



DEPARTMENT OF BIOLOGY, COLLEGE OF SCIENCE
UNIVERSITY OF THE PHILIPPINES BAGUIO

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CRE 297: Special Topic in Conservation Ecology

COURSE SYLLABUS

MIDYEAR | AY 2024–2025

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APPROVED ACADEMIC CALENDAR

As of 16 May 2024	FIRST SEMESTER (Aug - Dec)	SECOND SEMESTER (Jan - May)	MIDYEAR (June - July)
Deadline for filing application for transfer, appeal for readmission and extension for MRR	24 Jun, Mon	02 Dec, Mon	
ADVANCE REGISTRATION OF FIRST YEAR STUDENTS	10 Jul, Wed – 12 Jul, Fri		
Removal examination period	29 Jul, Mon – 09 Aug, Fri	16 Dec, Mon – 10 Jan, Fri	29 May, Thu – 11 Jun, Wed
Validation for advanced credits	29 Jul, Mon – 23 Aug, Fri	16 Dec, Mon – 24 Jan, Fri	29 May, Thu – 20 Jun, Fri
GENERAL REGISTRATION			13 Jun, Fri
Graduating students (4 th , 5 th , 6 th , 7 th Year etc.)	12 Aug, Mon	13 Jan, Mon	
Third Year & graduate students	13 Aug, Tue	14 Jan, Tue	
Second Year & graduate students	14 Aug, Wed	15 Jan, Wed	
First Year & graduate students	15 Aug, Thu	16 Jan, Thu	
All others & Last day of registration	16 Aug, Fri	17 Jan, Fri	
START OF CLASSES	19 Aug, Mon	20 Jan, Mon	16 Jun, Mon
WELCOME ASSEMBLY FOR FIRST YEAR STUDENTS	19 Aug, Mon		
Deadline for Change of Matriculation (CoM)	30 Aug, Fri	31 Jan, Fri	17 Jun, Tue
UP Foundation Day			18 Jun, Wed
Deadline for filing application for graduation	09 Sep, Mon	10 Feb, Mon	20 Jun, Fri
Deadline for Colleges to submit to OUR tentative list of candidates for graduation	16 Sep, Mon	17 Feb, Mon	25 Jun, Wed
UP College Admission Test (UPCAT)	c/o Office of Admissions		
MID-SEMESTER	12 Oct, Sat	17 Mar, Mon	01 Jul, Tue
Reading and Health Break	28 Oct, Mon – 31 Oct, Thu	13 Mar, Thu – 15 Mar, Sat	
DEADLINE FOR DROPPING SUBJECTS	14 Nov, Thu	15 Apr, Tue	09 Jul, Wed
DEADLINE FOR FILING LEAVE OF ABSENCE	22 Nov, Fri	02 May, Fri	11 Jul, Fri (for enrolled students only)
UP Baguio Foundation Day	02 Dec, Mon		
END OF CLASSES	07 Dec, Sat	17 May, Sat	18 Jul, Fri
Integration Period	09 Dec, Mon – 10 Dec, Tue	19 May, Mon – 20 May, Tue	
FINAL EXAMINATIONS	11 Dec, Wed – 18 Dec, Wed		21 Jul, Mon – 22 Jul, Tue
Graduating students		21 May, Wed – 22 May, Thu	
Other students		21 May, Wed – 28 May, Wed	
DEADLINE FOR SUBMITTING GRADES	07 Jan, Tue		25 Jul, Fri
Graduating students		02 Jun, Mon	
Other students		06 Jun, Fri	
Curriculum Committee Meeting	27 Jan, Mon	19 May, Mon	
Last day for graduating students to submit requirements for academic deficiencies (INCs/4.0s) incurred in previous semesters	10 Feb, Mon	02 Jun, Mon	
Last day for submission of grades of graduating students who cleared their academic deficiencies (INCs/4.0s) incurred in previous semesters	17 Feb, Mon	10 Jun, Tue	15 Sep, Mon
College Faculty Meeting to approve candidates for graduation	17 Feb, Mon	10 Jun, Tue	15 Sep, Mon
Deadline for Colleges to submit APPROVED list of candidates for graduation	19 Feb, Wed	17 Jun, Tue	22 Sep, Mon
UNIVERSITY COUNCIL MEETING	24 Feb, Mon	20 Jun, Fri	29 Sep, Mon
BOR MEETING TO APPROVE GRADUATION	Per BOR schedule	Per BOR schedule	Per BOR schedule
COMMENCEMENT EXERCISES		06 Jul, Tue	

