal Processing
10CS753/10IS753	Java and J2EE
10CS754/10IS754	Multimedia Computing
10CS755/10IS74	Data Warehousing and Data Mining
10CS756/10IS756	Neural Networks

Elective -III (Group C)

10CS761/10IS761	C# Programming and .Net
10CS762/10IS762	Digital Image Processing
10CS763/10IS763	Game Theory
10CS764/10IS764	Artificial Intelligence
10CS765/10IS765	Storage Area Networks
10CS766/10IS766	Fuzzy Logic


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

VIII SEMESTER

Sl. No	Sub-Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				Theory	Pract.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
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

Elective IV – Group D

10CS831/10IS831	Wireless Networks and Mobile Computing
10CS832/10IS832	Web 2.0 and Rich Internet Applications
10CS833	VLSI Design and Algorithms
10CS834/10IS834	Network Management Systems
10CS835/10IS835	Information and Network Security
10CS836/10IS836	Microcontroller-Based Systems

Elective V– Group E

10CS841/10IS841	Ad-hoc Networks
10CS842	Software Testing
10CS843	ARM Based System Design
10CS844/10IS844	Services Oriented Architecture
10CS845/10IS845	Clouds, Grids and Clusters
10CS846	Multi-core Architecture and Programming

NOTE: Students have to register for one Elective from each of the five Elective Group.

**SCHEME OF TEACHING & EXAMINATION
BE CIVIL ENGINEERING
III SEMESTER**

Sl. No	Subject Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				Th.	Pr.	Duration	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	50	75
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

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**SCHEME OF TEACHING & EXAMINATION
BE CIVIL ENGINEERING
IV SEMESTER**

S. No	Subject Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				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	50	75
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 ENGINEERING
V SEMESTER

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination Marks		
				Theory	Practical		LA	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	-	03	03	25	50	75
7	10 CVL 57	Hydraulics and Hydraulic Machinery Lab	Civil	-	03	03	25	50	75
8	10 CVL 58	Computer Aided Design Lab	Civil	24	06	24	200	700	900
TOTAL									

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**SCHEME OF TEACHING AND EXAMINATION
B.E. CIVIL ENGINEERING
VII SEMESTER**

B.E. CIVIL ENGINEERING VII SEMESTER									
Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination		
				Theory	Practical		IA	Theory / Practical	Total
1	10 CV 71	Environmental Engineering.-II	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	--	03	03	25	50	75
7	10 CVL 77	Environmental Engineering Lab	Civil	--	03	03	25	50	75
8	10 CVL 78	Concrete and Highway Materials lab.	Civil	--	03	03	25	50	75
TOTAL				24	06	24	200	700	900
Elective-III (Group C)									

Elective-II (Group B)

- 10 CV 751 Matrix Method of Structural Analysis
- 10 CV 752 Advanced Design of RC Structures
- 10 CV 753 Design of Masonry Structures
- 10 CV 754 Earth and Earth Retaining Structures
- 10 CV 755 Highway Geometric Design ✓
- 10 CV 756 Open Channel Hydraulics
- 10 CV 757 Solid Waste Management ✓

Elective-III (Group C)

- 10 CV 761 Numerical methods in Civil Engineering
- 10 CV 762 Rock Mechanics
- 10 CV 763 Pavement Materials and Construction ✓
- 10 CV 764 Photogrammetry and Remote Sensing
- 10 CV 765 Air Pollution and Control ✓
- 10 CV 766 Design and Drawing of Bridges: * (2 Hrs of Theory + 3 Hrs of Drawing) * (Exam Duration : 4 Hrs)
- 10 CV 767 Structural Dynamics


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**SCHEME OF TEACHING AND EXAMINATION
B.E. CIVIL ENGINEERING
VIII SEMESTER**

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination Marks		
				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
TOTAL				14	12	19	250	500	750

Elective-IV (Group D)

- 10 CV 831 Advanced Pre-stressed Concrete Structures
- 10 CV 832 Advanced Foundation Design
- 10 CV 833 Pavement Design
- 10 CV 834 Earthquake Resistant Design of Structures
- 10 CV 835 Industrial Waste Water Treatment
- 10 CV 836 Construction Management & Engineering 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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SCHEME OF TEACHING AND EXAMINATION
B.E. ELECTRONICS & COMMUNICATION ENGINEERING
(Common to EC/TC/ML)

III SEMESTER

Sl. No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination			
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks
1	10MAT31	Engg. Mathematics - III	Mat	04		03	25	100	125
2	10ES32	Analog Electronic Ckts	@	04		03	25	100	125
3	10ES33	Logic Design	@	04		03	25	100	125
4	10ES34	Network Analysis	@	04		03	25	100	125
5	10IT35	Electronic Instrumentation	@	04		03	25	100	125
6	10ES36	Field Theory	@	04		03	25	100	125
7	10ESL37	Analog Electronics Lab	@		03	03	25	50	75
8	10ESL38	Logic Design Lab	@		03	03	25	50	75
TOTAL				24	06	24	200	700	900

Note : @ indicates concerned discipline. **ES (for theory) & ECL (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.


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SCHEME OF TEACHING AND EXAMINATION
B.E. ELECTRONICS & COMMUNICATION ENGINEERING
(Common to EC/TC/ML)

IV SEMESTER

Sl. No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination			
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks
1	10MAT 41	Engg. Mathematics – IV	Mat	04		03	25	100	125
2	10ES 42	Microcontrollers	@	04		03	25	100	125
3	10ES43	Control Systems	@	04		03	25	100	125
4	10EC 44	Signals & Systems	@	04		03	25	100	125
5	10EC45	Fundamentals of HDL	@	04		03	25	100	125
6	10EC46	Linear ICs & Applications	@	04		03	25	100	125
7	10ESL47	Microcontrollers Lab	@		03	03	25	50	75
8	10ECL48	HDL Lab	@		03	03	25	50	75
TOTAL				24	06	24	200	700	900

Note : @ indicates concerned discipline. **ES (for theory) & ECL (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.


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SCHEME OF TEACHING AND EXAMINATION
B.E. ELECTRONICS & COMMUNICATION ENGINEERING
(Common to EC/TC)

V SEMESTER

SL No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination			
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks
1	10AL51	Management and Entrepreneurship	@	4	-	3	25	100	125
2	10EC52	Digital Signal Processing	EC	4	-	3	25	100	125
3	10EC53	Analog Communication	EC	4	-	3	25	100	125
4	10EC54	Microwaves and Radar	EC	4	-	3	25	100	125
5	10EC55	Information Theory & Coding	EC	4	-	3	25	100	125
6	10EC56	Fundamentals of CMOS VLSI	EC	4	-	3	25	100	125
7	10ECL57	DSP Lab	EC	-	3	3	25	50	75
8	10ECL58	Analog Communication Lab + LIC Lab	EC	-	3	3	25	50	75
TOTAL				24	06	24	200	700	900

@- Any Engineering department or department of Business study.


