



UNIVERSIDAD JUÁREZ DEL ESTADO DE DURANGO
FACULTY OF FORESTRY SCIENCES
Forestry Sciences Engineering



Learning Unit Modules
Focused in Integral Professional Competences

I. GENERAL LEARNING UNIT

1. Identification	2. Code	3. Semester	4. Training area
Forest Entomology and Pathology	DEP22	Fourth	Discipline

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

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

7. Person responsible for the subject.
Celina Palacios Mendoza

II. DATA SPECIFIC LEARNING UNIT

8. Objective
The student will identify the main characteristics of insects and pathogens of major importance in forestry, developing phytosanitary diagnostics and propose control measures.

9. Presentation.
This learning unit provides students with the knowledge of the main characteristics of insects and pathogens that affect forests, by analyzing the damage they cause. This also provides the tools necessary to develop a phytosanitary diagnostic and implement pest management program according to the principles of sustainable forest management. The knowledge acquired by the student contributes to the specific competencies of the educational program.



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10. Professional competences to develop in students.			
Knowledge	Skills	Attitudes	Values
Ecological links among beneficial and harmful organisms that make up the ecosystems. Forest use techniques that carry a sustainable management of forest resource.	Identifying the ecological links among beneficial and harmful organisms that make up the ecosystem. Understanding the ecosystem as a complex that provides environmental and economical benefits for society.	Interest in preserving nature. Collaboration and participation in team works Interest in self learning and continuous learning. Availability for learning from errors.	Respect Honesty Responsibility Commitment Ethics Unity

11. Course topics
Unit I: Forest entomology Unit II: Forest pathology Unit III: Population ecology (insects) Unit IV: Evaluation and management of forest pests and diseases Unit V: Forestry Case Studies

12. Evaluation criteria
Formative evaluation Summative evaluation Self assessment Co-evaluation Hetero-Evaluation

13. Information sources
Basic
• Agrios, G. N. 2002. Fitopatología. Segunda edición. LIMUSA. 838 p. • Apuntes de la capacitación en nematodos fitopatógenos. 2004 Impartida por M. en C. Francisco Franco Navarro-Colegio de Postgraduados México. • 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.



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SARH Subsecretaría Forestal y de Fauna Silvestre de México. USDA Forest Service, Natural Resources Canada. Comisión Forestal de América del Norte FAO.

- Cibrian, T. D., D. Alvarado- Rosales y S. E. García-Díaz. (Eds.) 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. 1990. Entomología Forestal. Ecología y control. Edit. Limusa. México.
- Geils, W. B., J. Cibrián-Tovar y B. Moody. 2002. Mistletoes of North American Conifers. Forest Service- U.S.A., SEMARNAT-México y Canadian Forest Service-Canadá. 123 pp
- Norman F. Johnson and Charles A. Triplehorn. 2004. Borror e introducción to the study of insects. Editions 7. Thomson Brooks/Cole. ISBN-13 9780030968358. P. 864.

Complementary

- Hansen, E. M. y K. J. Lewis. 2003. Plagas y enfermedades de las coníferas. Mundi-Prensa. España. 101 p.
- Hernández, M. F. 1985. Fitopatología forestal. Facultad Forestal Centro del Pinar del Río. La habana, Cuba. 184 pp
- kuint, J. 1969. The biology of parasitic flowering plants. University of California. U.S.A. 245 pp
- Manners, J. G. 1994. Introducción a la fitopatología. LIMUSA. México. 295 p
- Romero, C. S. 1993. Hongos fitopatógenos. Universidad Autónoma Chapingo. México. 361 pp.
- Sinclair, A. W., H. H. Lyon and W. T. Johnson. 1987. Diseases of trees and shrubs. Cornell University. 573 pp.
- Torres, J. J. 1998: Patología Forestal. Segunda edición. Mundi Prensa. España, 270 pag.
- Tainter, F.H. y Baker, F.A. 1996. Principles of Forest Pathology. John Wiley & Sons, Inc., NY. 805 pp