

# ENVIRONMENTAL DESIGN

## ENVIRONMENTAL IMPACT ASSESSMENT (1584)

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*Supplementary Material  
Autumn: 2012*

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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)**  
**Level: Post-Graduate** **Semester: Autumn, 2012**

**CONTENT LIST**

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

1. Course Book
2. Course Outline (Units 1–9)
3. Student Guide
4. Tutor Guide
5. Assignments (1 & 2)
6. Assignment Forms
7. Schedule for Submitting the Assignments and Lecture Sessions

**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.

# COURSE OUTLINE

## Environmental Impact Assessment

### Reference Books:

- Yousaf J. Ahmad, George K. Sammay: Guidelines to Environmental Impact Assessment in Developing Countries, Hodder and Staughton London, Sydney, Auckland Toronto, Sponsored by UNDP
- Crickson PA, “Environmental Impact Assessment: Principles & Application” Latest Edition

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

- Introduction to EIA
- Basic Concept of EIA
- Brief History of EIA
- EIA and EIS (Environmental Impact Statement) or difference between EIA & EIS

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

- Preliminary Activities
- Impact Identification (Scoping)
- Base Line Study (Existing conditions)
- Impact Evaluation (quantification)
- Mitigation Measures
- Assessment (comparison of alternatives)
- Documentation
- Decision Making
- Post-auditing/Monitoring of Follow-up

### Unit 3 Planning & EIA/Need of EIA for Development

- EIA as a Key Tool for Promoting Environmental Sound Development (S.D)
- Relationship of EIA to Regional Planning of Developing Project
- Relationship of EIA to Project Planning and Implementation

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

- Desirable Attributes of EIA methodologies
- 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 Alternatives
- b. Lack of Data
- c. Lack of Expertise
- d. Impact cannot be Quantified
- e. Cost Benefit Analysis is Inapplicable

**Unit 7 Cost Benefit Analysis as a Tool for Environmental Planning**

- 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 Case 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 Impact 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) Socio Economic
- ii) Industries
- iii) Resettlements
- iv) Archaeological Historic
- v) Aesthetic
- vi) Public Health

## **STUDENT GUIDE**

Dear Student,

Assalam-o-Alaikum

We hope you have enjoyed and successfully completed the first semester of your M. Sc. Environmental Design Programme. This course is 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 is 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 is 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 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 assignments 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 lecture sessions 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 of three credit hours 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 three 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 two days at the end of the semester Schedule of the workshop and venue will be sent to the students during the study period. Workshop will cover some of the lectures of the specialists on important topics and field visits. 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 are expected to take this examination in the examination halls especially established for this purpose.

For any queries you can write to the course / programme coordinator. Suggestions for improvement will 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 M. Sc. Environmental Design programme offered through the distance learning system are from different professions and have a variety of educational background 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 Campuses, Karachi and 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 discouraged 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 within 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 the tutor and will be marked by you.

### **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 the students would be presenting their research-based assignment and you are required to mark the assignments after their presentation.
- Thirdly the students would be presenting their research-based assignment and you are required to mark the assignment after their presentation.

## **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.

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**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) Semester Autumn, 2012**  
**Level: Post-Graduate Total Marks: 100**  
**Credit: 3(3+0) Pass Marks: 40**

**ASSIGNMENT No. 1**  
**(Units: 1–7)**

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

- Q.1 a) Enlist the general principles of Environmental Assessment (EA). (8)  
b) How can the EA process contribute to the development of environment management systems? (8)
- Q.2 Design checklist, matrix and network diagrams for an EIA process of a 100 storey building in the centre of your city. (18)
- Q.3 a) Describe the importance of base line study of an EIA project. (8)  
b) Post auditing is an important step in EIA. Explain how? (8)
- Q.4 a) Considering the need of conservation of biodiversity and natural resources, explain why is it necessary to conduct an ecological impact assessment? (8)  
b) Analyze the key task and activities in conducting a SEA. (8)
- Q.5 a) Discuss the importance of public partnership. Also discuss the strength and weaknesses of formal and informal public participation in an EIA process. (10)  
b) Why it is important to conduct a post-project analysis? (6)
- Q.6 Prepare a descriptive EIA report covering physical, biological and social parameters for the construction of a hill resort comprising of 100 guest rooms. (18)

## **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).

**Course: Environmental Impact Assessment (1584)**  
**Semester: Autumn, 2012** **Total Marks: 100**

## **TOPICS FOR REPORT WRITING**

1. Visit EPA library and review a Real Life EIA Project Report. Find out the status of the EIA Report. Prepare a Critical Analysis Report on that EIA project.
2. Conduct a detailed study of Ecological Impacts of construction and operation of restaurants' opening in national parks of the country. Study the effect of noise and late night lighting in the area on wild life (Flora and Fauna).
3. Select a factory (cement/paint etc.) in your area and prepare a report on:
  - The steps involved in the procedure of production.
  - They types of emission/effluents released from that factory in air/water during the process of production.
  - Collect the current level of air pollutants of that area.
  - Enlist the allowed standards.
  - Give your suggestion / recommendations on possibilities of minimizing the hazardous effects if any.
4. Conduct a questionnaire survey taking a sample size of at least 50 people and assess the cultural/social impacts of Renovation of Historical Buildings.
5. Suppose you are the project manager and have been given the assignment of construction of a dam. Design the project and prepare a proposal. The proposal must contain complete information regarding the team you are going to select for your project and the way you will manage the team.