

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CHOICE BASED CREDIT SYSTEM (CBCS)
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	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15PHY12	Engineering Physics	Physics	Basic Sc.	4 (T)	80	20	100	4
3	15CIV13	Elements of Civil Engg. & Mechanics	Civil Engg.	Civil Engg.	4 (T)	80	20	100	4
4	15EME14	Elements of Mechanical Engg.	Mech. Engg.	Mech. Engg.	4 (T)	80	20	100	4
5	15ELE15	Basic Electrical Engg.	E & E	E & E	4 (T)	80	20	100	4
6	15WSL16	Workshop Practice	Mech., Auto, IP, IEM, Mfg. Engg.	Mech. Engg.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
7	15PHY17	Engg. Physics Lab	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)	Humanities		2 (Tutorial)	40	10	50	--
9		Language (Kan.)	Humanities		1 (T)	-	-	-	--
					29	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses



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

II SEMESTER B.E./B.TECH.

PHYSICS 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	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15PHY22	Engineering Physics	Physics	Basic Sc.	4 (T)	80	20	100	4
3	15CIV23	Elements of Civil Engg. & Mechanics	Civil Engg.	Civil Engg.	4 (T)	80	20	100	4
4	15FME24	Elements of Mechanical Engg.	Mech. Engg.	Mech. Engg.	4 (T)	80	20	100	4
5	15ELE25	Basic Electrical Engg.	E & E	E & E	4 (T)	80	20	100	4
6	15WSL26	Workshop Practice	Mech., Auto, IP, IEM, Mfg. Engg.	Mech. Engg.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
7	15PHYL27	Engg. Physics Lab	Physics	Basic Sc.	3(2 hrs lab+ 1 hr instruction)	80	20	100	2
8	15CPH28	Constitution of India, Professional Ethics and Human Rights	Humanities		2 (Tutorial)	40	10	50	--
9		Language (Kan.)	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

ISEMESTER B.E./B.TECH.

CHEMISTRY GROUP

Sl. No.	Subject Code	Subject	Teaching Department	Board	Theory /Lab/ Drawing (Hrs/ Week)	Examination Marks			Credits
						Th./Pr.	L.A.	Total	
1	15MAT11	Engineering Maths-I	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15CHE12	Engineering Chemistry	Chemistry	Basic Sc.	4 (T)	80	20	100	4
3	15PCD13	Programming in C & Data Structures	Any Engineering Department	CSE	4 (T)	80	20	100	4
4	15CED14	Computer Aided Engineering Drawing	Mech./IP/Auto/Mfg.Engg./IEM	Mech. Engg.	6 (2I+4P)	80	20	100	4
5	15ELN15	Basic Electronics	E & C / E & E / TC / IT	E & C	4 (T)	80	20	100	4
6	15CPL16	Computer Programming Lab	Any Engineering Department	CSE	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
7	15CHE17	Engg. Chemistry Lab	Chemistry	Basic Sci.	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
8	15CIV18	Environmental Studies	Civil / Environmental	Civil	2 (Tutorial)	40	10	50	--
9		Language (Eng.)	Humanities		1 (T)	-	-	-	--
Total					31	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses



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

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.	L.A.	Total	
1	15MAT21	Engineering Maths-II	Maths	Basic Sc.	4 (T)	80	20	100	4
2	15CHE22	Engineering Chemistry	Chemistry	Basic Sc.	4 (T)	80	20	100	4
3	15PCD23	Programming in C & Data Structures	Any Engineering Department	CSE	4 (T)	80	20	100	4
4	15CED24	Computer Aided Engineering Drawing	Mech./IP/Auto/ Mfg.Engg./ IEM	Mech. Engg.	6 (2I+ 4P)	80	20	100	4
5	15ELN25	Basic Electronics	E & C / E & E / TC / IT	E & C	4 (T)	80	20	100	4
6	15CPL26	Computer Programming Lab	Any Engineering Department	CSE	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
7	15CHEL27	Engg. Chemistry Lab	Chemistry	Basic Sc.	3(2 hrs lab+ 1 hr Tutorial)	80	20	100	2
8	15CIV28	Environmental Studies	Civil / Environmental	Civil	2 (Tutorial)	40	10	50	--
9		Language (Eng.)	Humanities		1 (T)	-	-	-	--
Total					31	600	150	750	24

Note: The Subjects Kannada and English are Audit Courses



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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		Duration in hours	Examination			Credits
					Theory	Practical/ Drawing		I.A. Marks	Theory/ Practical Marks	Total Marks	
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 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. **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)

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
7	15BEL47	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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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
7	15EEL57	Laboratory	Microcontroller Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	80	20	100	2
8	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		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 <i>Logic car</i>
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.

