



COURSE SYLLABUS IN ES 3 PLANT TAXONOMY

Course Title: Plant Taxonomy	Instructor: Jaesma A. Asinas
Prerequisite: None	Class Schedule: Tuesday 11:00-12:00 PM Wednesday 10:00-12:00 PM
Credit Units: 3	Consultation Hours: Tuesday 2:00-4:00 PM
Number of Hours: 3	Term: Second Term A.Y. 2023-2024

COLLEGE OF ARTS AND SCIENCES VMGO

Vision

College of Arts and Sciences as an agent of change where students and faculty members demonstrate innovative skills, academic excellence, and ethical values towards intellectual and moral transformation of the society.

Mission

To serve as an avenue of intellectual, professional, and technical excellence to become center of liberal education and foundation courses.

BSES Program Goal

To produce graduates equipped with multidisciplinary and integrated tools and approaches; and perspectives and values related to environmental problems and concerns.

BSES Program Objectives

Specifically, the program has the following objectives:

1. To expose students in an integrated way to environmental processes and phenomena, as well as, environmental issues, from the perspective of the natural sciences.
2. To train them to recognize and understand the natural environment, how humans affect the environment, and how the environment impacts on society.

CORE VALUES

Resilience, Integrity Commitment and Excellence

PROGRAM OUTCOMES:

1. Equipped with sufficient knowledge on the scientific theories and techniques needed to monitor and understand environmental quality;
2. Able to integrate and apply the various disciplines towards the understanding of environmental problems;
3. Knowledgeable regarding relevant local, regional and global environmental issues; and
4. Able to employ a rational structured approach to solving environmental problems.

COURSE DESCRIPTION:

The course will cover the basic systems, principles and methods utilized in modern plant systematics. This course will examine recent developments within the field of systematics in the areas of phylogenetic systematics and classification. The also involves introducing the students to the classification and identification of some of the major taxa in the vascular flora of the Philippines and the Mindoro island.



COURSE OUTCOMES:

At the end of the semester, the students must have:

1. Recognize by sight about common plant species of the Philippines;
2. Apply the proper taxonomic scheme and nomenclature to plants;
3. Recognize morphological characteristics of plants;
4. Recognize and describe the morphological features of the major families of plants;
5. Use taxonomic keys to identify unknown plants; and
6. Write clear and informative narratives about botanical observations.

LINK TO PROGRAM OUTCOMES:

Course Outcomes:		PROGRAM OUTCOMES			
		1	2	3	4
	After completing this course, the students must have:				
	CO1. Recognize by sight about common plant species of the Philippines.	✓	✓	✓	✓
	CO2. Apply the proper taxonomic scheme and nomenclature to plants.	✓	✓	✓	✓
	CO3. Recognize morphological characteristics of plants.	✓	✓	✓	✓
	CO4. Recognize and describe the morphological features of the major families of plants.	✓	✓	✓	✓
	CO5. Use taxonomic keys to identify unknown plants, and	✓	✓	✓	✓
	CO6. Write clear and informative narratives about botanical observations.	✓	✓	✓	✓

COURSE OUTLINE:

Week	Course Outcomes	Topics	Teaching/ Learning Activities	Assessment
Week 1-3 (12 hours)	At the end of the course, the students should be able to: • identified and described the characteristics of plants; • classified plant type examples; • compare and contrast non-vascular and vascular plants; • list three non-vascular plants and three seedless vascular plants; • explain how seedless plants are important to the environment; • compare angiosperms and gymnosperms; explain the economic and environmental importance of gymnosperms and angiosperms.	I. Introduction to Plant Taxonomy A. What is Plant Taxonomy? B. What are plants? C. Vascular and Non-Vascular Plants - Angiosperms & Gymnosperms	Brainstorming Lecture Discussion with Video presentation	Participatory Recitation
Week 4 (3 hours)	• Label and draw plant organs and parts	II. Structural/Vegetative Terminology	Brainstorming Lecture Discussion with Video presentation	Use of rubrics



Week	Course Outcomes	Topics	Teaching/ Learning Activities	Assessment
Week 5-9 (14 hours)	- list the functions of roots, leaves, stems and flowers. - identify leaf arrangement types; - describe and draw the structure of leaf; - describe the structure of seeds and stems; - identify and label the parts of the flower and their functions.	III. Plant Organs A. Leaves B. Flowers C. Stems D. Fruits and Seeds E. Roots	Brainstorming Lecture Discussion with Video presentation	Participatory Recitation
MIDTERM EXAMINATION - WEEK 9 (1 hour)				
Week 10-15 (18 hours)	- describe key characteristics of major plant families - identify plant species based on groups; - describe ecosystems where specific plants thrive	IV. Plant Families and Identification A. Trees B. Mosses C. Vines D. Grasses E. Ferns	Lecture Discussion with Video Presentation Group Discussion Tree Identification (Mangroves and Dipterocarps)	Use of rubrics
Week 16-17 (6 hours)	- demonstrate plant collection and proper sampling of trees, shrubs, ferns, grasses and vines; - demonstrate proper preservation of leaf samples.	V. Plant Collecting and Sampling Techniques	Lecture Discussion Demonstration of Plant leaf collection and pressing	Participatory Recitation Use of rubrics
FINAL EXAMINATION - WEEK 18 (1 hour)				

