



B.Tech. : Civil Engineering 3rd Year - V Semester

THEORY

SN	Cate g ory	Course		Contac t hrs/wee k			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	ESC	5CE3-01	Construction Technology & Equipments	2	0	0	2	20	80	100	2
2	PCC / PE C	5CE4-02	Structural Analysis-I	2	0	0	2	20	80	100	2
3		5CE4-03	Design of Concrete Structures	3	0	0	3	30	120	150	3
4		5CE4-04	Geotechnical Engineering	3	0	0	3	30	120	150	3
5		5CE4-05	Water Resource Engineering	2	0	0	2	20	80	100	2
6		Departmental Elective-I:		2	0	0	2	20	80	100	2
		5CE5-11	Air & Noise Pollution and Control								
		5CE5-12	Disaster Management								
		5CE5-13	Town Planning								
7		Departmental Elective-II:		2	0	0	2	20	80	100	2
		5CE5-14	Repair and Rehabilitation of Structures								
		5CE5-15	Ground Improvement Techniques								
		5CE5-16	Energy Science & Engineering								
		Sub Total		16	0	0		160	640	800	16

PRACTICAL &SESSIONAL

8	PCC	5CE4-21	Concrete Structures Design	0	0	3	3	45	30	75	1.5
9		5CE4-22	Geotechnical Engineering Lab	0	0	3	3	45	30	75	1.5
10		5CE4-23	Water Resource Engineering Design	0	0	2	2	30	20	50	1
11	PSIT	5CE7-30	Industrial Training	0	0	1		75	50	125	2.5
12	SOD E CA	5CE8-00	Social Outreach, Discipline & Extra Curricular Activities	0	0	0		0	25	25	0.5
		Sub-Total		0	0	9		195	155	350	7
		TOTAL OF V SEMESTER		16	0	9		355	795	1150	23



B.Tech. : Civil Engineering 3rd Year - VI Semester

THEORY

SN	Category	Course		Contact hrs/week			Marks				Cr	
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total		
1	ESC	6CE3-01	Wind & Seismic Analysis	2	0	0	2	20	80	100	2	
2	PCC/PEC	6CE4-02	Structural Analysis-II	3	0	0	3	30	120	150	3	
3		6CE4-03	Environmental Engineering	3	0	0	3	30	120	150	3	
4		6CE4-04	Design of Steel Structures	3	0	0	3	30	120	150	3	
5		6CE4-05	Estimating & Costing	2	0	0	2	20	80	100	2	
6		Departmental Elective-III:			2	0	0	2	20	80	100	2
		6CE5-11	Pre-stressed Concrete									
		6CE5-12	Solid and Hazardous Waste Management									
		6CE5-13	Traffic Engineering and Management									
7		Departmental Elective-IV:			2	0	0	2	20	80	100	2
		6CE5-14	1. Bridge Engineering									
		6CE5-15	2. Rock Engineering									
		6CE5-16	3. Geographic Information System & Remote Sensing									
		Sub Total			17	0	0		170	680	850	17

PRACTICAL & SESSIONAL

8	PCC	6CE4-21	Environmental Engineering Design and Lab	0	0	3	3	45	30	75	1.5
9		6CE4-22	Steel Structure Design	0	0	3	3	45	30	75	1.5
10		6CE4-23	Quantity Surveying and Valuation	0	0	2	2	30	20	50	1
11		6CE4-24	Water and Earth Retaining Structures Design	0	0	2	2	30	20	50	1
12		6CE4-25	Foundation Design	0	0	2	2	30	20	50	1
13	SODE CA	6CE8-00	Social Outreach, Discipline & Extra Curricular Activities						25	25	0.5
Sub- Total				0	0	12		180	145	325	6.5
TOTAL OF VI SEMESTER				17	0	12		350	825	1175	23.5



B.Tech. : Civil Engineering 4th Year - VII Semester

THEORY											
SN	Category	Course Code	Course Title	Hours Per Week			Marks				Cr
				L	T	P	Exm Hrs	IA	ETE	Total	
1	PCC	7CE4-01	Transportation Engineering	3	0	0	3	30	120	150	3
2	OE		Open Elective-I	3	0	0	3	30	120	150	3
			Sub Total	6	0	0		60	240	300	6
PRACTICAL & SESSIONAL											
3	PCC	7CE4-21	Road Material Testing Lab	0	0	2		30	20	50	1
4		7CE4-22	Professional Practices & Field Engineering Lab	0	0	2		30	20	50	1
5		7CE4-23	Soft Skills Lab	0	0	2		30	20	50	1
6		7CE4-24	Environmental Monitoring and Design Lab	0	0	2		30	20	50	1
7	PSIT	7CE7-30	Practical Training	1	0	0		75	50	125	2.5
8		7CE7-40	Seminar	2	0	0		60	40	100	2
9	SODECA	7CE8-00	SODECA	0	0	0		0	25	25	0.5
			Sub- Total	3	0	8		255	195	450	9
			TOTAL OF VII SEMESTER	9	0	8		315	435	750	15

The highlighted area shows the subjects related to Professional ethics, Gender human values, Environment and sustainability



B.Tech. : Civil Engineering 2nd Year - III Semester

BRANCH CODE	Civil Engineering	C E						
		Hrs. / Week					Exa m	Tot al
SEMESTER III	Title	L	T	P	IA			
3CE1A	Strength of Materials-I	3	1	0	20		80	100
3CE2A	Civil Engineering Materials	3		0	20		80	100
3CE3A	Engineering Geology	3		0	20		80	100
3CE4A	Construction Technology	3		0	20		80	100
3CE5A	Fluid Mechanics	3	1	0	20		80	100
3CE6A	Advanced Engineering Mathematics	3	1	0	20		80	100
	Total	18	3					600
3CE7A	Civil Engineering Materials Lab	0	0	2	45		30	75
3CE8A	Engineering Geology Lab	0	0	2	30		20	50
3CE9A	Building Drawing-I	0	0	3	45		30	75
3CE10A	Fluid Mechanics Lab	0	0	2	45		30	75
3CE11A	Professional Ethics & Disaster Management	0	0	2	45		30	75
3CEDC	Discipline & Extra Curricular Activity			11				50
	Total							400
	Grand Total	18	3	11				1000



B.Tech. : Civil Engineering 3rd Year - V Semester

BRANCH CODE	Civil Engineering	C E					
		Hrs. / Week				Exam	Total
SEMESTER - V	Title	L	T	P	IA		
5CE1A	Theory of Structures-I	3	1	0	20	80	100
5CE2A	Environmental Engineering-I	3		0	20	80	100
5CE3A	Geotechnical Engineering-I	3	1	0	20	80	100
5CE4A	Surveying-II	3		0	20	80	100
5CE5A	Building Design	3		0	20	80	100
5CE6.1A	Ground Improvement Techniques	3		0	20	80	100
5CE6.2A	Advanced Concrete Technology						
5CE6.3A	Solid Waste Management						
	Total	18	2				600
5CE7A	Environmental Engineering Lab-I	0	0	2	45	30	75
5CE8A	Geotechnical Engineering Lab-I	0	0	2	45	30	75
5CE9A	Surveying Lab-II	0	0	3	45	30	75
5CE10A	Computer Aided Building Design	0	0	3	45	30	75
5CE11A	Structural Engineering Lab	0	0	2	30	20	50
5CEDC	Discipline & Extra Curricular Activity						50
	Total						400
	Grand Total	18	2	12			1000



