17.4.1. EDUCATION FOR SDGS COMMITMENT TO MEANINGFUL EDUCATION

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY
An Autonomous Institution | Approved by AICTE | Affiliated to Anna University | Accredited by NAAC with A++ Grade
Kuniamuthur, Coimbatore – 641008
Phone : (0422)-2678001 (7 Lines) | Email : info@skcet.ac.in | Website : www.skcet.ac.in

DEPARTMENT OF INFORMATION TECHNOLOGY

CURRICULUM AND SYLLABI

B.TECH. INFORMATION TECHNOLOGY

REGULATION 2022

(2022-2026 BATCH)

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

KUNIAMUTHUR, COIMBATORE-641008

DEPARTMENT OF INFORMATION TECHNOLOGY

Department Vision

To impart quality education by providing opportunities for shaping and transforming students into eminent and ethical IT professionals, researchers, innovators and entrepreneurs with requisite skill set to excel in the dynamic field of IT.

Department Mission

- To provide state of art computer education.
- To equip staff and students with the latest skills in the field
- To keep pace with new invention and technology development, thereby set the trend for the futuristic information technology education and research with ethical and moral values.

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

KUNIAMUTHUR, COIMBATORE-641008

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAMME OUTCOMES

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY KUNIAMUTHUR, COIMBATORE-641008

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAMME EDUCATIONAL OBJECTIVES

PEO 1: Graduates will have a profound knowledge in the various programming languages and possess globally competent skill sets by inculcating continuous up gradation of their technical skills and personality traits.

PEO 2: Graduates will be able to analyze and find solutions to various applications and reconcile the dynamic trends in the field of Information Technology.

PEO 3: Graduates will contribute to the society by their ethical behaviour and effective teamwork.

PEO 4: Graduates will excel with different skills like effective communication, leadership qualities, and provide smart solutions in business environment

Mapping of POs to PEOs

Programme Educational Objectives	Programme Outcomes											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
PEO 1	3	3	3	3	3	3	3	2	1	2	2	3
PEO 2	3	3	3	3	3	2	2	2	2	1	2	2
PEO 3	2	2	2	2	2	2	2	3	3	3	2	1
PEO 4	2	2	3	2	2	2	3	3	3	3	3	3

1	Reasonably agreed	**2**	Moderately agreed	**3**	Strongly agreed

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

KUNIAMUTHUR, COIMBATORE-641008

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAMME SPECIFIC OUTCOMES

PSO 1:

Graduates will demonstrate multidisciplinary knowledge for problem solving by creating solutions for product based and application-based software for the advancement of the society.

PSO 2:

Graduates attain advance knowledge in Information and Communication Technologies (ICT) thereby creating real time solutions for different projects by using modern tools prevailing in the current trends.

PSO 3:

Graduates will exhibit state of the art technologies by applying their knowledge in various programming skills to overcome the demand of sustainable development.

R2022

SEMESTER I							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
1.	22MA102	Mathematics I	3/1/0	4	4	60/40	BSC
2.	22EC111	Digital Logic and Design	3/0/0	3	3	60/40	ESC
3.	22EN101	Technical Communication Skills	2/0/2	4	3	50/50	HSMC
4.	22CH101	Engineering Chemistry	3/0/2	5	4	50/50	BSC
5.	22IT101	Application Development Practices	3/0/2	5	4	50/50	PCC
6.	22CS101	Problem Solving using C++	3/0/2	5	4	50/50	PCC
7.	22EC112	Digital Logic Design Laboratory	0/0/2	2	1	40/60	ESC
8.	22MC101	Mandatory Course – I (Induction Programme)	3 Weeks			0/100	MC
			Total	**28**	**23**	**800**	

