

## Fisheries Ecology (Biology 375/575)

Spring 2021

### Required Texts:

Diana, J.S. 2004. Biology & Ecology of Fishes 2<sup>nd</sup> ed. Biological Sciences Press. [Available at Text-Rental]

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### Lecture Outline:

Week of:	Lecture Topic	Chapter in Text	Lab Exercise
<b>Introduction</b>			
1/25	Aquatic/marine ecosystems	1	No lab
<b>Physiological Ecology</b>			
2/1	Respiration & Sensory	3	Respiration
2/8	Consumption	4	Age & growth demo
2/15	Growth & Bioenergetics	2, 5, 6, 7	Bioenergetic modeling
<b>Community / Behavioral Ecology</b>			
2/22	Movement & Migration	14, 15	<b>Exam 1</b>
3/1	Mating & Spawning	16	Swimming & schooling
3/8	Larval ecology	9, 18	Optimal foraging
3/15	Predation & Prey selection	11, 12, 13	Optimal foraging
3/22	<b>Spring Break</b>	10	<b>No lab</b>
3/29	Competition		Aquatic trophic cascade
<b>Biodiversity</b>			
4/5	Trophic dynamics	20	<b>Exam 2</b>
4/12	Temperate streams	21	Niche differentiation
4/19	Lake ecology	20, 25	Niche differentiation
4/26	Oceanic & Deep sea		Field trip
5/3	Tropical & Arctic	22	Field trip
5/10	Coral reef	23	Data analysis

### Learning Outcomes:

Upon successful completion of this course you should be able to –

1. Recognize the multiple levels of complexity at which biological systems operate from organism to ecosystem and be able to explain the emergent properties and process characteristic of each level.
2. Demonstrate proficiency in the methods and philosophy of science, including articulation and application of the Scientific Method, collection and analysis of biological data and application of professional ethics.
3. Articulate the application of biological sciences to meet the needs of society, including basic research, stewardship of biodiversity, human health, and entrepreneurial innovation.

### Supplemental Readings:

Required additional readings will be assigned throughout the semester. Notification of each reading will be announced in lecture as we cover the appropriate topic. Readings may supplement the lecture or laboratory topic. Articles will be available on Canvas (as pdf documents). Material in the readings will be partially covered in lectures and will be fully covered on the exams. If you have questions about the material in the articles, ask questions.

### Grading:

Three Exams	Exam 1 (in class ( <b>February 22</b> ), 100 pts)	20%
	Exam 2 (in class ( <b>April 5</b> ), 100 pts)	20%
	Exam 3 (Final exam ( <b>May 17</b> ), 100 pts)	20%
Lab Exercises	(7 @ 20 pts each + 1 @ 60 pts.)	<u>40%</u>
Total	(300 pts for exams; 200 pts for labs)	100%

**Discretionary points:** Points may be added or subtracted from your final course grade based on effort, improvement, participation, alacrity, and attitude.

### Grade Distribution (in %):

A = 100-94	B- = 83-80	D+ = 69-67
A- = 93-90	C+ = 79-77	D = 66-60
B+ = 89-87	C = 76-74	F = <60
B = 86-84	C- = 73-70	

### Lab Exercises:

You will be required to complete 8 lab exercises. Data collection for 7 exercises will be accomplished through video demonstrations and with data provided in Canvas. Data analysis and summaries should be completed individually and submitted through Canvas. The 8<sup>th</sup> exercise is comprised of a virtual field trip and data analysis. Credit can be earned with exercise accuracy, proper calculations, thorough analysis and explanations, and neatness. Further details will be provided with each exercise.

### Field Trip:

The field trip will be virtual with information and data shared through Canvas.

### Rules & Grades:

Lab exercises will be due one week after they are issued in Canvas based on the date in the syllabus. Two points (-2) will be subtracted each day for late submissions.

Only university approved absences, accompanied by appropriate evidence (see undergraduate catalog), will be accepted if you miss the exams. A make-up exam must be taken within 3 class days of the actual exam date. Contact the instructor **before** the exam if there may be a problem. Discussion regarding grades or grading practices will only be conducted during office hours by appointment; this ensures privacy and confidentiality.

**Academic Misconduct:** You are responsible for the honest completion and representation of your work and for the respect of others' academic endeavors. Any act of cheating, plagiarism, or academic misconduct is subject to the penalties outlined in UWS Chapter 14; <http://www.uwsp.edu/admin/stuaffairs/rights/rightsCommBillRights.pdf>

**Students with Special Needs:** First see Student Disability Services and complete the necessary paperwork. Then, contact me so that arrangements can be made to meet your needs.