B.Tech. : Civil Engineering 3rd Year - VI Semester

BRANCH CODE	Civil Engineering	C E					
		Hrs. / Week					
SEMESTER - VI	Title	L	T	P	IA	Exam	Total
6CE1A	Theory of Structures-II	3	1	0	20	80	100
6CE2A	Geotechnical Engineering-II	3	1	0	20	80	100
6CE3A	Environmental Engineering-II	3		0	20	80	100
6CE4A	Design of Concrete Structures-I	3		0	20	80	100
6CE5A	Transportation Engineering-I	3	1	0	20	80	100
6CE6.1A	Remote Sensing & GIS	3		0	20	80	100
6CE6.2A	Rock Mechanics						
6CE6.3A	Repair & Rehabilitation of Structures						
	Total	18	3				600
6CE7A	Geotechnical Engineering Lab-II	0	0	2	45	30	75
6CE8A	Environmental Engineering Lab-II	0	0	2	45	30	75
6CE9A	Concrete Structures Design-I	0	0	3	60	40	100
6CE10A	Road Material Testing Lab	0	0	2	60	40	100
6CEDC	Discipline & Extra Curricular Activity						50
	Total						400
	Grand Total	18	3	9			1000



B.Tech. : Civil Engineering 4th Year - VII Semester

BRANCH CODE	Civil Engineering	CE					
		Hrs. / Week				Exam	Total
SEMESTER - VII	Title	L	T	P	IA		
7CE1A	Water Resource Engineering-I	3		0	20	80	100
7CE2A	Design of Steel Structures-I	3		0	20	80	100
7CE3A	Design of Concrete Structures-II	3		0	20	80	100
7CE4A	Transportation Engineering-II	3		0	20	80	100
7CE5A	Application of Numerical Methods in Civil Engineering	3		0	20	80	100
7CE6.1A	Advance Transportation Engineering	3		0	20	80	100
7CE6.2A	Design of Prestress Concrete Structures						
7CE6.3A	Rural Water Supply & Sanitation						
	Total	18					600
7CE7A	Design of Water Resource Structures-I			2	30	20	50
7CE8A	Steel Structures Design-I	0	0	3	30	20	50
7CE9A	Concrete Structures Design-II			3	30	20	50
7CE10A	Application of Numerical Methods in Civil Engineering Lab	0	0	3	30	20	50
7CETR	Practical Training & Industrial Visit			2		100	100
7CEPR	Project-I			2	50		50
7CEDC	Discipline & Extra Curricular Activity						50
	Total						400
	Grand Total	18	0	15			1000



B.Tech. : Civil Engineering 4th Year - VIII Semester

BRANCH CODE	Civil Engineering	C E					
		Hrs. / Week					
		L	T	P	IA	Exam	Total
SEMESTER - VIII	1						
8CE1A	Water Resource Engineering-II	3		0	20	80	100
8CE2A	Design of Steel Structures-II	3		0	20	80	100
8CE3A	Project Planning & Construction Management	3		0	20	80	100
8CE4.1A	Bridge Engineering	3		0	20	80	100
8CE4.2A	Advance Foundation Engineering						
8CE4.3A	Earthquake Resistant Construction & Design						
	Total	12					400
8CE5A	Design of Water Resource Structures-II	0	0	3	30	20	50
8CE6A	Professional Practice & Estimating	0	0	3	30	20	50
8CE7A	Steel Structures Design-II			3	30	20	50
8CE8A	Design of Foundations			2	30	20	50
8CE9A	Structural Analysis by Matrix Methods	0	0	2	30	20	50
8CESM	Seminar	0	0	2	60	40	100
8CEPR	Project-II	0	0	2	120	80	200
8CEDC	Discipline & Extra Curricular Activity						50
	Total						600
	Grand Total	12	0	17			1000



B.Tech. : Civil Engineering 2nd Year - III Semester

THEORY											
SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	BSC	3CE2-01	Advance Engineering Mathematics -I	3	0	0	3	30	120	150	3
2	HSMC	3CE1-02/ 3CE1-03	Technical Communication /Managerial Economics & Financial Accounting	2	0	0	2	20	80	100	2
3	ESC	3CE3-04	Engineering Mechanics	2	0	0	2	20	80	100	2
4	PCC	3CE4-05	Surveying	3	0	0	3	30	120	150	3
5		3CE4-06	Fluid Mechanics	2	0	0	2	20	80	100	2
6		3CE4-07	Building Materials and Construction	3	0	0	3	30	120	150	3
7		3CE4-08	Engineering Geology	2	0	0	2	20	80	100	2
			Sub Total	17	0	0		170	680	850	17
PRACTICAL & SESSIONAL											
8	PCC	3CE4-21	Surveying Lab	0	0	3		45	30	75	1.5
9		3CE4-22	Fluid Mechanics Lab	0	0	2		30	20	50	1
10		3CE4-23	Computer Aided Civil Engineering Drawing	0	0	3		45	30	75	1.5
11		3CE4-24	Civil Engineering Materials Lab	0	0	2		30	20	50	1
12		3CE4-25	Geology Lab	0	0	2		30	20	50	1
13	PSIT	3CE7-30	Industrial Training	0	0	1		30	20	50	1
14	SODE CA	3CE8-00	Social Outreach, Discipline & Extra Curricular Activities	0	0	0		0	25	25	0.5
			Sub- Total	0	0	13		210	165	375	7.5
			TOTAL OF III SEMESTER	17	0	13		380	845	1225	24.5

The highlighted area shows the subjects related to Professional ethics, Gender human values, Environment and sustainability