SEMESTER II							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
1.	22MA202	Mathematics II	3/1/0	4	4	60/40	BSC
2.	22EE111	Basics of Electrical and Electronics Engineering	2/1/0	3	3	60/40	ESC
3.	22TA101	Heritage of Tamils	1/0/0	1	1	60/40	HSMC
4.	22PH201	Physics	3/0/2	5	4	50/50	BSC
5.	22CS201	Data Structures and Algorithms	3/0/2	5	4	50/50	PCC
6.	22IT201	Database Management Systems	3/0/2	5	4	50/50	PCC
7.	22AD201	Java Programming	3/0/2	5	4	50/50	PCC
8.	22EE114	Basics of Electrical and Electronics Engineering Laboratory	0/0/2	2	1	40/60	ESC
9.	22MC102	Mandatory Course II (Environmental Sciences)	2/0/0	2	0	0/100	MC
			Total	**32**	**25**	**900**	

SEMESTER III							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
1.	22GE201	Universal Human Values	3/0/0	3	3	60/40	HSMC
2.	22IT301	Computer Architecture	3/0/0	3	3	60/40	PCC
3.	22MA302	Random Variables and Statistics	3/1/0	4	4	60/40	BSC
4.	22TA201	Tamils and Technology	1/0/0	1	1	60/40	HSMC
5.	22IT302	Web Technology	1/0/4	5	3	50/50	PCC
6.	22AD301	Design and Analysis of Algorithms	1/0/4	5	3	50/50	PCC
7.	22CS301	Advanced Java Programming	1/0/4	5	3	50/50	PCC
8.	22MCXXX	Mandatory Course-III	2/0/0	2	0	0/100	MC
			Total	**28**	**20**	**800**	

SEMESTER IV							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
1.	22IT401	Formal Languages and Automata Theory	3/0/0	3	3	60/40	PCC
2.	22MA401	Optimization and Project Management	3/1/0	4	4	60/40	BSC
3.	22IT402	Software Testing	1/0/4	5	3	50/50	PCC
4.	22AD401	Cloud Computing	1/0/4	5	3	50/50	PCC
5.	22CS402	Web Frameworks	1/0/4	5	3	50/50	PCC
6.	22CS403	Operating Systems	3/0/2	5	4	50/50	PCC
7.	22MCXXX	Mandatory Course-IV	2/0/0	2	0	0/100	MC
			Total	**29**	**20**	**700**	

SEMESTER V							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
1.	22IT501	Data Communications and Computer Networks	3/0/0	3	3	60/40	ESC
2.	22XX0XX	Open Elective – I	3/0/0	3	3	60/40	OEC
3.	22EC511	Fundamentals of Data and Mobile Communications	3/0/0	3	3	60/40	ESC
4.	22XXXXX	Professional Elective-I	0/0/6	6	3	40/60	PEC
5.	22XXXXX	Professional Elective-II	3/0/0	3	3	60/40	PEC
6.	22CS502	Principles of Compiler Design	3/0/2	5	4	50/50	PCC
7.	22IT502	Data Communications and Computer Networks Laboratory	0/0/3	3	1.5	40/60	ESC
8.	22IT503	Mini Project	0/0/2	2	1	40/60	PW
			Total	**28**	**21.5**	**800**	

SEMESTER VI							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
1.	22IT601	Embedded Systems and Internet of Things	3/0/0	3	3	60/40	PCC
2.	22XXXX	Emerging Elective - I	3/0/0	3	3	60/40	EEC
3.	22CS602	Cryptography and Network Security	3/0/0	3	3	60/40	PCC
4.	22XXXXX	Professional Elective-III	3/0/0	3	3	60/40	PEC
5.	22XXXXX	Professional Elective-IV	3/0/0	3	3	60/40	PEC
6.	22IT602	Python Programming	3/0/2	5	4	50/50	PCC
7.	22IT603	Embedded Systems and Internet of Things Laboratory	0/0/3	3	1.5	40/60	PCC
			Total	**23**	**20.5**	**700**	

