



Universidad Juárez del Estado de Durango
Facultad de Ciencias Forestales



Learning Unit Programme
With an integral professional competences approach

I. LEARNING UNIT GENERAL DATA

1. learning Unit Name		2. Code			
Environmental management		8499			
3. Academic Unit					
FORESTRY SCIENCES FACULTY					
4. Academic programme			5. Level		
Environmental Management Engineering			Higher		
6. Training Area					
Disciplinary					
7. Academy					
Environmental management					
8. Modality					
Mandatory	x	Course	x	Attendance	x
Elective		Course-workshop		Non-attendance	
		Workshop		Mixed	
		Seminar			
		Laboratory, field practice, etc.			
		Professional Practice			
		Academic Stay			
9. Pre-requirements					
Environmental Legislation, Environmental Audit, Environmental Education, Critical Thinking Skills.					

10. Theory hours	Practice hours	Independent study hours	Total hours	Credits
5	0	0	5	5
11. Names of the teachers who participated in the development and/or modification of the programme				
Dr. Luis Armando e la Peña Arellano/M.C. Sandra Viviana Jáquez Matas.				
12. Date of development		Date of modification	Date of approval	
09/10/2016 22/02/2015		09/10/2016 22/02/2015 08/11/2017 second modification	26/10/2017	

II. LEARNING UNIT SPECIFIC DATA	
13. Presentation	
<p>This learning unit organizes the agenda into five modules; the first module presents an international, national and local panorama on environmental policy, as well as the agencies in charge of environmental politics, development programs and economic instruments of Environmental Management. In the second module, Mexican environmental legislation and its hierarchy are reviewed, including laws, regulations and norms, the General Law of Ecological Balance and the Environment (LGEEPA) and the national, state and municipal regulations for solid waste are reviewed and analysed. Urban and special management, natural protected areas, emissions to the atmosphere, water supply and waste, and packaging, labelling, transport, treatment and final disposal of waste. In the third module the student will know the administrative procedures required in environmental and health matters. The fourth unit allows the student to know and develop the necessary formats for environmental management in terms of pollution of wastewater and waste. The fifth and final module the student will learn how to implement an environmental management system under the criteria of a certifiable standard.</p>	
14. Integral professional competences to develop in the student	
Generic competences	<p>Instrumental:</p> <ul style="list-style-type: none"> • Analysis and synthesis. • Oral and written communication skills. • Knowledge of a foreign language. • Ability to manage information. <p>Personal:</p> <ul style="list-style-type: none"> • Capability for teamwork. • Ethical and quality commitment. • Critical thinking.

	Systemic: <ul style="list-style-type: none"> • Motivation for quality. • Ability to apply theoretical knowledge in practice. • Ability to communicate with people who are not experts in the subject. • Use of the internet as a means of communication and as a source of information. 			
Professional competences	<ul style="list-style-type: none"> • Ability to address environmental problems in a multidisciplinary manner. • Knowledge of laws, environmental regulations • Knowledge and application of the instruments of environmental management. • Environmental management systems. • Preparation, management, monitoring and control of environmental project procedures. 			
General purpose of the course	The student is able to implement environmental management systems in productive and service companies, as well as in municipalities, as well as to comply with international, national and local environmental policies, considering the current environmental legislation. Likewise, he is able to know the instruments of environmental management. The above from an environmental, social and economic perspective.			
15. Joint of axes				
The learning unit articulates the necessary knowledge to understand the environmental, administrative and legal policy that is applied in environmental matters in the country for the protection of the environment.				
16. development of the course				
Module 1	Environmental Politics.			
Intended learning	Learning contents	Learning product(s)	Strategies	Teaching resources and materials
Know the principles and structure of environmental politics, beginning with international agreements and	Introduction concepts sustainable development and Environmental	Research summary of sustainable development thought currents based on reading: History of the concept of sustainable development and other sources. <ul style="list-style-type: none"> • Presentation of international 	<ul style="list-style-type: none"> • Debate of different positions around the environment. With this, analyse the history and concept of sustainable 	Computer, internet, whiteboard, marker for whiteboard, projector, multimedia presentations, reading of documents, evaluation instruments, referred

conventions, as well as their economic instruments. Also know, analyse and compare (in environmental matters) national and municipal development programs.	Management.	agreements and agreements. <ul style="list-style-type: none"> • Comparative chart of national, state and municipal development plans. • Review exercise in class. • Presentation of written exam. 	development. <ul style="list-style-type: none"> • Learning based on presentation by the student. • Identify, analyse and compare plans and development programs in environmental matters, through research. • Knowledge studies with questions in notebook. • Knowledge studies with written exam. 	bibliography.
	1.1 Concepts of environmental policy.			
	1.2 Characteristics and formulation of environmental policy.			
	1.3 Economic and administrative Instruments of environmental policy and environmental management.			
	1.4 National, state and municipal Development Program.			