B.Tech. : Civil Engineering 2nd Year - IV Semester

THEORY											
SN	Cate g ory	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	BS C	4CE2-01	Advance Engineering Mathematics -II	2	0	0	2	20	80	100	2
2	HS MC	4CE1-03/ 4CE1-02	Managerial Economics & Financial Accounting/ Technical Communication	2	0	0	2	20	80	100	2
3	ES C	4CE3-04	Basic Electronics for Civil Engineering Applications	2	0	0	2	20	80	100	2
4	PC C	4CE4-05	Strength of Materials	3	0	0	3	30	120	150	3
5		4CE4-06	Hydraulics Engineering	3	0	0	3	30	120	150	3
6		4CE4-07	Building Planning	2	0	0	2	20	80	100	2
7		4CE4-08	Concrete Technology	3	0	0	3	30	120	150	3
		Sub Total		17	0	0		170	680	850	17
PRACTICAL & SESSIONAL											
8	PC C	4CE4-21	Material Testing Lab	0	0	2		30	20	50	1
9		4CE4-22	Hydraulics Engineering Lab	0	0	2		30	20	50	1
10		4CE4-23	Building Drawing	0	0	3		45	30	75	1.5
11		4CE4-24	Advanced Surveying Lab	0	0	2		30	20	50	1
12		4CE4-25	Concrete Lab	0	0	3		45	30	75	1.5
13	SO DE CA	4CE8-60	Social Outreach, Discipline & Extra Curricular Activities	0	0	0		0	25	25	0.5
		Sub- Total		0	0	12		180	145	325	6.5
		TOTAL OF IV SEMEESTER		17	0	12		350	825	1175	23.5

The highlighted area shows the subjects related to Professional ethics, Gender human values, Environment and sustainability



B.Tech. : Computer Science & Engineering 2nd Year - III Semester

THEORY											
SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	BSC	3CS2-01	Advanced Engineering Mathematics	3	0	0	3	30	120	150	3
2	HSMC	3CS1-02/ 3CS1-03	Technical Communication/ Managerial Economics and Financial Accounting	2	0	0	2	20	80	100	2
3	ESC	3CS3-04	Digital Electronics	3	0	0	3	30	120	150	3
4	PCC	3CS4-05	Data Structures and Algorithms	3	0	0	3	30	120	150	3
5		3CS4-06	Object Oriented Programming	3	0	0	3	30	120	150	3
6		3CS4-07	Software Engineering	3	0	0	3	30	120	150	3
			Sub Total	17	0	0		170	680	850	17
PRACTICAL & SESSIONAL											
7	PCC	3CS4-21	Data Structures and Algorithms Lab	0	0	3		45	30	75	1.5
8		3CS4-22	Object Oriented Programming Lab	0	0	3		45	30	75	1.5
9		3CS4-23	Software Engineering Lab	0	0	3		45	30	75	1.5
10		3CS4-24	Digital Electronics Lab	0	0	3		45	30	75	1.5
11	PSIT	3CS7-30	Industrial Training	0	0	1		0	0	50	1
12	SODE CA	3CS8-00	Social Outreach, Discipline & Extra Curricular Activities							25	0.5
			Sub- Total	0	0	13		180	120	375	7.5
			TOTAL OF III SEMESTER	17	0	13		350	800	1225	24.5

The highlighted area shows the subjects related to Professional ethics, Gender human values, Environment and sustainability



B.Tech. : Computer Science & Engineering 2nd Year - IV Semester

THEORY

THEORY											
SN	Categ ory	Course		Contact hrs/week			Marks				Cr
		Code	Title				L	T	P	Exm Hrs	
1	BSC	4CS2-01	Discrete Mathematics Structure	3	0	0	3	30	120	150	3
2	HSMC	4CS1-03/	Managerial Economics and Financial	2	0	0	2	20	80	100	2
		4CS1-02	Accounting /Technical Communication								
3	ESC	4CS3-04	Microprocessor & Interfaces	3	0	0	3	30	120	150	3
4	PCC	4CS4-05	Database Management System	3	0	0	3	30	120	150	3
5		4CS4-06	Theory of Computation	3	0	0	3	30	120	150	3
6		4CS4-07	Data Communication and Computer Networks	3	0	0	3	30	120	150	3
		Sub Total		17	0	0		170	680	850	17

PRACTICAL & SESSIONAL

7	PCC	4CS4-21	Microprocessor & Interfaces Lab	0	0	2		30	20	50	1
8		4CS4-22	Database Management System Lab	0	0	3		45	30	75	1.5
9		4CS4-23	Network Programming Lab	0	0	3		45	30	75	1.5
10		4CS4-24	Linux Shell Programming Lab	0	0	2		30	20	50	1
11		4CS4-25	Java Lab	0	0	2		30	20	50	1
12	SODE CA	4CS8-00	Social Outreach, Discipline & Extra Curricular Activities							25	0.5
Sub- Total				0	0	12		180	120	325	6.5
TOTAL OF IV SEMEESTER				17	0	12		350	800	1175	23.5



B.Tech. : Computer Science & Engineering 2nd Year - IV Semester

IV	Computer Science and Engineering	Teaching Hrs			Ex m Hrs	Max. Marks			Comments
Course Code	Subject	L	T	P		I A	T E	Total	Common with
4CS1A	Microprocessors and Interfaces	3			3	20	80	100	CS,IT
4CS2A	Discrete Mathematical Structures	3	1		3	20	80	100	CS,IT
4CS3A	Statistics and Probability Theory	3			3	20	80	100	CS,IT
4CS4A	Software Engineering	3			3	20	80	100	CS,IT
4CS5A	Principles of Communication	3			3	20	80	100	CS,IT
4CS6A	Principles of Programming Languages	3			3	20	80	100	CS,IT
4CS7A	Microprocessor Lab			3	3	60	40	100	CS,IT
4CS8A	Communication Lab			3	3	60	40	100	CS,IT
4CS9A	Computer Aided Software Engineering Lab			3	4	60	40	100	CS,IT
4CS10A	Business Entrepreneurship Development			2	3	30	20	50	
4CSDC	Discipline & extra Curricular Activities							50	
	Total	18	1	1	1			1000	

The highlighted area shows the subjects related to Professional ethics, Gender human values, Environment and sustainability



B.Tech. : Computer Science & Engineering 3rd Year - VI Semester

VI	Computer Science and Engineering	Teaching Hrs			Ex m Hrs	Max. Marks			Comments
Course Code	Subject Name (Revised)	L	T	P		IA	TE	TOTAL	Common to
6CS1A	Computer Networks	3	-		3	20	80	100	CS, IT
6CS2A	Design and Analysis of Algorithms	3	-		3	20	80	100	CS, IT
6CS3A	Theory Of Computation	3			3	20	80	100	CS, IT
6CS4A	Computer Graphics and Multimedia Techniques	3			3	20	80	100	
6CS5A	Embedded System Design	3	-		3	20	80	100	
6CS6.1A	Advance Topics in Operating Systems	3	-		3	20	80	100	CS, IT
6CS6.2A	Artificial Intelligence								
6CS6.3A	Human Computer Interface								CS, IT
6CS7A	Java Programming Lab			3		45	30	75	CS, IT
6CS8A	Computer Graphics & Multimedia Lab			2		30	20	50	
6CS9A	Design and Analysis of Algorithms Lab.			3		60	40	100	CS, IT
6CS10A	Embedded System Design Lab.			2		45	30	75	
6CS11A	Humanities and Social Sciences			2		30	20	50	CS, IT
6CSDC	Discipline & Extra Curricular Activities							50	CS, IT
		18	0	12				1000	