SEMESTER VII							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
1.	22IT701	Computational Biology	3/0/0	3	3	60/40	PCC
2.	22XXXX	Open Elective-II	3/0/0	3	3	60/40	OEC
3.	22XXXX	Emerging Elective - II	3/0/0	3	3	60/40	EEC
4.	22XXXXX	Professional Elective-V	3/0/0	3	3	60/40	PEC
5.	22XXXX	Professional Elective-VI	3/0/0	3	3	60/40	PEC
6.	22IT702	Big Data Frameworks and Technologies	3/0/2	5	4	50/50	PCC
7.	22EES01	Employability Enhancement Skills			2	0/100	EES
			Total	**20**	**21**	**700**	

SEMESTER VIII							
S No.	**Course Code**	**Course**	**L/T/P**	**Contact hrs/week**	**Credit**	**Ext/Int**	**Category**
PROJECT WORK							
1	22IT801	Project	0/0/24	24	12	40/60	PW
			Total	**24**	**12**	**100**	

HUMANITIES AND MANAGEMENT COURSES (8 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	22EN101	Technical Communication Skills	2/0/2	4	3	HSMC
2.	22GE201	Universal Human Values	3/0/0	3	3	HSMC
3.	22TA101	Heritage of Tamils	1/0/0	1	1	HSMC
4.	22TA201	Tamils and Technology	1/0/0	1	1	HSMC

BASIC SCIENCE COURSES (24 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	22MA102	Mathematics I	3/1/0	4	4	BSC
2.	22MA202	Mathematics II	3/1/0	4	4	BSC
3.	22PH201	Physics	3/0/2	5	4	BSC
4.	22CH101	Engineering Chemistry	3/0/2	5	4	BSC
5.	22MA302	Random Variables and Statistics	3/1/0	4	4	BSC
6.	22MA401	Optimization and Project Management	3/1/0	4	4	BSC

ENGINEERING SCIENCE COURSES (15.5 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	22EE111	Basics of Electrical and Electronics Engineering	2/1/0	3	3	ESC
2.	22EE114	Basics of Electrical and Electronics Engineering Laboratory	0/0/2	2	1	ESC
3.	22EC111	Digital Logic and Design	3/0/0	3	3	ESC
4.	22EC112	Digital Logic Design Laboratory	0/0/2	2	1	ESC
5.	22EC511	Fundamentals of Data and Mobile Communications	3/0/0	3	3	ESC
6.	22IT501	Data Communications and Computer Networks	3/0/0	3	3	ESC
7.	22IT502	Data Communications and Computer Networks Laboratory	0/0/3	3	1.5	ESC

PROFESSIONAL CORE COURSES (70.5 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	22IT101	Application Development Practices	3/0/2	5	4	PCC
2.	22CS101	Problem Solving using C++	3/0/2	5	4	PCC
3.	22CS201	Data Structures and Algorithms	3/0/2	5	4	PCC
4.	22IT201	Database Management Systems	3/0/2	5	4	PCC
5.	22AD201	Java Programming	3/0/2	5	4	PCC
6.	22AD301	Design and Analysis of Algorithms	1/0/4	5	3	PCC
7.	22IT301	Computer Architecture	3/0/0	3	3	PCC
8.	22IT302	Web Technology	1/0/4	5	3	PCC
9.	22CS301	Advanced Java Programming	1/0/4	5	3	PCC
10.	22CS402	Web Frameworks	1/0/4	5	3	PCC
11.	22CS403	Operating Systems	3/0/2	5	4	PCC
12.	22IT401	Formal Languages and Automata Theory	3/0/0	3	3	PCC
13.	22IT402	Software Testing	1/0/4	5	3	PCC
14.	22AD401	Cloud Computing	1/0/4	5	3	PCC
15.	22CS502	Principles of Compiler Design	3/0/2	5	4	PCC
16.	22IT601	Embedded Systems and Internet of Things	3/0/0	3	3	PCC
17.	22IT602	Python Programming	3/0/2	5	4	PCC
18.	22CS602	Cryptography and Network Security	3/0/0	3	3	PCC
19.	22IT603	Embedded Systems and Internet of Things Laboratory	0/0/3	3	1.5	PCC
20.	22IT701	Computational Biology	3/0/0	3	3	PCC
21.	22IT702	Big Data Frameworks and Technologies	3/0/2	5	4	PCC

