 <p>NAGARJUNA COLLEGE OF ENGINEERING & TECHNOLOGY</p>	<p>NBA Accredited *</p> <p>NACC Accredited with “A” grade (An ISO 9001 – 2008 Certified Institution)</p> <p>Affiliated to Visvesvaraya Technological University (VTU)</p> <p>Recognized by Govt. of Karnataka & Approved by A.I.C.T.E. New Delhi</p>
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Course Handout for Environmental Studies (20ENV57)

Course No. : 18CVT58	Dept.: Chemistry
Course Title : Environmental Studies	Semester: 5
Instructor-in-charge : Dr.Manjunatha.K/Mrs.Mamatha.M/Mrs.Shruthi.K.S	Academic Year: 2020-21
Lab. Instructor : Mr.Lokesh.R.A	

Subject Description:


Environmental studies are the scientific study of the environmental system and the status of its inherent or induced changes on organisms. It includes not only the study of physical and biological characters of the environment but also the social and cultural factors and the impact of man on environment. The objectives of environmental studies are creating the awareness about environmental problems among people, developing an attitude of concern for the environment, motivating public to participate in environment protection and environment improvement, acquiring skills to help the concerned individuals in identifying and solving environmental problems and striving to attain harmony with Nature.

Text Books:

Sl. No	Name of the Textbook/s	Title of the Book Author/s	Name of the Publisher	Edition and Year
1	Environmental Studies	Benny Joseph	Tata Mc Graw – Hill.	2 nd Edition, 2012
2	Environmental Studies	S M Prakash	Pristine Publishing House, Mangalore	3 rd Edition, 2018
3	Environmental Studies – From Crisis to Cure	R Rajagopalan	Oxford Publisher	2005

Reference Books:

Sl. No	Name of the Textbook/s	Title of the Book Author/s	Name of the Publisher	Edition and Year
1	Principals of Environmental Science and Engineering	Raman Sivakumar	Cengage learning, Singapur.	2 nd Edition, 2005
2	Environmental Science – working with the Earth	G. Tyler Miller Jr.	Thomson Brooks /Cole,	11 th Edition, 2006
3	Text Book of Environmental and Ecology	Pratiba Sing, Anoop Singh & Piyush Malaviya	Acme Learning Pvt. Ltd. New Delhi.	1 st Edition

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PREREQUISITES

1.Environment 2.Renewable and Non renewable Resources 3.Pollution 4.Ozone layer & 5.EIA <i>A good understanding of the above topics is essential</i>	Self study/ Online/ Outsourced	Referral Document	Remarks Students must understand these prerequisites
		Self study/ Online	

LECTURE PLAN

Topic	Topic Details	Number of Lectures	Cumulative lecture hrs.	Unit/ Chapter Reference
Overview	Introduction to Environmental studies	01	01	T1,T2,T3 & R1,R2 &R3
Module 1 Ecosystems (Structure and Function)	Forest, Desert, Wetlands, Riverine, Oceanic and Lake.	01	02	T1,T2,T3 & R1,R2 &R3
	Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity.	01	03	T1,T2,T3 & R1,R2 &R3
	Forest Wealth and Deforestation.	01	04	T1,T2,T3 & R1,R2 &R3
Revision	Module 1 Revision	01	05	
Module 2 Advances in Energy Systems	(Merits, Demerits, Global Status and Applications): Hydrogen, Solar energy.	01	06	T1,T2,T3 & R1,R2 &R3
	OTEC, Tidal and Wind.	01	07	T1,T2,T3 & R1,R2 &R3
	Natural Resource Management (Concept and case-studies): Disaster Management	01	08	T1,T2,T3 & R1,R2 &R3
	Sustainable Mining, Cloud Seeding, and Carbon Trading.	01	09	T1,T2,T3 & R1,R2 &R3
Revision	Module 2 Revision	01	10	
Assignment	Sustainable Mining, Cloud			T1,T2,T3 &


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	Seeding, and Carbon Trading.			R1,R2 &R3
Module 3 Environmental Pollution	(Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground	01	11	T1,T2,T3 & R1,R2 &R3
	Water Pollution; Noise pollution; Soil Pollution and Air Pollution.	01	12	T1,T2,T3 & R1,R2 &R3
	Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes	01	13	T1,T2,T3 & R1,R2 &R3
	E-wastes; Industrial and Municipal Sludge.	01	14	T1,T2,T3 & R1,R2 &R3
Revision	Module 3 Revision	01	15	
PBL	E-wastes; Industrial and Municipal Sludge.			T1,T2,T3 & R1,R2 &R3
Module 4 Global Environmental Concerns	(Concept, policies and case-studies): Ground water depletion/ recharging, Climate Change; Acid Rain	01	16	T1,T2,T3 & R1,R2 &R3
	Ozone Depletion; Radon and Fluoride problem in drinking water	01	17	T1,T2,T3 & R1,R2 &R3
	Resettlement and rehabilitation of people,Environmental Toxicology.	01	18	T1,T2,T3 & R1,R2 &R3
Revision	Module 4 Revision	01	19	
Assignment	Acid Rain and Environmental Toxicology			T1,T2,T3 & R1,R2 &R3
Module 5 Latest Developments in Environmental Pollution Mitigation Tools	(Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment	01	20	T1,T2,T3 & R1,R2 &R3
	Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs.	01	21	T1,T2,T3 & R1,R2 &R3
	Field work	02	23	
Revision	Module 5 Revision	01	24	
Future scope of learning	*The scope of environmental studies is very wide and it deals with many areas like Conservation of			

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	<p>natural resources, ecological aspects, pollution of the surrounding natural resources, controlling the pollution, social issues connected to it, to develop sustainable strategies to protect the environment and impacts of human population on the environment.</p> <p>*<i>Environmental</i> Studies are employed by the mines, fertilizer plants, textile and dying industry, food processing units, etc. They can easily work in government and private organization and many other industries.</p>			
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Evaluation Scheme:

Component	Duration	Weightage	Date (Time)
CIE 1	90 min	20%	
CIE 2	90 min	20%	
AIT 1	2 days	5%	
AIT 2	2 days	5%	
Make up CIE	90 min	20%	
SEE	180 min	50%	
Make up SEE	180 min	50%	
Total		100%	

Course-in-charge
Dr.Manjunatha.K