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SCHEME OF TEACHING AND EXAMINATION
B.E. ELECTRONICS & COMMUNICATION ENGINEERING

VI SEMESTER

Sl. No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination			
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks
1	10EC61	Digital Communication	EC	4	-	3	25	100	125
2	10EC62	Microprocessors	EC	4	-	3	25	100	125
3	10EC63	Microelectronics Circuits	EC	4	-	3	25	100	125
4	10EC64	Antennas and Propagation	EC	4	-	3	25	100	125
5	10EC65	Operating Systems	EC	4	-	3	25	100	125
6	10EC66x	Elective-I (Group A)	EC	4	-	3	25	100	125
7	10ECL67	Advanced Communication Lab	EC	-	3	3	25	50	75
8	10ECL68	Microprocessor Lab	EC	-	3	3	25	50	75
TOTAL				24	06	24	200	700	900

Elective – I (Group A)			
10EC661	Analog and Mixed Mode VLSI Design	10EC664	Low Power VLSI Design
10EC662	Satellite Communications	10EC665	Data Structure Using C++
10EC663	Random Process	10EC666	Digital System Design Using Verilog
		10EC667	Virtual Instrumentation


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SCHEME OF TEACHING AND EXAMINATION
B.E. ELECTRONICS & COMMUNICATION ENGINEERING

VII SEMESTER

Sl. No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination			
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks
1	10EC71	Computer Communication Networks	EC	4	-	3	25	100	125
2	10EC72	Optical Fiber Communication	EC	4	-	3	25	100	125
3	10EC73	Power Electronics	EC	4	-	3	25	100	125
4	10EC74	Embedded System Design	EC	4	-	3	25	100	125
5	10EC75x	Elective-II (Group B)	EC	4	-	3	25	100	125
6	10EC76x	Elective-III (Group C)	EC	4	-	3	25	100	125
7	10ECL77	VLSI Lab	EC	-	3	3	25	50	75
8	10ECL78	Power Electronics Lab	EC	-	3	3	25	50	75
TOTAL				24	06	24	200	700	900

Elective – II (Group B)		Elective – III (Group C)	
10EC751	DSP Algorithms & Architecture	10EC761	Programming in C++
10EC752	Micro and Smart Systems Technology	10EC762	Real Time Systems
10EC753	Artificial Neural Network	10EC763	Image Processing
10EC754	CAD for VLSI	10EC764	Radio Frequency Integrated Circuits
10EC755	Applied Embedded System Design*	10EC765	Wavelet Transforms
10EC756	Speech Processing	10EC766	Modeling and Simulation of Data Networks

NOTE: * 06EC755 Applied Embedded System Design has a LAB component (syllabus is different and in the Theory Examination, questions from Lab experiments will also be there.)



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SCHEME OF TEACHING AND EXAMINATION
B.E. ELECTRONICS & COMMUNICATION ENGINEERING

VIII SEMESTER

Sl. No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination			
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks
1	10EC81	Wireless Communication	EC	4	-	3	25	100	125
2	10EC82	Digital Switching Systems	EC	4	-	3	25	100	125
3	10EC83x	Elective-IV (Group D)	EC	4	-	3	25	100	125
4	10EC84x	Elective-V (Group E)	EC	4	-	3	25	100	125
5	10ECP85	Project Work	EC	-	6	3	100	100	200
6	10ECS86	Seminar	EC	-	3	-	50	-	50
TOTAL				16	09	15	250	500	750

Elective – IV (Group D)		Elective – V (Group E)	
10EC831	Distributed Systems	10EE841	Multimedia Communication
10EC832	Network Security	10EC842	Real Time Operating Systems
10EC833	Optical Networks	10EC843	GSM
10EC834	High Performance Computing Networks	10EC844	Ad-hoc Wireless Networks
10EC835	Internet Engineering	10EC845	Optical Computing


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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)

III SEMESTER

Sl. No	Subject Code	Subject (Course)	Title	Teaching Dept.	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15MAT31	Core Subject	Engineering Mathematics-III	Mathe matics	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 -I	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
8	15EEL38	Laboratory	Electronics Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
TOTAL					Theory:24 hours Practical: 06 hours		24	160	640	800	28

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

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


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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
SCHEME OF TEACHING AND EXAMINATION

I SEMESTER B.E./B.TECH.

Sl. No.	Subject Code	Subject	Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	PHYSICS GROUP Examination Marks		
						Th./Pr.	I.A.	Total
1	10MAT11	Engineering Maths-I	Maths	Basic Sc.	4 (T)	100	25	125
2	10PHY12	Engineering Physics	Physics	Basic Sc.	4 (T)	100	25	125
3	10CIV13	Elements of Civil Engg. & Engineering Mechanics	Civil Engg.	Civil Engg.	4 (T)	100	25	125
4	10EME14	Elements of Mechanical Engg.	Mech. Engg.	Mech. Engg.	4 (T)	100	25	125
5	10ELE15	Basic Electrical Engg.	E & E	E & E	4 (T)	100	25	125
6	10WSL16	Workshop Practice	Mech., Auto, IP, IEM, Mfg. Engg.	Mech. Engg.	3 (L)	50	25	75
7	10PHYL17	Engg. Physics Lab	Physics	Basic Sc.	3 (L)	50	25	75
8	10CIP18	*Constitution of India & Professional Ethics	Any Department		2 (T)	50	25	75
9		Language (Kan.)	Humanities		2 (T)	---	---	---
Total					30	**600	**175	775

I SEMESTER B.E./B.TECH.

CHEMISTRY GROUP

Sl. No.	Subject Code	Subject	Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks		
						Th./Pr.	I.A.	Total
1	10MAT11	Engineering Maths-I	Maths	Basic Sc.	4 (T)	100	25	125
2	10CHE12	Engineering Chemistry	Chemistry	Basic Sc.	4 (T)	100	25	125
3	10CCP13	Computer Concepts & C Programming	Any Engineering Department	CSE	4 (T)	100	25	125
4	10CED14	Computer Aided Engineering Drawing	Mech./IP/Auto/ Mfg.Engg./ IEM	Mech. Engg.	6 (2T + 4L)	100	25	125
5	10ELN15	Basic Electronics	E & C / E & E / TC / IT	E & C	4 (T)	100	25	125
6	10CPL16	Computer Programming Lab	Any Engineering Department	CSE	3 (L)	50	25	75
7	10CHEL17	Engg. Chemistry Lab	Chemistry	Basic Sc.	3 (L)	50	25	75
8	10CIV18	*Environmental Studies	Civil / Environmental	Civil	2 (T)	50	25	75
9		Language (Eng.)	Humanities		2 (T)	---	---	---
Total					32	**600	**175	775