PROFESSIONAL ELECTIVE VERTICAL COURSES

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
Vertical – I Cloud Computing & Data Storage Technologies						
1.	22CD901	Data Virtualization	3/0/0	3	3	PEC
2.	22IT901	Cloud Services and Integration	3/0/0	3	3	PEC
3.	22CY901	Security and Privacy in Cloud	3/0/0	3	3	PEC
4.	22AD902	Storage Technologies	3/0/0	3	3	PEC
5.	22CS901	Software Defined Networks	3/0/0	3	3	PEC
6.	22CB901	Stream Processing	3/0/0	3	3	PEC
7.	22CD903	Multimedia and Animation	3/0/0	3	3	PEC
Vertical – II Applied Artificial Intelligence						
1.	22IT911	Intelligent Multiagent and Expert Systems	3/0/0	3	3	PEC
2.	22AD901	App Development	0/0/6	6	3	PEC
3.	22CY911	ETL Tools	3/0/0	3	3	PEC
4.	22CS911	Statistical Pattern Recognition	3/0/0	3	3	PEC
5.	22CD911	Stochastic and Network Control	3/0/0	3	3	PEC
6.	22AD911	Bayesian Data Analysis	3/0/0	3	3	PEC
7.	22AD917	Virtual Reality and Augmented Reality	3/0/0	3	3	PEC
Vertical – III Information Security						
1.	22IT921	Cyber Threats and Vulnerabilities	3/0/0	3	3	PEC
2.	22IT923	Cyber Physical Systems	3/0/0	3	3	PEC

3.	22IT924	Ethical Hacking and Auditing Frameworks	3/0/0	3	3	PEC
4.	22CY921	Data Privacy and Security	3/0/0	3	3	PEC
5.	22CY944	Cyber Crime and Forensics	3/0/0	3	3	PEC
6.	22CY922	Digital and Mobile Forensics	3/0/0	3	3	PEC
Vertical – IV Data Analytics						
1.	22IT931	NLP in Analytics	3/0/0	3	3	PEC
2.	22IT903	Deep Learning Techniques	3/0/0	3	3	PEC
3.	22IT932	Cognitive Systems and Analytics	3/0/0	3	3	PEC
4.	22CS931	Big Data Analytics	3/0/0	3	3	PEC
5.	22CD931	Social Network Analysis	3/0/0	3	3	PEC
6.	22CY931	Exploratory Data Analytics	3/0/0	3	3	PEC
7.	22CS902	Data Science with Python	3/0/0	3	3	PEC
8.	22IT922	Data Mining	3/0/0	3	3	PEC
Vertical – V Networks and Communication						
1.	22IT941	Wireless Sensor Networks and its Applications	3/0/0	3	3	PEC
2.	22IT942	Mobile Adhoc Networks	3/0/0	3	3	PEC
3.	22IT943	Wireless Networks	3/0/0	3	3	PEC
4.	22IT944	Network Protocols and Algorithms	3/0/0	3	3	PEC
5.	22IT945	Network Design and Management	3/0/0	3	3	PEC
6.	22IT946	Wireless and Mobile Communication	3/0/0	3	3	PEC
7.	22IT947	Advanced Mobile Communication	3/0/0	3	3	PEC
8.	22IT948	Digital Communication Systems	3/0/0	3	3	PEC
9.	22IT949	Communication Systems Engineering	3/0/0	3	3	PEC
Vertical – VI Blockchain						
1.	22IT951	Principles of Cryptography	3/0/0	3	3	PEC
2.	22IT952	Blockchain Technology	3/0/0	3	3	PEC
3.	22IT953	IoT and Blockchain	3/0/0	3	3	PEC
4.	22IT954	Cryptocurrencies and Blockchain Technology	3/0/0	3	3	PEC
5.	22IT955	Fundamentals of Ethereum	3/0/0	3	3	PEC
6.	22IT956	AI and Blockchain	3/0/0	3	3	PEC
7.	22IT957	Blockchain Business Models	3/0/0	3	3	PEC
8.	22IT958	Smart Contracts and Application Development	3/0/0	3	3	PEC
9.	22IT959	Bitcoin Essentials and Use Cases	3/0/0	3	3	PEC

