Universidad Juárez del Estado de Durango
Faculty of Forestry Sciences
Forestry Sciences Engineering

Units Learning Modules
Focused in Integral Professional Competences

I.   GENERAL LEARNING UNIT

1. Identification	2. Code	3. Semester	4. Training area
Forest Botany	DBOF009	Second	Discipline

5. Mode				
Compulsory	X	Elective	X	
Classroom	X	Non-Attendance	X	Mixed	X
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
Laura Isabel Rentería Arrieta

II.   DATA SPECIFIC LEARNING UNIT

8. Objectives
• Apply yourself the basic principles of Vegetal Taxonomy • Recognize the principles techniques of plant herborization • Handle morphology that used for identification of plants above • Recognize the major taxa of Gimnosperms and Angiosperms to Mexico • Relate the above groups with aspects general vegetation, distribution, ecology and economic importance

9. Presentation.
The learning unit of Forest Botany is an interdisciplinary science that provides to Forestry Sciences Engineer profile, the ability to identify and classification of forest species based on knowledge of the characteristics morphological plants. This course also provides fundamental concepts for identification and classification of forest species, which are used in other related learning units as Vegetal Physiology, Soil Science, Forest Health, Forest Management, Forestry, Natural Resources Assessment, Forest Industries, Forest Genetics, etc.

This course is located in the area of basic science and part of the Forest Management academy, and horizontal second semester career.

10. Professional competences to develop in students.

Knowledge	Skills	Attitudes	Values
Science Vegetal Taxonomy for precise structuring of scientific names Process of herborization The major taxa of gimnosperms and angiosperms Main vegetation types that concur in Mexico and Durango	Manipulate of botanical samples Use of an appropriate botanical, vegetal and forest vocabulary Handle taxonomic keys Identification of major forest species of interest in the State of Durango	Responsibility and respect to the use and management of natural resources and the environment Interest in preserving nature Collaboration and participation in team works Interest in self learning and continuos learning Open to criticism and with availability to accept them	Respect Honesty Responsibility Commitment Ethics

11. Course topics

MODULE I: INTRODUCTION TO FOREST BOTANY
MODULE II: BASIC CONCEPTS AND PRINCIPLES OF TAXONOMY
MODULE III: TAXONOMIC METHODOLOGY
MODULE IV: GIMNOSPERMAS (DIVISION PINOPHYTA)
MODULE V: FAMILY PINACEAE
MODULE VI: GENUS *PINUS*
MODULE VII: OTHER FAMILIES OF ORDER CONIFERALES
MODULE VIII: ANGIOSPERMAS (DIVISION MAGNOLIOPHYTA)
MODULE IX: FAMILIES WITH ECONOMIC IMPORTANCE
MODULE X: VEGETATION AND CONSERVATION

12. Evaluation criteria

Educational evaluation
Accumulative evaluation
Self evaluation
Co-evaluation
Hetero-evaluation

13. Information sources
Basic

Dimitri, M y Orfila E. 2004. Tratado de Morfología y Sistemática Vegetal. ACME.

García, A. y S. González. 2003. Pináceas de Durango. Inst. de Ecología A.C. 2a. Ed. 187 P.

González, E. A., E. Cedillo, L. Díaz. 2010. Morfología y Anatomía de Plantas con Flores. U.A.CH. 276 P.

Pérez, R. M. 2008. Claves de Determinación Botánica (con énfasis en familias de árboles). U.A.CH. 307 P.

Yáñez, E.L. 2004. Las Principales Familias de Árboles en México. 1era. Ed. U.A.CH. División de C. Ftales. 189 P.

Complementary

Top national and international journal periodicals that can be checked:

Anales del Jardín Botánico

Cactáceas y Suculentas Mexicanas

Journal of Forestry

Resources

Revista Mexicana de Ciencias Forestales

World Conservation

Links of web sites of interest:

www.ipni.org

www.missouribotanicalgarden.org

www.iucn.org

www.ine.gob.mx

www.semarnat.gob.mx

www.profepa.gob.mx

www.conabio.gob.mx

www.conafor.gob.mx

www.conanp.gob.mx

Biodiversity Information Network - BIN21

EnviroLink