

BIO 473—STREAM ECOLOGY

INSTRUCTOR: Dr. Jon Moore

Phone: (778)782-9246; email: jwmoore@sfu.ca

TEACHING ASSISTANT: Mike Beakes

Email: mbeakes@sfu.ca

LECTURES: Tuesday 8:30-10:20AM, Thursday 8:30-9:20AM. AQ5018

COURSE OBJECTIVES: This course will examine life in running waters. Rivers integrate upstream habitats and then propagate these patterns downstream. We will examine the physical and chemical dynamics of rivers, the adaptations of different organisms to this setting, and the dynamics of streams food webs, communities, and ecosystems. Across these topics, this class will seek to link general theory to specific examples or case studies. In addition, the course will examine application of stream ecology to conservation and management challenges and opportunities.

WEBSITE: <http://www.sfu.ca/biology/faculty/jwmoore/BIO473.htm>

Course materials and lecture notes are going to be available at this website. You will probably want to download/print the notes ahead of lecture and bring them to class. In addition, this website will have PDFs of reading materials in addition to the textbook.

READINGS: Readings will primarily from the scientific literature. Readings will be available as PDFs on the class website. There are no required textbooks for the classes. The following books will be available for supplemental reference in the library:

- Allan and Castillo. 2007. Stream Ecology: Structure and Function of Running Waters.
 - Hauer and Lamberti. 2007. Methods in Stream Ecology.
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EXAMS: There will be two midterms the cover the first and second halves of the course. 2nd midterm is not comprehensive. Exams can include any course material, including reading and lecture materials.

ASSIGNMENTS AND GRADING:

	% of final grade	Date due
1 st midterm	20	March 5
2 nd midterm	20	April 11
Projects		
Rivers of Change	20	Feb 7
Stream carbon—part 1	5	March 14
Stream carbon—part 2	15	April 4
Readings--review and react (R&R)		
	15(3.75 each)	Jan 22, Feb 19, March 19, April 9
Participation		
	5	On-going
TOTAL	100	

*all information is tentative and subject to change.

CLASS POLICIES:

Participation.—This is intended to be a participatory class. 5% of your grade is based on attendance, and active participation in lectures, discussions, and class excursions.

Late assignment policy.—Everything is due at the beginning of the class on the day it is due. Assignments will lose 5% per day if they are late.

Plagiarism.—Plagiarism or any other academic dishonesty will not be tolerated. All work should be your own.

Field days.—We will have some short excursions to local streams during class, leaving promptly at the beginning of class. These will be rain, snow, or shine (probably rain), so wear appropriate clothes and footwear.

COURSE SCHEDULE (tentative)

Day	Date	Topic	Assignments
Tues	Jan 8	Introduction	
Thurs	Jan 10	Physical: channels	
Tues	Jan 15	FIELD DAY	
Thurs	Jan 17	Physical: rocks	
Tues	Jan 22	Physical: flow	Lytle and Poff—read/react
Thurs	Jan 24	Physical: temperature	
Tues	Jan 29	Nutrients: spiraling	
Thurs	Jan 31	Nutrients: biogeochemistry	
Tues	Feb 5	FIELD DAY	
Thurs	Feb 7	Energy: sources	Due: rivers of change
Tues	Feb 12	READING BREAK—no class	
Thurs	Feb 14	READING BREAK—no class	
Tues	Feb 19	Energy: cycling	Nakano—read/react
Thurs	Feb 21	Species interactions	
Tues	Feb 26	Freshwater biodiversity and threats	
Thurs	Feb 28	Ecosystem engineering	
Tues	March 5	1st midterm	1 st midterm
Thurs	March 7	Invertebrates	
Tues	March 12	FIELD DAY	
Thurs	March 14	Fish	Due: carbon cycling: part 1
Tues	March 19	Pacific salmon	Schindler —read/react
Thurs	March 21	BC fish biogeography	
Tues	March 26	Urban stream syndrome	
Thurs	March 28	Riparian management	
Tues	April 2	FIELD DAY	
Thurs	April 4	Stream restoration	Due: carbon cycling: part 2
Tues	April 9	Watershed stability	Moore (TBW) —read/react
Thurs	April 11	2nd midterm	2 nd midterm

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