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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)

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.



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SCHEME OF TEACHING AND EXAMINATION - 2015-16

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING

CHOICE BASED CREDIT SYSTEM (CBCS)

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	15EE76	Laboratory	Power system Simulation Laboratory	EEE	01-Hour Instruction 02-Hour Practical		03	20	80	100	2
7	15EE77	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				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.



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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)

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

- 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 between the VI and VII semester vacation or VII and VIII semester vacation period.



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VI SEMESTER

ELECTRICAL AND ELECTRONICS ENGINEERING

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching		Duration (Hrs)	Examination		
				Theory	Practical		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	E- CADD	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



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VII SEMESTER

ELECTRICAL AND ELECTRONICS ENGINEERING

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination		
				Theory	Practical		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



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VIII SEMESTER

ELECTRICAL AND ELECTRONICS ENGINEERING

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination		
				Theory	Practical		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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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Mechanical Engineering

III SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week			Duration (Hours)	Examination		Credits	
			Lecture	Tutorial	Practical		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/ 15ME35B	Metal Casting and Welding	04			03	80	20	100	4
		Machine Tools and Operations								
6	15ME36 A/ 15ME36B	Computer Aided Machine Drawing	02		4	03	80	20	100	3
		Mechanical Measurements and Metrology	04							
7	15MEL37A/ 15MEL37B	Materials Testing Lab/	1		2	03	80	20	100	2
		Mechanical Measurements and Metrology Lab								
8	15MEL38A/ 15MEL38B	Foundry and Forging Lab	1		2	03	80	20	100	2
		Machine Shop/								
TOTAL			22/24	04	08/04		640	160	800	27



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SCHEME OF TEACHING AND EXAMINATION 2015-2016
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/ 15ME45B	Metal Casting and Welding	04			03	80	20	100	04
		Machine Tools and Operations								
6	15ME46 A/ 15ME46B	Computer Aided Machine Drawing	02		4	03	80	20	100	03
		Mechanical Measurements and Metrology	04							
7	15MEL47A/ 15MEL47B	Materials Testing Lab/	1		2	03	80	20	100	02
		Mechanical Measurements and Metrology Lab								
8	15MEL48A/ 15MEL48B	Foundry and Forging Lab	1		2	03	80	20	100	02
		Machine Shop/								
TOTAL			19/21	06	08/04		640	160	800	27



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NIDASOSHI-591 236

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016
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
2	15ME52	Dynamics of Machinery	3	2	0	03	80	20	100
3	15ME53	Turbo Machines	3	2	0	03	80	20	100
4	15ME54	Design of Machine Elements - I	3	2	0	03	80	20	100
5	15ME55X	Professional Elective-I	3	0	0	03	80	20	100
6	15ME56X	Open Elective-I	3	0	0	03	80	20	100
7	15MEL57	Fluid Mechanics & Machinery Lab	1	0	2	03	80	20	100
8	15MEL58	Energy Lab	1	0	2	03	80	20	100
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 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
- Open Elective:** Electives from other technical and/or emerging subject areas.




PRINCIPAL
 Nidasoshi Institute of Technology
 NIDASOSHI-591 236

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 Method	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		

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




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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	Human Resource Management
15ME744	Design for Manufacturing	15ME754	Mechatronics
15ME745	Smart Materials & MEMS	15ME755	Advanced Vibrations

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

B.E. Mechanical Engineering

VIII SEMESTER

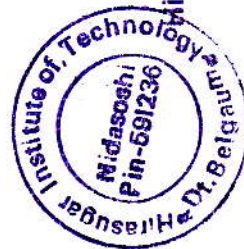
Sl. No	Subject Code	Title	Teaching Hours /Week			Examination				Credits
			Lecture	Tutorial	Practical	Duration (Hours)	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ME81	Operations Research	3	2	0	03	80	20	100	4
2	15ME82	Additive Manufacturing	4	0	0	03	80	20	100	4
3	15ME83X	Professional Elective - 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	15ME86	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

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

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

3. Internship / Professional Practice: To be carried out between 6th & 7th semester vacation or 7th & 8th semester vacation.



