

# ENVIRONMENTAL DESIGN

ENVIRONMENTAL IMPACT ASSESSMENT (1584)

---

*Supplementary Material*  
*Autumn, 2013*

---

ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD  
Department of Home and Health Sciences

**ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD**  
*(Department of Home and Health Sciences)*

**Course: Environmental Impact Assessment (1584)**

**Semester: Autumn, 2013**

**Level: Post-Graduate**

**CONTENT LIST**

The study pack for “Environmental Impact Assessment” includes following items:

1. Course Book
2. Course Outline (Units 1–9)
3. Study Guide
4. Assignments (1 & 2)
5. Assignments Forms
6. Schedule for Submitting the Assignments and Tutorial Meetings

**Note:** If any of the above mentioned material is missing in your pack, please contact at the following address:

*Mailing Officer,  
Services and Operations Block  
Allama Iqbal Open University,  
H-8 Islamabad*

**Or**

*Dr. Nomana Anjum  
Programme Coordinator/ Chairperson  
Environmental Design Programme  
Allama Iqbal Open University, Block 6,  
H-8 Islamabad*

## **Environmental Impact Assessment (1584)**

**Programme: Environmental Design**

**Level: Postgraduate**

**Credit: Half**

### ***Reference Books and Suggested Readings or References:-***

1. *Yousaf J. Ahmad, George K. Sammay "Guidelines to Environmental Impact Assessment" in developing countries. Hodder and Staughton London, Syney, Auckland Toronto. Sponsored by UNDP*
2. *Crickson PA, "Envoronmental Impact Assessment: Principles & Application" Latest Edition*

### **Unit-1 Environmental Impact Assessment (EIA)/Environmental Impact of Human Activities**

- a) Introduction to EIA
- b) Basic Concept of EIA
- c) Brief History of EIA
- d) EIA and EIS (Environmental Impact Statement) or difference between EIA and EIS

### **Unit-2 Practical Framework for EIA/Steps in EIA (9 steps)**

- a) Prelimnary Activities
- b) Impact Identification (Scoping)
- c) Base line study (Existing conditions)
- d) Impact evaluation (quantifraction)
- e) Metrgative measures
- f) Assessment (comparison of alternatives)
- g) Documentation
- h) Decision Making
- i) Post-auditing/Monitoring of Follow-up

### **Unit-3 Planning & EIA/need of EIA for Development**

- a) EIA as a key toll for promoting environmental sound development (S.D.)
- b) Relationship of EIA to Regional Planning of Developing Project
- c) Relationship of EIA to Project Planning and Implementation

### **Unit-4 Methods, Techniques & Procedure for EIA/Methodologies/Tools**

- a) Desirable attributes of EIA Methodologies
- b) Ad-hoc Procedure
- c) Checklist
- d) Matrices
- e) Networks
- f) Map overlays
- g) GIS etc. of cost-benefit analysis

### **Unit-5 Exploding Myths**

- a) Myth EIA is very expensive
- b) Myth EIA is anti-development
- c) Myth EIA is paper tiger

**Unit-6 EIA Problems and Potential Solutions**

- a) Too many alternative
- b) Lack of data
- c) Lack of Expertise
- d) Impact cannot be quantified
- e) Cost benefit analysis is in applicable

**Unit-7 Cost Benefit Analysis as a tool for Environmental decision-making**

- a) Quantification and costing of Impacts
- b) Willingness to pay as a measure of damage cost
- c) New Techniques for assessment
- d) The definition of damage

**Unit-8 Cast Studies of EIA of Land use and Environmental Planning**

- a) Infra structural
- b) Industrial (Example from developing countries)
- c) Water resources development/hydropower
- d) Transport development of (highway) project

