

Annexe A: New/Revised Course Content in OBTL+ Format

Course Overview

Expected Implementation in Academic Year (New format)	AY2017-2018
Semester/Trimester/Others (specify approx. Start/End date)	Semester 2
Course Author * Faculty proposing/revising the course	David Wardle (Prof);#124
Course Author Email	david.wardle@ntu.edu.sg
Course Title	Current Issues in Ecology
Course Code	ES3305
Academic Units	3
Contact Hours	39
Research Experience Components	

Course Requisites (if applicable)

Pre-requisites	ES2303 Introduction to Ecology
Co-requisites	
Pre-requisite to	
Mutually exclusive to	
Replacement course to	
Remarks (if any)	

Course Aims

This is an advanced ecology course, and as such it builds on the foundations and theory that you have been exposed to in ecology courses in your first two years. Because it is an advanced course, the aim is to get you to think critically and to apply your knowledge to new and unfamiliar situations, rather than just memorize facts. As such, you will be introduced to a series of 12 cutting edge topics including those currently under debate, and will be expected to critically assess them. A large part of the course will also be to write a review or opinion article on a fast moving topic in ecology.

Course's Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, you (student) would be able to:

ILO 1	discuss key, fast moving and high profile, topics in the general area of community and ecosystem ecology
ILO 2	apply ecological concepts to unfamiliar situations
ILO 3	critically assess controversial topics in ecology that are currently under debate and formulate well-reasoned opinions about these debates.
ILO 4	synthesize primary ecological literature on fast moving topics and present it convincingly in both written and oral form.

Course Content

The class content will be organized as 12 separate topics or 'issues in ecology', i.e., one a week. These very broadly fall into five groups: (1) Biodiversity Change, (2) Multitrophic interactions, (3) Pattern and Process in Nature, (4) Ecosystem Processes and Sustainability, and (5) Synthesis. Each topic will include a one hour formal lecture and a two hour team-based activity. A written exercise that cuts across these topics will also be a major part of the course.

Reading and References (if applicable)

This is an advanced course aimed at getting students to think critically, and is on fast moving topics many of which are under debate. No textbook exists which covers these sorts of issues, and a textbook would be inappropriate for this type of course. Because a key element of this course is to train students to make effective use of the primary scientific literature, they will be assigned a small number of scientific articles and review articles to read each week and will be expected to be prepared to discuss them in class.

Planned Schedule

Week or Session	Topics or Themes	ILO	Delivery Mode	Activities	Readings
1	BIODIVERSITY CHANGE: Are global biodiversity losses reflected at local scales?	1,2,3,4	In-person		
2	INVASION BIOLOGY: Have impacts of invasive organisms been exaggerated and is invasion biology even a real discipline?	1,2,3,4	In-person		
3	ABOVEGROUND-BELOWGROUND LINKAGES: Are the two subsystems closely interlinked or do they function independently?	1,2,3,4	In-person		
4	PLANT-HERBIVORE INTERACTIONS: Do these interactions, and plant defenses, change predictably with environmental stress and latitude?	1,2,3,4	In-person		
5	TROPHIC INTERACTIONS: Are ecosystems more commonly under bottom-up or top-down control?	1,2,3,4	In-person		
6	PLANT REPRODUCTION AND POLLINATION: Do we already know everything there is (or want) to know?	1,2,3,4	In-person		

Week or Session	Topics or Themes	ILO	Delivery Mode	Activities	Readings
7	INTER-ANNUAL MAST FRUITING IN SOUTHEAST ASIA. What are the theories and evidence behind it and what are the selective pressures that maintain it?	1,2,3,4	In-person		
8	HUMP-SHAPED DIVERSITY RESPONSES: Are these real phenomena or simply statistical artefacts?	1,2,3,4	In-person		
9	THE CONCEPT OF SPECIES ACROSS THE TREE OF LIFE: How can we apply different versions of the species concept to genetically promiscuous taxa such as bacteria and archaea?		In-person		
10	FOREST CARBON CYCLE: Are forests accumulating more biomass due to elevated atmospheric CO ₂ ?	1,2,3,4	In-person		
11	USERS AND USES: Is environmental sustainability possible in today's world?	1,2,3,4	In-person		

Week or Session	Topics or Themes	ILO	Delivery Mode	Activities	Readings
12	DIVERSITY-FUNCTIONING: Is biodiversity loss causing ecosystem functioning to decline, and can current approaches answer this?	1,2,3,4	In-person		
13	SYNTHESIS, PRESENTATIONS AND ESSAY QUIZ	1,2,3,4	In-person		

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Lecture	To effectively convey information on fundamental theories and key concepts and to bring all students up to similar levels of knowledge (LO1)
Interactive team-based activities	Various activities (discussion groups, debate, etc) to help students analyze and formulate point of view on topics that are fast moving and/or are under debate and to present and discuss these constructively in a group setting (LO2, LO3, LO4)

Assessment Structure

Assessment Components (includes both continuous and summative assessment)

No.	Component	ILO	Related PLO or Accreditation	Weightage	Description of Assessment Component	Team/Individual	Rubrics	Level of Understanding
1	Continuous Assessment (CA): Others([class participation] Participation in class discussion)	1,2,3	Knowledge, Intellectual flexibility and critical thinking, problem solving, passion and communication	10		Team		
2	Continuous Assessment (CA): Others([presentations] Preparation and presentation of perspectives article)	1,2,3,4	Intellectual flexibility and critical thinking, formulating questions, passion and communication	50		Individual		
3	Continuous Assessment (CA): Others([quiz/test] End of course essay quiz)	1,2,3	Knowledge, Intellectual flexibility and critical thinking, formulating questions	40		Individual		

Description of Assessment Components (if applicable)

Formative Feedback

Students will receive oral feedback for Component 1, written feedback for Component 3, and either written or oral feedback as appropriate for the various parts of Component 2

NTU Graduate Attributes/Competency Mapping

This course intends to develop the following graduate attributes and competencies (maximum 5 most relevant)

Attributes/Competency	Level
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Course Policy

Policy (Academic Integrity)

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Policy (General)

(1) General

Students are expected to complete all assigned pre-class readings and activities on time, attend all lectures and class discussions, and submit all scheduled assignments and tests by due dates. Students are expected to take responsibility to follow up with course notes, assignments and course related announcements for seminar sessions they have missed.

Policy (Absenteeism)

(2) Absenteeism

Absence from scheduled lectures and discussion groups without a valid reason will affect your overall course grade.

Valid reasons include falling sick supported by a medical certificate.

If you miss a lecture or discussion group exercise you must inform me via email (david.wardle@ntu.edu.sg) prior to the start of the class.

Policy (Others, if applicable)

(3) Compulsory Assignments

You are required to submit compulsory assignments on due dates, unless a valid reason is provided. Valid reasons include falling sick supported by a medical certificate. If you will miss a deadline for a valid reason you must inform me via email (david.wardle@ntu.edu.sg) prior to the deadline, and as soon as is possible.

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Last Updated By: Sze Chun Chau (Dr)