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NIDASOSHI-591 236

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

VI SEMESTER

Sl. No	Sub-Code	Title	Teaching hours /week		Examination		
			Theory	Pract. / Drg.	Dura- tion	I.A. Marks	Theory/ Pract. Total Marks
1	10ME61	Computer Integrated Manufacturing	04	--	03	25	100
2	10ME62	Design of Machine Elements II	04	--	03	25	100
3	10ME63	Heat & Mass Transfer	04	--	03	25	100
4	10ME64	Finite Element Methods	04	--	03	25	100
5	10ME65	Mechatronics & Microprocessor	04	--	03	25	100
6	10ME66X	Elective 'A'	04	--	03	25	100
7	10ME67	Heat & Mass Transfer Lab	--	03	03	25	50
8	10ME68	CAMA Lab	--	03	03	25	50
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




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 Hirasugar Institute of Technology
 NIDASOSHI-591 236

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

VII SEMESTER

Sl. No	Sub-Code	Title	Teaching hours /week		Dura- tion	Examination		
			Theory	Pract/ Drg.		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.	Dura- tion	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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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

SCHEME OF TEACHING AND EXAMINATION FOR M.TECH. in Thermal Engineering/Thermal Power Engineering

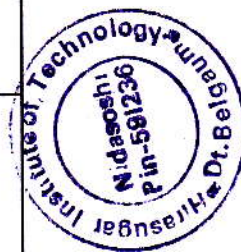
CHOICE BASED CREDIT SYSTEM (CBCS)

I SEMESTER

Subject Code	Name of the Subject	Teaching hours/week		Duration of Exam in Hours	Marks for		Total Marks	CREDITS
		Lecture	Practical / Field Work / Assignment		I.A.	Exam		
16MTP11	Applied Mathematics	4	-	3	20	80	100	4
16MTP12	Finite Element Method	4	-	3	20	80	100	4
16MTP13	Advanced Fluid Mechanics	4	-	3	20	80	100	4
16MTP14	Thermodynamics & Combustion Engineering	4	-	3	20	80	100	4
16MTP15X	Elective - I	4	-	3	20	80	100	4
16MTP16	Thermal Engineering measurement - Lab 1	--	3	3	20	80	100	2
16MTP/MTH 17	SEMINAR	--	-	--	100	--	100	1
Total		20	3	18	220	480	700	23

Elective - I

16MTP 151	Non Conventional Energy System	14 MTP 153	Energy Conservation and Management
16MTP 152	Nuclear Energy Conversion	14MTP 154	Refrigeration and Air Conditioning



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Nidasoshi Institute of Technology
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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

SCHEME OF TEACHING AND EXAMINATION FOR M.TECH. in Thermal Engineering/Thermal Power Engineering

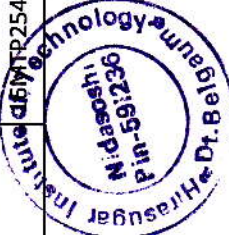
CHOICE BASED CREDIT SYSTEM (CBCS)

II SEMESTER

Subject Code	Name of the Subject	Teaching hours/week		Duration of Exam in Hours	Marks for		Total Marks	Credits
		Lecture	Practical / Field Work /		I.A.	Exam		
16MTP21	Advanced Heat Transfer	4	-	3	20	80	100	4
16MTP22	Steam & Gas Turbines	4	-	3	20	80	100	4
16MTP23	Advanced Power Plant Cycles	4	-	3	20	80	100	4
16MTP24	Theory of IC Engines	4	-	3	20	80	100	4
16MTP25X	Elective – II	4	-	3	20	80	100	4
16MTP26	Simulation Laboratory Projects on Thermal Engineering - Lab 2	--	3	3	20	80	100	2
16MTP/MTH27	SEMINAR	--	-	--	100	--	100	1
	**PROJECT WORK PHASE-I COMMENCEMENT(6 WEEKS DURATION)	--	--	--	--	--	--	--
Total		20	3	18	220	480	700	23

Elective – II

16MTP251	Thermal Power Station – 1	16MTP253	Modeling and Simulation of Thermal Systems
16MTP252	Alternate Fuels for IC Engines	16MTP254	Computational Methods in Heat Transfer & Fluid Flow