(SCHEME OF TEACHING & EXAMINATION)
III SEMESTER ELECTRICAL AND ELECTRONICS ENGINEERING

Subject Code	Title	Teaching Dept.	Teaching hours/week		Examination			
			Theory	Practical	Duration in hours	Marks		
						I. A	Theory/ Practical	Total Marks
10MAT31	Engineering Mathematics - III	Mat	04	-	03	25	100	125
10ES32	Analog Electronic Circuits	@	04	-	03	25	100	125
10ES33	Logic Design	@	04	-	03	25	100	125
10ES34	Network Analysis	@	04	-	03	25	100	125
10EE35	Electrical and Electronic Measurements And Instrumentation	E&EE	04	-	03	25	100	125
10EE36	Electric Power Generation	E&EE	04	-	03	25	100	125
10ESL37	Analog Electronics Lab	@	-	03	03	25	50	75
10ESL38	Logic Design Lab	@	-	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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**(SCHEME OF TEACHING & EXAMINATION)
IV SEMESTER
ELECTRICAL AND ELECTRONICS ENGINEERING**

Subject Code	Title	Teaching Dept.	Teaching hours/week		Examination			
			Theory	Practical	Duration in hours	Marks		
						I. A	Theory/ Practical	Total Marks
10MAT 41	Engineering Mathematics - IV	Mat	04	-	03	25	100	125
10ES42	Microcontrollers	@	04	-	03	25	100	125
10ES43	Control Systems	@	04	-	03	25	100	125
10EE44	Field Theory	E&EE	04	-	03	25	100	125
10EE45	Power Electronics	E&EE	04	-	03	25	100	125
10EE46	Transformers and Induction Machines	E&EE	04	-	03	25	100	125
10ESL47	Microcontrollers Lab	@	-	03	03	25	50	75
10EEL48	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.

**(SCHEME OF TEACHING & EXAMINATION)
V SEMESTER
ELECTRICAL AND ELECTRONICS ENGINEERING**

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

@- Any Engineering department or department of Business study.

**(SCHEME OF TEACHING & EXAMINATION)
VI SEMESTER
ELECTRICAL AND ELECTRONICS ENGINEERING**

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Examination			
				Theory	Practical	Duration (Hrs)	Marks		
							IA	Theory / Practical	Total
1	10EE61	Power System Analysis and Stability	E&EE	4	-	3	25	100	125
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	CAED (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 - Operation Research

10EE662 - Advanced Power Electronics

10EE663 - Fuzzy Logic

10EE664 - Object Oriented Programming using C++

10EE665 - Embedded Systems

10EE666 - Electrical Engineering Materials.

(SCHEME OF TEACHING & EXAMINATION)
VII SEMESTER ELECTRICAL AND ELECTRONICS ENGINEERING

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Examination			
				Theory	Practical	Duration (Hrs)	Marks		
							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	10EEL78	Power System Simulation Laboratory	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

(SCHEME OF TEACHING & EXAMINATION)
VIII SEMESTER ELECTRICAL AND ELECTRONICS ENGINEERING

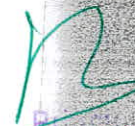
Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Examination			
				Theory	Practical	Duration (Hrs)	Marks		
							1A	Theory / Practical	Total
1	10EE81	Electrical Design, Estimating and Costing	E&EE	4	-	3	25	100	125
2	10EE82	Power System Operation and Control	E&EE	4	-	3	25	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	25	100	125
6	10EES86	Seminar (on a latest topic relevant to the branch and independent of the project work)	E&EE	-	3	-	100	100	200
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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I SEMESTER B.E./B.TECH.**CHEMISTRY GROUP**

Sl. No.	Subject Code	Subject	Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks		
						Th./Pr.	I.A.	Total
1	10MAT11	Engineering Maths-I	Maths	Basic Sc.	4 (T)	100	25	125
2	10CHE12	Engineering Chemistry	Chemistry	Basic Sc.	4 (T)	100	25	125
3	10CCP13	Computer Concepts & C Programming	Any Engineering Department	CSE	4 (T)	100	25	125
4	10CED14	Computer Aided Engineering Drawing	Mech./IP/Auto/ Mfg.Engg./ IEM	Mech. Engg.	6 (2T + 4L)	100	25	125
5	10ELN15	Basic Electronics	E & C / E & E / TC / IT	E & C	4 (T)	100	25	125
6	10CPL16	Computer Programming Lab	Any Engineering Department	CSE	3 (L)	50	25	75
7	10CHEL17	Engg. Chemistry Lab	Chemistry	Basic Sc.	3 (L)	50	25	75
8	10CIV18	*Environmental Studies	Civil / Environmental	Civil	2 (T)	50	25	75
9		Language (Eng.)	Humanities		2 (T)	---	---	---
Total					32	**600	**175	775

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II SEMESTER B.E./B.TECH.

PHYSICS GROUP

Sl. No.	Subject Code	Subject	Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks		
						Th./Pr.	I.A.	Total
1	10MAT21	Engineering Maths-II	Maths	Basic Sc.	4 (T)	100	25	125
2	10PHY22	Engineering Physics	Physics	Basic Sc.	4 (T)	100	25	125
3	10CIV23	Elements of Civil Engg. & Engineering Mechanics	Civil Engg.	Civil Engg.	4 (T)	100	25	125
4	10EME24	Elements of Mechanical Engg.	Mech. Engg.	Mech. Engg.	4 (T)	100	25	125
5	10ELE25	Basic Electrical Engg.	E & E	E & E	4 (T)	100	25	125
6	10WSL26	Workshop Practice	Mech./IP/Auto/ Mfg.Engg./ IEM	Mech. Engg.	3 (L)	50	25	75
7	10PHYL27	Engg. Physics Lab	Physics	Basic Sc.	3 (L)	50	25	75
8	10CIP28	*Constitution of India & Professional Ethics	Any Department	Civil	2 (T)	50	25	75
9		Language (Kan.)	Humanities		2 (T)	---	---	---
Total					30	**600	**175	775

**SCHEME OF TEACHING AND EXAMINATION
B.E. MECHANICAL ENGINEERING**

III SEMESTER

Sl. No	Sub-Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				Theory	Pract. /Drg.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
1	10MAT31	Engineering Mathematics - III	Mathematics	04	-	03	25	100	125
2	10ME32A/ 10ME32B	Material Sc. & Metallurgy / Mechanical Measurements & Metrology	Mechanical	04	--	03	25	100	125
3	10ME33	Basic Thermodynamics	Mechanical	04	--	03	25	100	125
4	10ME34	Mechanics of Materials	Mechanical	04	--	03	25	100	125
5	10ME35	Manufacturing Process I (Fundamentals of Foundry and Welding)	Mechanical	04	--	03	25	100	125
6	10ME36A/ 10ME36B	Computer Aided Machine Drawing / Fluid Mechanics	Mechanical	01 04	03 --	03	25	100	125
7	10MEL37A/ 10MEL37B	Metallography & Material Testing Lab / Mech. Measurements & Metrology Lab	Mechanical	--	03	03	25	50	75
8	10MEL38A/ 10MEL38B	Foundry & Forging lab / Machine Shop	Mechanical	--	03	03	25	50	75
TOTAL				21/24	09	03	200	700	900

