

## BIOL 468: Food Web Ecology

Instructor: Dr. Erin O'Brien  
Office Cunn 217  
[erinobrien@uvic.ca](mailto:erinobrien@uvic.ca)

- Office hours: M, Th 2:30 – 3:30 or email me to arrange an appointment

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, as well as organismal and community-level implications of trophic interactions. Topics will include: isotope ecology, ecological stoichiometry, nutritional geometry, lipid and molecular tracers, optimal foraging theory, indirect effects of predation risk (phenotypic plasticity, ecology of fear).

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

**Time:** Mondays & Thursdays 13:00 – 14:20 ELL 162

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

### **Evaluation:**

- Midterm 1 (**Thursday 4<sup>th</sup> Oct** in class, 25%)
- Non-cumulative Midterm 2 (**Thursday 8<sup>th</sup> Nov** in class, 25%)
- Final 50% (date and time to be announced)

### **Academic regulation:**

1. **VERY IMPORTANT:** UVic's policy on academic integrity  
(<https://web.uvic.ca/calendar2018-01/undergrad/info/regulations/academic-integrity.html>)
2. Know your responsibilities as outlined in the calendar  
(<https://www.uvic.ca/registrar/students/policies/student-responsibilities/index.php>)

### **Important information:**

1. If you have any special needs please speak to me or contact staff at The Center for Accessible Learning (<https://www.uvic.ca/services/cal/>) so that appropriate accommodations can be made to ensure your success in the course.
2. If you miss a midterm due to a medical reason (with valid documentation) then your final exam grade will be used in place of your midterm mark in the final grade assignment.
4. Grades are assigned on a percentage scale in accordance with UVic policy as outlined in the calendar (<https://web.uvic.ca/calendar2018-05/undergrad/info/regulations/grading.html>)
5. Read UVic's policy on copyright (<https://www.uvic.ca/library/featured/copyright/>)

**Tentative schedule:**

<b>Weeks</b>	<b>Day</b>	<b>Number</b>	<b>Lecture</b>
6 Sept	Thurs	1	Welcome and Introduction
10 Sept	Mon	2	Stable isotopes: introduction and notation
13 Sept	Thurs	3	Stable isotopes fractionation
17 Sept	Mon	4	Fractionation during photosynthesis
20 Sept	Thurs	5	Nitrogen fractionation in primary producers
24 Sept	Mon	6	Stable isotopes in animals
27 Sept	Thurs	7	SIA food web analysis
1 Oct	Mon	8	SIA applications: animal migration
<b>4 Oct</b>	<b>Thurs</b>		<b>MIDTERM I</b>
8 Oct	Mon		Thanksgiving (University closed)
11 Oct	Thurs	9	Fatty acids
15 Oct	Mon	10	Ecological stoichiometry Introduction
18 Oct	Thurs	11	Ecological stoichiometry: Consumer-mediated nutrient recycling
22 Oct	Mon	12	<i>Guest lecture *TBA</i>
25 Oct	Thurs	13	Ecological stoichiometry: Nutritional imbalances
29 Oct	Mon	14	Nutritional geometry; Future approaches to food web analysis
1 Nov	Thurs	15	Nutrient transport
5 Nov	Mon	16	Complexity – Stability; Network theory
<b>8 Nov</b>	<b>Thurs</b>		<b>MIDTERM II</b>
12 Nov	Mon		Reading Break (University closed)
15 Nov	Thurs	17	Optimal foraging theory I
19 Nov	Mon	18	Optimal foraging theory II
22 Nov	Thurs	19	Indirect effects of predation risk I: Phenotypic plasticity
26 Nov	Mon	20	Indirect effects of predation risk II: The ecology of fear
29 Nov	Thurs	21	Review I
3 Dec	Mon	22	Review II