

Semester	AUG 2023
Open to semester	3
Course code	BI2113
Course title	Ecology and Evolution
Credits	3 /
Course Coordinator & participating faculty (if any)	Sutirth Dey
Nature of Course	Lectures
Pre-requisites	None
Objectives (goals, type of students for whom useful, outcome etc)	<p>This is an introductory course that would help the students in terms of</p> <p>A) understanding of</p> <ol style="list-style-type: none"> 1) the basic concepts in ecology and evolution 2) how organisms interact with each other, and the environment, and 3) the ways of investigating ecological and evolutionary questions <p>B) ability to</p> <ol style="list-style-type: none"> 1) visualize how these concepts connect to real-life situations, and 2) investigate questions in ecology and evolution in particular, and biology/science in general using the tools mentioned above.
Course contents (details of topics /sections with no. of lectures for each)	<p>Introduction: An overview of biological processes: Why study ecology and evolution?</p> <p>Population ecology: Survivorship curves, Life-tables, Simple population dynamics models and their behavior, Deterministic chaos, Lattice effect</p> <p>Community ecology/ Species interaction: Competition (Competitive exclusion principle, Niche, Lotka-Volterra Model of Competition, Niche partitioning, Invasive species); Predation (Lotka-Volterra Model, Classic experiments in predation, Predator-avoidance strategies);</p> <p>Applications: Conservation biology (Basic concepts, Reserve designing, Case study: Passenger pigeons and Project Tiger), Eutrophication, Lake restoration</p> <p>Evolution: A very brief history of evolutionary thought up to Extended Evolutionary Synthesis. Selection.</p>

	Population genetics: H-W equilibrium; selection; genetic drift
Evaluation /assessment	End-Sem Examination-40% Mid-Sem Examination-40% Others-20%
Suggested readings (with full list of authors, publisher, year, edn etc.)	No single text book can be prescribed. The following books shall cover much of the proposed syllabus: <ul style="list-style-type: none"> • Molles, M.C. (2009) Ecology Concepts and Applications: McGraw Hill. • Freeman, S and Herron, J. (2014) Evolutionary Analysis. W. Prentice Hall.