**SCHEME OF TEACHING AND EXAMINATION
B.E. MECHANICAL ENGINEERING**

IV SEMESTER

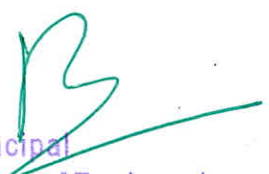
Sl. No	Sub-Code	Title	Teaching Dept.	Teaching hours /week		Examination			
				Theory	Pract/ Drg.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
1	10MAT41	Engineering Mathematics - IV	Mathematics	04	-	03	25	100	125
2	10ME42A/ 10ME42B	Material Sc. & Metallurgy / Mechanical Measurements & Metrology	Mechanical	04	--	03	25	100	125
3	10ME43	Applied Thermodynamics	Mechanical	04	--	03	25	100	125
4	10ME44	Kinematics of Machines	Mechanical	04	--	03	25	100	125
5	10ME45	Manufacturing Process II	Mechanical	04	--	03	25	100	125
6	10ME46A/1 0ME46B	Computer Aided Machine Drawing / Fluid Mechanics	Mechanical	01 04	03 --	03	25	100	125
7	10MEL47A/ 10MEL47B	Metallography & Material Testing Lab / Mech. Measurements & Metrology Lab	Mechanical	--	03	03	25	50	75
8	10MEL48A/ 10MEL48B	Foundry & Forging lab / Machine Shop	Mechanical	--	03	03	25	50	75
TOTAL				21/24	09	24	200	700	900


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**SCHEME OF TEACHING AND EXAMINATION
B.E. MECHANICAL ENGINEERING**

V SEMESTER

Sl. No	Sub-Code	Title	Teaching hours /week		Examination			
			Theory	Pract. / Drg.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
1	10AL51	Management and Entrepreneurship	04	--	03	25	100	125
2	10ME52	Design of Machine Elements I	04	--	03	25	100	125
3	10ME53	Energy Engineering	04	--	03	25	100	125
4	10ME54	Dynamics of Machines	04	--	03	25	100	125
5	10ME55	Manufacturing Process III	04	--	03	25	100	125
6	10ME56	Turbo Machines	04	--	03	25	100	125
7	10MEL57	Fluid Mechanics & Machines Lab	--	03	03	25	50	75
8	10MEL58	Energy Conversion Engg. Lab	--	03	03	25	50	75
TOTAL			24	06	24	200	700	900


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**SCHEME OF TEACHING AND EXAMINATION
B.E. MECHANICAL ENGINEERING**

VI SEMESTER

Sl. No	Sub-Code	Title	Teaching hours /week		Examination			
			Theory	Pract. / Drg.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
1	10ME61	Computer Integrated Manufacturing	04	--	03	25	100	125
2	10ME62	Design of Machine Elements II	04	--	03	25	100	125
3	10ME63	Heat & Mass Transfer	04	--	03	25	100	125
4	10ME64	Finite Element Methods	04	--	03	25	100	125
5	10ME65	Mechatronics & Microprocessor	04	--	03	25	100	125
6	10ME66X	Elective 'A'	04	--	03	25	100	125
7	10MEL67	Heat & Mass Transfer Lab	--	03	03	25	50	75
8	10MEL68	CAMA Lab	--	03	03	25	50	75
TOTAL			24	06	24	200	700	900

Elective – 1 (Group A)			
10ME661	Theory of Elasticity	10ME662	Mechanics of Composite Materials
10ME663	Refrigeration & Air Conditioning	10ME664	Design of Heat Exchangers
10ME665	Non-Traditional Machining	10ME666	Knowledge Management
10ME667	Project Management	10ME668	Statistical Quality Control

**SCHEME OF TEACHING AND EXAMINATION
B.E. MECHANICAL ENGINEERING**

VII SEMESTER

Sl. No	Sub-Code	Title	Teaching hours /week		Examination			
			Theory	Pract/Drg.	Duration	I.A. Marks	Theory/Pract.	Total Marks
1	10ME71	Economics	04	--	03	25	100	125
2	10ME72	Mechanical Vibrations	04	--	03	25	100	125
3	10ME73	Hydraulics and Pneumatics	04	--	03	25	100	125
4	10ME74	Operations Research	04	--	03	25	100	125
5	10ME75X	Elective B	04	--	03	25	100	125
6	10ME76X	Elective C	04	--	03	25	100	125
7	10MEL77	Design Lab	--	03	03	25	50	75
8	10MEL78	CIM and Automation Lab	--	03	03	25	50	75
TOTAL			24	06	24	200	700	900


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Elective – 2 (Group B)		Elective – 3 (Group C)	
10ME751	Mechanism Design	10ME761	Experimental Stress Analysis
10ME752	Theory of Plasticity	10ME762	Tool Design
10ME753	Engineering Design	10ME763	Cryogenics
10ME754	Non Conventional Energy Sources	10ME764	Smart Materials
10ME755	Gas Dynamics	10ME765	Agile Manufacturing
10ME756	Management Information System	10ME766	Robotics
10ME757	Automation in Manufacturing	10ME767	Finance Management
10ME758	Total Quality Management	10ME768	Micro & Smart System Technology
		10ME769	Product Life Cycle Management

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**SCHEME OF TEACHING AND EXAMINATION
B.E. MECHANICAL ENGINEERING**

VIII SEMESTER

Sl. No	Sub-Code	Title	Teaching hours /week		Examination			
			Theory	Pract/ Drg.	Duration	I.A. Marks	Theory/ Pract.	Total Marks
1	10ME81	Operations Management	04	--	03	25	100	125
2	10ME82	Control Engineering	04	--	03	25	100	125
3	10ME83X	Elective D	04	--	03	25	100	125
4	10ME84X	Elective E	04	--	03	25	100	125
5	10ME85L	Project Work	--	06	03	100	100	200
6	10ME86L	Seminar	--	03	--	50	--	50
TOTAL				09	15	250	500	750


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Elective – 4 (Group D)		Elective – 5 (Group E)	
10ME831	Tribology	10ME841	Machine Tool Design
10ME832	Fracture Mechanics	10ME842	Industrial Engineering & Ergonomics
10ME833	Power Plant Engineering	10ME843	Bio Mass Energy Systems
10ME834	Nanotechnology	10ME844	Automotive Engineering
10ME835	Organisational Behaviour and Professional Communication	10ME845	Database Management System
10ME836	Computer Graphics	10ME846	Artificial Intelligence
10ME837	Rapid Prototyping	10ME847	Design of Experiments
10ME838	Foundry Technology	10ME848	Design for Manufacture & Assembly

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
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SCHEME OF TEACHING AND EXAMINATION 2015-2016

I SEMESTER B.E./B.TECH.