B.Tech. : Electrical Engineering 2nd Year - III Semester

THEORY											
SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	BSC	3EE2-01	Advance Mathematics	3	0	0	3	30	120	150	3
2	HSMC	3EE1-02/ 3EE1-03	Technical Communication / Managerial Economics and Financial Accounting	2	0	0	2	20	80	100	2
3	ESC	3EE3-04	Power generation Process	2	0	0	2	20	80	100	2
4	PCC	3EE4-05	Electrical Circuit Analysis	3	0	0	3	30	120	150	3
5		3EE4-06	Analog Electronics	3	0	0	3	30	120	150	3
6		3EE4-07	Electrical Machine - I	3	0	0	3	30	120	150	3
7		3EE4-08	Electromagnetic Field	2	0	0	2	20	80	100	2
			Sub Total	18	0	0		180	720	900	18
PRACTICAL & SESSIONAL											
8	PCC	3EE4-21	Analog Electronics Lab	0	0	2		30	20	50	1
9		3EE4-22	Electrical Machine-I Lab	0	0	4		60	40	100	2
10		3EE4-23	Electrical circuit design Lab	0	0	4		60	40	100	2
13	PSIT	3EE7-30	Industrial Training	0	0	2				50	1
14	SODE CA	3EE8-00	Social Outreach, Discipline & Extra Curricular Activities							25	0.5
			Sub- Total	0	0	12		150	100	325	6.5
		TOTAL OF III SEMESTER		18	0	12		330	820	1225	24.5

The highlighted area shows the subjects related to Professional ethics, Gender human values, Environment and sustainability



B.Tech. : Electrical Engineering **2nd Year - III Semester**

SEMESTER III		Hrs. / Week			IA	Exam	Total
Subject Code	Title	L	T	P			
3EE1A	Electronic Devices & Circuits	3	1	Theory Subjects	20	80	100
3EE2A	Circuit Analysis-I	3	1		20	80	100
3EE3A	Digital Electronics	3	1		20	80	100
3EE4A	Object Oriented Programming	3			20	80	100
3EE5A	Electrical Machines-I	3	1		20	80	100
3EE6A	Advanced Engg. Mathematics-1	3			20	80	100
3EE7A	Electronic Devices Lab	Practical laboratory courses		2	45	30	75
3EE8A	Electrical Circuit Lab			2	30	20	50
3EE9A	Digital Electronics Lab			2	45	30	75
3EE10A	C++ Programming Lab			2	45	30	75
3EE11A	Humanities & Social Sciences			2	45	30	75
3EEDC	Discipline & Extra Curricular Activity						50



B.Tech. : Electrical Engineering

2nd Year - IV Semester

THEORY											
SN	Categ ory	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	BSC	4EE2-01	Biology	2	0	0	2	20	80	100	2
2	HSMC	4EE1-02/	Technical	2	0	0	2	20	80	100	2
		4EE1-03	Communication / Managerial Economics and Financial Accounting								
3	ESC	4EE3-04	Electronic Measurement & Instrumentation	2	0	0	2	20	80	100	2
4	PCC	4EE4-05	Electrical Machine - II	3	0	0	3	30	120	150	3
5		4EE4-06	Power Electronics	3	0	0	3	30	120	150	3
6		4EE4-07	Signals & Systems	3	0	0	3	30	120	150	3
7		4EE4-08	Digital Electronics	2	0	0	2	20	80	100	2
		Sub Total		17	0	0		170	680	850	17
PRACTICAL & SESSIONAL											
8	PCC	4EE4-21	Electrical Machine - II Lab	0	0	4		60	40	100	2
9		4EE4-22	Power Electronics Lab	0	0	4		60	40	100	2
10		4EE4-23	Digital Electronics Lab	0	0	2		30	20	50	1
11		4EE3-24	Measurement Lab	0	0	2		30	20	50	1
13	SODE CA	4EE8-00	Social Outreach, Discipline & Extra Curricular Activities							25	0.5
		Sub- Total		0	0	12		180	120	325	6.5
		TOTAL OF IV SEMEESTER		17	0	12		350	800	1175	23.5

The highlighted area shows the subjects related to Professional ethics, Gender human values, Environment and sustainability



B.Tech. : Electrical Engineering 3rd Year - V Semester

SEMESTER V	Title	Hrs. / Week			IA	Exa m	To tal
Subject Code		L	T	P			
5EE1A	Power Electronics	3	1	Theory Subjects	20	80	100
5EE2A	Microprocessors & Computer Architecture	3			20	80	100
5EE3A	Control Systems	3	1		20	80	100
5EE4A	Data Base Management System	3			20	80	100
5EE5A	Transmission & Distribution of Electrical Power	3	1		20	80	100
5EE6.1A	Optimisation Techniques	3	1		20	80	100
5EE6.2A	Principle of Communication Systems						
5EE6.3A	Introduction to VLSI						
5EE7A	Power Electronics Lab	Practical laboratory courses	2	45	30	75	
5EE8A	Microprocessor Lab		2	45	30	75	
5EE9A	System Programming Lab		2	45	30	75	
5EE10A	DBMS Lab		2	45	30	75	
5EE11A	Professional Ethics and Disaster Management		2	30	20	50	
5EEDC	Discipline & Extra Curricular Activity						50
	T o t a l	18	3	10			100



VALUE ADDED COURSES

CIVIL ENGINEERING

3CE1-03/4CE1-03: MANAGERIAL ECONOMICS AND FINANCIAL ACCOUNTING

Basic economic concepts-Meaning, nature and scope of economics, deductive vs inductive methods, static and dynamics, Economic problems: scarcity and choice, circular flow of economic activity, national income-concepts and measurement.

Demand and Supply analysis-Demand-types of demand, determinants of demand, demand function, elasticity of demand, demand forecasting –purpose, determinants and methods, Supply-determinants of supply, supply function, elasticity of supply.

roduction and Cost analysis-Theory of production-production function, law of variable proportions, laws of returns to scale, production optimization, least cost combination of inputs, isoquants. Cost concepts-explicit and implicit cost, fixed and variable cost, opportunity cost, sunk costs, cost function, cost curves, cost and output decisions, cost estimation

Market structure and pricing theory-Perfect competition, Monopoly, Monopolistic competition, Oligopoly.

Financial statement analysis-Balance sheet and related concepts, profit and loss statement and related concepts, financial ratio analysis, cash-flow analysis, funds-flow analysis, comparative financial statement, analysis and interpretation of financial statements, capital budgeting techniques.

5CE2A: ENVIRONMENTAL ENGINEERING-I

Introduction to scope, objective and outcome of subject.

General: Environment and its components, Importance of water, Role of an Environmental Engineer, Historical overview. Water Demand: Design flow, design periods, design population, factors affecting water consumption, variation in water demand, design capacities for various water supply components.