COURSE POLICIES:

1. Only students enrolled in the course are allowed to participate in the class.
2. Students' attendance is required.
3. In the event that the absences exceed the maximum allowed due to sickness, the student will be dropped from the roll or be allowed to be on **Leave of Absence (LOA)**.
4. In order to avoid receiving a failing grade in the course, a student should file the corresponding dropping form within a week after the midterm examination.
5. The entry on the records concerning a particular dropped course by a student who filed the required dropping form would be officially dropped (OD). On the other hand, a student who drops the course without filing the required dropping form shall be given a **failing grade** therein.
6. Students' final grade will be determined by their active participation and performance in the discussions, assignments and examination.
7. There are two (2) grades issued during a school term, the midterm grade and the final grade. Grade shall either be passing (3.0) and above, or failure (5.0). No incomplete (Inc.) mark shall be given to a student for failure to submit a term paper or report project of similar nature. The corresponding grade shall be given with proper deductions for paper submitted. A student who fails to take the final examinations for whatever valid reasons shall be given a No Final Examination (NFE) mark if he is passing prior to final examinations.



- However, if such student is failing prior to final examination and is deemed to fail even if he perfects the final examination, a failing grade shall be given to the student. (MinSCAT Student Handbook, 2016, page 12)
8. Computation of Grades. In computing the grades, several factors are being considered by the instructor/professor. This usually depends whether the subject is with laboratory or purely lecture/without laboratory, a general education subject, or a major subject, etc. In any case, the basis of computation, as approved by the Academic Council, would be presented by the instructor/professor during the first class meetings. (MinSCAT Student Handbook, 2016, page 12)
 9. The College adopts the following grading system:

Percent Equivalent	Numerical Equivalent	Grade Description
97-100	1.00	Excellent
94-96	1.25	Outstanding
91-93	1.50	Very Good
88-90	1.75	Good
85-87	2.00	Very Satisfactory
82-84	2.25	Thorough Satisfactory
79-81	2.50	Satisfactory
76-78	2.75	Fair
75	3.00	Passing
Below 75%	5.00	Failing

10. Cheating in an examination is penalized with a failure grade. Transmission or solicitation of any information between the students during the examination is forbidden. Both students in this case, if warranted will be given a grade of failure for that particular examination.
11. All forms of intellectual dishonesty such as cheating during examinations, copying assignments, plagiarism and data fabrication will not be tolerated.

COURSE REQUIREMENTS

- Activity sheets/outputs
- Project

GRADING SYSTEM:

Written output (assignments, quizzes, and others)	=	30%
Performance Tasks (Research paper, Laboratory exercises if applicable, portfolio, and others)	=	40%
Major Assessment (Midterm and Final Exam)	=	<u>30%</u>
Total Grade	=	100%
Total grade for Midterm	100%	
Total grade for Final Term	100%	
Final Grade = (Midterm Grade + Tentative Final Grade)/2		

LEARNING RESOURCES

Textbooks

- Caballes, D. G. & Florida, J. S. (2013). Biological Science. Mutya Publishing House, Inc. ISBN 978-971-821-348-3
- Hadsall, A. S. (2021). Basic Taxonomy Seminar material
- Kaplan, D. R. (2001). The science of plant morphology: Definition, history, and role in Modern Biology. *American Journal of Botany*, 88(10): 1711-1741



Online References

Co's Digital Flora. <https://www.philippineplants.org/>

Journal References

- Linis, V. C. (2009). Biogeography of Mindoro mosses. *Blumea-Biodiversity, Evolution and Biogeography of Plants*, 54(1-2), 290-296.
- Malabrigo, P., Tobias, A., Eduarte, G., Terbio, L., Hernandez, J., & Umali, A. G. (2022). Tree diversity and stand structure of a 2-hectare Permanent Biodiversity Monitoring Area (PBMA) in Mts. Iglit-Baco National Park, Mindoro Island, Philippines. *Ecosystems and Development Journal*, 12(1), 83-94.
- Villanueva, E. L. C., & Buot Jr, I. E. (2015). Threatened plant species of Mindoro, Philippines. *IAMURE International Journal of Ecology and Conservation*, 14, 168.
- Villanueva, E. L. C., & Buot Jr, I. E. (2016). Hoyas of Mindoro Island, Philippines: Conservation concerns. *Journal of Nature Studies*, 15(1), 87-97.