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1	15MAT11	Engineering Maths-I	BS	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15PHY12	Engineering Physics	BS	Physics	Basic Sc.	4 (T)	80	20	100	4
3	15CIV13	Elements of Civil Engg. & Mechanics	ES	Civil Engg.	Civil Engg.	4 (T)	80	20	100	4
4	15EME14	Elements of Mechanical Engg.	ES	Mech. Engg.	Mech. Engg.	4 (T)	80	20	100	4
5	15ELE15	Basic Electrical Engg.	ES	E & E	E & E	4 (T)	80	20	100	4
6	15WSL16	Workshop Practice	ES	Mech., Auto, IP, IEM, Mfg. Engg.	Mech. Engg.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
7	15PHYL17	Engg. Physics Lab	BS	Physics	Basic Sc.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
8	15CPH18	Constitution of India, Professional Ethics and Human Rights (CPH)	MNC	Humanities		2 (Tutorial)	40	10	50	--
9		Language (Kan.)	Mandatory Learning	Humanities		1 (T)	-	-	-	--
						29	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses


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SCHEME OF TEACHING AND EXAMINATION 2015-2016

II SEMESTER B.E./B.TECH.

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	PHYSICS GROUP Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1.	15MAT21	Engineering Maths-II	BS.	Maths	Basic Sc.	4 (T)	80	20	100	4.
2	15PHY22	Engineering Physics	BS	Physics	Basic Sc.	4 (T)	80	20	100	4
3	15CIV23	Elements of Civil Engg. & Mechanics	ES	Civil Engg.	Civil Engg.	4 (T)	80	20	100	4
4	15EME24	Elements of Mechanical Engg.	ES	Mech. Engg.	Mech. Engg.	4 (T)	80	20	100	4
5	15ELE25	Basic Electrical Engg.	ES	E & E	E & E	4 (T)	80	20	100	4
6	15WSL26	Workshop Practice	ES	Mech., Auto, IP, IEM, Mfg. Engg.	Mech. Engg.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
7	15PHYL27	Engg. Physics Lab	BS	Physics	Basic Sc.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
8	15CPH28	Constitution of India, Professional Ethics and Human Rights	MNC	Humanities		2 (Tutorial)	40	10	50	--
9		Language (Kan.)	Mandatory Learning	Humanities		1 (T)	--	-	-	--
						29	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses


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CHOICE BASED CREDIT SYSTEM (CBCS)

SCHEME OF TEACHING AND EXAMINATION 2015-2016

I SEMESTER B.E./B.TECH.**CHEMISTRY GROUP**

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1	15MAT11	Engineering Maths-I	BS	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15CHE12	Engineering Chemistry	BS	Chemistry	Basic Sc.	4 (T)	80	20	100	4
3	15PCD13	Programming in C & Data Structures	ES	Any Engineering Department	CSE	4 (T)	80	20	100	4
4	15CED14	Computer Aided Engineering Drawing	ES	Mech./IP/Auto/ Mfg.Engg./ IEM	Mech. Engg.	6 (2I+ 4P)	80	20	100	4
5	15ELN15	Basic Electronics	ES	E & C / E & E / TC / IT	E & C	4 (T)	80	20	100	4
6	15CPL16	Computer Programming Lab	ES	Any Engineering Department	CSE	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
7	15CHEL17	Engg. Chemistry Lab	BS	Chemistry	Basic Sci.	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
8	15CIV18	Environmental Studies	MNC	Civil / Environmental	Civil	2 (Tutorial)	40	10	50	--
9		Language (Eng.)	Mandatory Learning	Humanities		1 (T)	-	-	-	--
Total						31	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses

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II SEMESTER B.E./B.TECH.

CHEMISTRY GROUP

Sl. No.	Subject Code	Subject		Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
							Th./Pr.	I.A.	Total	
1	15MAT21	Engineering Maths-II	BS	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15CHE22	Engineering Chemistry	BS	Chemistry	Basic Sc.	4 (T)	80	20	100	4
3	15PCD23	Programming in C & Data Structures	ES	Any Engineering Department	CSE	4 (T)	80	20	100	4
4	15CED24	Computer Aided Engineering Drawing	ES	Mech./IP/Auto/ Mfg.Engg./ IEM	Mech. Engg.	6 (2I+ 4P)	80	20	100	4
5	15ELN25	Basic Electronics	ES	E & C / E & E / TC / IT	E & C	4 (T)	80	20	100	4
6	15CPL26	Computer Programming Lab	ES	Any Engineering Department	CSE	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
7	15CHEL27	Engg. Chemistry Lab	BS	Chemistry	Basic Sc.	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
8	15CIV28	Environmental Studies	MNC	Civil / Environmental	Civil	2 (Tutorial)	40	10	50	--
9		Language (Eng.)	Mandatory Learning	Humanities		1 (T)	-	-	-	--
Total						31	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses


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SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E.-BIOTECHNOLOGY

III SEMESTER

Sl No.	Subject Code	Title	Teaching Dept.	Teaching Hours/Week		Examination				Credits
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
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

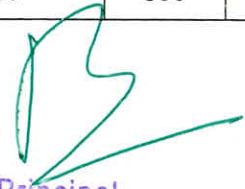

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B.E.-BIOTECHNOLOGY

IV SEMESTER

Sl No.	Subject Code	Title	Teaching Dept.	Teaching Hours/Week		Examination				Credits
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
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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SCHEME OF TEACHING AND EXAMINATION 2015-16
B.E. Biotechnology

V Semester

Sl No.	Subject Code	Title	Teaching Hours/Week			Examination				Credits
			Lecture	Tutorial	Practical /Drawing	Duration	I.A. Marks	Theory /Practical Marks	Total Marks	
1	15BT51	Bio-Kinetics and Bio-reaction Engineering	4	0	0	3	20	80	100	4
2	15BT52	Genetic Engineering and Applications	4	0	0	3	20	80	100	4
3	15BT53	Immunotechnology	4	0	0	3	20	80	100	4
4	15BT54	Bioinformatics	4	0	0	3	20	80	100	4
5	15BT55X	Professional Elective - 1	3	0	0	3	20	80	100	3
6	15BT56X	Open Elective - 1	3	0	0	3	20	80	100	3
7	15BTL57	Genetic Engg. And Immunotechnology Lab	0	0	3	3	20	80	100	2
8	15BTL58	Bioinformatics Lab	0	0	3	3	20	80	100	2
TOTAL			22	0	6	-	160	640	800	26

