

Course Type	Course Code	Name of Course	L	T	P	Credit
OE	ESO 404	Sustainability Engineering	3	0	0	9

Course Objective

Understanding on Various issues of sustainability
 Role of engineering and technology within sustainable development

Learning Outcomes

Upon successful completion of this course, students will :
 Learn the methods, tools, and incentives for sustainable product-service system development.
 Develop a broader perspective for adapting sustainable practices by utilizing the engineering knowledge and principles.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Sustainability- need and concept and challenges, sustainable development framework, Environmental policies, acts and protocols, Global, Regional and Local environmental issues, Clean Development Mechanism, Circular Economy and its Implementation.	07	The students will be able to understand what is sustainable development framework and different governmental policies which aim for it. .
2	Natural resources and their pollution, Carbon credits, Zero waste.	05	The students will be able to understand about the natural resources, its exploitation, related pollution, Carbon credit and mitigation measures
3	Environmental Management System and its application, ISO 14001 Guidelines, Life Cycle Analysis, Inventory and Impact Assessment, Environmental Audits. An overview of Environmental Impact Assessment, Environmental Clearances, Public Consultations	10	The information regarding International Guidelines of Environmental Management.
4	Sustainable habitat, Green buildings, Green materials, Case studies. Energy, Conventional and renewable sources.	10	The students will be able to learn about energy efficient green building.
5	Technology and sustainable development, Sustainable urbanization, Industrial Ecology.	04	The students will be able to learn about sustainable development in cities and Industries.

Textbooks:

1. Sustainable Engineering: Concepts, Design and Case Studies, D.T. Allen, and D.R. Shonnard, Prentice Hall,(2011).

Reference Books:

1. Engineering applications in sustainable design and development, A.S. Bradley, A.O. Adebayo, P. Maria, Cengage learning.