

Savannakhet University

No _____/.....

Place, Date ____/____/____

Course Syllabus

1 Program

Title of the study programme: Forest Resource Management

2 Course details

Course name: Dendrology

Course code: FOA04DEN21211

Number of credits (hours/week): 2(1-2-2)

Course type (tick the appropriate box): Required, Elective, Other, if other please explain:

Prerequisites courses: Non

Semester, in which the course is taught: *tick the appropriate box below*

Year 1		Year 2	
Semester 1	Semester 2	Semester 1	Semester 2
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3 Responsible unit: Office of Post-Graduate Study

3.1 Department: Department of Forestry Resource

Names and affiliations of lecturer(s): Ms. Phonesavan PHASAWATH, Department of Forestry Resource, Agriculture and Environment Faculty, Savannakhet University, Lao PDR. Tel: +856 20 23589678, Email: phone.svk2030@gmail.com

4 Course description

The course concentrates on the identification, classification, nomenclature, uses and characteristic habitats of major tree, shrub and groundcover species of Laos and common understory and wetland species. Emphasis is placed on examples found in plant communities. We will study how to use different characteristics such as leaf shape, arrangement, bark texture, and habitat to identify trees and other plant species

5 Course objectives

The goals of this course are for you to learn:

- To identify (by sight), trees and important shrubs native, and some commonly planted non-native trees;
- The general identification characteristics of important trees native to other regions of Laos;
- The most important silvical characteristics (i.e., range, tolerance, site requirements, etc.) of these species.
- Learn parts of woody plants that are useful in their identification.
- Examine the site characteristics that control the distribution of different species.
- Learn the defining characteristics and utility of trees locally
- Develop a collection of representative woody plants that can be used for future studies.
- Be able to identify in the field each plant species covered in laboratory.
- Learn the scientific and common names of each plant species studied

Knowledge:

Students are able to explain the definition of dendrology, tree, wooden plant and benefit of dendrology related other science, the parts and specific morphological characteristics in organs of leaves, flowers, fruit, stems, and roots; able to explain the two devices that form tree architecture models, and know the kind of of tree architectural models, the mention various categories and classes in plant classification; able to explain some of the rules in writing scientific names of plants, as well as being able to write at least two complete scientific names of trees; able to mention the four methods of tree species identification and Students are able to explain the characteristics of Gymnosperms and Angiosperms Subdivisions; able to mention the botanical characteristics, habitat, distribution, and important benefits of trees of Podocarpaceae, Araucariaceae, Pinaceae, Arecaceae and other family.

Skills:

Students are able to observe and identify the tree morphology, to demonstrate in making of Herbarium Specimens, construct determination key, observe and identify the family, genus, and species of tree from 32 families.

Application of theories to practice:

Graduates will be able to identify unknown species in the forest; able to explain some of the rules in writing scientific names of plants, as well as being able to write at least two complete scientific names of trees and to mention the botanical characteristics, habitat, distribution, and important benefits of trees

Social knowledge and skills:

Graduates will become demonstrate a willingness to participate in the class activities, are able to complete all tasks and participate in class discussion. Besides that, students are expected to be able in practice for identification the important tree species in forestry field.

5.1 Learning objectives of particular modules

At the conclusion of this course, the student will be able to:

- Identify major tree, shrub and herbaceous species in the forests of Laos from living specimens as well as from samples of flowers, twigs, leaves, and fruits;
- Use rules of scientific nomenclature to correctly present the common name and binomial;

- Employ dichotomous plant keys to identify unknown species in the future;
- State major and minor uses of each species; and,
- Describe physical and biological features associated with the major tree species and forest types in other regions of Laos.
- Synthesize, write and publicly present information about trees and plants

6 Course teaching methods

The course consists of lectures, collaborative teaching, discussion, learning by doing/group work, Classroom lectures, Homework, Field trips, Teaching and learning with a research process, Experiments, research, data collection, presentation, Web-base teaching and other

7 Teaching plan

Week	Content	Method/activity	Hours
1	Module 1: Introduction to the Dendrology	Lecture discussion	3
2	Module 2: Nomenclature and Classification	Lecture discussion Q&A	3
3	Module 2: Nomenclature and Classification (Con't)	Lecture discussion assignment	3
4	Module 3: Vegetative Morphology	Lecture discussion	3
5	Module 3: Vegetative Morphology (Con't)	Lecture discussion homework	4
6	Module 4: Reproductive Morphology	Lecture discussion	3
7	Module 4: Reproductive Morphology (Con't)	Lecture discussion	4
8	Midterm Examination	Writing exam	
9	Module 5: Variation (Habitat, Range & Communities)	Lecture discussion assignment	8
10	Module 6: Hardwood Forested Uplands	Lecture and discussion by PowerPoint/ LCD Give homework	6



11	Module 7: High Pine and Scrub	Lecture and discussion by PowerPoint/ LCD Give homework	6
12	Module 8: Pine Flat woods	Lecture Discussion Plant collection homework	6
13	Module 9: Fresh Water Non-Forested Wetlands Fresh Water Forested Wetlands	Lecture Discussion Plant collection homework	3
14	Module 10: Tree Biology	Lecture discussion homework	6
15	Module 11: Invasive Plants / Urban Forests Plant ID review	Lecture Discussion Plant collection homework	6
16	Field survey of plants	Practical Presentation	16
17	Review for Final Exam/additional week	Review	
18	Final examination	Writing exam	

8 Material needs

8.1 Course equipment: *link to equipment needs/purchases as part of the project*

Digital weighing scale FC-si/FC-i, MOISTURE METER, Electric Kilns

9 References

9.1 Compulsory reading list

Backer, C. A. & R.C. Bakhuizen v.d. Brink, jr., 1964-1965. Flora of Java. Vol. 1-2. Groningen, Netherlands.

