



# 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		
Ecological Management			7858		
3. Academic Unit					
FORESTRY SCIENCES FACULTY					
4. Academic programme			5. Level		
Environmental Management Engineering			Higher Bachelor's degree		
6. Training Area					
Discipline					
7. Academy					
Environmental management					
8. Modality					
Mandatory	X	Course	X	Attendance	X
Elective		Course-workshop		Non-attendance	
		Workshop		Mixed	
		Seminar			
		Laboratory, field practice, etc.	X		
		Professional Practice			
		Academic Stay			
9. Pre-requirements					
Previous knowledge in statistics and environmental legislation					

10. Theory hours	Practice hours	Independent study hours	Total hours	Credits
5	2	0	5	5
<b>11. Names of the teachers who participated in the development and/or modification of the programme</b>				
DR. Efraín Rodríguez Téllez, MC Carlos Gandarilla Morales				
12. Date of development	Date of modification		Date of approval	
	08/02/2017 MC Carlos Gandarilla		26/10/2017	

II. LEARNING UNIT SPECIFIC DATA	
13. Presentation	
<p>The Learning unit (UA) of Ecological Management is of a disciplinary nature with most of the previous knowledge acquired by the student in the basic UAs and some other UA disciplines, being also predecessor of the terminal area.</p> <p>It is important to point out that in this UA the theoretical bases are established for the development of methodologies, their adaptation and / or innovation, referring to the restoration and conservation of natural resources.</p> <p>In each module of this UA it is expected that the student of Environmental Management Engineering acquires the professional competences for the planning and ecological ordination of the territory.</p> <p>This UA contributes to the development of the professional competences related to the Consultancy and evaluation of the environmental impact and the Management of the natural environment.</p> <p>In addition, an integrating and application activity is established in the last module of this UA with the aim of developing students' work skills.</p> <p>The aim is to start from concrete, everyday experiences, so that the student is able to recognize the physical, chemical and climatic phenomena in their surroundings, through the modelling and creation of similar scenarios.</p>	
14. Integral professional competences to develop in the student	
<b>Generic competences</b>	<b>Instrumental</b> Capability for abstraction, analysis and synthesis. Oral and written communication skills. Ability to manage information

	<b>Personal</b> Teamwork Ethical and quality commitment  <b>Systemic</b> Motivation for quality Ability to apply theoretical knowledge in practice			
<b>Professional competences</b>	Management of the natural environment Planning and integrated land management			
<b>General purpose of the course</b>	Provide students with the necessary tools to describe, diagnose, elaborate a prospective analysis and elaborate a proposal of Ecological Management.			
<b>15. Joint of axes</b>				
The learning unit articulates the environment, social responsibility and research so that students develop viable projects within a sustainable framework.				
<b>16. development of the course</b>				
<b>Module 1</b>	Conceptual development and legal-administrative framework of the general ecological order of the territory			
<b>Intended learning</b>	<b>Learning contents</b>	<b>Learning product(s)</b>	<b>Strategies</b>	<b>Teaching resources and materials</b>
The importance of managing is informed Territorial planning, scope, importance and modalities of  It Elaborates individually An essay on the importance,	Territorial planning, scope, importance and modalities of  ecological Management.	It prepares an essay individually on the importance, objectives, legal bases and methodology on the Ecological Management.  Research on tragedy of the common goods.	Documentary research work.  Encourages activities of search, selection, analysis and interpretation of information in different sources	Common materials of the classroom -Library of the FSF - Central University Library -digitalized literatura - Computer equipment - Internet -Web pages
	Complex systems as a methodological approach to ordering.			

objectives, legal bases and methodology on the Ecological Management	Methodological steps for the Ecological Management.			
<b>Module 2</b>	Methodology for the general Ecological Management of the territory			
<b>Intended learning</b>	<b>Learning contents</b>	<b>Learning product(s)</b>	<b>Strategies</b>	<b>Teaching resources and materials</b>
It is reported on how to approach an Ecological Management plan, answering the questions: What do you have? Where do you have it? How much do you have?	General bases for the construction of the diagnosis.	<p>He makes an exhibition in which he exposes the results of the realization of a descriptive analysis of the components of the natural subsystem of a particular municipality.</p> <p>Make an exhibition on potentialities and limitations of the natural resources of the municipality in question for different uses.</p>	<p>Documentary and field research work.</p> <p>Encourage search activities, selection, analysis and interpretation of information from different sources.</p>	Documentary and field research work.
	<p>Natural subsystem, availability, deterioration, potentialities and limitations of soil and water for agricultural and urban infrastructure activities</p> <p>Ecological quality of natural resources and natural fragility. Make an exhibition on potentialities and limitations of the natural resources of the municipality in question for</p>			<p>Promote activities of search, selection, analysis and interpretation of common classroom materials</p> <ul style="list-style-type: none"> <li>- FSF library</li> <li>-Library Central University</li> <li>- Literature</li> <li>- computer equipment</li> <li>- Internet</li> </ul>

