



**Environmental Impact Assessment
Open Educational Resources
UNU Media Studio/Online Learning**

**Environmental Impact Assessment Course Module
Instructional Guide**

This Instructional Guide has been developed to provide instructors using the Environmental Impact Assessment Course Module with an understanding of the design of the Module so that they can customise the its material and assessment to the needs of their learners and location.

Introduction

Environmental Impact Assessment (EIA) is a tool for assisting environmental management and for contributing to Sustainable Development. The purpose of EIA is to identify potential environmental impacts from proposals, such as projects and programs, and to propose means to avoid or reduce the significant impacts.

EIA was developed formally in the 1970s and has been incorporated in the procedures of governments and major development organisations world-wide. As a result it is important that people who may have any role in the design or planning of projects, or may be associated with deciding about their suitability, should be aware of EIA and how it operates in their local area. The Environmental Impact Assessment Course Module is designed to enable participants to gain this awareness.

Purpose of this Guide

The Environmental Impact Assessment Course Module has been designed to bring understanding of EIA to a wide range of students. These students may be undertaking formal studies in higher education for their first degree as undergraduate students, or doing further studies as postgraduate students. They may also be people who have been working for some time in one of the many professions where EIA has relevance: their level of formal education is likely to range from low to high.

Also, while the broad principles of EIA are applicable everywhere, the details of how these principles are applied in specific countries and jurisdictions varies.

As a result, the Environmental Impact Assessment Course Module has been designed to be flexible, and to be customised and made relevant to:

- students with different educational and knowledge backgrounds;
- students with different needs;
- different EIA regimes around the world.

Environmental Impact Assessment Course Module Description

The Module is designed to provide a critical overview of the theory and practice of EIA as operated internationally to those students who need to understand EIA: this includes formal students being graduate and postgraduate students, plus practitioners/professionals.

Within this framework there are opportunities to customise the material to reflect local jurisdictional procedures and issues.

The Module covers the:

- purpose and aims of EIA;
- EIA administration and practice;
- concept of associated assessment processes;
- key elements of the EIA process;
- undertaking an EIA;
- role of public participation;
- stages that follow EIA;

the costs and benefits of undertaking EIA; and understanding of the strengths and limitations of EIA.

The aim of the Module is to provide understanding of EIA and confidence with its application and limitations. Broadly the objectives are for students to:

appreciate the purpose and role of EIA in the decision-making process;
understand the strengths of EIA in regard to environmental management;
understand the technical and social/political limitations of EIA;
know the administration and procedures that apply in the student's jurisdiction;
understand the screening process;
understand the scoping process and how it is applied;
know the options for estimating environmental and social impacts;
know the format of an EIA Report (Environmental Impact Statement, or Environmental Statement);
appreciate the factors that assist, and detract, from the usefulness of the EIA Report;
understand the purpose of developing follow-up procedures, and the options for designing these procedures.

The learning that students will achieve will come from the structured materials that form the basis of the Module, the self-administered questions that are contained within the Modules' Sections, and the assignments that are specified at certain points in the Module.

The Module Sections are:

1. Background
2. Law, Policy and Institutional Arrangements
3. Public involvement
4. Screening
5. Scoping
6. Impact analysis
7. Mitigation and impact management
8. EIA reporting
9. Review of EIA quality
10. Decision making
11. Implementation and follow-up

In each Section the material is primarily text based, and written in English, so that students will need to have a reasonably good standard of English to comprehend the concepts and some of the terminology and technical terms. Otherwise no specific level of scientific, economic or social understanding is assumed. If students do not understand some aspect they should be able to find information about the issue through the Wiki, by referring to other EIA material, by searching on the Internet, or by asking their Tutor.

To compliment the written material most Sections provide the opportunity for students to directly link to short video segments. These segments have been designed to illustrate the issues being discussed through presentations by a subject matter expert, or by illustrating examples of the type of situation being discussed.

Role of the Tutor

The Module has been designed to stand alone, so that students would usually find all the information they need within the Module. Students are also encouraged to be self-learners, in that they are encouraged to seek information themselves, and to reflect on this information to develop their understanding. The Module is not a set of 'facts and figure' that students will memorise and repeat. Rather the students are expected to think carefully about what they are reading, and to understand the ideas and issues.

The role of the Tutor is very important. The tutor will be a critical element in the learning achieved by the students. The Tutor will need to:

customise the Module to suit the particular group of students and to suit the local jurisdiction;
work with the students to guide them to materials and information, while encouraging them to find these themselves;
engage the students in discussion to help them come to understand the EIA concepts (not just tell them what is 'right' or 'wrong');
mark the assignments and provide feed-back to assist students to realise what they clearly understand, and what they need to do to improve their understanding.

Customising the Module

The tutor will need to read the Sections of the Module to understand:

its coverage and what is expected of the students;
where information in the Module needs to be related to local situations (such as the EIA legislation or procedure in the nation or jurisdiction (province/state/region/organisation);
where local examples of projects are required and to find these examples;
that the learning style of the Module is based on the students thinking about what they are learning, so that the Tutor will have to encourage this thinking and resist telling students the 'answers'.