Source of water and collection works: Alternative sources i.e. rain, surface and ground water, Assessment of yield and development of the source. Quality of water: The hydrological cycle and water quality, physical, chemical and biological water quality parameters, water quality requirements, Indian Standards

Transmission of water: Hydraulics of conduits, selection of pipe materials, pipe joints, pumps, pumps station. Preliminary Treatment of Water: Historical overview of water treatment, water treatment processes (theory and application): aeration, solids separation, settling operations, coagulation, softening

Advanced Treatment of Water: filtration, disinfection, other treatment processes, dissolved solids removal, treatment plant design, preparation of hydraulic profiles.

Distribution of water: Method of distributing water, distribution reservoirs, distribution system, distribution system components, capacity and pressure requirements, design of distribution systems, hydraulic analysis of distribution systems, pumping required for water supply system. 5Plumbing of Building for water supply: Service connections, fixture units, simultaneous flow, design of plumbing system.



5CE6.1A : GROUND IMPROVEMENT TECHNIQUES

Introduction to scope, objective and outcome of subject.

Introduction: Formation of soil, major soil types, collapsible soil, expansive soil, reclaimed soil, sanitary land fill, ground improvements; objective, potential. General principles of compaction: Mechanics, field procedure, quality control in field.

Ground Improvement in Granular soil: In-place densification by (a) Vibro floatation (b) Compaction piles in sand (c) Vibro compaction piles (d) Dynamic compaction (e) Blasting

Ground improvement in cohesive soil: Preloading with or without vertical drains. Compressibility vertical and radial consolidation, Rate of consolidation, Preloading methods. Types of drains, Design of vertical drains, Construction techniques. Stone column: Function, Design principles, load carrying capacity, construction techniques, settlement of stone column foundation.

Ground Improvement by Grouting & Soil Reinforcement: Grouting in soil: Types of grout, desirable characteristics, Grouting pressure, Grouting methods. Soil Reinforcement – Mechanism, Types of reinforcing elements, Reinforcement- Soil interaction, Reinforced soil application beneath roads, foundation and retaining walls

Soil Stabilization: Lime Stabilization – Base Exchange mechanism, Pozzolonic reaction, limesoil interaction, lime columns, Design of foundation on lime column. Cement stabilization-Mechanism, amount, Age and curing. Fly ash-Lime stabilization Soil bitumen stabilization

5CE6.3A: SOLID WASTE MANAGEMENT

General: Problems associated with Solid Waste Disposal. Generation of Solid Waste: Goals and objectives of solid waste management, Classification of Solid Waste. Solid Waste Generation, Factors Influencing Generation of Solid Waste, Characteristics of Solid Waste, Analysis of Solid Waste

Onsite Handling, Storage and Processing: Public Health and Aesthetics, Onsite Handling, Onsite, Storage, Dust bins, Community Containers, Container Locations, On-site Processing Methods.

Solid Waste Collections, Transfer and Transport: Collection Systems, Equipment and Labor requirement, Collection Routes, Options for Transfer and Transport Systems.

Processing and Disposal Methods: Processing Techniques and Methods of Disposal, Sanitary land filling, Composting and Incineration, Bioremediation.

Recovery of Resources, Conversion, Products and Energy: Material Recovery, Energy Generation and Recovery Operation, Reuse in other industry. Industrial Solid Waste: Nature, Treatment and Disposal Methods.



5CE7A: ENVIRONMENTAL ENGINEERING DESIGN & Lab. –I

1. To determine the pH of the given sample of water.
2. To determine the turbidity of the given sample of water
3. To determine Total Solids of the given water sample.
4. To determine the Total Dissolved Solids of the given water sample.
5. To find out conductivity of the given water sample.
6. To determine hardness of the given water sample.
7. To find out chloride of the given water sample.
8. To determine alkalinity of the given water sample
9. To find out acidity of the given water sample.
10. To determine hardness of the given water sample.
11. To determine the optimum dose of alum by Jar test.
12. To study various water supply Fittings.

6CE3A : ENVIRONMENTAL ENGINEERING –II

General: Terms: sewerage, domestic sewage, sewage treatment, disposal scope, Role of an Environmental engineer, historical overview. Sewage Characteristics: Quality parameters: BOD, COD, TOC, Solids, DO, Nitrogen, Phosphorus, Standards of disposal into natural watercourses and on land, Indian standards.

Collection of Sewage: Systems of sewerage, Separate, combined, and partially separate, components of sewerage systems, systems of layout, quantity of sanitary sewage and variations, quantity of storm water, rational method, shapes of sewer, Hydraulic design of sewers: diameter self cleansing velocity and slopes, construction and testing of sewer line, Sewer materials, joints and appurtenances, Sewage pumping and pumping stations, maintenance of sewerage system

Sewage Treatment: Various units: their purpose, sequence and efficiencies, preliminary treatment, screening and grit removal units, oil and grease removal, primary treatment, secondary treatment, activated sludge process, trickling filter, sludge digestion and drying beds, stabilization pond, septic tank, soakage systems, recent trends in sewage treatment, advanced wastewater treatment :nutrient removal, solids removal.

Wastewater Disposal and Reuse: Disposal of sewage by dilution, selfpurification of streams, sewage disposal by irrigation sewage farming, waste waters reuse. Plumbing for Design of Buildings: Various systems of plumbing – one pipe, two pipes, single stack, traps, layout of house drainage.

Air and Noise Pollution: Air quality, Emission standards, vehicular pollution, Effect of air pollution on human health, Noise Pollution, global effect of air and noise pollution, green house effect, acid rain etc



6CE8A: ENVIRONMENTAL ENGINEERING LAB. & DESIGN – II

1. To determine the pH of the given sample of sewage.
2. To determine Total Solids of the given sewage sample.
3. To determine the Total Dissolved Solids of the given sewage sample.
4. To find out Total Settle-able Solids of the given sewage sample.
5. To determine Total Suspended Solids of the given sewage sample.
6. To find out the Quantity of Dissolved Oxygen present in the given water sample by Winkler's Method.
7. To determine Biochemical Oxygen Demand exerted by the given wastewater sample.
8. To find out Chemical Oxygen Demand of the waste water sample.
9. To study various Sanitary Fittings

7CE1A: WATER RESOURCES ENGINEERING – I

Introduction: Definitions, functions and advantages of irrigation, present status of irrigation in India, classification for agriculture, soil moisture and crop water relations, Irrigation water quality. Consumptive use of water, principal Indian crop seasons and water requirements, multiple cropping, hybrid crops, water harvesting and conservation.

Canal Irrigation: Types of canals, parts of canal irrigation system, channel alignment, assessment of water requirements, estimation of channel losses, design of channels, regime and semi theoretical approaches (Kennedy's Theory, Lacey's Theory), cross section of channels, silt control in canals. Water Distribution System: Rotational delivery (Warabandi, Jama Bandi, Khasra Bandi, Sajra Sheets), continuous delivery and delivery on demand, Role of command area development authority, Functions and organizational structures.