Prepared by: | /

sgd

JAESMA A. ASINAS

Instructor IV

BSES Program Chairperson

Approved:

sgd

KATHERINE P. SANCHEZ-ESCALONA, Ph.D., EnP

Dean, College of Arts and Sciences



COURSE SYLLABUS IN ES 5 WILDLIFE BIOLOGY

Course Title: Wildlife Biology	Instructor: Jaesma A. Asinas
Prerequisite: None	Class Schedule: Lecture Mon 1:00-2:00 PM, Tue 10:00-11:00 AM, Fri 8:00-9:00 AM Laboratory Mon 2:00-5:00 PM, Friday 9:00-12:00 PM
Credit Units: 5	Consultation Hours: Monday 11:00-12:00 PM
Number of Hours: 5	Term: Second Term A.Y. 2023-2024

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PROGRAM OUTCOMES:

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4. Able to employ a rational structured approach to solving environmental problems.

COURSE DESCRIPTION:

Wildlife Biology is an introductory course designed to provide basic concepts of wildlife biology and ecology, both on the species and population level with special emphasis to the wildlife within the Mindoro Biogeographic Region. It is a combination of lecture and laboratory activities, and will focus on a wide range of topics revolving on wildlife and its management, including policies and laws. The laboratory will further cover taxonomic classification and basic wildlife field survey techniques.



COURSE OUTCOMES:

At the end of the semester, the students must have:

1. discussed the basic concepts of Wildlife Biology;
2. familiarized themselves with the different Philippine policies and laws governing wildlife management and protection;
3. understood the importance of habitat and population management, and species conservation;
4. demonstrated simple wildlife field survey techniques and proper wildlife handling; and
5. identified the common Philippine wildlife species with emphasis on Mindoro fauna and flora.

LINK TO PROGRAM OUTCOMES:

Course Outcomes:		PROGRAM OUTCOMES			
		1	2	3	4
	After completing this course, the students must have:				
	CO1. Discuss the basic concepts of Wildlife Biology	✓	✓	✓	✓
	CO2. Familiarize themselves with the different Philippine policies and laws governing wildlife management and protection	✓	✓	✓	✓
	CO3. Understand the importance of habitat and population management, and species conservation	✓	✓	✓	✓
	CO4. Demonstrate simple wildlife field survey techniques and proper wildlife handling	✓	✓	✓	✓
	CO5. Identify the common Philippine wildlife species with emphasis on Mindoro fauna and flora.	✓	✓	✓	✓

COURSE OUTLINE:

Week	Course Outcomes	Topics	Teaching/ Learning Activities	Assessment
Week 1-3 (9 hours)	The students must be able to: • define wildlife • enumerate the threats to wildlife • integrate threats with policy supports to wildlife	INTRODUCTION TO THE COURSE A. Introduction and overview a. Definition and importance b. Threats to biodiversity c. Policies and Advocacies i. Republic Act No. 9147 ii. IUCN classifications and Red List iii. Philippine Red List iv. Other Conventions (CITES, RAMSAR, etc)	Interactive Discussion Lecture/Discussion	Quiz/Activity Use of Rubrics
Week 4-9 (19 hours)	• identify Philippine and Mindoro wildlife • identify and discuss different species of birds, mammals, reptiles and amphibians • associate wildlife species	B. The Wildlife of the Philippines and Mindoro a. Introduction i. Philippine Zoogeography/ Biogeography	PowerPoint Presentation Lecture/Discussion	Quiz/Activity Use of Rubrics



Week	Course Outcomes	Topics	Teaching/ Learning Activities	Assessment
	with habitats	ii. Habitat types and Characteristics b. Birds i. Introduction to some Philippine Avian Families and their representatives ii. Introduction to Mindoro Avian Species iii. Behaviour iv. Habitat preferences c. Mammals i. Introduction to some Philippine Mammalian Families and their representatives ii. Introduction to Mindoro Mammalian Species iii. Behaviour iv. Habitat preferences d. Reptiles and Amphibians i. Introduction to some Philippine Herpetofauna Families and their representatives ii. Introduction to Mindoro Herpetofauna iii. Behaviour iv. Habitat preferences		
MIDTERM EXAMINATION - WEEK 9 (1 hour)				
Week 10-12 (9 hours)	- identify Philippine and Mindoro wildlife - discuss biodiversity and their importance - associate wildlife species with habitats	B. The Wildlife of the Philippines and Mindoro (continuation) e. Invertebrates i. Introduction to some Philippine and Mindoro Invertebrates ii. Habitat Preferences f. Plants i. Introduction to some Philippine and Mindoro Flora ii. Uses	PowerPoint Presentation Lecture/Discussion	Quiz/Activity Use of Rubrics



