THE MODULE HANDBOOK

Magister Biology Study Program

FACULTY OF BIOLOGY

POPULATION ECOLOGY

Course code	BIMB202128	
Course level	Master's	
Semester/term	Odd	
Course coordinator(s)	Siti Nurleily Marliana	
Lecture(s)	Siti Nurleily Marliana	
Language	Indonesian	
Classification within the Curriculum	Compulsory	
Teaching format/ class hours per week during the semester	The lecture runs for 14 weeks, comprising one meeting each week, 100 min long.	
Workload	100 min of lecture per week; 120 min independent learning per week.	
Credits	2-0	
Requirements	None	
Program Learning Outcome	CPL A1	contribute in improving the quality of life of society, nation, state, and the development of civilization based on Pancasila;
	CPL A2	cooperate with communities at various level, and have social sensitivity and concern for the society and environment;
	CPL K1	biological theories, includes all aspects of biological studies at various levels in the organization of life;
	CPL K3	analysis and synthesis based on biological concepts, and principles of sustainable use and conservation of biological resource.
	CPL GS2	make decisions in solving biological problems based on analytical or experimental studies and critical analysis of information and data;
	CPL SK1	conduct research in the field of biology independently or in groups, and able to solve various biological-related problems.
Course Learning Outcome	CPMK1	Students should be able to explain how environmental abiotic factors influence population dynamics and stability.
	CPMK2	Students should be able to explain species population dynamics by employing terms in population ecology correctly.

	CPMK3	Students should be able to explain how environmental biotic factors (i.e. interactions between organisms) influence population dynamics and stability.
	CPMK4	Students should be able to explain the role and mechanisms of evolution as a driving factor in shaping the modern populations of organisms.
	CPMK5	Students should be able to identify, analyze, and evaluate how population ecology is used to address problems in biodiversity conservation and natural resource management.
	CPMK 6	Students should be able to apply principles in population dynamics to analyze population viability and develop species management plans.
Course Description	The Population Ecology course provides students with basic knowledge and understanding of ecological populations, the processes that affect their structure and characteristics, and their application in conservation biology. This course integrates various ecological topics that play a role in the shaping of population structures, including populations' environmental factors, population characteristics and dynamics, life history, the niche theory and habitat concepts, interactions between species, evolution, population genetics, and applications of population ecology. In this course, students will learn how the characteristics and structure of populations are shaped and influenced by environmental factors in the short and long term, including the impact of abiotic and biotic factors on population changes, and how populations of organisms respond to changes in their environment and adapt to survive. Furthermore, students will use the basic knowledge of population ecology to study its real-world applications, including the concept of metapopulation ecology and population viability analysis (PVA), and their application in species conservation.	
Assesments	Individual project (10%), topical quizzes (20%), midterm exam (35%), end of term exam (35%)	
Study Media	Lecture video (YouTube), Google Classroom, online meeting platform	
Literature	1. Rockwood LL. 2015. Introduction to Population Ecology. Wiley-Blackwell. 2. Ricklefs RE. 2008. The Economy of Nature. WH Freeman and Company. 3. Molles MC Jr. 2013. Ecology: concepts and applications. McGraw-Hill. 4. Smith RL. 2015. Elements of Ecology. Pearson.	

	5. Reece JB, Urry LA, Cain ML, Wasserman SA, Minorsky PV, Jackson RB. 2019. Campbell Biology. 10th ed. Pearson. 6. Audesirk T, Audesirk G, Byers BE. (2017) - Biology: Life on earth with physiology. Pearson. 7. OER: OpenStax Biology (https://openstax.org/details/books/biology) 8. Various journal articles