INSTITUTO POLITÉCNICO DE BRAGANÇA

Course Unit	Option IV - Environment Impact			Field of study	Environment and Geographic Information		
Master in	Renewable Energy and Energetic Efficiency			School	School of Technology and Management		
Academic Year	2011/2012	Year of study	2	Level	2-2	ECTS credits	6.0
Type	Semestral	Semester	1	Code	6793-475-2102-01-11		

Workload (hours)	162	Contact hours	T	TP	PL	TC	S	E	OT	O
			30	30	-	-	-	-	-	-

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s): Marina Maria Pedrosa Meca Ferreira Castro

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Learn the technical and legal process of EIA. Learn methods of preparation and evaluation of environmental impact assessments using individual cases as projects for the renewable energy projects.
2. Identify, assess and predict impacts and meet methodologies to minimize the negative impacts.
3. Perform critical analysis of EIS.
4. Understand specific legal issues related to the EIA process and the implementation of renewable energy projects.
5. Impact prediction, evaluation and mitigation of renewable energy projects.
6. EIS planning.

Prerequisites

Before the course unit the learner is expected to be able to:
Not required

Course contents

Introduction to Environmental Impact Assessment (EIA): definitions, principles, goals, roles. EIA processes: phasing and methodology; case-studies. Legal framework: international, European and Portuguese EIA law. Environmental Impact Studies in renewable energy projects.

Course contents (extended version)

1. Introduction to EIA: definitions, principles, goals, roles.
   - Context of environmental policy. Evolution of the Environmental impact assesssement (EIA).
2. Basic concepts: Impact, significance of an impact, alternative, minimizing, mitigation, EIS /EIA.
3. The national system of Environmental Impact Assessment.
   - Legal framework: International, European and Portuguese law. Partners, products and process.
4. Public Participation in Environmental Impact Assessment. Modes and techniques.
5. Methodologies and techniques in EIA. Impacts by sectors. Leopold matrix.
6. Planning and management of environmental impact study. Quality of Environmental Impact Studies.
   - Strategic Environmental Assessment: evolution, scope, forms and benefits.
   - Measures for Minimizing / Mitigation of negative impacts. Compensation of impacts.
   - Post-evaluation of residual impacts. Determination of the effectiveness of measures to minimize.
7. Reports (EIA pieces).
8. Case Study: National and European. Emphasis on renewable energy projects.

Recommended reading

1. Boyle G, (editor), (2004). Renewable Energy: Power for a Sustainable Future. Oxford University Press. 2nd Ed, Oxford
2. Canter, L. W. , (1996). Environmental Impact Assessement. McGraw-Hill. 2nd Ed, New York.
3. Davis, M. L. Davis & Cornwell, D. A. (1998). Introduction to Environmental Engineering. 3rd Ed, McGraw-Hill
4. Glasson, J. , Therivel, R. and Chadwick, A. (2005). Introduction To Environmental Impact Assessment. University College London (UCL) Press. 2nd Ed, London.
5. Partidário, M. R. and Jesus J. , (2003). Fundamentos de Avaliação de Impacte Ambiental. Universidade Aberta, Lisboa.

Teaching and learning methods

Conventional lectures; use of power point presentations and internet resources. Laboratory classes. Field Classes. Course materials available in the e-learning plataform. For the foreigner students there is a specific training programme and evaluation based in individual working plans related to their national environmental specifications.

Assessment methods

1. Regular - (Regular) (Final)
   - Reports and Guides - 10% (Reports of seminars.)
   - Case Studies - 10% (Critical appreciation RNT.)
   - Case Studies - 30% (Critical appreciation EIA.)
   - Final Written Exam - 50%
2. Full - (Regular, Student Worker) (Supplementary, Special)
   - Final Written Exam - 100% (For students unsuccessful in the assessment process regular.)

Language of instruction

Portuguese

Electronic validation

Marina Maria Pedrosa Meca Ferreira Castro	Luís Manuel Frolen Ribeiro	Albano Agostinho Gomes Alves
01-11-2011	13-11-2011	13-12-2011