Professional Elective -1		Open Elective - 1	
15BT551	Microbial BT	15BT561	Biology for Engineers
15BT552	Transport Phenomena	15BT562	Biomaterials
15BT553	Animal BT	15BT563	BT for Sustainable Environment
15BT554	Bio-molecular Engineering		

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SCHEME OF TEACHING AND EXAMINATION 2015-16
B.E. Biotechnology

VI Semester

Sl No.	Subject Code	Title	Teaching Hours/Week			Examination				Credits
			Lecture	Tutorial	Practical /Drawing	Duration	I.A. Marks	Theory /Practical Marks	Total Marks	
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 Elective - 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		

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SCHEME OF TEACHING AND EXAMINATION 2015-16
B.E. Biotechnology

VII Semester

Sl No.	Subject Code	Title	Teaching Hours/Week			Examination				Credits
			Lecture	Tutorial	Practical /Drawing	Duration	I.A. Marks	Theory /Practical Marks	Total Marks	
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	Lab to Industrial Scaling	15BT753	Molecular Diagnostics
15BT744	Food BT	15BT754	Big Data Management

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SCHEME OF TEACHING AND EXAMINATION 2015-16
B.E. Biotechnology

VIII Semester

Sl No.	Subject Code	Title	Teaching Hours/Week			Examination				Credits
			Lecture	Tutorial	Practical /Drawing	Duration	I.A. Marks	Theory /Practical Marks	Total Marks	
1	15BT81	Clinical and Pharmaceutical Biotechnology	4	0	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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SCHEME OF TEACHING AND EXAMINATION 2015-2016

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

III SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			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

Note: 'I' Stands for Instruction Hours and 'P' for practical Hours


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SCHEME OF TEACHING AND EXAMINATION 2015-2016

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

IV SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical 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	--	11+2P	03	80	20	100	2
8	15CSL48	Microprocessors Laboratory	--	11+2P	03	80	20	100	2
TOTAL			24	06	24	640	160	800	28

Note: 'I' Stands for Instruction Hours and 'P' for practical Hours


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B.E. Computer Science & Engineering

V SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			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	--	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 Elective 1	
15CS551	Object Oriented Modeling and Design
15CS552	Introduction to Software Testing
15CS553	Advanced JAVA and J2EE
15CS554	Advanced Algorithms

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


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B.E. Computer Science & Engineering

VI SEMESTER

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

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

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


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SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering

VII SEMESTER

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

Professional Elective 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

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

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SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering
 VIII SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			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	Industry Oriented		3	50	50	100	2
5	15CSP85	Project work phase II	--	6	3	100	100	200	5
6	15CSS86	Seminar	--	4	--	100	--	100	2
TOTAL			11	10	15	310	390	700	20

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

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


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SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. CIVIL ENGINEERING

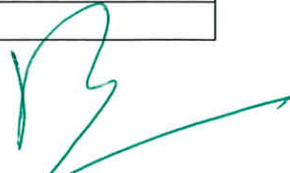
(Common to _____)

III SEMESTER

Sl. No	Subject Code	Title	Teaching Hours / Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	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:

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


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B.E. CIVIL ENGINEERING

(Common to _____)

IV SEMESTER

Sl. No	Subject Code	Title	Teaching Hours / Week		Examination				Credits
			Theory	Practical / Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	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 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

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
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SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. CIVIL ENGINEERING

V SEMESTER

Sl. No.	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. 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-I	03		03	80	20	100	3
6	15CV56X	Open Elective-I	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	Masonry 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


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B.E. CIVIL ENGINEERING

VI SEMESTER

Sl. No.	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. 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 Elective-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


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B.E. CIVIL ENGINEERING

VII SEMESTER

Sl. No.	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			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

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

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

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELGAUM
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SCHEME OF TEACHING AND EXAMINATION 2015-2016
B.E. CIVIL ENGINEERING

VIII SEMESTER

Sl. No.	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15CV81	Quantity Surveying and Contracts Management	4	-	3	20	80	100	4
2	15CV82	Design of Pre Stressed Concrete Elements	4	-	3	20	80	100	4
3	15CV83X	Professional Elective 5	3	-	3	20	80	100	3
4	15CV84	Internship/Professional Practice	Industry 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	
15CV831	Earthquake Engineering
15CV832	Hydraulic Structures
15CV833	Pavement Design
15CV834	Advanced Foundation Design


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SCHEME OF TEACHING AND EXAMINATION
B.E Electronics & Communication Engineering / Telecommunication Engineering
(Common to Electronics & Communication and Telecommunication Engineering)

III SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	Engineering Mathematics –III*	04		03	80	20	100	4
2	15EC32	Analog Electronics	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	Electronic Instrumentation	04		03	80	20	100	4
6	15EC36	Engineering Electromagnetics	04		03	80	20	100	4
7	15ECL37	Analog Electronics Lab		1I+2P	03	80	20	100	2
8	15ECL38	Digital Electronics Lab		1I+2P	03	80	20	100	2
TOTAL			24	6	24	640	160	800	28

*Additional course for Lateral entry students only:

1	15MATDIP31	Additional Mathematics - I	03		03	80	--	80	--
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SCHEME OF TEACHING AND EXAMINATION
B.E Electronics & Communication Engineering / Telecommunication Engineering
(Common to Electronics & Communication and Telecommunication Engineering)

IV SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical / Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT41	Engineering Mathematics –IV*	04		03	80	20	100	4
2	15EC42	Microprocessor	04		03	80	20	100	4
3	15EC43	Control Systems	04		03	80	20	100	4
4	15EC44	Signals and Systems	04		03	80	20	100	4
5	15EC45	Principles of Communication Systems	04		03	80	20	100	4
6	15EC46	Linear Integrated Circuits	04		03	80	20	100	4
7	15ECL47	Microprocessor Lab		11+2P	03	80	20	100	2
8	15ECL48	Linear ICs and Communication Lab		11+2P	03	80	20	100	2
TOTAL			24	06	24	640	160	800	28

*Additional course for Lateral entry students only:

1	15MATDIP41	Additional Mathematics - II	03		03	80	--	80	--
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SCHEME OF TEACHING AND EXAMINATION
B.E.: Electronics & Communication Engineering

V SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical /Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ES51	Management and Entrepreneurship Development	04		03	80	20	100	4
2	15EC52	Digital Signal Processing	04		03	80	20	100	4
3	15EC53	Verilog HDL	04		03	80	20	100	4
4	15EC54	Information Theory & Coding	04		03	80	20	100	4
5	15EC55X	Professional Elective-1	03		03	80	20	100	3
6	15EC56X	Open Elective-1	03		03	80	20	100	3
7	15ECL57	DSP Lab		1I+2P	03	80	20	100	2
8	15ECL58	HDL Lab		1I+2P	03	80	20	100	2
TOTAL			22	06	24	640	160	800	26

Professional Elective-1		Open Elective - 1* (List offered by EC/TC Board only)	
15EC551	Nanoelectronics	15EC561	Automotive Electronics
15EC552	Switching & Finite Automata Theory	15EC562	Object Oriented Programming Using C++
15EC553	Operating System	15EC563	8051 Microcontroller
15EC554	Electrical Engineering Materials		
15EC555	MSP430 Microcontroller		

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

2. * Open Elective List: For other Open Electives offered by other Boards, refer the Scheme of other Boards or Consolidated list in VTU Website.