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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

SCHEME OF TEACHING AND EXAMINATION FOR M.TECH. in Thermal Engineering/Thermal Power Engineering

CHOICE BASED CREDIT SYSTEM (CBCS)

III SEMESTER

Subject Code	Title	Teaching hours/week			Examination			Total Marks	CREDITS
		Theory	Practical / Field Work / Assignment	Duration	I.A. Marks	Theory / Practical Marks			
16MTP31	Seminar/ Presentation on Internship (After 8 weeks from the date of commencement)	-	-	-	25	-	25	20	1
16 MTP32	Report on Internship	-	-	-	25	-	25		
16 MTP 33	Evaluation and Viva-Voce of Internship	-	-	-	-	50	50		
16 MTP34	Project Work Phase-1	-	-	-	50	-	50	1	21
Total		-	-	-	100	50	150		




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 NIDASOSHI-591 236

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
SCHEME OF TEACHING AND EXAMINATION FOR M.TECH. in Thermal Engineering/Thermal Power Engineering
CHOICE BASED CREDIT SYSTEM (CBCS)

VI SEMESTER

Subject Code	Title	Teaching hours/week		Examination Duration			Total Marks	CREDITS
		Theory	Practical / Field Work /	Duration in Hrs	I.A. Marks	Theory / Practical Marks		
16MTP41	Design of heat Transfer Equipments for thermal power plant	4	2	3	20	80	100	4
	ELECTIVE-III	4	2	3	20	80	100	3
16 MTP 43	Evaluation of Project Work Phase-II	-	-	-	50	-	50	3
16 MTP 44	Evaluation of Project Work and Viva-Voce	-	-	3	-	100+100	200	10
	Total	-	4	9	90	360	450	20

ELECTIVE-III

16MTP421	Convective Heat and Mass Transfer	16MTP423	Design & Analysis of Thermal Systems
16MTP422	Engine Flow & Combustion	16MTP424	Experimental Methods in Thermal Power Engineering

Note:

1. **Project Phase-2:** 16-week duration during 4th semester. Evaluation shall be done by the committee constituted comprising of HoD as Chairman, Guide and Senior faculty of the department.
2. **Project Evaluation:** Evaluation shall be taken up at the end of 4th semester. Project work evaluation and Viva-Voce examination shall conducted
3. **Project evaluation:**

- a. Internal Examiner shall carry out the evaluation for 100 marks.
- b. External Examiner shall carry out the evaluation for 100 marks.
- c. The average of marks allotted by the internal and external examiner shall be the final marks of the project evaluation.

- c. Viva-Voce examination of Project work shall be conducted jointly by Internal and External examiner for 100 marks.



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Nidasoshi Institute of Technology
NIDASOSHI-591 236

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		Duration	Examination			Credits
			Theory	Practical/ Drawing		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		Duration	Examination			Credits
			Theory	Practical / Drawing		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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NIDASOSHI-591 236

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
2	15EC52	Digital Signal Processing	04		03	80	20	100
3	15EC53	Verilog HDL	04		03	80	20	100
4	15EC54	Information Theory & Coding	04		03	80	20	100
5	15EC55X	Professional Elective-1	03		03	80	20	100
6	15EC56X	Open Elective-1	03		03	80	20	100
7	15ECL57	DSP Lab		11+2P	03	80	20	100
8	15ECL58	HDL Lab		11+2P	03	80	20	100
TOTAL			22	06	24	640	160	800

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.



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NIDASOSHI-591 236

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	APM 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		11+2P	03	80	20	100	2
8	15ECL68	Computer Networks Lab		11+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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NIDASOSHI-591 236

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		11+2P	03	20	80	100	2
7	15ECL77	VLSI Lab		11+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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NIDASOSHI-591 236

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

VI SEMESTER

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination		
				Theory	Practical		IA	Theory / Practical	Total
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)



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10EC661 – Analog and Mixed Mode VLSI Design
10EC662 – Satellite Communications
10EC663 - Random Process

10EC664 – Low Power VLSI Design
10EC665 – Data Structure Using C++
10EC666 – Digital System Design Using Verilog
10EC667- Virtual Instrumentation

2




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**SCHEME OF TEACHING AND EXAMINATION
B.E. ELECTRONICS AND COMMUNICATION**