The Tutor will be responsible to introducing these local situations into the Sections (where specified) and for assisting the students' learning through discussion.

Duration of the Module

The Module can be undertaken within a range of time periods.

The minimum would be 4 weeks, where students worked through the material in the Module during the first 2 weeks and completed Assignments 1-3. Assignment 4 would be completed by the end of week 4. In this situation the time periods associated with the assignments would have to be modified to suit the much shortened schedule.

However, the discussion in this Instructional Guide is based on the Module running over an extended period of 12 weeks for the students to work through the material, plus a 3 week period for the submission of the final assignment.

Learning Outcomes

At the conclusion of this Module students will be able to critically apply the framework of EIA to situations relevant to the student. Specifically all students will have:

appreciation of the contexts and role of EIA in environmental management;
understanding of the elements of EIA and the processes by which they are applied;
a critical appreciation of the strengths and limitations of EIA;
confidence to apply the framework of EIA to relevant situations.

However, the needs and expectations of students undertaking the Module as part of formal studies will often be different from those taking it for professional or practical reasons.

For undergraduate or postgraduate students, by the end of the module the candidates should be able to:

appreciate the purpose and role of EIA in the decision-making process;
be aware of the technical and social/political limitations of EIA;
be aware of the administration and procedures that apply in the student's jurisdiction;
understand the screening process;
understand the scoping process and how it is applied;
be aware of the options for estimating environmental and social impacts;
know the format of an EIA Report (Environmental Impact Statement, Environmental Statement);
appreciate the issues that affect the quality of the EIA Report;

be aware of the purpose of developing follow-up procedures, and the options for designing these procedures.

Within this framework of outcomes, successful postgraduate students will be able to demonstrate a critical and extensive knowledge of the topics and issues. Postgraduate students will also be expected to demonstrate some understanding of the interconnections of the various parts of EIA (such as the relationship of screening and scoping, and the relationship between a thorough impact analysis and the quality of the EIA Report).

Where the students are undertaking the Module as part of an academic program the students would be expected to refer to literature and academic material associated with EIA for some of the assignments. In this case an additional outcome may be the ability to use academic literature associated with EIA and provide accurate references to it in an appropriate reference format.

When the Module is used with professionals and practitioners, the expectations for their learning will be similar, but a greater degree of understanding of the EIA principles and practice will be expected – as these are the people who will be directly applying their knowledge to EIA activities. They are also people who will have had some experience in the technical and social practices of government and business. As a result they will have an awareness of how EIA can fit with these practices and some understanding of the relationships of technical, economic and social factors in decision-making.

The learning outcomes for the professional/practitioner students will be to:

- recognise the purpose and role of EIA in the decision-making process;
- understand the strengths of EIA in regard to environmental management;
- understand the technical and social/political limitations of EIA;
- know the administration and procedures that apply in the student's jurisdiction;
- understand the screening process;
- understand the scoping process and how it is applied;
- know the options for estimating environmental and social impacts;
- know the format of an EIA Report (Environmental Impact Statement, or Environmental Statement);
- appreciate the factors that assist, and detract, from the usefulness of the EIA Report;
- understand the purpose of developing follow-up procedures, and the options for designing these procedures.

Professionals are more accustomed to writing reports, rather than academic pieces, so the need for references to literature and academic material may differ.

Learning activities

Learning occurs better by doing than by simply being presented with information. While the Module includes 'passive' activities such as reading, viewing and listening, its design incorporates student activities as a central part of the learning process. Assessment is also a critical subset of these student activities.

Although designed as an open educational resource, the goal of this Module is to provide learning opportunities which enable students to become reflective practitioners. Through reflection they will be able to understand the practise of EIA in a professional context, while being aware of its limitations in an academic context.

In order to provide the appropriate types and mix of learning situations and mechanisms, a range of learning activities is incorporated into the Module as follows:

- Passive text and further reading;
- Mixed-mode audio and/or visual media;
- Reflection and application exercises;
- Activities and tasks;

Assignments.

These have been arranged in order from most numerous to least numerous, and all of 3-6 contain problem-centred elements, in particular, 4-6 involve students extending learning by doing.

A summary of these reflective elements can be found in the Module's Learning Activity Plan. In broad terms, the elements 1-2 are the mechanisms that students will use to gain information about the various aspects of EIA. The vast majority of the information they will need is contained in the Module itself, but occasionally students are advised to seek additional information (from web sites, for example) if they are unsure of particular terms or concepts. Elements 3-6 are associated with the relevant Section, so that where students are gaining information they are also being asked to reflect on that information and to present responses to their Tutor to demonstrate that they understand the material.

A key aspect of the students gaining understanding will be the opportunities they have to discuss their ideas with the Tutor, but also with other students. For this reason the *EIA Wiki* has been developed to enable students to outline their thoughts about aspects of EIA, and to engage in limited discussion about the issues with others in the class, based on the cumulative contributions of a range of participants.

