



CHRIST THE KING ENGINEERING COLLEGE

Karamadai, Coimbatore - 641104

(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

LESSON PLAN

Course Code: GE3451

Branch: ECE

Course Name: Environmental Science and Sustainability

Year/Sem: II/IV

Name of the Faculty: Mrs.V.Nithya

TEXTBOOKS:

1. Anubha Kaushik and C. P. Kaushik's "Perspectives in Environmental Studies", 6th Edition, New Age International Publishers, 2018.
2. Benny Joseph, 'Environmental Science and Engineering', Tata McGraw-Hill, New Delhi, 2016.
3. Gilbert M.Masters, 'Introduction to Environmental Engineering and Science', 2nd edition, Pearson Education, 2004.
4. Allen, D. T. and Shonnard, D. R., Sustainability Engineering: Concepts, Design and Case Studies, Prentice Hall.
5. Bradley. A.S; Adebayo, A.O., Maria, P. Engineering applications in sustainable design and development, Cengage learning.
6. Environment Impact Assessment Guidelines, Notification of Government of India, 2006.
7. Mackenthun, K.M., Basic Concepts in Environmental Management, Lewis Publication, London, 1998.

REFERENCES:

1. R.K. Trivedi, 'Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards', Vol. I and II, Enviro Media. 38 . edition 2010.
2. Cunningham, W.P. Cooper. T.H. Gorhani, 'Environmental Encyclopedia', Jaico Publ., House, Mumbai, 2001.
3. Dharmendra S. Sengar, 'Environmental law', Prentice hall of India PVT. LTD. New Delhi, 2007.
4. Rajagopalan, R, 'Environmental Studies-From Crisis to Cure', Oxford University Press, Third Edition, 2015.
5. ErachBharucha "Textbook of Environmental Studies for Undergraduate Courses" Orient Blackswan Pvt. Ltd. 2013.



Dr.M.JEYAKUMAR, M.E.,Ph.D.
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Course Plan

Lecturer Hours	Date	Topic to be covered	Cumulative hours	Text Book/ Reference	Teaching methodology	Actual date of completion	Focus for CO achievement
UNIT I- ENVIRONMENT AND BIODIVERSITY							
L1	07.02.2023	Definition, scope and importance of environment	1	R1,R2	PPT	07.02.2023	CO 1
L2	08.02.2023	Need for public awareness. Eco-system and Energy flow-ecological succession	2	R1,R2	PPT	08.02.2023	CO 1
L3	09.02.2023	Types of biodiversity: genetic, species and ecosystem diversity, hot-spots of biodiversity	3	R1,R2	PPT	09.02.2023	CO 1
L4	10.02.2023	threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts	4	R1,R2	PPT	10.02.2023	CO 1
L5	14.02.2023	endangered and endemic species of India	5	R1,R2	PPT	14.02.2023	CO 1
L6	15.02.2023	conservation of biodiversity: In-situ and ex-situ	6	R1,R2	PPT	15.02.2023	CO 1

Learning Outcomes:

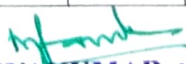
On learning this unit, the student should be able to:

- Acquire knowledge about nature and facts of environment

UNIT II- ENVIRONMENTAL POLLUTION

L1	16.02.2023	Causes, Effects and Preventive measures of Water, Soil Pollutions.	7	R1,R2	PPT	16.02.2023	CO 2
L2	17.02.2023	Causes, Effects and Preventive 9 measures of Air and Noise Pollutions.	8	R1,R2	PPT	17.02.2023	CO 2
L3	21.02.2023	Solid, Hazardous and E-Waste management.	9	R1,R2	PPT	21.02.2023	CO 2




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L1	22.02.2023	Case studies on Occupational Health and Safety Management system (OHASMS).	10	R1,R2	Lecture with Discussion & Chalk and Board	22.02.2023	CO 2
L2	23.02.2023	Case studies on Occupational Health and Safety Management system (OHASMS).	11	R1,R2	Lecture with Discussion & Chalk and Board	23.02.2023	CO 2
L3	24.02.2023	Environmental protection, Environmental protection acts .	12	R1,R2	Lecture with Discussion & Chalk and Board	23.02.2023	CO 2

