

<b>B. E. COMMON TO ALL PROGRAMMES</b>				
<b>Choice Based Credit System (CBCS) and Outcome Based Education (OBE)</b>				
<b>SEMESTER – V</b>				
<b>ENVIRONMENTAL STUDIES</b>				
Course Code	<b>18CIV59</b>	CIE Marks	40	
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60	
Credits	01	Exam Hours	02	
<b>Module - 1</b>				
<b>Ecosystems</b> (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake. <b>Biodiversity:</b> Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.				
<b>Module - 2</b>				
<b>Advances in Energy Systems</b> (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind. <b>Natural Resource Management</b> (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.				
<b>Module - 3</b>				
<b>Environmental Pollution</b> (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution. <b>Waste Management &amp; Public Health Aspects:</b> Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.				
<b>Module - 4</b>				
<b>Global Environmental Concerns</b> (Concept, policies and case-studies): Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.				
<b>Module - 5</b>				
<b>Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications):</b> G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs. <b>Field work:</b> Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.				
<b>Course Outcomes:</b> At the end of the course, students will be able to: <ul style="list-style-type: none"> <li>• CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,</li> <li>• CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.</li> <li>• CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components.</li> <li>• CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.</li> </ul>				
<b>Question paper pattern:</b> <ul style="list-style-type: none"> <li>• The Question paper will have 100 objective questions.</li> <li>• Each question will be for 01 marks</li> <li>• Student will have to answer all the questions in an OMR Sheet.</li> <li>• The Duration of Exam will be 2 hours.</li> </ul>				
Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
<b>Textbook/s</b>				

1	Environmental Studies	Benny Joseph	Tata Mc Graw – Hill.	2 <sup>nd</sup> Edition, 2012
2.	Environmental Studies	S M Prakash	Pristine Publishing House, Mangalore	3 <sup>rd</sup> Edition' 2018
3	Environmental Studies – From Crisis to Cure	R Rajagopalan	Oxford Publisher	2005
<b>Reference Books</b>				
1	Principals of Environmental Science and Engineering	Raman Sivakumar	Cengage learning, Singapur.	2 <sup>nd</sup> Edition, 2005
2	Environmental Science – working with the Earth	G.Tyler Miller Jr.	Thomson Brooks /Cole,	11 <sup>th</sup> Edition, 2006
3	Text Book of Environmental and Ecology	Pratiba Sing, Anoop Singh & Piyush Malaviya	Acme Learning Pvt. Ltd. New Delhi.	1 <sup>st</sup> Edition