VII SEMESTER

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination		
				Theory	Practical		IA	Marks Theory / Practical	Total
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)

6




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10EC751 – DSP Algorithms & Architecture
10EC752 - Micro and Smart Systems Technology
10EC753 – Artificial Neural Network
10EC754 – CAD for VLSI
10EC755 – Applied Embedded System Design*
10EC756 – Speech Processing

10EC761 - Programming in C++
10EC762 – Real Time Systems
10EC763 - Image Processing
10EC764 - Radio Frequency Integrated Circuits
10EC765 - Wavelet Transforms
10EC766 - Modeling and Simulation of Data Networks

NOTE: 10EC755 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 AND COMMUNICATION

VIII SEMESTER

Sl. No.	Subject Code	Title of the Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination		
				Theory	Practical		IA	Theory / Practical	Total
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)
10EC831 – Distributed Systems
10EC832 – Network Security

Elective-V (Group-E)
10EE841 – Multimedia Communication
10EC842 – Real Time Operating Systems

8



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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CREDIT SYSTEM (CS)
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		Duration	Examination			Credits
			Theory	Practical/ Drawing		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	--	11+2P	03	80	20	100	2
8	15CSL38	Data Structures Laboratory	--	11+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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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
CREDIT SYSTEM (CS)
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		Duration	Examination			Credits
			Theory	Practical/ Drawing		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 Programming with JAVA	04	--	03	80	20	100	4
6	15CS46	Data communications	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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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

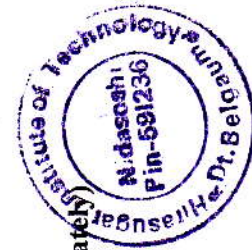
V SEMESTER

B.E. Computer Science & Engineering

Sl. No	Subject Code	Title	Teaching Hours /Week		Duration	Examination			Credits
			Theory	Practical/ Drawing		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	--	11+2P	03	80	20	100	2
8	15CSL58	DBMS Laboratory with mini project	--	11+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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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

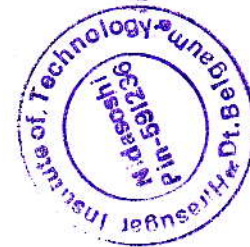
B.E. Computer Science & Engineering

VI SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Duration	Examination			Credits
			Theory	Practical/ Drawing		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	--	11+2P	03	80	20	100	2
8	15CSL68	Computer Graphics Laboratory with mini project	--	11+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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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016
 B.E. Computer Science & Engineering

VII SEMESTER

Sl. No	Subject Code	Title	Teaching Hours /Week		Duration	Examination		Credits
			Theory	Practical/ Drawing		L.A. Marks	Theory/ Practical Marks	
1	15CS71	Web Technology and its applications	04	--	03	20	80	4
2	15CS72	Advanced Computer Architectures	04	--	03	20	80	4
3	15CS73	Machine Learning	04	--	03	20	80	4
4	15CS74x	Professional Elective 3	03	--	03	20	80	3
5	15CS75x	Professional Elective 4	03	--	03	20	80	3
6	15CSL76	Machine Learning Laboratory	--	11+2P	03	20	80	2
7	15CSL77	Web Technology Laboratory with mini project	--	11+2P	03	20	80	2
8	15CSP78	Project Phase 1 + Seminar	--	--	--	100	--	2
TOTAL			18	6	21	240	560	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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VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering
VIII SEMESTER

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



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

VI SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination		
				Theory	Practical		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	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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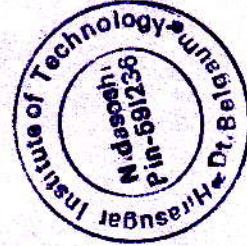



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Elective I – Group A

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

VII SEMESTER

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Hrs / Week		Duration (Hrs)	Examination		
				Theory	Practical		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



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Elective III – Group C

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

Elective II – Group B

Advanced DBMS
Digital Signal Processing
Java and J2EE
Multimedia Computing
Data Warehousing and Data Mining
Neural Networks

10CS751/10IS751
10CS752
10CS753/10IS753
10CS754/10IS754
10CS755/10IS755
10CS756/10IS756



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

S. No.	Subject Code	Subject	Teaching Dept.	Teaching Hrs / Week		Duration	Examination		
				Theory	Practical		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



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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

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




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