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

VI SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				Credits
			Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15EC61	Digital Communication	04		03	80	20	100	4
2	15EC62	ARM Microcontroller & Embedded Systems	04		03	80	20	100	4
3	15EC63	VLSI Design	04		03	80	20	100	4
4	15EC64	Computer Communication Networks	04		03	80	20	100	4
5	15EC65X	Professional Elective-2	03		03	80	20	100	3
6	15EC66X	Open Elective-2	03		03	80	20	100	3
7	15ECL67	Embedded Controller Lab		1I+2P	03	80	20	100	2
8	15ECL68	Computer Networks Lab		1I+2P	03	80	20	100	2
TOTAL			22	6	24	640	160	800	26

Professional Elective-2		Open Elective – 2* (List offered by EC/TC Board only)	
15EC651	Cellular Mobile Communication	15EC661	Data Structures Using C++
15EC652	Adaptive Signal Processing	15EC662	Power Electronics
15EC653	Artificial Neural Networks	15EC663	Digital System Design using Verilog
15EC654	Digital Switching Systems		
15EC655	Microelectronics		

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

2. * Open Elective List: For other Open Electives offered by other Boards, refer the Scheme of other Boards or Consolidated list in VTU Website.


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

VII SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Examination				15EC
			Theory	Practical/Drawing	Duration	I.A. Marks	Theory/Practical Marks	Total Marks	
1	15EC71	Microwave and Antennas	04		03	20	80	100	4
2	15EC72	Digital Image Processing	04		03	20	80	100	4
3	15EC73	Power Electronics	04		03	20	80	100	4
4	15XX74X	Professional Elective-3	03		03	20	80	100	3
5	15EC75X	Professional Elective-4	03		03	20	80	100	3
6	15ECL76	Advanced Communication Lab		1I+2P	03	20	80	100	2
7	15ECL77	VLSI Lab		1I+2P	03	20	80	100	2
8	15ECP78	Project Work Phase-I + Project work Seminar		03		100	-	100	2
TOTAL			18	09	21	240	560	800	24

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

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


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

VIII SEMESTER

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

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

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


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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)

IV SEMESTER

Sl. No	Subject Code	Subject (Course)	Title	Teaching Dept.	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15MAT41	Core Subject	Engineering Mathematics-IV	Maths	04	--	03	20	80	100	4
2	15EE42	Core Subject	Power Generation and Economics	EEE	04	--	03	20	80	100	4
3	15EE43	Core Subject	Transmission and Distribution	EEE	04	--	03	20	80	100	4
4	15EE44	Core Subject	Electric Motors	EEE	04	--	03	20	80	100	4
5	15EE45	Core Subject	Electromagnetic Field Theory	EEE	04	--	03	20	80	100	4
6	15EE46	Foundation Course	Operational Amplifiers and Linear ICs	EEE	04	--	03	20	80	100	4
	15EEL47	Laboratory	Electrical Machines Laboratory -2	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
8	15EEL48	Laboratory	Op- amp and Linear ICs Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
TOTAL					Theory:24 hours Practical: 06 hours		24	160	640	800	28

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

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


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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)

V SEMESTER

Sl. No	Subject Code	Subject (Course)	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	Theory/ Practical Marks	I.A. Marks	Total Marks	
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	EEE	04	--	03	80	20	100	4
5	15EE55X	Professional Elective	Professional Elective – I	EEE	03	--	03	80	20	100	3
6	15EE56Y	Open Elective	Open Elective - I	EEE	03	--	03	80	20	100	3
8	15EEL57	Laboratory	Microcontroller Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	80	20	100	2
	15EEL58	Laboratory	Power Electronics Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	80	20	100	2
TOTAL					Theory:22hours Practical: 06 hours		24	160	640	800	26

Elective

Professional Elective

Open Elective ***

Offered by the Department of Electrical and Electronics Engineering

Courses under Code 15EE55X	Title	Courses under Code 15EE55X	Title
15EE551	Introduction to Nuclear Power	15EE561	Electronic Communication systems
15EE552	Electrical Engineering Materials	15EE562	Programmable Logic controllers
15EE553	Estimating and Costing	15EE563	Renewable Energy Systems
15EE554	Special Electrical Machines	15EE564	Business Communication

*** 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 provided;

- The candidate has pre – requisite knowledge.
- The candidate has not studied during I and II year 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.

Registration to electives shall be documented under the guidance of Programme Coordinator and Adviser.

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

2. Professional Elective: Electives relevant to chosen specialization/ branch.

3. Open Elective: Electives from other technical and/ or emerging subject areas.


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VI SEMESTER

Sl. No	Subject Code	Subject (Course)	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15EE61	Core Subject	Control Systems	EEE	04	--	03	80	20	100	4
2	15EE62	Core Subject	Power System Analysis – I	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	EEE	01-Hour Instruction 02-Hour Practical		03	80	20	100	2
8	15EEL68	Laboratory	Digital Signal Processing Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	80	20	100	2
TOTAL					Theory:22 hours Practical: 06 hours		24	160	640	800	26

Elective

Professional Elective		Open Elective *** Offered by the Department of Electrical and Electronics Engineering	
Courses under Code 15EE65X	Title	Courses under Code 15EE66Y	Title
15EE651	Computer Aided Electrical Drawing	15EE661	Artificial Neural Networks and Fuzzy logic
15EE652	Advanced Power Electronics	15EE662	Sensors and Transducers
15EE653	Energy Audit and Demand side Management	15EE663	Batteries and Fuel Cells for Commercial, Military and Space Applications
15EE654	Solar and Wind Energy	15EE664	Industrial Servo Control Systems

*** 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 provided;

- The candidate has pre – requisite knowledge.
- The candidate has not studied during I and II year 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.

Registration to electives shall be documented under the guidance of Programme Coordinator and Adviser.

