Course Type	Course Code	Name of Course	L	T	P	Credit
OE	ESO 303	Occupational Health, Safety and risk Assessment	3	0	0	9

Course Objective

- To learn various Occupational Health, Risk and Safety issues in the industry.
- To learn Ergonomics in the workplaces, workplace risk and international guidelines for mitigation of these risks

Learning Outcomes

- Understanding the Occupational Health, Risk and Safety unit operations of the polluting industries.
- The students will be able to understand and orient themselves with the industry before they undergo summer training, internship, interview or job.
- The students will be able to conceive and prepare Health, Safety and Risk Management Plan of the industries.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	**Occupational Health and Safety concern and problems**. National and International protocols and concerns, policies and legislation. **Introduction to Ergonomics:** Role of Ergonomics in improving Health of Workforce. Area of application in work system. Anatomy, posture and Body Mechanics, Anthropometric principles in workspace and equipment design; Work capacity, stress and fatigue; Impacts of temperature, illumination, noise in human behaviour; Human–machine interaction, human error and safety; Accidents and safety.	12	The students will be able to learn about the OHS concern and issues with respect to the industries, they will serve. They will also learn how a good working posture and environment can improve working efficiency as well as improve health.
2	**Occupational Health & Safety Management Systems: -** OHSAS 18001 /ISO 45001-2018 guidelines, Legal requirements; Occupation Health and Safety Policy; OH&S Documentation.	12	The will be able to learn about the International Guidelines and how to implement it in the industry they will serve.
3	**Safety at work place:** Managing health and safety in industries, slips and trips, general fire safety, work at height, building work, machinery safety, plant and equipment maintenance, gas and oil-fired equipment, flame-proof and intrinsically safe equipment, pressurized plant and equipment, workplace transport, lifting and handling, managing health, safe ways of working, selection and training; Special groups of workers, contractors and agency workers, personal protective equipment, useful contacts and information for safety, role of health and safety executives.	10	The will be able to learn about the safety requirement in various work places. They will be able to work as environment and safety officers in their work places.
4	**Risk Assessment and Management:** Perception of Risk in Industries: Theories and Human Adjustment. Environmental and Industrial Risk assessment: Introduction, identification of potential hazards, assessment of the risk, consequence analysis, hazard identification methods: check list, hazard and operability studies (HAZOP), hazard analysis methods, failure modes and effect analysis, hazard indices, models, regulatory priorities. Emergency preparedness and response. Disaster Management.	08	The will be able to learn the Risk assessment and management techniques.

Text Books

1. Fundamental Principles of Occupational Health and Safety, Benjamin O. Alli, The Synergist, , USA
2. Occupational Health and Safety Management: A Practical Approach, Charles D. Reese, CRC Press
3. Safety, Health and Environment Handbook, K.T.Narayanan, Mc Graw Hill.

Reference Books

1. Practical Guide to Occupational Health and Safety by Paul A Erickson, Academic Press, (Elsevier Science) USA, UK
5. OHSAS- 18001, Guidelines, British Standards Institute, 2007
2. Introduction to Ergonomics – R.S Bridger, 3rd Edition, Routledge