



*Learning Unit Modules*  
*Focused in Integral Professional Competences*

**I. GENERAL LEARNING UNIT**

1. Identification	2. Code	3. Semester	4. Training area
<b>Forest Health</b>	TOP44- TOP47	7TH-8TH	Terminal

5. Mode					
<b>Compulsory</b>	X	<b>Elective</b>			
<b>Classroom</b>	X	<b>Non-Attendance</b>		<b>Mixed</b>	
<b>Laboratory</b>		<b>Field practices</b>	X	<b>Guided tours</b>	

6. Class shedule (hours per week)				
Theory	Practice	Independent study	Total hours	Credits
2	2	1	5	5

7. Person responsible for the subject.
Rafael Vázquez Rivera

**II. DATA SPECIFIC LEARNING UNIT**

8. Objectives
<ul style="list-style-type: none"> <li>• The student will develop the ability to assess the damage caused by forest pests and diseases.</li> <li>• Determine control strategies of species of forest insects and diseases, based on the identification of species, their life cycles and habits.</li> <li>• The student may establish the conditions for the integrated management of pests and diseases, at the forest management.</li> </ul>

9. Presentation.
The learning unit Forest Health aims to give the student a comprehensive education to develop forest management strategies that contribute to achieving forest stands with higher levels of vigor and health, based on the application of silvicultural techniques that take into account the management integrated forest pests and diseases. The correct application of silvicultural practices is the ability to ensure healthy forests.

10. Professional competences to develop in students.			
Knowledge	Skills	Attitudes	Values



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<ul style="list-style-type: none"> <li>• Ecological links among beneficial and harmful organisms that make up the ecosystems.</li> <li>• Complex ecosystem that provides environmental and economic benefits for society.</li> <li>• Forest use techniques that carry a sustainable management of forest resource.</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying the ecological links among beneficial and harmful organisms that make up the ecosystem.</li> <li>• Understanding the ecosystem as a complex that provides environmental and economic benefits for society.</li> <li>• Perform investigation of forest aspects, using forest lands as laboratories.</li> </ul>	<ul style="list-style-type: none"> <li>• Interest in preserving nature.</li> <li>• Collaboration and participation in team Works.</li> <li>• Interest in self learning and continuous learning.</li> <li>• Open to criticism and with availability to accept them.</li> </ul>	<ul style="list-style-type: none"> <li>• Respect.</li> <li>• Honesty.</li> <li>• Responsibility.</li> <li>• Commitment.</li> <li>• Ethics.</li> </ul>
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<b>11. Course topics</b>
<p>UNIT I: Health Problems in the forests of Mexico.</p> <ol style="list-style-type: none"> <li>1. Pests and diseases of forests.</li> <li>2. Effects of climate change.</li> </ol> <p>UNIT II: Integrated management of forest pests and diseases.</p> <ol style="list-style-type: none"> <li>1. Ecosystem management.</li> <li>2. Silviculture and Forest Health.</li> <li>3. Forest management systems.</li> </ol> <p>UNIT III: Survey of pests and diseases.</p> <ol style="list-style-type: none"> <li>1. Sampling terrestrial.</li> <li>2. Aerial Survey.</li> <li>3. Satellite detection.</li> <li>4. Use of geographic information systems.</li> </ol> <p>UNIT IV: Management of major forest pests and diseases.</p> <ol style="list-style-type: none"> <li>1. Bark's insects.</li> <li>2. Defoliating insects.</li> <li>3. Parasitic plants.</li> </ol>

<b>12. Evaluation criteria</b>
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Formative evaluation	30 %
Summative evaluation	30 %
Self assessment	10 %
Co-evaluation	20%
Evaluation hetero	10 %

### 13. Information sources

#### Basic

Cibrián, T. D., J. T. Méndez-Montiel, R. Campos-Bolaños, H. O. Yates III y J. Flores-Lara. 1995. Insectos Forestales de México / Forest Insects of México. Universidad Autónoma Chapingo. SARH Subsecretaría Forestal y de Fauna Silvestre de México. USDA Forest Service, Natural Resources Canada. Comisión Forestal de América del Norte FAO.

Cibrián T. D., Alvarado R. D., y García D. S.E. 2007. Enfermedades Forestales en México/ Forest Diseases in México. Universidad Autónoma Chapingo; CONAFOR-SEMARNAT, México; Forest Service USDA, EUA; NRCAN Forest Service, Canadá y Comisión Forestal de America del Norte, COFAN, FAO. Chapingo, México. 587 pp.

Coulson R., N. y J. A. Witter. 1994. Forest Entomology: Ecology and Management. Edit. Limusa. México.

#### Complementary

Romero F.,R. 2004. Manejo Integrado de Plagas: Las bases, los conceptos, su mercantilización. UACH, Chapingo, Méx. 103 pp.

[http://www.virtual.chapingo.mx/dona/sis.prod.forestal/unidad\\_iii.pdf](http://www.virtual.chapingo.mx/dona/sis.prod.forestal/unidad_iii.pdf) Silvicultura y manejo integral de los recursos forestales.