	different uses.			- websites
<b>Module 3</b>	Regionalization for the Ecological Management and environmental diagnosis of the productive sectors at the national level			
<b>Intended learning</b>	<b>Learning contents</b>	<b>Learning product(s)</b>	<b>Strategies</b>	<b>Teaching resources and materials</b>
Make known the ordering methods according to the area to be ordered; establish the guidelines to determine the environmental management units.	Regionalization and political-administrative division for sector analysis.	He presents an exhibition in which he presents the results of an analysis of the levels of environmental stability in a particular municipality.	Documentary and field research work. Encourage search activities, selection, analysis and interpretation of information  - from different sources	- common classroom materials - FSF library - Central University Library - digitized literature - computer equipment - internet - web pages
	Typology by levels of environmental stability.	Make a presentation on the current situation of productive activities in the primary, secondary and tertiary sectors		
	Diagnosis of agricultural activity, livestock, forestry, aquaculture, and secondary and tertiary			

	economic activities.			

**17. Performance assessment:**

Performance evidence(s)	Performance criteria	Application scopes	percentage
<p>Essay on the importance, objectives, legal bases and methodology on the Ecological Management.</p> <p>Research on tragedy of the common goods.</p> <p>Exhibition of descriptive analysis of the components of the natural subsystem of a particular municipality.</p>	<p>Rubric instrument determined for each product, with the indicators of:</p> <p>Quality</p> <p>Sufficiency</p> <p>Congruence</p> <p>Coherence</p>	<p>Local</p> <p>Regional</p> <p>National</p> <p>International</p>	<b>10%</b>
			<b>5%</b>

<p>Exhibition on potentialities and limitations of the natural resources of a municipality for different uses.</p> <p>Presentation of levels of environmental stability of a particular municipality and the current situation of productive activities in the primary, secondary and tertiary sectors</p> <p>Final project of the ecological management of a particular municipality (document in Word, power point, and the project in Arc G s).</p>			<b>10%</b>
			<b>10%</b>
			<b>10%</b>

#### 18. Evaluation criteria:

Criterion	Value
<b>Formative Evaluation</b>	10% values (respect, responsibility and honesty) 10% attitudes (participation, organization, perseverance and personal presentation) 5% skills (for listening, leadership, for written communication, to gather information)
<b>Summative evaluation</b>	45% performance evidence
<b>Criteria summation</b>	10% the teacher evaluates the work of the students
<b>Self-evaluation</b>	10% each student will be evaluated, by means of a writing where he / she shows what was learned during the period with their respective evidence

<b>Co-evaluation</b>	10% each student will evaluate their classmates, indicating the favourable points and in their case the areas of opportunity detected in their classmates
<b>Heteroevaluation</b>	10% the teacher evaluates the work of the students
<b>Criterion</b>	100%
<b>19. accreditation</b>	
The Learning Unit is accredited, if the student presents all the evidences of performance, if the attendance to the course is greater than 80%, and if the sum of the evaluation criteria is 60 or greater.	
<b>20. Information sources</b>	
<b>Basic</b>	<p>Cárdenas, O. (2014): «A model of environmental order to face the environmental problems of the Cuban territory». Online: <a href="http://www.monografias.com/trabajos81/modelo-ordenamiento-ambiental/modeloordenamiento-ambiental.shtml">http://www.monografias.com/trabajos81 / modelo-ordenamiento-ambiental / modeloordenamiento-ambiental.shtml</a>. Retrieved on February 16, 2014.</p> <p>UNITED MEXICAN STATES (2012): «General Ecological Territory Ordering Program». Official Journal of the Federation, September 7, 2012, Mexico, D. F. Online: <a href="http://www.dof.gob.mx/nota_detalle_popup.php?codigo=5267334">http://www.dof.gob.mx/nota_detalle_popup.php?codigo=5267334</a>. Retrieved on February 18, 2014.</p> <p>Ferrufino, C. E. (2014): «Territorial order: diversity, convergence and challenges». Online: <a href="http://www.diariolibre.com/habitat/2013/02/22/i372506_ordenamiento-territorial-diversidad-converenciadesafos.html">http://www.diariolibre.com/habitat/2013/02/22/i372506_ordenamiento-territorial-diversidad- converenciadesafos.html</a>. Retrieved on February 12, 2014.</p> <p>González-Ortiz, M. A. (2014): "The Community Organization of the Territory in Mexico". Autonomous Group for Environmental Research, A. C. Online: <a href="http://www.conafor.gob.mx:8080/documentos/docs/7/0Estado%20del%20OCT%20en%20M%C3%A9xico%20.pdf">http://www.conafor.gob.mx:8080/documentos/docs/7/0Estado%20del%20OCT%20en%20M%C3%A9xico%20.pdf</a>. Retrieved on February 12, 2014</p> <p>Hernández-Santana, J. R. (2014). «The art of basing territorial interests». GeocritiQ, July 10, 2014. Online: <a href="http://www.geocritiq.com/2014/07/el-arte-dehilvanar-los-intereses-territoriales-2/">http://www.geocritiq.com/2014/07/el-arte-dehilvanar-los-intereses-territoriales-2/</a>. Retrieved on October 11, 2014.</p>