Week	Course Outcomes	Topics	Teaching/ Learning Activities	Assessment
Week 13-17 (9 hours)	- discuss wildlife management strategies; - choose strategies based on wildlife behavior	C. Wildlife management and conservation strategies a. Habitat Management i. Basic Landscape Ecology ii. Habitat Restoration and Protection iii. Edge Improvement iv. Corridor Establishment and Protection v. Establishment of Protected Areas and Critical Habitats vi. Case Study: Naujan Lake National Park b. Species Conservation and Population Management i. Flagship and Keystone Species ii. Captive Breeding iii. Reintroduction iv. Establishment of Critical Habitats v. Human-Wildlife Conflict Management vi. Case Study: Philippine Eagle, Tamaraw, Flying Foxes, Waterbirds of NLNP c. Invasive species i. Identification and extent ii. Eradication iii. Case Study: <i>Rattus tanezumi</i>, <i>Kaloula pulchra</i>, <i>Chromolaena odorata</i>, Golden Kuhol (<i>Pomacea canaliculata</i>)	PowerPoint Presentation Lecture/Discussion	Quiz/Activity Use of Rubrics
FINAL EXAMINATION - WEEK 18 (1 hour)				

Laboratory Outline

Week	Course Outcomes	Topics	Teaching / Learning Activities	Assessment
1-2	The students should be able to:	A. Introduction to laboratory a. Writing a laboratory report b. Library research methods	Lecture	



	-follow guidelines in writing laboratory reports;	c. Safety guidelines for field research		
3-4	-practice steps in processing and preserving biological specimen	B. Biological specimen collection and preservation 1. Field Collection Techniques and Biometrics a. Transects and Counts b. Netting and Trapping c. Detectors and Acoustics d. Biometrics 2. Wet and dry preservation methods a. Basic taxidermy b. Herbarium	Demonstration by Resource Person	Specimen collected; Laboratory report
4-5	-understand and apply taxonomic tools	C. Taxonomy and species identification 1. How to use dichotomous key 2. Constructing a Dichotomous key	Lecture by Resource Person	Laboratory Report
6-7	-practice assessment tools for wildlife	D. Ecological habitat assessment and tools 1. Transect 2. Quadrats 3. Points	Lecture/demonstration by Resource Person	Laboratory Report
8-9	-apply basic data analysis	E. Basic data analysis 1. Species richness 2. Relative abundance 3. Diversity indices	Lecture/demonstration by Resource Person	Laboratory Report
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Total grade for Midterm	100%	
Total grade for Final Term	100%	
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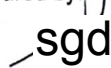
LEARNING RESOURCES

Books

- Botkin, D. B. & Keller, E. A. (2003). *Environmental Science: Earth as a living planet* 4th Ed. John Wiley & Sons, Inc.
- Sinclair, A. R. E., Fryxell, J. M., & Caughley, G. (2006). *Wildlife Ecology, Conservation, and Management*. Second Edition. Blackwell Publishing.
- Key to the Bats of the Philippines
Birds of the Philippines
A field guide to Philippine Frogs
Illustrated Key to Philippine Snakes
Evolutionary Processes of Diversification in a Model Island Archipelago (for bio/zoogeography)

Online References

- CITES (n.d.). The CITES Appendices. From <https://cites.org/eng/app/index.php>
- DENR (2019). Department of Environment and Natural Resources Administrative Order Number 2019-09: Updated National List of Threatened Philippine Fauna and their Categories
- Fernando, E. S., Co, L. C., Lagunzad, D. A., Gruezo, W. S., Barcelona, J. F., Madulid, D. A., Lapis, A. B., texon, G. I., Manila, A. C., & Zamora, P. M. (2008). Threatened plants of the Philippines: A preliminary assessment. *The Asian International Journal of Life Sciences*, 3: 1-52.
- Heaney, Lawrence & Balete, Danilo & Duya, Mariano Roy & Duya, Melizar & Jansa, Sharon & Steppan, Scott & Rickart, Eric. (2016). Doubling diversity: a cautionary tale of previously unsuspected mammalian diversity on a tropical oceanic island. *Frontiers of Biogeography*. 8. 10.21425/F5FBG29667.
- IUCN (n.d.). International Union for Conservation of Nature Red List. From <https://www.iucnredlist.org/>
- Tian, M., Potter, G. R., & Phelps, J. (2023). What is "wildlife"? Legal definitions that matter to conservation. *Biological Conservation*, 287, 110339. <https://doi.org/10.1016/j.biocon.2023.110339>

Prepared by: 

JAESMA A. ASINAS

Instructor

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Approved:



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