

## Environmental Impact Assessment

<b>Course Code</b> <b>GIE-456</b>	<b>Credit Hours</b> <b>3-0</b>
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### Course Description

This course is designed for undergraduate students to give them a brief introduction of EIA, its components, EIA cycle, Initial Environmental Examination, Environmental Risk Assessment, and Strategic Environmental Assessment (SEA) and enhance their skills and ability to plan, conduct and reviews the EIAs of development projects. Students will learn how GIS; RS are integrated in EIA projects through case studies & research papers

### Text Book:

1. Crickson PA, "Environmental Impact Assessment: Principles & Application" Latest Edition.

### Reference Book:

1. Lecture Notes
2. Environmental Initiatives: Global and National Perspectives in Pakistan by Dr Muhammad Khurshid, 2004
3. Yousaf J. Ahmad, George K. Sammay "Guidelines to Environmental Impact Assessment" in developing countries. Hodder and Stoughton London, Sydney, Auckland Toronto, Sponsored by UNDP

### Prerequisites :

Nil.

### ASSESSMENT SYSTEM FOR THEORY

	Without Project (%)	With Project/Complex Engineering Problems (%)
Quizzes	15	10-15
Assignments	10	5-10
Mid Terms	25	25
Project	-	5-10

End Semester Exam	50	45-50
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**ASSESSMENT SYSTEM FOR LAB**

Lab Work/ Psychomotor Assessment/ Lab Reports	70%
Lab Project/ Open Ended Lab Report/ Assignment/ Quiz	10%
Final Assesment/ Viva	20%

**Teaching Plan**

<b>Week No</b>	<b>Topics/Learning Outcomes</b>
1.	Global Environmental Issues
2.	Regional Environmental Issues: Environmental Issues of Pakistan: Physical, Chemical, Biological and Social Environment. The global environmental drivers that are affecting Pakistan also be discussed briefly (e.g climate change, global warming, pollution, and population increase), environmental threats (natural and manmade disasters), environmental movements, environmental integration through tools and instruments (Planning, Policy Making, management and assessment), ecosystem services
3.	Sustainable Development & EIA
4.	Introduction to Environmental Impact Assessment a. Definition; b. History of development; c. Objectives d. Types of EIA; and e. Difference between effect and impact
5.	Regulatory mechanisms to EIA (in Pakistan) a. Policies and legislations b. Environmental standards (emission levels, species protection list) c. Major environmental parameters
.	Steps involved in undertaking EIA (in Pakistan) a. EIA and the project cycle b. EIA Report Format
7.	Environmental Screening, Scoping and Terms of Reference
8.	Baseline information a. Data Sources

	b. Methods of Data Collection and Processing
9.	Significance of Spatial Data & GIS for Environment 1m act
10.	Executing the EIA process, Alternative Analysis; Types of Impacts, Methods of identifying impacts, Impact prediction techniques; and Impact evaluation
11.	Environmental Impact Mitigating measures a. Benefit enhancing measures (selection and implementation) b. Adverse Impact mitigating measures (selection and implementation)
12.	Environmental Monitoring and Auditing, Types, and methods, Environmental Management Plan, Contents, and requirements
13.	Environmental Assessment Report and Format, Terms of Reference, Initial Environmental Examination (IEE), Environmental Impact Assessment
14.	Strategic Environmental Assessment (SEA)
15.	Application of Geoinformatics for environmental impact assessment
16.	Integrating EIA, GIS & RS in Development Process (Case studies).
17-18	ESE

**Practical:** Nil