



Great Lakes Fish Ecology

The University of Toledo

Department of Environmental Sciences, College of Natural Sciences & Mathematics

4980/6980/8930

Instructor: Dr. Carol Stepien (with Dr. Katy Klymus & Dr. Patrick Kocovsky)	Term: Spring 2015
Email: carol.stepien@utoledo.edu	Class Location: Lake Erie Center
Office Hours: Tuesdays 1-3:00	Class Day/Time: Thursdays 3-4:50 (+4 evenings 6-8)
Office Location: Lake Erie Center	Lab Location: N/A
Office Phone: 419 530 8362	Lab Day/Time: N/A
	Credit Hours: 2

COURSE/CATALOG DESCRIPTION

EEES4980/6980/ 8980 Advanced Topics In Ecology

Course covering some aspect of ecology not covered in the formal undergraduate or graduate curriculum. Students may repeat the course for different topics. This course is on Great Lakes Fish Ecology.

COURSE OVERVIEW

Great Lakes Fish Ecology explores ecological adaptations of freshwater fishes, representing a wide variety of life styles, morphologies, behaviors, relationships, and evolutionary strategies. Students will learn critical analysis of scientific papers, and engage in stimulating discussions with their peers and professors. Each student will give an original presentation to the class that summarizes subjects in the book, critiques an original research study, and encourages group participation. The student thus will lead the class on that day. Ph.D. students will be giving 2 or more original presentations, M.S. students at least once, and undergraduate students may share a presentation slot with another or present alone, if they elect.

STUDENT LEARNING OUTCOMES

Achieve fundamental understanding of the ecological adaptations of Great Lakes fish diversity. Analyze and critique key recent scientific literature. Develop individual presentation skills and the ability to answer questions and engage in scientific discourse.

TEACHING STRATEGIES

Students will learn to present their own lectures on key topics of fish ecology, select a recent key scientific paper for group discussion on the week's topic when they lead the discussion, and learn to encourage discussion and critical analysis. Three instructors will co-lead the course to aid in different perspectives of fish ecology (Dr. Carol Stepien with Dr. Patrick Kocovsky and Dr. Katy Klymus).

PREREQUISITES AND COREQUISITES

Any Ecology course or approval of instructor

REQUIRED TEXTS AND ANCILLARY MATERIALS

Ecology of North American Freshwater Fishes by Stephen T. Ross, 2013. University of California Press.

TECHNOLOGY REQUIREMENTS

None



UNIVERSITY POLICIES

The University is an equal opportunity educational institution. Please read The University's Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance.)

ACADEMIC ACCOMMODATIONS

The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the Student Disability Services Office.)

ACADEMIC POLICIES

Students need to mark sources of materials used in their powerpoints on their slides. Students are allowed one missed class without penalty. Absences will be excused if students are presenting their research at a conference approved by their advisor and the course instructor. Students must be prepared for class, and have read the chapter and paper thoroughly before coming to class.

COURSE EXPECTATIONS

The class will begin promptly. Points will be deducted for late-comers. No late assignments will be accepted. Students must send their evaluations of presentations by others to the instructor by the next day by 5 pm. Students must present on their scheduled date and turn in all assignments on time and attend class, unless there is a very unfortunate and serious issue (hospitalization, death in immediate family, car accident, etc., with prompt notice of the instructor). All students are required to attend the Lake Erie Center fish lectures on the four evenings. Graduate students are expected to give lead presentations more than once in the course, and Ph.D. students more than M.S. students, who will present more often than those at the advanced undergraduate level. No cell phones or gum-chewing (you can't be speaking while chewing gum).

GRADING

30%	Attendance & Participation & Weekly Contributions
50%	Presentations & Discussion Leading
20%	Class Feedback (evaluation forms of others, including their completeness, in on time)

FINAL GRADING:

A 93-100%	B+ 88-89%	C+ 78-79%
A- 90-92%	B 83-87%	C 73-77%
	B- 80-82%	C- 70-72%

If you are going to miss a class or miss a class, please contact Dr. Stepien immediately by e-mail (carol.stepien@utoledo.edu). To get the full points, you are expected to attend all classes and to be on time and well-prepared (have thoroughly read the book chapter and papers, taken notes or underlined, etc.), pay attention, and actively participate.

PRESENTATION AND DISCUSSION LEADING:

- Give a well-organized discussion-oriented presentation, with at least 50% input from the group, and be thoroughly conversant and knowledgeable about your subject.
- Present the highlights from the chapter and paper, including primary figures and tables.
- Lead discussion on chapter.
- Look up background material and key terms, papers, etc.
- Bring up interesting and controversial points.



- Encourage class participation and keep the class on track.
- Be involved in your subject.
- Involve and review a recent, “hot” and short 2013-15 paper, article, or review article from a high-caliber scientific journal, such as *Journal of Great Lakes Research*, *Transactions of American Fisheries Society*, *Biological Invasions*, *Ecology*, *Science*, *Nature*, *Evolution*, *TREE*, *Molecular Phylogenetics and Evolution*, *Ecology*, *Molecular Ecology*, *Genetics*, *PNAS*, etc. that has high relevance and interest to all or part of the chapter, as a good example, test of a hypothesis, alternative or collaborative view, augmentation, etc. Paper should be relatively short, 15 pages or less in length. **Must be 2013-15.**
- You must provide/email copies of your selected paper the week before to all.
- Do not read directly from your notes!
- Relate the paper to the chapter; discuss its relative strengths and any weaknesses.
- Discuss what further work could be done.
- You are welcome to meet with Dr. Stepien for 30 min to 1 hour the week before your presentation in order to go over the material.
- See grading sheet for organization and grading

EVALUATIONS OF PRESENTERS:

- Due 5 pm day after each class.
- Must be submitted electronically to Dr. Stepien.
- You will receive points for each, and will be graded on the quality, objectiveness, and completeness of your comments.
- Will be given anonymously to the presenters.