	<p>INAFED, SECRETARIAT OF GOVERNANCE (2014): «Encyclopedia of the Municipalities and Delegations of Mexico». Online: <a href="http://www.e-local.gob.mx/wb2/ELOCAL/ELOC_Enciclopedia">http://www.e-local.gob.mx/wb2/ELOCAL/ELOC_Enciclopedia</a>. Retrieved on February 17, 2014.</p> <p>Massiris-Cabeza, A. (2012): «Latin American land-use policies. Reality and challenges »in Organization Processes in Latin America and Colombia (esPinoza rico, M. a., RaMírez castañeda, t., Rincón avellaneDa, P., sanaBria artunDuaga, t.). Bogotá, National University of Colombia, 1st ed., 13-30.</p> <p>Olivos-Campos, J. R. (2014): «Representative democracy in Mexico». Online: <a href="http://derecho.posgrado.unam.mx/congresos/congreibero/ponencias/olivoscamosjoserene.pdf">http://derecho.posgrado.unam.mx/congresos/congreibero/ponencias/olivoscamosjoserene.pdf</a>. Retrieved on February 22, 2014.</p> <p>Sánchez-Salazar, M. T., Hernández-santana, J. R. (2011): "Proposal for a Degree in Comprehensive Land Management for the ENES León Unit of the UNAM". Lecture at the VII Symposium of the Teaching of Geography in Mexico (Querétaro, November 3 to 5, 2011). Querétaro, Autonomous University of Querétaro, 14</p>
<b>Complementary</b>	<p>Azueta de la Cueva, A. (2013), "Territorial Management in Mexican legislation", in Sánchez, MT, G. Bocco and JM Casado (coords.), The policy of Territorial Management in Mexico: from the theory to the practice, Institute of Geography, Centre for Research in Environmental Geography, UNAM, Secretariat of Environment and Natural Resources, National Institute of Ecology and Climate Change, Mexico</p> <p>Cabralles-Barajas, L. F. (2013), "The ordering of the territory", in Mendoza Vargas, H. (coord.), Studies of the human geography of Mexico, Geography for the 21st century, Texts university series, no. 13, Institute of Geography, UNAM, pp. 137-15</p> <p>Sánchez-Salazar, MT, G. Bocco Verdinelli and JM Casado Izquierdo (coords, 2013), The policy of Territorial Management in Mexico: from theory to practice, Institute of Geography, Centre for Research in Environmental Geography, UNAM, Secretariat of Environment and Natural Resources, National Institute of Ecology and Climate Change, Mexico.</p> <p>Troitiño-Vinuesa, M.A. (2013), "Territorial planning and management: a necessary and urgent change of direction in territorial and urban policies", in Urquidez, O. et al. (coords.), Metropolis in movement, El Colegio de Jalisco, pp. 17-41.</p> <p>Verduzco-Chávez, B. (2013), "Normative and institutional aspects of the ecological and Territorial Management", in</p>

	Sánchez, MT, G. Bocco and JM Casado (coords.), The policy of Territorial Management in Mexico: from the theory to the practice, Institute of Geography, Centre of Investigations in Environmental Geography, UNAM, Secretariat of Environment and Natural Resources, National Institute of Ecology and Climate Change, Mexico
<b>21. Profile for the teacher who imparts this learning unit</b>	
<p>Have a bachelor's degree in Forest Science, Environmental Management, Ecology, Biology, or related area.</p> <p>Preferably with a Master's or Doctorate degree.</p> <p>Professional university experience as a teacher in front of a group.</p> <p>Availability to work as a team</p> <p>Availability to work in the New Educational Model of the UJED.</p>	