HOLIDAYS IN ACADEMIC YEAR 2024-2025			
2024		2025	
Ninoy Aquino Day	21 Aug, Wed	New Year's Day	01 Jan, Wed
National Heroes Day	26 Aug, Mon	Chinese/Lunar New Year	29 Jan, Wed
Baguio Day	01 Sep, Sun	Araw ng Kagitingan	09 Apr, Wed
Commemoration of the 1986 Sipat Peace Talks	13 Sep, Fri	Maundy Thursday	17 Apr, Thu
All Saints Day	01 Nov, Fri	Good Friday	18 Apr, Fri
All Souls Day	02 Nov, Sat	Black Saturday	19 Apr, Sat
Bonifacio Day	30 Nov, Sat	Labor Day	01 May, Thu
Feast of the Immaculate Conception of Mary	08 Dec, Sun	Independence Day	12 Jun, Thu
Christmas Eve	24 Dec, Tue	Cardillera Day	15 Jul, Tue
Christmas Day	25 Dec, Wed	Eidul Fitar	as per official declaration
Rizal Day	30 Dec, Mon	Eidul Adha	as per official declaration
Last Day of the Year	31 Dec, Tue		

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ABOUT UP BAGUIO

The University of the Philippines (UP) was founded in 1908 with its first campus in Manila. Its foundation was then followed soon after by the establishment of constituent units (CUs) and campuses that are strategically located all over the country. In over a century, UP has established eight constituent Universities from its 17 campuses.

The University of the Philippines Baguio (UP Baguio) began as the University of the Philippines College of Baguio (UPCB) (among the growing number of UP campuses in the Philippines), UPCB was established through the initiative of UPCB Alumni in Baguio, Benguet in 1961. UP Baguio became the 7th constituent university of the UP system in 2002 to be a hub of knowledge generation and human resource training and development in Northern Luzon.

UP Baguio takes pride in its contribution to nurturing and developing innovative programs in the arts and sciences as it continues to develop the niche it has created over the past decades - Cordillera studies.

Vision

The University of the Philippines envisions itself as a leading regional and global university in an environment that sustains 21st century learning, knowledge creation, and public service for society and humanity. As a constituent of the University of the Philippines System, UP Baguio will sustain its lead position in the delivery of tertiary education in the North.

UP Baguio will continue to nurture and develop innovative programs in the arts and sciences. It will also continue to develop the niche it has created over the past decade in Cordillera Studies.

Mission

Our mission, therefore, as a unit of the UP system and as the leading institution of higher learning in Northern Luzon, is to spearhead the offering of the highest standard of education and to contribute to the overall upgrading of the quality of instruction in the region.

We seek to create an impact by informing our students with a regional perspective, while they are informed with a national and global outlook.

Objectives

Based on the vision, the mandate, and the mission of the university in knowledge creation and public service, four goals were derived:

1. To contribute to national development by building expertise in different fields through the developing and strengthening of academic programs and research policies;
2. To optimize the use of resources through adequate budgetary and policy support, alumni support, and innovation of resource generation;
3. To promote equity amidst diversity in the efforts to achieving excellence and internationalization; and
4. To strengthen and enhance human resource management and promotion systems for the improvement of the welfare of constituents.

ABOUT THE COLLEGE OF SCIENCE

After the reorganization of UP Baguio after its institution as the 7th constituent university of the UP system in 2002, the College of Science (CS), being one of the three colleges emerging from the reorganization, evolved from the merger of the Division of Natural Sciences and Mathematics and the Sports, Physical Education and Recreation Division.

The College offers four undergraduate programs, such as the BS in Mathematics, BS Biology, BS in Computer Science, and BS in Physics, and three graduate degree programs, namely, Master of Science in Conservation and Restoration Ecology (MS CaRE), Master of Science in Mathematics, and Doctor of Philosophy in Mathematics. All of these programs are regularly reviewed and upgraded to prepare students for careers in education, research, and/or postgraduate studies.

Vision

The College of Science aims to continue offering high-standard and relevant quality education through good practices in program implementation that follow innovative pedagogical strategies that utilize appropriate technology in supporting this endeavor.