OPEN ELECTIVE COURSES

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	22IT001	Mobile Applications Development using Android	3/0/0	3	3	OEC
2.	22IT002	PHP and MySQL	3/0/0	3	3	OEC
3.	22IT003	Blockchain Essentials	3/0/0	3	3	OEC
4.	22IT004	Cloud and Virtualization	3/0/0	3	3	OEC
5.	22IT005	REST API using Spring Boot	0/0/6	6	3	OEC
6.	22IT006	Introduction to Cyber Security	3/0/0	3	3	OEC

EMERGING ELECTIVE COURSES

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
Emerging Elective Courses – Stream 1						
1.	22IT008	Kotlin for Cross-platform Application Development	3/0/0	3	3	EEC
2.	22IT009	Extended Reality	3/0/0	3	3	EEC
3.	22IT011	Principles of Industry 4.0	3/0/0	3	3	EEC
Emerging Elective Courses – Stream 2						
4.	22IT007	Open-Source Deep Learning Frameworks	3/0/0	3	3	EEC
5.	22IT010	Explainable AI	3/0/0	3	3	EEC
6.	22IT012	Fog and Edge Computing	3/0/0	3	3	EEC

EMPLOYABILITY ENHANCEMENT SKILLS (2 Credits)

S. No	Course Code	Course Title	Credits	Category
1.	22EES01	Employability Enhancement Skills	2	EES

MANDATORY COURSES

S.No	Course Code	Course Title	Category
1.	22MC101	Induction Programme	MC
2.	22MC102	Environmental Sciences	MC
3.	22MC103	Soft Skills	MC
4.	22MC105	General Aptitude	MC
5.	22MC106	Life Skills and Ethics	MC
6.	22MC107	Stress Management	MC
7.	22MC108	Constitution of India	MC
8.	22MC109	Essence of Indian Traditional Knowledge	MC

VALUE ADDED COURSES

S. No	Course Code	Course Title	Credits	Category
1.	22VA900	Application Development using Flutter	1	VAC
2.	22VA901	Ruby on Rails	1	VAC
3.	22VA130	Effective Communication Skills	2	VAC

SCHEME OF CREDIT DISTRIBUTION – SUMMARY

S. No	Stream	Credits / Semester								Credits	AICTE Norms
		I	II	III	IV	V	VI	VII	VIII		
1.	Humanities (HSMC)	3	1	4						8	**16**
2.	Basic Sciences (BSC)	8	8	4	4					24	**23**
3.	Engineering Sciences (ESC)	4	4			7.5				15.5	**29**
4.	Professional Core (PCC)	8	12	12	16	4	11.5	7		70.5	**59**
5.	Professional Electives (PEC)					6	6	6		18	**12**
6.	Open Electives (OEC)					3		3		6	**9**
7.	Emerging Elective (EEC)						3	3		6	
8.	Project Work (PW)					1			12	13	
9.	Employability Enhancement Skills (EES)							2		2	**15**
10.	Mandatory Course (MC)										**Non-Credit**
	Total	23	25	20	20	21.5	20.5	21	12	**163**	
	AICTE (CSE)	**18**	**23**	**23**	**21**	**20**	**23**	**20**	**15**		**163**

22MC102	ENVIRONMENTAL SCIENCES	2 /0 /0 /0

Nature of Course	:C (Theory Concept)
Pre requisites	:Basics in Environmental Studies

Course Objectives:

1	To learn the integrated themes on various natural resources.
2	To gain knowledge on the type of pollution and its control methods.
3	To have an awareness about the current environmental issues and the social problems.