Module 2	Laws, normative and legal framework in environmental matters, environmental procedures in Mexico.			
Intended learning	Learning contents	Learning product(s)	Strategies	Teaching resources and materials
<p>Know basic legal and legal concepts, know and analyse the hierarchy of legislation, as well as Mexican and local environmental laws and regulations.</p>	2.1 Concepts of Law, Standard, Decree, Regulation, Law and Codification.	<ul style="list-style-type: none"> • Conceptual map (law, norm, decree, regulation, law and coding, hierarchization). • Investigation of laws, regulations, and standards (NOM and NMX) Word document. • Research and presentation of state and municipal laws and regulations. • Carry out a thorough investigation of the licenses, authorizations, permits and procedures in force and required for a turnaround established in class in the procedures section of the SEMARNAT website and will present it jointly with a work team. 	<ul style="list-style-type: none"> • Identify, analyse, synthesize and compare the basic legal and legal concepts in environmental matters. • Research-based learning by the student. • Learning based on research and presentation by the student, identifying and comparing laws and regulations of the state and municipality. • Studies of knowledge and analytical capability with evaluation essay. • Investigation of procedures of different fields on the internet in official pages of environmental procedures in Mexico, as well as 	<ul style="list-style-type: none"> • Computer, internet, whiteboard, marker for whiteboard, projector, multimedia presentations, reading of documents, evaluation tools, referred bibliography, navigation in web page: http://www.semarnat.gob.mx/
	2.2 Hierarchy of Environmental legislation.			
	2.3 Laws, regulations and Official Mexican Standards (NOM) and Mexican Standards (NMX) in Environmental matters.			
	2.4 State and municipal regulations on environmental matters.			
	2.5 Environmental			

	procedures in Mexico.		exhibition and discussion in class.	
Module 3	Environmental management systems.			
Intended learning	Learning contents	Learning product(s)	Strategies	Teaching resources and materials
Identify and know the types of existing Environmental management systems and their applications.	<p>3.1 Types of Environmental Management Systems.</p> <p>3.2 Environmental Audits in Environmental Management Systems SGA (International Certifications, ISO 14001: 2004).</p>	<ul style="list-style-type: none"> • Exhibition by the teacher. • Practice; Form teams and simulate the implementation of 3 requirements of the ISO 14001: 2004 standard of a supposed company of the determined turn in class, generating all the evidences that mark the requirements of the selected norm. Also form other teams that simulate the role of standard auditors, creating audit plan, checklist, report findings and resolution. <p>Do the audit simulation exercise in class, with companies and auditors.</p>	<ul style="list-style-type: none"> • Learning based on observation and practice in the actual implementation of an Environmental Management System. 	<p>Computer, internet, whiteboard, marker for whiteboard, projector, multimedia presentations, reading of documents, evaluation tools, Referred bibliography, navigation in web.</p>

		Deliver a report by team with all the documents, evidences and describing the steps carried out, as well as the findings that occurred during the audit exercise.		
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17. Performance assessment:			
Performance evidence(s)	Performance criteria	Application scopes	percentage
Research, Exhibition, Conceptual map, Comparative table, Essay, Exercise; questions in class, assessment instrument, presentations, practice, self- evaluation and evaluation.	In all the works, content, extension and presentation, use of tools, capability for explanation, analysis, synthesis, understanding and handling of the debate, group defence, team work, delivery opportunity, class participation	In the management and application of environmental policy. In the management before public or private organizations. In the formulation and management of Environmental	Module 1: Summative evaluation: Diagnostic examination (10%) Document of current of thought Sustainable Development and debate (10%) Presentation of international agreements and agreements (10%) Comparative table of national, state and municipal