It will further its objectives by initiating interdisciplinary programs anchored on disciplinary specializations in its efforts to enhance the efficiency of research conduct and management.

It will continue to encourage and reward scientific productivity by conducting research responsive to the needs of the region, nation, and the global community.

The college envisions itself moving towards a more inclusive and equitable environment that enables faculty members to lead with exemplary qualifications – mindful of scholarly research and dedicated to public service.

Furthermore, it will support UP Baguio's wellness program for both academic and support staff to guarantee efficiency in service to the university and society.

Lastly, the college, together with the university, will take the initiative to continue, strengthen, and widen the reach of its involvement in public service by sharing individual and collective expertise with other academic institutions, local government units, Non-Government Organizations (NGOs), peoples' organizations and indigenous communities in the region and other areas.

Mission

In line with the vision of the College, it is our mission, therefore, to produce scientific leaders and civic-minded citizens with high regard for integrity, compassion, and genuine service who lead in a research study that follows ethical standards and excellence in instruction, research, and public service.

It is our mission to improve basic facilities and design so that researchers can work more collaboratively and efficiently.

We pursue to guarantee the safety of researchers, to minimize adverse impact to the environment, to respect research protocols involving indigenous communities, and to ensure professional conduct as we encourage good instruction, research, and public service in upholding the University's banner of honor and excellence.

Objectives

In accordance with the mission and vision of the University, the college aims to accomplish the following objectives:

1. To continue formulating new degree programs while sustaining the old ones;
2. To encourage interdisciplinary research across programs;
3. To institutionalize the Science Research Center (SRC) in continuing research responsive to the needs of the region, and in the enhancement of interdisciplinary collaboration within the departments of the College and even with other faculty members in other Colleges of the UP Baguio;
4. To have a closer linkage with the UP Baguio Cordillera Studies Center (UP Baguio- CSC) as the University's research center and as an aide in putting up the Biodiversity and Innovation Research Center;
5. To foster an environment suitable for the growth of the academic and support staff; and,
6. To provide public service based on each academic and support staff's specialization.

ABOUT THE DEPARTMENT OF BIOLOGY

The Department of Biology emerged from being a Discipline under the then Division of Natural Sciences and Mathematics in 2002. Currently, it offers a Bachelor's degree in Biology, and a Master's degree in Conservation and Restoration Ecology (MS CaRE).

The BS Biology is a four-year program with a thesis requirement. It provides a thorough grounding in the biological sciences by:

- Instilling among the students important biological principles, theories, concepts, and methods;
- Keeping them abreast with the latest developments in Biology and Allied Sciences
- Honing their research skills in the field and the laboratory; and
- Inculcating in them a scientific and ethical culture of science.

The BS Biology program offers three Areas of Concentration: General Biology, Ecology & Systematics, and Microbiology.

Vision

Aligned with the goals of the College of Science and the University of the Philippines Baguio, the vision of the Department of Biology is to be a leader in academic excellence, research, and community involvement in Northern Luzon. We envision being an active contributor to the university's commitment to deliver high-quality education by maintaining responsive curricula and instituting relevant academic programs integrating perspectives rooted in specific disciplines in biology. The department aspires to a more inclusive and equitable academic environment empowering teaching staff, personnel, and students to better engage in scholarly work, interdisciplinary research, and public service.

Mission

The Department of Biology commits to develop, adopt, and employ best practices in innovative pedagogies and technologies in scientific inquiry. We strive to generate knowledge through interdisciplinary research rooted in biology disciplines. We pursue a vibrant academic environment that produces researchers, professionals, and scientific leaders competent and equipped to responsibly and ethically address and manage environmental and health challenges. We extend our service to the public by sharing individual and collective expertise with various educational institutions,

local government units, non-governmental organizations, peoples' organizations, and indigenous communities in the Cordillera Administrative Region and the rest of Northern Luzon