Course Outcomes:
Upon completion of the course, students shall have ability to

C102.1	Recall and play an important role in transferring a healthy environment for future generation.	[R]
C102.2	Illustrate the importance of natural resources and conservation of biodiversity.	[U]
C102.3	Interpret and analyze the impact of engineering solutions in a global and societal context.	[U]
C102.4	Apply the gained knowledge to overcome pollution problems.	[AP]
C102.5	Apply the gained knowledge in various environmental issues and sustainable development.	[AP]

Course Contents:

Natural Resources:
Introduction-Forest resources: Use and abuse, case study-Major activities in forest-Water resources-over utilization of water, dams-benefits and problems. Mineral resources-Use and exploitation, environmental effects of mining- case study–Food resources- World food problems, case study. Energy resources -Renewable and non-renewable energy sources Land resources- Soil erosion and desertification – Role of an individual in conservation of natural resources.

Environmental Pollutions:
Definition – causes, effects and control measures of: a. Air pollution - Acid rain - Greenhouse effect-Global warming- Ozone layer depletion – case study- Bhopal gas tragedy. Water pollution c. Soil pollution - Solid waste management-Recycling of plastics-Pyrolysis method- causes, effects and control measures of municipal solid wastes d. Noise pollution. e. Nuclear hazards-case study-Chernobyl nuclear disaster-Role of an individual in prevention of pollution.

Social issues and the Environment:
Sustainable development-water conservation, rain water harvesting, E-Waste Management – Environmental ethics: 12 Principles of green chemistry-Scheme of labelling of environmental friendly products (Eco mark) – Emission standards – ISO 14001 standard.

Total Hours:	**30**

Text Books:

1	AnubhaKaushik and C P Kaushik “Perspectives in Environmental Studies”4th Edition, Newage International (P) Limited, Publisher Reprint 2014. New Delhi
2	Rajagopalan, R, “Environmental Studies-From Crisis to Cure”, Oxford University Press 2015.

Reference Books:

1	Tyler Miller, Jr., “Environmental Science”, Brooks/Cole a part of Cengage Learning, 2014.
2	William Cunningham and Mary Cunningham, “Environmental Science”, 13th Edition, McGraw Hill,2015.

3	Gilbert M. Masters, “Introduction to Environmental Engineering and Science”, Third Edition, Pearson Education, 2014.
Web References:	
1	http://nptel.ac.in/courses/104103020/20
2	http://nptel.ac.in/courses/120108002
3	http://nptel.ac.in/courses/122106030
4	http://nptel.ac.in/courses/120108004/
5	http://nptel.ac.in/courses/122102006/20
Online Resources:	
1	https://www.edx.org/course/subject/environmental-studies
2	www.environmentalscience.org

Assessment Methods & Levels (based on Bloom’s Taxonomy)

Formative assessment based on Capstone Model (Max. Marks:50)

Course Outcome	Bloom’s Level	Assessment Component	Marks
C102.1	Remember	Quiz	10
C102.2	Understand	Case study based on environmental aspect	20
C102.3	Understand	Class presentation	10
C102.4& C102.5	Apply	Assignment	10

Summative assessment based on Continuous Assessment

Bloom’s Level	Continuous Assessment		
	CIA-I [0 marks]	CIA-II [0 marks]	Term End Assessment [50 marks]
Remember	-	-	30
Understand	-	-	40
Apply	-	-	30
Analyze	-	-	-
Evaluate	-	-	-
Create	-	-	-

Course Articulation Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C102.1							3						2	2
C102.2							3						2	2
C102.3						2	3						2	2
C102.4							3						2	2
C102.5							3						2	2
C102						**2**	**3**						**2**	**2**