



# SYLLABUS

<b>Course Title</b>	<b>Environmental Science</b>
<b>Course Code</b>	<b>BES201</b>
<b>Course Credit</b>	Theory(Hrs) : 3
	Practical(Hrs) : 0
	Tutorial(Hrs) : 0
	Credits : 3

## Course Objectives

The objectives of the course are:

- To understand and realize the multidisciplinary nature of the environment, its components, and interrelationship between man and environment
- To comprehend the importance of ecosystem, biodiversity and natural bio geo chemical cycle
- To correlate the human population growth and its trend to the environmental degradation and develop the awareness about his/her role towards environmental protection and prevention
- To identify different types of environmental pollution and control measures
- To develop practice to make lifestyle eco-friendly

## Detailed Syllabus

<b>Sr. No.</b>	<b>Name of chapter &amp; details</b>	<b>Hours Allotted</b>
<b>Section – I</b>		
<b>1</b>	<b>Introduction of Environment</b> Definition and scopes of Environment, Components of Environment, Importance of Environmental Science for Concern Educational Field, Technology of Clean technology, Man Environment Relationship	<b>03</b>

2	<p><b>Ecological Aspects of Environment</b>          Concept of Ecology &amp; Eco System, Structure of Eco System, Bio-Geo-Chemical Cycle : Water Cycle, Nitrogen cycle, Carbon Cycle, Oxygen Cycle, Sulphur Cycle          Food Chain , Food Web, Ecological Pyramid and their Types, Biodiversity &amp; Biodiversity Index</p>	08
3	<p><b>Water and Air Pollution</b>          Sources of Water, Type of Impurities in waste water          Removal Method of Impurities : Suspended Parties(Settling, Coagulation, Filtration) , BOD, COD and Organic Impurities(CaOCl<sub>2</sub> , Cl<sub>2</sub>, CaCO<sub>3</sub>), Inorganic Impurities(Soda Lime, Hot Soda, Ion- Exchange)          Water Treatment Plant, Water Quality Std by 'WHO', Structure of Atmosphere, Sources of Air Pollutant,          Control of Industrial Air Pollution : Bag House Method, Cyclone Separator, Scrubber, Catalytic Converter, ESP(Electro Static Precipitator)          Current Air quality Standards by WHO, Prevention of Water &amp; Air Pollution</p>	12
<b>Section – II</b>		
5	<p><b>Noise &amp; Land Pollution</b>          Noise &amp; Sound Levels, Types of Noise &amp; Effect on Human, Control of Noise Pollution, Structure of Lithosphere, Classification of Solid Waste          Base on Sources : Domestic Solid Waste, Commercial Solid Waste, Industrial Solid Waste, Institutional Solid Waste, Bio Medical Solid Waste, Agriculture Solid Waste, Electronic Solid Waste, Radioactive Solid Waste          4 R Principle,          Disposal of Solid Waste: Land Fill, Incineration, Vermicomposting.</p>	12
6	<p><b>Natural Resource</b>          Natural resources and associated problems, Renewable &amp; Non Renewable Resources          Forest Resources (Use, Overuse &amp; Management): Water Resources, Mineral Resources, Energy Resources</p>	05
7	<p><b>Human Population Dynamic</b>          Population Growth, Exponential Population Growth, Logistic Population Growth, Demographic Projection of Human Population          Calculation of Population by : Arithmetic Progression Method, Geometrical Progression Method, Incremental Increase Method, Declining Growth Method</p>	05

### **Instructional Method and Pedagogy:**

- Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.
- Assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval.
- Surprise tests/Quizzes/Tutorials will be conducted.

### **Reference Books:**

1. Textbook of Environmental Studies for Undergraduate Courses by Erach Bharucha Second Edition, 2013 Publisher: Universities Press (India) Private Ltd, Hyderabad.
2. Basics of Environmental Studies by Prof Dr N S Varandani ,2013 Publisher: LAP Lambert Academic Publishing , Germany
3. Environmental Studies by Anindita Basak ,2009 Publisher: Drling Kindersley(India)Pvt. Ltd Pearson
4. Textbook of Environmental Studies by Deeksha Dave & S S Kateva , Cengage Publishers.
5. Environmental Sciences by Daniel B Botkin & Edward A Keller Publisher: John Wiley & Sons.
6. Environmental Studies by R. Rajagopalan, Oxford University Press
7. Environmental Studies by Benny Joseph, TMH publishers
8. Environmental Studies by Dr. Suresh K Dhameja, 2007 Published by : S K Kataria & Sons New Delhi
9. Basics of Environmental Studies by U K Khare, 2011 Published by Tata McGraw Hil