Introduction to Ecology

Principles of Ecology and its relation to Human Society
Spring 2021

Lecturer: Dr. Elli Groner, Dr. Jessica Schaeckermann
3 hours a week divided into two lessons of 1.5 hours each, 3 credits **Undergraduate**

Course purpose

Students will be taught the basic terminology, principles and ideas of ecology. The course will introduce the basic ideas of ecology, its evolution and links to other sciences. Subsequent lectures will examine these ideas looking at different ecological scales: individuals, populations, communities and ecosystems. Human ecological issues will also be discussed where relevant within the framework of the course, with a special emphasis on ecosystem integrity and ecosystem services. Case studies will be brought from the Arava valley and will be presented during a 1-day trip to the area.

Grade components:

- Attendance, participation, discussions 10%
- Quizzes, exercises, 30%
- Mid-term exam 5%
- Trip reports 5%
- Final exam 50%

Reading, assignments, exercises & practical

Q	Reading quizzes	At the beginning of each class a question will be posed based on the reading Set for the coming lesson. The reading is required to understand the lesson.
E	Exercise	Homework on the material already taught. This should be done in pairs and submitted the next week. The exercise allows students to practice the material that was taught.
D	Discussion	Discussion in class on the taught topic and human impact upon it
P	Practical	Hands-on demonstration of an example from the taught topic.
MTE	Mid-term exam	Exam in week 6 on material from weeks 1-5
FE	Final exam	Exam on material from all the semester

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Textbooks for course

Ecology: Individuals, Populations and Communities / M. **Begon**, J. Harper, C. Townsend.Blackwell Science LTD, Oxford, UK 2nd edition.

Or

Ecology: Concepts and Applications / M. C. **Molles** Jr. 2002. McGraw-Hill Higher Education, NY, USA (2nd edition). Only for UG.

Schedule:

	Lesson	Topic		Content
Week 1	L1	Intro	Elli	What is ecology
	L2	Evolution	Elli	Evolution game
Week 2	L3	Human-Nature interactions	Jessica	Long Term Socio-Ecological research:The Arava LTSER platform
	L4	Behaviour	Elli	Optimal foraging
	L5	Community ecology	Jessica	Competition
Week 4	L6	Population Ecology	Elli	Distribution
	L7	Population Ecology	Elli	Life History
Week 6	L8	Community ecology	Jessica	Association
	L9	Community ecology	Jessica	Predation, Parasitism And Mutualism
Week 7	L10	Ecosystem ecology	Jessica	Ecosystem ecology
	L11	Ecosystem ecology	Jessica	Food webs
Week 8	L12	Population Ecology	Elli	Mark Release Recapture
	L13	Population Ecology	Elli	Population Growth
Week 9	L14	Ecosystem ecology	Jessica	Ecosystem services (ES)
	L15	Ecosystem ecology	Jessica	Ecosystem services and ecosystem disservices
Week 10	L16	Population Ecology	Elli	R and K
	L17	Population Ecology	Elli	Carrying Capacity
Week 11	L18	Ecosystem ecology	Jessica	ES and land management
	L19	Ecosystem ecology	Jessica	Balancing nature protection and agriculture
Week 13	L20	Landscape Ecology	Elli	Ecosystem Integrity
	L21	Landscape Ecology	Elli	Landscape Ecology
		Field trip	TBA	
		FINAL EXAM	TBA	