**Unit-9 Detailed study of Environmental Impacts of Selected Project (Highway/road, hydropower, industries & mines)**

- a) **Physical Resources**
  - i) Surface water quality
  - ii) Surface water hydrology
  - iii) Ground water quality
  - iv) Air quality
  - v) Soil
  - vi) Noise
- b) **Ecological Resources**
  - i) Fisheries & aquatic life
  - ii) Forestry
  - iii) Wild Life
- c) **Human use Values**
  - i) Land use
  - ii) Navigation
  - iii) Land Transport
  - iv) Flood Control
  - v) Agriculture
- d) **Quality of life Values**
  - i) Soccio Economi
  - ii) Industries
  - iii) Resettlements
  - iv) Archaeologicaled Historic
  - v) Aesthatic
  - vi) Public Health

## STUDENT GUIDE

Dear Student,

Assalam-o-Alaikum

We hope you have enjoyed and successfully completed the first semester of your PGD Leading to M.S. Environmental Design Programme. This course is the part of the second semester of the programme. For introduction to the course please go through the introductory pages of the course book. Here are some guidelines for successful completion of the course.

In order to understand the course content it is vital to know its aims and objectives properly. Let's go through its aims and objectives first.

### Course objectives

This course aims to develop your expertise regarding the impacts of development. It covers the management tools, techniques and their implementations, which will enable you to analyze the impacts of human development and expansion on the biophysical environment. This course will enable you to evaluate whether the paid cost worth the benefits drawn out of it or not.

### Details of the course

**Unit no. 1** is the introductory unit that introduces you with the concept of planning and its importance for sustainability.

**Unit no.2** deals with the issues regarding sustainability. Moreover it covers the policy context and institutions related to it.

**Unit no. 3 and 4** emphasizes on evaluation of the built environment in sustainable planning and the urban development. The impact prediction and evaluation and includes several parameters like air, noise, water etc.

**Unit no. 5** will give you a detailed account of building evaluation in the context of construction while **Unit no. 6** deals with the same in to the economical perspective.

**Unit no. 7, 8 and 9** give you a detailed account regarding the selection of most appropriate materials and processes that may ultimately lead to sustainable building design

### Part time tutors

Students are allocated a part time tutor. The name and address of your tutor will be provided to you. The tutor is to help and guide you in studying the books and conducting activities related to study units. You are expected to take full advantage of the tutor knowledge and experience. These tutors are also responsible for marking your assignments.

Make all efforts to complete your written assignment according to the prescribed schedule and try your best to attend all the study sessions according to the timetable provided to you.

As in the previous semester the schedule for tutorial meetings are arranged on fortnightly bases. The specific dates in the form of tutorial schedule are being provided separately. Try to attend these meetings regularly to get proper guidance from your tutor.

### **Assignments**

The course is a 03 credit hr. course therefore includes two assignments, which are compulsory for successful completion of the whole course. Each assignment is of 100 marks and out of these students obtaining 40 marks will be declared pass.

**Assignment no. 1** is theory based as you have experienced earlier and must reach your assigned tutor before the due date. The schedule of submitting the assignment is provided separately. The tutor will send the marked assignment back to the students within 15 days, if you do not receive the marked assignment after 15 days please contact your tutor or regional office of the Allama Iqbal Open University.

**Assignment no. 2** is research based and do not need submission to the tutor before the workshop is held. For detailed instructions related to your research based assignment please go through the detailed instructions enclosed with the assignment

**Note: Do not forget to dispatch the prescribed forms along with the complete assignments.**

### **Methods of Study**

Study period of 16 weeks has been allocated for studying this course through distance learning where as 17<sup>th</sup> and 18<sup>th</sup> weeks are kept for general assessment and for final examination.

<b>Units</b>	<b>Assignments</b>	<b>Study period</b>
1-2		4 weeks
3-6		4 weeks
7	Assignment 1	2 weeks
8-9		2 weeks
Revision	Assignment 2	4 weeks
Preparation for examination		2 weeks

### **Practical workshop**

As you are familiar that a practical workshop is arranged for three days at the end of the semester, therefore Schedule of the Workshop will be sent to the students

during the study period and the venue will be Block No. 25 (Video conferencing Room). Workshop will cover some of the lectures of the specialist on important topics and field visit. The tutor will provide guidance for the workshop. Attendance in workshop is **compulsory** for the students.