Example assessment tasks

The assignments are in two forms. First, sets of multiple-choice questions are embedded in the Sections, usually at the end of the package of information about a topic. These questions are self-assessed by the individual student. Their purpose is to assist the students to check that they have gained the correct information from the reading (and listening and viewing) that they have just completed.

Second is the set of four assignments. The first three assignments are located at different stages in the Module, at the point where the students need to reflect on the information covered, and show their understanding of it. The final assignment comes at the end of the Module and provides the opportunity for students to draw together aspects of EIA.

The assignments are:

Assignment 1. Legal Requirements for EIA - in a letter format the student will outline the local legal and regulatory framework for EIA and its role in making decisions about a proposed development.

Assignment 2. Scoping Study - using a local example of a project students will develop a scoping matrix for the development and produce a brief method statement to justify their choice of impacts.

Assignment 3. Impact Assessment and Mitigation – Students develop a table to illustrate the types of impacts that may occur with a particular project and provide a written commentary explaining their choice of impact magnitude, significance descriptors, and suggested mitigation measures.

Assignment 4. Essay/Project – students have a choice of writing an essay (particularly relevant for full time /academic students) or a report on a situation that relates to the work or private interests of the student.

Connections between assessment tasks and learning outcomes

Learning Outcomes in italics have a direct relevance for the Assignment – those in plain text are indirectly relevant

Assignment	Related Learning Outcomes
1	<i>purpose and role of EIA in the decision-making process</i> technical and social/political limitations of EIA <i>be aware of the administration and procedures that apply in the student's jurisdiction</i> options for estimating environmental and social impacts format of an EIA Report (Environmental Impact Statement, Environmental Statement)

2	<i>administration and procedures that apply in the student's jurisdiction screening process scoping process and how it is applied</i> options for estimating environmental and social impacts
3	technical and social/political limitations of EIA <i>administration and procedures that apply in the student's jurisdiction screening process scoping process and how it is applied be aware of the options for estimating environmental and social impacts</i> format of an EIA Report (Environmental Impact Statement, Environmental Statement) <i>follow-up procedures</i>
4	NOTE - The applicability of the following will depend on which assignment is chosen appreciate the purpose and role of EIA in the decision-making process be aware of the technical and social/political limitations of EIA be aware of the administration and procedures that apply in the student's jurisdiction understand the screening process understand the scoping process and how it is applied be aware of the options for estimating environmental and social impacts know the format of an EIA Report (Environmental Impact Statement, Environmental Statement) appreciate the issues that affect the quality of the EIA Report be aware of the purpose of developing follow-up procedures, and the options for designing these procedures

Additional learning resources

In addition to the references made in the Module to materials, the following are possible sources of information.

Books/texts – there are many books that have been written about EIA. A search of academic library catalogues or using a web-based search will identify many possible titles. While many books and academic papers have been written about the EIA process and examples in particular countries, the following is a selection of books that provide a general coverage of EIA.

André, P. (2004) Environmental assessment for sustainable development : processes, actors and practice

Caroll, B. (2002) Environmental impact assessment handbook : a practical guide for planners, developers and communities

Eccleston, C. H. (2001) Effective environmental assessments : how to manage and prepare NEPA EAs

Glasson, J. (2005) Introduction to environmental impact assessment

Jain, R.K. (1981) Environmental impact analysis: a new dimension in decision making

Environmental impact assessment: practice and participation, Ontario: Oxford University Press, (2005)

Thomas, I. and Elliott, M. (2005) Environmental impact assessment in Australia : theory and practice

Web sites – there are many sites that deal with EIA. Apart from undertaking a web search the following provide a starting point for making connections to the major networks and information sources:

EIA Centre Manchester University - HYPERLINK "http://www.art.man.ac.uk/EIA/eiac.htm"

<http://www.art.man.ac.uk/EIA/eiac.htm>

International Association for Impact Assessment HYPERLINK "http://www.iaia.org"

<http://www.iaia.org>

Sample student learning programme

As discussed above, the Module can be undertaken within a range of time periods. The following schedule is based on a period of 12 weeks for the students to work through the material of the Module, plus a 3 week period for the submission of Assignment 4. If it was decided to shorten this time period, the following program could be changed proportionately to specify deadlines for Sections and Assignments.

Week	Task, or Section to be completed	Assignment start	Assignment submitted
1	Become conversant with the Module's outline and associated guides provided by your Tutor. Become familiar with the additional resources identified by your Tutor. Become familiar with the EIA Wiki		
2	1. Background		
3	2. Law, Policy and Institutional Arrangements	Assignment 1	
4	3. Public involvement		Assignment 1
5	4. Screening	Assignment 2	
6	5. Scoping		Assignment 2
7	6. Impact analysis	Assignment 3	
8	7. Mitigation and impact management		Assignment 3
9	8. EIA reporting	Assignment 4 (NOTE – discuss with your Tutor the topic you are thinking about for Assignment 4)	
10	9. Review of EIA quality		
11	10. Decision making		
12	11. Implementation and follow-up		
13			Assignment 4