COURSE DESCRIPTION AND REQUIREMENTS

About the Instructors

Faculty member in charge (Parts I and II)	Contact details
Liesel M. Magtoto, Ph.D. <i>PhD in Botany (Plant Systematics, minor in Environmental Science)</i> Associate Professor of Biology College of Science University of the Philippines Baguio	Email address: Immagtoto@up.edu.ph Consultation hours: TTh 8:00-10:30, 2:30-5:00
Faculty member in charge (Part III)	Contact details
Aris A. Reginaldo, Ph.D. <i>PhD in Biology (Ecology and Systematics)</i> <i>MS in Zoology (minor in Animal Science)</i> Associate Professor of Biology College of Science University of the Philippines Baguio Research: ResearchGate ; The Philippine Mammal Project	Email address: aareginaldo@up.edu.ph Consultation hours: M-F 8:00–5:00 By appointment

Course Details

Course Number: CRE 297

Course Title: Special Topics in Conservation and Restoration Ecology

Course Credit: 3 units. May be taken twice provided the topics are not identical.

Course Prerequisite: COI

Semester/s Offered: 1st Semester, AY 2026-2027

Number of Hours: 3 hours per week

Course Requirements

Topic Report	30%
Student-led Discussion and Final Exam	20%
Recitation	20%
Paper (Critique, Review Paper, Proposal)	30%

Topic: Ecology and Conservation of Montane Forests in the Cordillera

Objectives:

1. Discuss concepts and principles of montane forest ecosystems and communities.
2. Explain the mechanisms and processes that influence montane forests.
3. Evaluate new findings that describe the effects of disturbance on the components, processes, and dynamics in montane forests and adjacent habitats.

4. Analyze situations where conservation and restoration programs can be improved, and restoration work can be applied in montane forests and adjacent habitats.
5. Develop sound research problems using the framework of terrestrial ecosystems and communities and disturbance.
6. Recommend approaches toward conserving the biodiversity of the Cordillera montane forests.

Program Learning Outcomes (PLOs)

The Program Learning Outcomes (PLO) of the MS CaRE Program are as follows:

PLO 1	To demonstrate genuine concern and passion for environmental issues that have impacts on species, ecosystems, and people.
PLO 2	To practice professional and ethical integrity in diverse social and academic settings.
PLO 3	To generate knowledge through independent transdisciplinary research.
PLO 4	To communicate scientific outputs to key stakeholders and the general public.
PLO 5	To assess ecological patterns and processes through rigorous and ethical scientific inquiry that supports evidence-based predictions for conservation and restoration decisions.
PLO 6	To design a framework that can influence research and policies on the conservation and restoration of species, habitats, and ecosystems.
PLO 7	To utilize immersive ground-truthing as a mechanism to ensure conservation and restoration interventions are both scientifically robust and socioculturally situated.
PLO 8	To establish linkages with local communities, academia, non-government organizations, and government agencies in support of conservation and ecological restoration.
PLO 9	To integrate multidisciplinary approaches, local and indigenous knowledge systems, and community partnerships to consistently champion conservation and restoration across diverse ecosystems.
PLO 10	To adhere and commit to a life-long application of evolving ecological knowledge and collaborative practices to advance conservation and restoration efforts.
PLO 11	To embody competence in ecological stewardship and sustainable resource management.

Course Learning Outcomes (CLOs)

At the end of this course, the student should be able to:

CLO 1	Review concepts, principles and new findings in Philippine plant and animal ecology;
CLO 2	Explain the mechanisms and processes that determine patterns of animal and plant distribution, community dynamics in plant and animal communities;
CLO 3	Analyze situations where conservation and restoration programs can be improved and where restoration work can be applied by developing sound research problems using framework of plant and animal community, population or landscape ecology; and,
CLO 4	Demonstrate a clear understanding of the concepts and principles of plant and animal ecology and a conscious participation in conservation and restoration works.

Mapping of CLOs with PLOs

Lecture											
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
CLO 1	M	I	I	I	I	I	I	I	I	I	I
CLO 2	M	I	I	I	I	I	I	I	I	I	I
CLO 3	F	M	F	F	F	M	M	M	F	M	M
CLO 4	F	F	F	F	F	M	M	F	F	F	F

LEGEND: *I*-Introduced; *M*-Moderately achieved; *F*-Fully achieved

Grading Scheme

Grade	Equivalent	UP Classification	Grade	Equivalent	UP Classification
98 – 100	1.00	Excellent	65 – 69	2.75	Satisfactory
95 – 97	1.25	Excellent	60 – 64	3.00	Passing
90 – 94	1.50	Very Good	55 – 59	4.00	Conditional
85 – 89	1.75	Very Good	Below 55	5.00	Fail
80 – 84	2.00	Good	DRP		Dropped
75 – 79	2.25	Good	INC		Incomplete
70 – 74	2.50	Satisfactory			