	are valued.	Management Systems.	<p>development plans (15%) Review exercise in class. (5%) Written partial exam. (20%) Portfolio of Evidence (15%)</p> <p>Formative evaluation: Participation (10%) Aptitudes and values (5%) Total: 100%</p> <p>Module 2:</p> <p>Summative evaluation: Investigation of laws, regulations, and standards (NOM and NMX) environmental PowerPoint document (25%) Research and presentation of laws and state and municipal regulations (25%). Conceptual map; law, norm, decree, regulation, law, Hierarchy (15%). Procedures ... Presentation about licenses, authorizations and permits in environmental matters by SEMARNAT classification (Screenshots), Also investigate what is the procedure that they ask for, for example that is a MIA, LAU, COA, among others (5%) Portfolio of Evidence (15%)</p>
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			<p>Formative evaluation: Participation (10%) Aptitudes and values (5%) Total: 100%</p> <p>Module 3: Summative evaluation: Report with all the audit exercise material ISO14001 (40%) Class exercises (5%) Project SGA Tires (25%) Portfolio of Evidence (15%)</p> <p>Formative evaluation: Participation (10%) Aptitudes and values (5%) Total: 100%</p> <p>In the final evaluation of the semester is included in the final grade: Summary for Self-assessment (10%) Issuance of value judgments in Co-evaluation (5%) Issuance of value judgments in Hetero evaluation (5%)</p>
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18. Evaluation criteria:

Criterion	Value
Formative Evaluation	15% participation, skills and values. 10% Self-evaluation, 5 % Hetero evaluation, 5 % Coe evaluation.

Summative evaluation	65% the products and activities requested during the course, indicated above.
Criteria summation	100%
19. accreditation	
<p>The accreditation of the learning unit is aligned with the provisions of the regulations of the Forestry Sciences Faculty. It is necessary to pass with a minimum of 6.0; the evaluation is done according to the established evaluation criteria. The student who has obtained a minimum final average of 8.5 (eight point five) and 80% attendance, will be exempt from presenting ordinary exam, can present if he wishes, in order to improve their qualification.</p>	
20. Information sources	
Basic	<ul style="list-style-type: none"> • General Law of Ecological Balance and Environmental Protection, published in the Official Gazette of the Federation on January 28, 1988, the last reform published in the Official Gazette of January 16, 2014. • Regulation of the General Law of Ecological Balance and Environmental Protection in the Area of Self-Regulation and Environmental Audits, published in the Official Gazette of the Federation on April 29, 2010. • PROFEPA. National Program of Environmental Audit. Website http://profepa.gob.mx • Canter, L.W. Manual of Environmental Impact Evaluation. Ed. Mc Graw Inter-American Hill. Spain. 1988. • Carabias J. and F. Tudela. Climate change. The environmental problem of the next century. In Sustainable Development year 1 no. 9. Mexico. 1999. • Cortinas de Nava, C. and M. In Ing. Cintia Mosler García. Hazardous waste management. UNAM-PUMA Mexico. 2002. • Crites, R. & G. Tchobanoglous. Wastewater Treatment in Small Populations. McGraw-Hill. Colombia, 2000. • De Nevers, N. Air Pollution Control Engineering. Mc Graw Hill / Interamericana. Mexico, 1998. • Erickson, P.A. A Practical Guide To Environmental Impact Assessment. Ed. Academic Press. USES. 1994. • Fiksel, J. Environmental Design Engineering. DFE Mc Graw Hill-Interamericana. Spain. 1997. • Freeman, Harry. M. 1988. Manual for the Prevention of Industrial Pollution. Mc Graw-Hill. Mexico. • Naínia Pierri. History of the concept of sustainable development. Chapter 2. Pág. 27-82.
Complementary	<ul style="list-style-type: none"> • Constitutional Government of the United Mexican States. May 22, 2006. General Law for the Prevention and Integral Management of Waste.

- **Constitutional Government of the United Mexican States. January 28, 1988. General Law of Ecological Balance and Environmental Protection. DOF. With the Reforms of January 7, 2000, December 31, 2001, February 25, 2003 and February 23, 2005.**
- **Constitutional Government of the United Mexican States. April 29, 2004. Law on National Waters.**
- **Constitutional Government of the United Mexican States. May 30, 2000. Regulations of the LGEEPA on Environmental Impact Assessment.**
- **Constitutional Government of the United Mexican States. November 30, 2006. Regulation of the General Law for the Prevention and Integral Management of Waste.**
- **Constitutional Government of the United Mexican States. November 22, 2000. Regulations of the LGEEPA on Environmental Audit.**
- **<http://www.envintl.com/spanish/spaniso1.html>. ISO 14000 Environmental Management Systems, Environment International Ltd. 2003.**
- **Calderón Bertheneuf, José Luis. 1994 The environmental audit in Mexico. INE.**
- **SEMARNAT. The environment in Mexico. 2005. In Summary.**
- **PROFEPA, 2001. Procurement of Environmental Justice 2001-2006. SEMARNAT, PROFEPA, National Development Plan. Mexico.**

21. Profile for the teacher who imparts this learning unit

**University Degree with Master's Degree or Doctorate in Environmental Management, Environmental Engineering or related area
Professional experience in environmental impact studies and environmental audits. Professional experience in implementation studies in SGA.**