Distribution of Canal Water: System of regulation and control, outlets, assessment of canal revenue. Hydraulics of Alluvial Rivers : Critical tractive force, regimes of flow, resistance relationship for natural streams, bed load, suspended load and total equations, different stages of rivers, meandering, aggradations, and degradation, river training & bank protection works.

Water Logging: Causes, preventive and curative measures, drainage of irrigated lands, saline and alkaline lands, types of channels lining and design of lined channel. Well Irrigation: Open wells and tube wells, types of tube wells, duty of tube well water.

Hydrology: Definition, Hydrologic cycle, Application to Engineering problems, measurement of rainfall, rain gauge, peak flow, flood frequency method, catchment area formulae, Flood hydrograph, Rainfall analysis, Infiltration, Run off, Unit hydrograph and its determination, Estimation of run off.



7CE6.3A : RURAL WATER SUPPLY AND SANITATION

General: Importance of village community in India, Condition of Indian villages with special regard to economics, social and health aspects. Sources of water: Traditional sources of water in rural areas. Different types of wells, sanitary aspects in well construction, pumps used for village wells, Hand pump Technology, its operation and maintenance. Water harvesting techniques.

Quality of water: Estimation of total water requirement including cattle water demand, quality of water needed for village community, water quality surveillance, standards of water quality. Communicable Diseases: Diseases and immunity, Source of communicable diseases, Mode of transfer, Control of communicable diseases, Guinea worm Eradication

Water Treatment: Slow sand filter, horizontal roughing filter and their combination. Disinfection of rural water sources, Fluoride and its removal. Schemes of Rural water supply: Different Schemes of Rural water supply in Rajasthan, Their Design and project formulation including the programmes and standards laid by Govt. of India and Govt. of Rajasthan.

Milk and Food sanitation: Essentials of dairy farm and cattle shed sanitation, Tests for milk and dairy products, food epidemics, food poisoning, Botulism. Fly and Mosquito control: Life cycle of flies and mosquitoes, various methods of flies and mosquito control.

Rural Sanitation: Village latrines, VIP latrines, pour flush latrines, materials, construction and cost of the latrines, Pollution aspects and pollution travel from latrines. Storm water and sludge problems. Septic tank, soak pit, small bore sewer system; its design and construction. Animal waste, method of composting, Biogas, collection and disposal of wastes. Community Awareness and user participation: Planning of communication support in rural supply and sanitation projects.

8CE1A : WATER RESOURCES ENGINEERING- II

Regulation of works: Falls, Classification of falls, Design of falls, Distributory head regulator and cross-head regulator, Escape, bed bars. Cross-Drainage Structure: Necessity of Cross-drainage structures, their types and selection, comparative merits and demerits, design of various types of cross-drainage structure-aqueducts, siphon aqueduct, super passage siphon, level crossing and other types

Diversion Head works: Design for surface and subsurface flows, Bligh's and Khosla's methods. Selection of site and layout, different parts of diversion head works, types of weirs and barrages, design of weirs on permeable foundation, silt excluders and different types of silt ejectors. Energy dissipation.

Embankment Dams: Suitable sites, causes of failures, stability and seepage analysis, flownet, slope stability analysis, precautions of piping, principles of design of earth dams. Gravity Dams: Force acting on a gravity dam, stability requirements, Instrumentation

Spillways: Spillway capacity, flood routing through spillways, different types of spillways and gates, energy dissipation below spillways. Hydro Power Plant: General features of hydroelectric schemes, elements of power house structure, selection of turbines, draft tube and setting of turbine, cavitations

Reservoirs: Evaluation of impact of water projects on river regimes and environment. Reservoir sedimentation and water shed management. Optimization: Introduction to optimization techniques and system approach. Introduction to G.I.S. and Computer aided irrigation design.



5CE4-05: WATER RESOURCE ENGINEERING /5CE4-23: WATER RESOURCES ENGINEERING DESIGN LAB

Introduction: Objective, scope and outcome of the course.

Introduction: Definitions, functions and advantages of irrigation, present status of irrigation in India, classification for agriculture, soil moisture and crop water relations, Irrigation water quality. Consumptive use of water, principal Indian crop seasons and water requirements.

Canal Irrigation: Types of canals, design of channels, regime and semi theoretical approaches (Kennedy's Theory, Lacey's Theory) Diversion Head works: Design for surface and subsurface flows, Bligh's and Khosla's methods.

Embankment Dams: Suitable sites, causes of failures, stability and seepage analysis, flow net, principles of design of earth dams. Gravity Dams: Force acting on a gravity dam, stability requirements.

Well Irrigation: Open wells and tube wells, types of tube wells, duty of tube well water. Cross-Drainage Structure: Necessity of Crossdrainage structures, their types and selection, comparative merits and demerits.

Hydrology: Definition, Hydrologic cycle, measurement of rainfall, Flood hydrograph, Rainfall analysis, Infiltration, Run off, Unit hydrograph and its determination.

5CE5-11: AIR & NOISE POLLUTION AND CONTROL

Introduction: Objective, scope and outcome of the course.

Air Pollution: Air pollutants, Sources, classification, Combustion Processes and pollutant emission, Effects on Health, vegetation, materials and atmosphere, Reactions of pollutants in the atmosphere and their effects- Smoke, smog and ozone layer disturbance, Greenhouse effect.

Air sampling and pollution measurement methods, principles and instruments, Ambient air quality and emission standards, Air pollution indices, Air Act, legislation and regulations, control principles,

Removal of gaseous pollutants by adsorption, absorption, reaction and other methods. Particulate emission control, settling chambers, cyclone separation, Wet collectors, fabric filters, electrostatic precipitators and other removal methods like absorption, adsorption, precipitation etc. Biological air pollution control technologies, Indoor air quality.

Noise pollution: Basics of acoustics and specification of sound; sound power, sound intensity and sound pressure levels; plane, point and line sources, multiple sources; outdoor and indoor noise propagation; psychoacoustics and noise criteria,

Effects of noise on health, annoyance rating schemes; special noise environments: Infrasound, ultrasound, impulsive sound and sonic boom; noise standards and limit values; noise instrumentation and monitoring procedure. Noise indices. Noise control methods



5CE5-12: DISASTER MANAGEMENT

Introduction: Objective, scope and outcome of the course.

Introduction: Understanding the Concepts and definitions of Disaster, Hazard, Vulnerability, Risk, Natural and Manmade Disasters, Disaster and Development, and Climate Change.

Types of Disasters, their occurrence/ causes, impact and preventive measures: Geological Disasters: earthquakes, landslides, tsunami, mining; Hydro-Meteorological Disasters: floods, cyclones, lightning, thunder-storms, hail storms, avalanches, droughts, cold and heat waves. Biological Disasters: epidemics, pest attacks, forest fire.; Technological Disasters: chemical, industrial, radiological, nuclear.