TREATS:

Treats for the class are welcome on the day you present.

COMMUNICATION GUIDELINES:

The instructor will do her best to communicate via email. All students are expected to conduct themselves professionally and to be courteous to others. No cell phones or web browsing or text messaging, or gum chewing, etc. are permitted in class.

STUDENT SUPPORT SERVICES:

Relevant UT support services:

University Libraries: <http://www.utoledo.edu/library/>

Learning Enhancement Center: <http://www.utoledo.edu/success/lec/>

Writing Center: <http://www.utoledo.edu/success/writingcenter/index.html>

Success Coaches: <http://www.utoledo.edu/successcoach/index.html>

Counseling Center: <http://www.utoledo.edu/studentaffairs/counseling/>



COURSE SCHEDULE (student leaders will be assigned)

Thurs. Jan 15	(No class)-double class following week
Thurs. Jan. 22	3-5:00 Chapters 1 & 2 (Origin of Fauna) and paper by Dr. Pyron (Jacquemin et al. 2014) (Leader is Stepien) 6-6:45 Dinner discussion with Dr. Mark Pyron 7-8:00 Dr. Pyron Lecture: "Regime change in a large river fish assemblage."
Thurs. Jan 29	(No class, many will be at Ohio Research Review)
Thurs. Feb. 5	3-5:00 Chapter 3 (Reshaping North American Fish fauna) (Leader is Klymus)
Thurs. Feb. 12	3-5:00 Chapter 4 (Responses to Biotic & Physical Factors) (Leader is Kocovsky)
Thurs. Feb 19	3-5:00 Chapter 5 (Populations & Assemblages) + paper by Dr. Vandergoot 6-6:45 Dinner discussion with Dr. Chris Vandergoot (Ohio DNR) 7-8:00 Vandergoot Lecture: "Following Lake Erie Walleye: Confirming previous movement perceptions or formulating new ones."
Thurs. Feb. 20	3-5:00 Chapter 6 (Fish Assemblages)
Thurs. Feb. 27	3-5:00 Chapter 7 (Morphology & Functional Ecology)
Thurs. March 5	3-5:00 Chapter 8 (Form & Function in Feeding)
Thurs. March 12	(No class, UT spring break)
Thurs. March 19	3-5:00 Chapter 9 (Life History & Reproduction) 6-6:45 Dinner discussion with Dr. Bruce Manny (USGS) 7-8:00 Manny lecture: "Giants of the deep -- Restoration of lake sturgeon in the central Great Lakes."
Thurs. March 27	3-5:00 Chapter 10 (Communication among Individuals)
Thurs. April 2	3-5:00 Chapter 11 (Interactions in Resource Acquisition I)
Thurs. April 9	3-5:00 Chapter 12 (Interactions in Resource Acquisition II)
Thurs. April 16	3-5:00 Chapter 13 (Getting along-interactions)
Thurs. April 23	3-5:00 Chapter 14 (Streams)
Thurs. April 30	7-8pm Lecture by Dr. Jhonatan Sepulveda-Villet "Feeding fish today, feeding families tomorrow: promoting food security through Great Lakes aquaculture." 6 pm (optional) Dinner before and reception at the LEC
Thurs. May 7	3-5:00 Chapter 15 (Ponds, Lakes, Impoundments)



PRESENTATIONS/Discussion Leading form

Presenter's NAME: _____

Chapter: _____

DATE: _____

Scale: 98-100%= A+, 93-97%= A, 90-92%=A-, 88-89%=B+, 83-87%=B, 80-82%=B-, 78-79%=C+, 73-77%=C, 70-72%=C-

A. Key Paper Choice _____/100%

Select and Distribute (week before in class) copies of a recent short 2013-15 relevant key paper from top journal that is written at the graduate/advanced undergraduate level the week before for everyone to read as highly pertinent to the chapter or a part of it. Should be 4-15 pages.

Comments: _____

II. Presentation and Discussion leading

B. _____/100% *Give coherent, well-practiced, knowledgeable, and interesting overview of key points in the chapter (and paper), including figures and tables. Do not read directly from your notes. Involve class input. 30 min*

Comments: _____

C. _____/100% *Lead a focused discussion on key points of your selected chapter and paper. Keep discussion moving, oriented, and on-track and keep participation high. Discussion should include all as much as possible and not be dominated by 1 or 2 individuals. Discussion should be at least 50% of the class time. 30 min*

Comments: _____

D. _____/ 100% *Outside Research, relevance, and summary. Look up and present background material, example, and key terms, papers. Relate these to your chapter, paper, and to the background material presented in our class to date. Bring up interesting and controversial points. Discuss what further research work could be done. Present and defend your opinion for important points. Give a coherent and well-presented 5 minute summary of the main points and class discussion at the end.*

Comments: _____

Mean % = _____ (mean of above, A, B, C, & D)

Evaluator's Name: _____ (will be cut off) _____/10 pts