Learning Outcomes:

On learning this unit, the student should be able to:

- Finding and implementing scientific, technological, economic and political solutions to environmental problems

UNIT III- RENEWABLE SOURCES OF ENERGY

L1	28.02.2023	Energy management and conservation	13	R2,R3	Lecture with Discussion & Chalk and Board	28.02.2023	CO 3
L2	01.03.2023	New Energy Sources: Need of new sources.	14	R2,R3	Lecture with Discussion & Chalk and Board	01.03.2023	CO 3
L3	02.03.2023	Different types new energy sources	15	R2,R3	Lecture with Discussion & Chalk and Board	02.03.2023	CO 3
L4	03.03.2023	Applications of Hydrogen energy, Ocean energy resources conversion	16	R2,R3	Lecture with Discussion & Chalk and Board	03.03.2023	CO 3
L5	08.03.2023	Applications of Tidal energy conversion	17	R2,R3	Lecture with Discussion & Chalk and Board	08.03.2023	CO 3
L6	09.03.2023	Concept, origin and power plants of geothermal energy.	18	R2,R3	Lecture with Discussion & Chalk and Board	09.03.2023	CO 3



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Learning Outcomes:

On learning this unit, the student should be able to:

- Attempt to reduce an individual's/society's use of Earth's natural resources and personal resources.

UNIT IV- SUSTAINABILITY AND MANAGEMENT


L1	10.03.2023	Development, GDP, Sustainability- concept, needs and challenges	19	R1,R2	Lecture with Discussion & Chalk and Board	10.03.2023	CO 4
L2	14.03.2023	Economic, social and aspects of sustainability- from unsustainability to sustainability	20	R1,R2	Lecture with Discussion & Chalk and Board	14.03.2023	CO 4
L3	15.03.2023	Millennium development goals, and protocols, Sustainable Development Goals- targets, indicators and intervention areas Climate change	21	R1,R2	Lecture with Discussion & Chalk and Board	15.03.2023	CO 4
L4	16.03.2023	Global, Regional and local environmental issues and possible solutions	22	R1,R2	Lecture with Discussion & Chalk and Board	16.03.2023	CO 4
L5	17.03.2023	Case studies. Concept of Carbon Credit, Carbon Footprint,	23	R1,R2	Lecture with Discussion & Chalk and Board	17.03.2023	CO 4
L6	18.03.2023	Environmental management in industry -A case study	24	R1,R2	Lecture with Discussion & Chalk and Board	18.03.2023	CO 4

Learning Outcomes:

On learning this unit, the student should be able to:

- Public awareness of environment is at infant stages




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UNIT V- SUSTAINABILITY PRACTICES

L1	21.03.2023	Zero waste and R concept, Circular economy, ISO 14000 Series, Material Life cycle assessment, Environmental Impact Assessment	25	R1,R2	Lecture with Discussion & Chalk and Board	30.03.2023	CO 5
L2	30.03.2023	Sustainable habitat: Green buildings, Green materials, Energy efficiency, Sustainable transports.	26	R1,R2	Lecture with Discussion & Chalk and Board	31.03.2023	CO 5
L3	31.03.2023	Sustainable energy: Non-conventional Sources,	27	R1,R2	Lecture with Discussion & Chalk and Board	06.04.2023	CO 5
L4	06.04.2023	Energy Cycles-carbon cycle, emission and sequestration,	28	R1,R2	Lecture with Discussion & Chalk and Board	11.04.2023	CO 5
L5	11.04.2023	Green Engineering: Sustainable urbanization - Socio-economic and technological change.	29	R1,R2	Lecture with Discussion & Chalk and Board	13.04.2023	CO 5
L6	13.04.2023	Urbanization- Socio-economic and technological change.	30	R1,R2	Lecture with Discussion & Chalk and Board	15.04.2023	CO 5
L7	15.04.2023	Water resource Management (Content beyond syllabus)	31	R1,R2	PPT	18.04.2023	CO 5

Learning Outcomes:

On learning this unit, the student should be able to:

- Environmental pollution problems cannot be solved in a vacuum. Public participation is an important aspect which serves the environmental pollution. One will obtain knowledge on the following after course completion.



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