Manmade Disasters: building collapse, rural and urban fire, road and rail accidents. Disaster profile of Indian continent, Mega Disasters of India and Lessons Learnt. Risk mapping.

Disaster Management Cycle: Disaster Management Cycle and its components: Pre disaster and post disaster, Paradigm Shift in Disaster Management. Safety tips for various types of disasters.

Disaster management system in India: Disaster Management Act 2005, National Guidelines and Plans on Disaster Management; Role of Government (local, state and national), Non-Government and Inter Governmental Agencies.

6CE4-03: ENVIRONMENTAL ENGINEERING

Introduction: Objective, scope and outcome of the course.

Water: -Sources of Water and quality issues, water quality requirement for different beneficial uses, Water quality standards, water quality indices. Water Supply systems, Need for planned water supply schemes, Water demand industrial and agricultural water requirements, Components of water supply system; Transmission of water, Distribution system, Various valves used in W/S systems, service reservoirs and design. Water Treatment: aeration, sedimentation, coagulation flocculation, filtration, disinfection, advanced treatments like adsorption, ion exchange, membrane processes.

Sewage- Domestic and Storm water, Quantity of Sewage, Sewage flow variations. Conveyance of sewage- Sewers, shapes design parameters, operation and maintenance of sewers, Sewage pumping; Sewerage, Sewer appurtenances, Design of sewerage systems. Small bore systems, Storm Water- Quantification and design of Storm water. Sewage characteristics: Quality parameters: BOD, COD, TOC, Solids, DO, Nitrogen, Phosphorus, Standards of disposal into natural watercourses and on land, Indian standards. Sewage and Sullage, Pollution due to improper disposal of sewage, Wastewater treatment, aerobic and anaerobic treatment systems, suspended and attached growth systems, recycling of sewage – quality requirements for various purposes. Wastewater Disposal and Refuse: Disposal of sewage by dilution, Selfpurification of streams, sewage disposal by irrigation sewage farming, waste water reuse.

Air - Composition and properties of air, Quantification of air pollutants, Monitoring of air pollutants, Air quality standards, Control measures for Air pollution

Noise- Basic concept, measurement and various control methods



6CE5-12: SOLID AND HAZARDOUS WASTE MANAGEMENT

Introduction: Objective, scope and outcome of the course.

Introduction to SWM: Definition of waste and solid waste, classification solid waste, sources of solid waste, its composition, factors affecting waste generation, traditional methods of waste collection and disposal

Waste Collection: Components of waste collection, waste collection containers, their characteristics, types, waste collection vehicles, collection frequency, collection route, transfer stations

Solid Waste Characterization: Physical characteristics, chemical characteristics and biological characteristics of solid wastes Waste Processing: Size reduction, factors affecting size reduction, size reducing equipment, volume reduction, equipment for volume reduction, waste minimization, waste hierarchy, R principle

Hazardous Waste: Definition, sources, classification, collection, segregation, treatment and disposal methods Radioactive Waste, E-Waste, Biomedical Waste: Definition, sources, classification, segregation, management and disposal methods

Treatment and Disposal of Solid Waste: Composting, vermicomposting, biogas production, thermal treatment, incineration, pyrolysis, gasification, biological treatment, Sanitary land filling, land fill leachate and gas management Latest Advances and Rules related to SWM, Hazardous Waste, Plastic Waste and E-Waste Management

6CE4-21: Environmental Engineering Design and Lab

1. Population forecasting and water demand
2. Water Quality parameters
3. Design of Sedimentation tanks, coagulation and flocculation tanks
4. Design of rapid and slow sand filters
5. Design of disinfection units and transmission systems
6. Design of Sewer lines and storm water systems
7. Design of aerobic and anaerobic treatment units
8. Design of suspended and attached growth systems

Lab.

1. Physical Characterization of water: Turbidity, Electrical Conductivity, pH
2. Analysis of solids content of water: Dissolved, Settleable, suspended, total, volatile, inorganic etc. 3. Alkalinity and acidity, Hardness: total hardness, calcium and magnesium hardness
4. Optimum coagulant dose
5. Chemical Oxygen Demand (COD)
6. Dissolved Oxygen (D.O) and Biochemical Oxygen Demand (BOD)
7. Break point Chlorination
8. Bacteriological quality measurement: MPN,



7CE4-23: Soft Skills Lab

SOFT SKILLS- Introduction to Soft Skills, Aspects of Soft Skills, Identifying your Soft Skills, Negotiation skills, Importance of Soft Skills, Concept of effective communication. **SELF-DISCOVERY**- Self-Assessment, Process, Identifying strengths and limitations, SWOT AnalysisGrid.

PREPARING CV/RESUME – Introduction, meaning, difference among bio-data, CV and resume, CV writing tips. Do's and don'ts of resume preparation, Vocabulary for resume, common resume mistakes, cover letters, tips for writing cover letters.

INTERVIEW SKILLS - Introduction. Types of interview, Types of question asked, Reasons for rejections, Post-interview etiquette, Telephonic interview, Dress code at interview, Mistakes during interview, Tips to crack on interview, Contextual questions in interview skills, Emotional crack an interview, Emotional intelligence and critical thinking during interview process.

DEVELOPING POSITIVE ATTITUDE – Introduction, Formation of attitude, Attitude in workplace, Power of positive attitude, Examples of positive attitudes, Negative attitudes, overcoming negative attitude and its consequences,

IMPROVING PERCEPTION- Introduction, Understanding perception, perception and its application in organizations.

CAREER PLANNING – Introduction, Tips for successful career planning, Goal setting immediate, short term and long term, Strategies to achieve goals, Myths about choosing career.

TEAM BUILDING AND TEAM WORK - Introduction, Meaning, Characteristics of an effective team, Role of a Team Leader, Role of Team Members, inter group Collaboration Advantages, Difficulties faced, Group Exercises-Team Tasks and Role-Play, Importance of Group Dynamics.

TIME MANAGEMENT: The Time management matrix, apply the Pareto Principle (80/20 Rule) to time management issues, to prioritize using decision matrices, to beat the most common time wasters, how to plan ahead, how to handle interruptions, to maximize your personal effectiveness, how to say “no” to time wasters, develop your own individualized plan of action. **STRESS MANAGEMENT** – Introduction, meaning, positive and negative stress, Sources of stress, Case studies, signs of stress, Stress management tips, Teenage stress. Group discussion practice on current topics, Quantitative aptitude and reasoning preparation

7CE4-24: Environmental Monitoring and Design Lab

Design:

1. Sewer design and estimation of Waste/Storm water by software.
2. Design of Water Treatment Plant and Sewage Treatment Plant
3. Design of Oxidation pond, stabilization pond and aerated lagoons.
4. Design of aerobic and anaerobic digester.