Ban, N.T. 2000. Flora of Vietnam, Vol. 1. Hanoi, Vietnam (In Vietnamese).

Ban, N.T. et al. 1996. Red data book of Vietnam. Vol. 2. Plants, Hanoi, Vietnam

Callaghan, R.M., 1995. Plants of Laos. A list of tree species. Vientiane, Laos.

Chan, L.M. & Huyen, L.T. 2000. Forest plants of Vietnam, Hanoi, Vietnam (In Vietnamese)

Corner, E.J.H. 1940. Wayside Trees of Malaya, Singapore.

Dung, V.V. 1996, Vietnam Forest Trees, Hanoi, Vietnam

- Flora of China, 1999-2000. Vol.4 – 24, Beijing, China.
- Flora of Malesiana, 1948-2000. Ser. 1, Vol. 4-14. Leiden, the Netherlands
- Flora of Thailand, 1970-2002-. Vol. 2-7. Bangkok. Thailand
- Flore du Laos, du Cambodge et du Vietnam. (in French). Volume 1-31. 1960-2003. Muséum National D'Histoire Naturelle, Laboratoire de Phanérogamie, Paris.
- Gardner, Sidisunthorn & Ansarnsunthorn, 2000. Field guide to Forest Trees of Northern Thailand. Bangkok, Thailand.
- Hooker, J.D et al. Flora of British India, 1872-1890. Vol. 3-5, London.
- Ho, P. H., 1991-1992. Flore in Vietnam, Vol. 1-2. Paris. (In Vietnamese).
- Ke, L.K. et al., Vol. I–VI, 1969 – 1977. The common plants in Vietnam. Hanoi (In Vietnamese).
- Keoler, P.J.A. in K. Kubitzki, J.G. Rohwer, V. Bittrich, 1993. Vol. 2. Families and Genera of Vascular Plants. Annonaceae. Springer-Verlag Berlin Heidelberg, Germany.
- Keoler, P.J.A., 2000. ser. 3. Secondary forest trees of Kalimantan, Indonesia. MOFEC Tropenbos-Kalimantan Project. Slidrecht, Netherlands.
- Khamseng Nanthavong, Hoang Van Sam, Keoler, P.J.A., 2004. Trees of Laos and Vietnam: a field guide to 100 economically or ecologically important species. National Herbarium of Netherlands. Leiden. Netherlands.
- Le Comte, H. et al. Flore Generale Indo-Chine. 1907-1950. Vol. 1-5. Paris.
- Lehmann, Greijmans & Shenman, 2003. Field guide to Forests and Trees of the Central Highlands of Xieng Khouang Lao P.D.R. Lao Tree Seed Project, Vientiane, Laos
- Mcgraw-hill, 1991. Textbook of dendrology. International editions.
- Mcgraw-hill, 1978. Textbook of dendrology. Book company. New York.
- Michael Hickey and Clive King, 2000. The Cambridge Illustrated Glossary of Botanical Terms. Cambridge University Press
- Nopphone, 1993. Taxonomy of Vascular Plants. Bangkok, Thailand.
- Prosea: Plant Resources of South-Rast Asia 1993-2003. 5(1)-17. Netherlands.
- Ridley, H.N. Flora of Malay Peninsula, 1923-1925, Vol. 1-15, London.
- Svengsuksa, B. & Vidal, J.E 1997. Dipterocarpaceae of Laos, Paris, France.
- Somnuk, 1993. Laboratory of Forest Biology (Dendrology). Bangkok, Thailand.
- Tree Flora of Malaya, 1972-1989. Vol. 1-4. Kepong, Forest Research Institute Malaysia.
- Tree Flora of Sabah and Sarawak, 1995-2002. Vol. 1-4. Kepong, Forest Research Institute Malaysia.
- Trung, V.T. 1970. The vegetation of Vietnam, Hanoi, Vietnam (In Vietnamese)

Vidal, J.E., 1959. Noms Vernaculaires de Plantes (LAO, MÈO, KHA) en usage au Laos. École Française D'extreme-Orient, Paris.

9.2 Suggested reading list

Core, E.L. and N.P. Ammons, 1958, Woody Plants in Winter, West Virginia Univ. Press.

Petrides, G.A. and R.T. Peterson, 1998, A Fieldguide to Eastern Trees, Peterson's Fieldguides, Houghton Mifflin Harcourt.

Samuelson, L.J. and M.E. Hogan, 2006, Forest Trees: A Guide to the Eastern United States, Pearson Prentice Hall, Pearson Education, NJ, USA.

Weakley, A.S, J.C. Ludwig, J.F. Townsend. 2012. Flora of Virginia, Botanical Research Institute of Texas, 1572 p.

10 Assessment of students

10.1 Description of assessment

- Attendance 10 %
- Reporting 30 %
- Midterm examination 20 %
- Final examination 40 %

10.2 Grade distribution and student assessment

Grading scale

Score level	Meaning		Total score	Scale
	(Lao)	(English)		
A	ດີເລີດ	(Excellent)	80-100	4,00
B+	ດີຫຼາຍ	(Very Good)	75-79	3,50
B	ດີ	(Good)	70-74	3,00
C+	ດີພໍໃຊ້	(Fairly Good)	65-69	2,50
C	ພໍໃຊ້	(Fair)	60-64	2,00
D+	ອ່ອນ	(Poor)	55-59	1,50



D	ອ່ອນຫຼາຍ	(Very Poor)	50-54	1,00
F	ຕົກ	(Fail)	0-49	0,00
I	ບໍ່ສົມບູນ (ຮຽນບໍ່ຄົບ)	(Incomplete)		

Place, Date/...../.....

Head of Department.....

Course Instructor

Dean of Faculty.....