

Biology 470: Methods in Food Web Ecology (Split with Bio550B: Directed studies in Ecology)

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Characterizing food web interactions is fundamental to Ecology. This course provides a comprehensive introduction to the most important methods used to characterize food web interactions in terrestrial and aquatic ecosystems. Topics will include: isotopic ecology, ecological stoichiometry, nutritional geometry, lipid tracers, and molecular tracers.

Pre-requisites: Biology 190A, Biology 190B, Biology 215, third-year standing

Time: Mondays-Thursdays 10:00 to 11:20 AM.

Room: MacLaurin Building D114

Readings and textbook: There is no textbook for the class. Classroom Readings and lectures will be posted on Coursespaces

Evaluation:

Biology 470 (Undergraduate students): Midterm 1 (4th Feb in class, 25%)

Non-cumulative Midterm 2 (7th March in class, 25%)

Final 40% (date and time to be announced)

Participation in class discussions/Presentations 10%

Biology 550 (graduate students): Class seminar 30%

Midterm 1 (4th Feb in class, 10%)

Non-cumulative Midterm 2 (7th March in class, 10%)

Final paper 50%

Tentative schedule:

Day	Day	Number	Lecture
4-Jan-16	Mon	1	Welcome and Introduction
7-Jan-16	Thur	2	Stable isotopes: introduction and notation
11-Jan	Mon	3	Stable isotopes fractionation
14-Jan	Thur	4	Fractionation during photosynthesis
18-Jan	Mon	5	Photosynthesis continued
21-Jan	Thur	6	Nitrogen fractionation in primary producers
25-Jan	Mon	7	Stable isotopes in animals
28-Jan	Thur	8	SIA food web analysis
1-Feb	Mon	9	SIA applications: animal migration and paleoecology
4-Feb	Thur		Midterm 1
8-Feb	Mon		Family Day (no class)
11-Feb	Thur		Reading week (no class)
15-Feb	Mon	10	Fatty acids: an introduction
18-Feb	Thur	11	Fatty acid applications
22-Feb	Mon	12	Ecological stoichiometry - an introduction
25-Feb	Thur	13	Ecological stoichiometry part 2
29-Feb	Mon	14	Ecological stoichiometry consumer-mediated nutrient recycling
3-Mar	Thur	15	Ecological stoichiometry Nutritional imbalances
7-Mar	Mon		Midterm 2
10-Mar	Thur	16	Nutritional geometry
14-Mar	Mon	17	Special topics: Tropical armoured catfish
17-Mar	Thur	18	Special topics: Marine Coral fishes
21-Mar	Mon	19	Special topics: Detritus in stream ecosystems
24-Mar	Thur	20	Special topics: food webs and evolution
28-Mar	Mon		Easter Monday (no class)
31-Mar	Thur	21	Special topics: intraspecific diet specialization