Lab:

1. Demonstration of air pollution monitoring instruments namely, High volume sampler
2. Determination of SPM, PM₁₀ and PM_{2.5}.
3. Demonstration of noise pollution monitoring equipment namely, modular precision sound level meter.
4. Air quality monitoring for Traffic/Residential locality and its effect on the environment.
5. Noise quality monitoring for Traffic/Residential locality and its effect on the environment.



6. Latest technology for management of municipal solid waste, e-waste, bio- medical waste and their prevalent rules and regulations.

Electrical Engineering

3EE11A: HUMANITIES & SOCIAL SCIENCE (Common to EE and EX)

Unit 1 : India: Brief history of Indian Constitution, farming features, fundamental rights, duties, directive principles of state. History of Indian National Movement, socio economic growth after independence.

Unit 2 : Society: Social groups- concept and types, socialization- concept and theory, social control: concept, social problem in contemporary India, status and role.

Unit 3 : The Fundamentals of Economics: meaning, definition and importance of economics, Logic of choice, central economic problems, positive and normative approaches, economic systems- socialism and capitalism.

Unit 4 : Microeconomics: Law of demand supply, utility approach, indifference curves, elasticity of demand and supply and applications, consumer surplus, Law of returns to factors and returns to scale.

Unit 5 : Macroeconomics: concepts relating to National product–National income and its measurement, Simple Keynesian theory, simple multiplier, money and banking. Meaning, concept of international trade, determination of exchange rate, Balance of payments.

4EE1-03/3EE1-03: MANAGERIAL ECONOMICS AND FINANCIAL ACCOUNTING

Introduction: Objective, scope and outcome of the course.

Basic economic concepts earning, nature and scope of economics, deductive vs inductive methods, static and dynamics, Economic problems: scarcity and choice, circular flow of economic activity, national income- concepts and measurement

Demand and Supply analysis Demand-types of demand, determinants of demand, demand function, elasticity of demand, demand forecasting –purpose, determinants and methods, Supply-determinants of supply, supply function, elasticity of supply

Production and Cost analysis Theory of production-production function, law of variable proportions, laws of returns to scale, production optimization, least cost combination of inputs, isoquants. Cost concepts-explicit and implicit cost, fixed and variable cost, opportunity cost, sunk costs, cost function, cost curves, cost and output decisions, cost estimation.

Market structure and pricing theory perfect competition, Monopoly, Monopolistic competition, Oligopoly

Financial statement analysis Balance sheet and related concepts, profit and loss statement and related concepts, financial ratio analysis, cash-flow analysis, funds-flow analysis, comparative financial statement, analysis and interpretation of financial statements, capital budgeting techniques



5EE11A PROFESSIONAL ETHICS AND DISASTERS MANAGEMENT

(Common for

EE and EX)

1.Objectives: • To appreciate the importance and values and ethics in implementing the technology and ensure sustainable development, happiness and prosperity.

• To understand the co-existence with nature and to be aware of potential natural and manmade disasters.

2 Human Values: Effect of Technological Growth and Sustainable Development. Profession and Human Values: Values crisis in contemporary society. Nature of values. Psychological Values, Societal Values and Aesthetic Values. Moral and Ethical values.

3 Professional Ethics:

• Professional and Professionalism-Professional Accountability, Role of a professional, Ethic and image of profession.

• Engineering Profession and Ethics-Technology and society, Ethical obligations of Engineering professionals, Roles of Engineers in industry, society, nation and the world.

• Professional Responsibilities-Collegiality, Loyalty, Confidentiality, Conflict of Interest, Whistle Blowing.

4 Disaster Management: Understanding Disasters and Hazards and related issues social and environmental. Risk and Vulnerability. Types of Disasters, their occurrence/ causes, impact and preventive measures: Natural Disasters- Hydro-meteorological Based Disasters like Flood, Flash Flood, Cloud Burst, Drought, Cyclone, Forest Fires; Geological Based Disasters like Earthquake, Tsunami, Landslides, Volcanic Eruptions.

5 Manmade Disasters: Chemical Industrial Hazards, Major Power Break Downs, Traffic Accidents, Fire Hazards, Nuclear Accidents. Disaster profile of Indian continent. Case studies. Disaster Management Cycle and its components



COMPUTER SCIENCE ENGINEERING

4CS10A Business Entrepreneurship Development (Common to Computer Science and Engineering & Info. Tech)

Introduction to Entrepreneurship- Concept and need, Entrepreneurship and innovation, Entrepreneurship and economic growth.

Entrepreneurial competencies, Leadership, Decision making, Motivation, Risk taking.

Business Enterprise Planning- Identification of business opportunity, Idea generation, Demand estimation, Preparation of project report, Feasibility analysis.

Intellectual Property rights, Patents, Taxation- Central excise & Sales tax, VAT.

Government Policies for Entrepreneurs, Entrepreneurial career opportunities for Engineers, case studies.

6CS11A Humanities and Social Sciences (Common to CS & IT)

1. India-brief history of Indian constitution, framing-features fundamental rights, duties, directive principles of states, History of Indian National movement, Socio economic growth after independence.
2. Society-Social groups-concepts and types, socialization-concept theory, social control: concept, social problem in contemporize. India, status and role.
3. The fundamental of Economics-meaning, definition and importance of economics, Logic of choice, central economic problems, positive and normative approaches, economic systems socialism and capitalism.
4. Microeconomics-Law of demand and supply, utility approach, indifference curves, elasticity of demand & supply and applications, consumer surplus, Law of returns to factors and returns to scale.
5. Macroeconomics- concept relating to National product-National income and its measurement, simple Keynesian theory, simple multiplier, money and banking. Meaning, concept of international trade, determination of exchange rate, Balance of payments.

3CS1-03/ 4CS1-03: Managerial Economics and Financial Accounting

Basic economic concepts- Meaning, nature and scope of economics, deductive vs inductive methods, static and dynamics, Economic problems: scarcity and choice, circular flow of economic activity, national income-concepts and measurement

Demand and Supply analysis- Demand-types of demand, determinants of demand, demand function, elasticity of demand, demand forecasting –purpose, determinants and methods, Supply-determinants of supply, supply function, elasticity of supply.

Production and Cost analysis- Theory of production- production function, law of variable proportions, laws of returns to scale, production optimization, least cost combination of inputs, isoquants. Cost concepts-explicit and implicit cost, fixed and variable cost, opportunity cost, sunk costs, cost function, cost curves, cost and output decisions, cost estimation.

Market structure and pricing theory- Perfect competition, Monopoly, Monopolistic competition, Oligopoly.

Financial statement analysis- Balance sheet and related concepts, profit and loss statement and related concepts, financial ratio analysis, cash-flow analysis, funds-flow analysis, comparative financial statement, analysis and interpretation of financial statements, capital budgeting techniques