Course Outline

TIMELINE		TOPIC	LEARNING ACTIVITIES	ASSESSMENT TOOLS
Week 1		Orientation Submission of Form 5 Introduction to Tropical Forests		
<i>This section presents an overview of terrestrial communities in the Cordillera. We will review the basic ecology of the different communities, focusing on the montane forests. This chapter will cover concepts about physical factors affecting terrestrial ecosystem structure, functions, and dynamics. The chapter ends with an introduction to threats in montane forests and other stands in the Central Cordillera.</i>				
August 22		Structures: Karst forest, Forest over ultramafic soils	Student led-discussion	reporting
August 29		Structures: Pine forest, tropical montane forest (lower and upper)	Student led-discussion	reporting

Sept 5		History of Central Cordillera Forest	Class discussion, readings	Reflection Paper
Sept 12, 19		Diversity and function of dominant life forms	Class discussion, readings	Reflection Paper
Sept 26		Threats to ecosystem structures and functions	Class discussion, readings	Recitation
Oct 3		The state of tropical montane forest restoration	Class discussion, readings, Case Study	Recitation, Reflection Paper
Oct 10, 17		Writing Break (Review Paper/Critique Paper)		
Oct 24		Submission of a Review Paper/Critique Paper		
This section describes the origin and evolution of terrestrial animals in the Central Cordillera, reviews concepts and findings of habitat disturbance studies, and reviews the ecology of animals in disturbed landscapes that include montane forest habitats.				
Oct 31		Class Orientation 4:30–5:30 REQUIREMENTS Check 1261 BIO PART III CLASS REQUIREMENTS	Advance Reading and Preparations Check this document for details of requirements.	
31 Oct 6:00–7:30		I. An Overview of the Terrestrial Vertebrates in Montane Forests Lecture A Parade of Philippine Vertebrates		
07 Nov 4:30–5:45		II. The Origin and Evolution of Organisms on Luzon Island Reading I.1 <i>Producing Diversity: Speciation and Diversification Part I</i> (Chapter 5 of Mammals of Luzon by Heaney, Rickart, and Balete 2016)	Student-led discussion I Facilitator 1:	

07 Nov 6:00-7:15		Reading I.2: <i>Producing Diversity: Speciation and Diversification</i> (Chapter 5 of Mammals of Luzon by Heaney, Rickart, and Balete 2016) Visuals	Student-led discussion II Facilitator 2:	
07 Nov 4:30–5:45		Reading 1.3a: <i>Discovering Diversity: Topography and Elevational Diversity Gradient Part I</i> (Chapter 4 of Mammals of Luzon by Heaney, Rickart, and Balete 2016)	Student-led discussion II Facilitator 3:	
07 Nov 6:00-7:15		Reading 1.3b: <i>Discovering Diversity: Topography and Elevational Diversity Gradient Part II</i> (Chapter 4 of Mammals of Luzon by Heaney, Rickart, and Balete 2016) Visuals	Student-led discussion IV Facilitator 4:	
14 Nov 4:30–5:45		III. Animals, Disturbance, and Invasive Species Reading III.a: <i>Habitat fragmentation and its lasting impact on Earth's ecosystems</i> (Haddad et al. 2015)	Student-led discussion V Facilitator 5:	
14 Nov 6:00-7:15		Reading III.b. <i>A framework for integrating thermal biology into fragmentation research</i> (Tuff et al. 2016)	Student-led discussion VI Facilitator 6:	
21 Nov 4:30–5:45		Reading III.b: <i>Habitat Disturbance and Invasive Species</i> (Chapter 6 of Mammals of Luzon by	Student-led discussion VII	• Facilitation • Recitation

21 Nov 6:00-7:15		Heaney, Rickart, and Balet (2016) Visuals A case of Mammals in the Central Cordillera Landscapes Mammals in Mt. Data Mammals in Baguio, Benguet	Facilitator 7: Teacher-led discussion (VIII) Facilitator Aris Reginaldo	
28 Nov		Integration Period Review of Concepts Release of Class Standing in Recitation		
05 Dec		Long Examination (Online Oral Examination)		