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

2. Professional Elective: Electives relevant to chosen specialization/ branch.

3. Open Elective: Electives from other technical and/ or emerging subject areas.



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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)

VII SEMESTER

VII SEMESTER											
Sl. No	Course Code	Subject (Course)	Title	Teaching Department	Teaching Hours/Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	
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 Instruction 02-Hour Practical		03	20	80	100	2
7	15EEL77	Laboratory	Rely and High Voltage Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
8	15EEP78	Project Phase – I + Seminar		EEE	--		--	100	--	100	2
TOTAL					Theory:24 hours Practical: 06 hours		21	240	560	800	24

Elective

Professional Elective – III		Professional Elective – IV	
Courses under Code 15EE74X	Title	Courses under Code 15EE75Y	Title
15EE741	Advanced Control Systems	15EE751	FACTS and HVDC Transmission
15EE742	Utilization of Electrical Power	15EE752	Testing and Commissioning of Power System Apparatus
15EE743	Carbon Capture and Storage	15EE753	Spacecraft Power Technologies
15EE744	Power System Planning	15EE754	Industrial Heating

- 1. Core subject:** This is the course, which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective:** Elective relevant to chosen specialization/ branch.
- 3. Project Phase –I + Seminar:** Literature Survey, Problem Identification, objectives and Methodology. Submission of synopsis and seminar.
- 4. Internship / Professional Practice:** To be carried between the VI and VII semester vacation or VII and VIII semester vacation period.


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VIII SEMESTER

Sl. No	Course Code	Subject (Course)	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
					Theory	Practical/ Drawing	Duration in hours	I.A. Marks	Theory/ Practical Marks	Total Marks	
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	Industry 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					Theory:11 hours Practical: 10 hours		15	310	390	700	20

Professional Elective – V

Courses under Code 15EE83X	Title
15EE831	Smart Grid
15EE832	Operation and Maintenance of Solar Electric Systems
15EE833	Integration of Distributed Generation
15EE834	Power System in Emergencies

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2. Professional Elective: Elective relevant to chosen specialization/ branch.

3. Internship / Professional Practice: To be carried between the VI and VII semester vacation or VII and VIII semester vacation period.

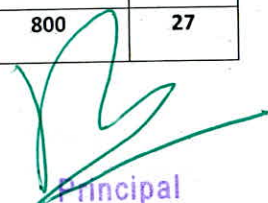
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B.E. Mechanical Engineering

III SEMESTER

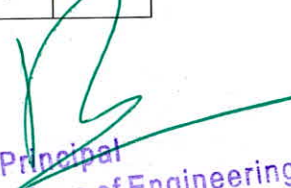
Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT31	Engineering Mathematics – III	04			03	80	20	100	4
2	15ME32	Materials Science	04			03	80	20	100	4
3	15ME33	Basic Thermodynamics	03	02		03	80	20	100	4
4	15ME34	Mechanics of Materials	03	02		03	80	20	100	4
5	15ME35A/	Metal Casting and Welding	04			03	80	20	100	4
	15ME35B	Machine Tools and Operations								
6	15ME36 A/	Computer Aided Machine Drawing	02		4	03	80	20	100	3
	15ME36B	Mechanical Measurements and Metrology	04							
7	15MEL37A/	Materials Testing Lab/	1		2	03	80	20	100	2
	15MEL37B	Mechanical Measurements and Metrology Lab								
8	15MEL38A/	Foundry and Forging Lab	1		2	03	80	20	100	2
	15MEL38B	Machine Shop/								
TOTAL			22/24	04	08/04		640	160	800	27


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B.E. Mechanical Engineering

IV SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15MAT41	Engineering Mathematics – III	04			03	80	20	100	04
2	15ME42	Kinematics of Machinery	03	02		03	80	20	100	04
3	15ME43	Applied Thermodynamics	03	02		03	80	20	100	04
4	15ME44	Fluid mechanics	03	02		03	80	20	100	04
5	15ME45A/	Metal Casting and Welding	04			03	80	20	100	04
	15ME45B	Machine Tools and Operations								
6	15ME46 A/	Computer Aided Machine Drawing	02		4	03	80	20	100	03
	15ME46B	Mechanical Measurements and Metrology	04							
7	15MEL47A /	Materials Testing Lab/	1		2	03	80	20	100	02
	15MEL47B	Mechanical Measurements and Metrology Lab								
8	15MEL48A /	Foundry and Forging Lab	1		2	03	80	20	100	02
	15MEL48B	Machine Shop/								
TOTAL			19/21	06	08/04		640	160	800	27


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B.E. Mechanical Engineering

V SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME51	Management and Engineering Economics	3	2	0	03	80	20	100	4
2	15ME52	Dynamics of Machinery	3	2	0	03	80	20	100	4
3	15ME53	Turbo Machines	3	2	0	03	80	20	100	4
4	15ME54	Design of Machine Elements - I	3	2	0	03	80	20	100	4
5	15ME55X	Professional Elective-I	3	0	0	03	80	20	100	3
6	15ME56X	Open Elective-I	3	0	0	03	80	20	100	3
7	15MEL57	Fluid Mechanics & Machinery Lab	1	0	2	03	80	20	100	2
8	15MEL58	Energy Lab	1	0	2	03	80	20	100	2
TOTAL			21	06	04		640	160	800	26

Professional Elective-I		Open Elective-I	
15ME551	Refrigeration and Air-conditioning	15ME561	Optimization Techniques
15ME552	Theory of Elasticity	15ME562	Energy and Environment
15ME553	Human Resource Management	15ME563	Automation and Robotics
15ME554	Non Traditional Machining	15ME564	Project Managemet

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- 2. Professional Elective:** Elective relevant to chosen specialization/ branch
- 3. OpenElective:** Electives from other technical and/or emerging subject areas.

B.E. Mechanical Engineering

VI SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME61	Finite Element Analysis	3	2	0	03	80	20	100	4
2	15ME62	Computer integrated Manufacturing	4	0	0	03	80	20	100	4
3	15ME63	Heat Transfer	3	2	0	03	80	20	100	4
4	15ME64	Design of Machine Elements -II	3	2	0	03	80	20	100	4
5	15ME65X	Professional Elective-II	3	0	0	03	80	20	100	3
6	15ME66X	Open Elective-II	3	0	0	03	80	20	100	3
7	15MEL67	Heat Transfer Lab	1	0	2	03	80	20	100	2
8	15MEL68	Modeling and Analysis Lab(FEA)	1	0	2	03	80	20	100	2
TOTAL			21	6	04		640	160	800	26

Professional Elective-II		Open Elective-II	
15ME651	Computational Fluid Dynamics	15ME661	Energy Auditing
15ME652	Mechanics of Composite Materials	15ME662	Industrial Safety
15ME653	Metal Forming	15ME663	Maintenance Engineering
15ME654	Tool Design	15ME664	Total Quality Management
15ME655	Automobile Engineering		

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- 2. Professional Elective:** Elective relevant to chosen specialization/ branch
- 3. OpenElective:** Electives from other technical and/or emerging subject areas.

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

B.E. Mechanical Engineering

VII SEMESTER

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

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

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

2. Professional Elective: Elective relevant to chosen specialization/ branch


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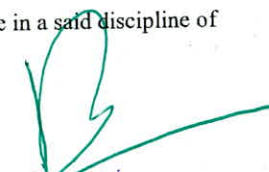
B.E. Mechanical Engineering

VIII SEMESTER

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

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

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


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