### **Final examination**

At the end of the course there will be a final examination. All the students will be expected to take this examination in the examination halls especially established for this purpose.

For any queries you can write to the course / program coordinator. Suggestions for improvement will also be welcomed.

We wish you all the best.

**Dr. Nomana Anjum**

Course Coordinator/ Chairperson

### **Address:**

Department of Home and Health Sciences  
Allama Iqbal Open University, Islamabad

## **Tutor Guide**

### **Dear tutor,**

Students enrolled in PGD Leading to M.S. Environmental Design offered through the distance learning system are from different professions and have a variety of educational back grounds and experience.

These students have very limited contact with their course mates and part time tutors. It is therefore important to keep in mind that some of the distance-learning students have had no links with education during the past few years after completing their formal education. Therefore they might lack confidence. Secondly distance-learning students are involved in studying during their spare time, probably after office hours. You are therefore requested to guide and help the students while keeping these factors in mind. Some students may need help in developing professional attitudes as well as understanding the facts about EIA.

### **Study Center**

The main purpose of establishing the study center for distance learning students is to provide help and guidance for the difficulties faced by the students while studying at home. The study centers have been established in local institutions (Main Campus Islamabad, Regional Office, Karachi and Regional Office Lahore). During the lecture sessions it is required to provide guidance to the students to sort out their problems.

### **Assignments**

In the distance learning system, studying the course units has its own importance but assignments and workshops are the major source of link between tutor and the student. Therefore it is important to offer your comments through these assignments. Express your views in such a way that the student is not discourage, hurt or feels depress after going through your comments.

You are also expected to guide on issues like methods of solving assignments, effective methods of studying and methods to improve study habits and working hard.

It is anticipated that the student will submit their assignment in time according to the prescribed schedule.

***You are therefore requested to mark the assignments with in 15 days and return these with detailed comments within the scheduled dates.***

Marking guides are provided to you. You are expected to follow the instructions and make full use of these guides while marking the assignments. The students are expected to avoid giving unnecessary details and try to be brief and comprehensive. While marking the assignments the tutor has to assess whether the students have followed the instructions provided to them or not.



## **Practical Assignment**

The students are given another assignment which is research based and would involve the student in some research activity after which they will be presenting their work report in the workshop held by the end of the semester. The students are not required to submit this assignment to you before it is presented. However, after the workshop the assignments will be submitted to you and will be marked.

## **Workshop**

A three-day workshop will be arranged for the students for each course in their respective study center. You will be intimated before time as your presence in the workshop is necessary.

- During the workshop the experts will deliver lectures focusing on main areas of the subject.
- Secondly they would be taken to the field visit. The details of which will be mailed to you later.
- Thirdly the students would be presenting their research-based assignment and you are required to mark the assignments after their presentation.

**ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD**  
*(Department of Home and Health Sciences)*

**WARNING**

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

Course: Environmental Impact Assessment (1584)  
Level: Postgraduate

Semester: Autumn, 2013  
Total Marks: 100  
Pass Marks: 40

**ASSIGNMENT No. 1**  
(Units 1–7)

*Note: 10 marks for class attendance and participation.*

- Q. 1 Give detailed steps involved in EIA process with special reference to Pakistan (08)
- Q. 2 Sustainable development is not possible unless we adopt environment friendly policies procedures and processed in different stages of projects. How EIA is helping to ensure the sustainable development? (12)
- Q. 3 a. Name different tools for data collection and impact prediction of hazards and compare the advantages and disadvantages of Checklists and matrices. (08)
- b. Develop a matrix for analysis of various threats likely to be encountered during various phases of Highway project. (10)
- Q. 4 Biodiversity plays an important role in the environmental quality and survival of the flora and fauna. What kinds of impact assessment techniques can be employed for the ecological assessment in a Safari project in Islamabad? (12)
- Q. 5 Environmental Risk Assessment (ERA) is one of the major challenges in the EIA Process. Explain various techniques available for ERA of a new cement factory to the air quality proposed in the Potohar region of Pakistan. (12)
- Q. 6 Explain steps involved in the ground water assessments due to new developmental projects. (08)
- Q.7 The quality of the EIA process depends on the quality of baseline data but unfortunately the baseline data about various environmental parameters is not available in Pakistan. Explain the problems faced in the baseline data collection for EIA studies. (10)
- Q.8 Define and explain the following terms:  
i. SEA ii. ES iii. IEE iv. AAQS v. NEQS (10)

## **Instructions for Assignment No. 2**

1. This assignment is of practical nature. You have to prepare a research report and present it in the workshop prior to the final examination (you do not need to send this to your tutor before the workshop).
2. The workshop component is mandatory for all the students. You cannot sit in the final examination without compiling this report and presenting it in the workshop.
3. This assignment requires thorough review of literature to develop the conceptual framework before conducting the field research, which also needs to be incorporated in the report systematically.
4. You can select any of the given topics for field research; the field visits should preferably be based closed to your home address.
5. Your research report should be at least 20-25 typed pages covering both theoretical and practical components.
6. Include the following sections in your report:
  - a) Introduction and objectives of the study
  - b) Methodology for field research
  - c) Review of literature
  - d) Data Analysis with statistics and graphical representations
  - e) Conclusions / suggestions
  - f) Appendices and bibliography
7. Prepare three copies of this assignment, one for yourself, one for the tutor and the third one for the Department of Home and Health Sciences (AIOU) for record. Attach three assignment forms with this assignment as for assignment one.
8. As the student is suppose to do a presentation in the workshop to the resource person and course mates, they should prepare transparencies or other illustrative material for effective presentation.
9. You are advised to consult source material frequently. If you need any guidance you may contact your tutor or write to the Department of Home and Health Sciences (AIOU).

## TOPICS FOR REPORT WRITING

1. Select a major highway project recently completed in your vicinity. Contact the executing department and trace the EIS. Study the EIA report of the project and conduct the post completion evaluation of the project. Besides secondary data about the projects and major stakeholders, collect primary data from the users of the project. Critically evaluate the report and develop your post completion environmental audit report covering all the important aspects mentioned above.
2. Visit a high-rise building of at least ten floors and develop the list of environmental issues relating to the construction of high rise building in the area with special reference to visual pollution, solid waste management, parking and noise pollution/ other related issues. Conduct survey to apprise the project sponsor about the major environmental issues.
3. The Higher Education Commission of Pakistan has developed Environmental and Social Management Plan (ESMP). The soft copy is available at the HEC website link: ([www.hec.gov.pk/Documents/HEC%20ESMP%20TESP%202011.pdf](http://www.hec.gov.pk/Documents/HEC%20ESMP%20TESP%202011.pdf).)

The ESMP requires the Universities to comply with various environmental mitigations measures during various phases of the construction projects. Please develop a monitoring tool for collect the data about the actual status of the compliance and visit at least 5 public sector Universities to check its implementation status and develop a detailed report incorporating various activities and sections as described above.

## Marking Guide

It is anticipated that the tutors mark the assignments carefully and follow the similar marking standard for all the students.

For the theory based assignments you are requested to follow the marks division as indicated on the assignment. The questions that are further divided into parts a, b etc. accompany a further division of marks as well.

For the research based assignment the allocation of marks is indicated as under:

Research activity..... 50 marks  
Report writing..... 25 marks  
Presentation in the workshop.....25 marks

You are expected to stick to the guidelines provided to maintain the standardization and uniformity.