

## **I. COURSE NUMBER AND TITLE:**

Ichthyology

Course Number: BMME 8058; OCMB 999; MEVS 5595

Days: Tuesday

Time: 6-9 PM

Building & Room: Foreman 120 (lecture); Modular Teaching Lab (lab)

## **II. INSTRUCTOR:**

Tracey T. Sutton, Ph.D.

Phone: 954-262-3692/3733

Email: [tsutton1@nova.edu](mailto:tsutton1@nova.edu)

Office: COE 328/421

Office Hours: TBD

## **III. COURSE DESCRIPTION:**

This course will provide a thorough coverage of ichthyology, the study of fishes. The focus will be on the systematics of bony, cartilaginous and jawless fishes, both living and extinct. The anatomy of fishes will be detailed, followed by a multi-lecture series treating the major lineages of fishes. Lab exercises will involve anatomical study and taxonomy of extant fishes. Following systematic lectures key ecological aspects of fishes will be examined, including trophic ecology, growth and reproduction, and community structure. These ecological elements will be traced back to the evolution of major lineages to allow student understanding of why certain fish groups occur (or do not occur) where they do. In addition to in-lab work, students will gain experience in field sampling techniques around the Oceanographic Center in order to acquire fresh material for laboratory exercises.

## **IV. LEARNING OUTCOMES:**

After taking this course, students will be familiar with the entire spectrum of fishes, from the first forms to the living lineages. Students will be able to diagnose any fish with respect to structure, systematic placement, and likely ecology. Through laboratory exercises, students will receive training in fish anatomy, taxonomy, trophic ecology, and reproductive ecology.

## V. REQUIRED TEXTS AND MATERIALS:

### **Fishes: A Guide to Their Diversity**

Philip A. Hastings (Author), Harold Jack Walker Jr. (Author), Grantly R. Galland (Author)

Available worldwide

Paperback, 336 pages

ISBN: 9780520283534

January 2015

### Suggested Supplementary Reading

Cailliet, GM, MS Love and AW Ebeling (1996) Fishes: A Field and laboratory Manual on Their Structure, Identification, and Natural History. Waveland Press. ISBN-10: 0881339086.

Wootton, RJ (1999) Ecology of Teleost Fishes, 2<sup>nd</sup> Ed. Springer. ISBN-10: 041264200X. Available in paperback.

Carrier, JC, JA Musick and MR Heithaus (2004) Biology of Sharks and Their Relatives. CRC Press. ISBN-10: 0849315145.

Nelson, JS (2006) Fishes of the World, 4<sup>th</sup> Ed. Wiley. ISBN-10: 0471250317.

Sale, PF (1993) The Ecology of Fishes on Coral Reefs. Academic Press. ISBN-10: 0126151814.

**Additional Reading:** Supplementary research papers highlighting specific aspects of fish ecology will be provided by the instructor.

## VI. COURSE SCHEDULE AND TOPIC OUTLINE:

- Jan 05 Intro to fishes; diversity; adaptive responses; anatomy
- Jan 12 Agnathans; Chondrichthyes, “primitive” fishes
- Jan 19 Teleostean phylogeny, Neoteleosts, lower spiny teleosts
- Jan 26 Acanthopterygians 1 – the lower spiny-rayed fishes
- Feb 02 **Exam 1**
- Feb 09 Acanthopterygians 2 – the higher spiny-rayed fishes
- Feb 16 Fish feeding ecology, daily ration, energy budgets
- Feb 23 **Exam 2**
- Mar 01 Food webs: rivers to the abyss
- Mar 08 Fish growth and reproduction; Evolution of life history patterns
- Mar 15 Fish assemblages: multivariate statistical analysis of ecological data
- Mar 22 **Final Exam**

Note: We will also schedule a weekday or weekend Field Sampling exercise in John Lloyd State Park. The date and time will be arranged by class consensus.

## VII. GRADING CRITERIA:

Participation in the classroom discussion will be worth 10 points for each lecture, for a total of **200** points.

Each exam will be worth **400** points each.

Thus, there are a total of **1400** points available for this course. A standard grading scale will be used, with 90-100% earning an A, 80-89% earning a B, 70-79% earning a C, 60-69% earning a D, and below 60% earning an F in the course. Should class performance deviate significantly from this scale, adjustments (“curving”) may be required.

## **VII. COURSE REQUIREMENTS AND POLICIES:**

### INSTRUCTIONAL APPROACH

My office hours are flexible, and I will do my best to accommodate students’ work schedules. I will be available by appointment in advance. **Please note that pursuant to Nova Southeastern University policy, I will only respond to email coming from your NSU email account.** I cannot respond to email sent from a hotmail, msn, yahoo, etc. email account.

I encourage questions during lecture, and will stop lecture until you are satisfied that your question has been answered. I also ask questions of the class during lectures in order to stimulate independent thinking (versus rote memorization). Lack of participation in the form of questions or answers will be considered when grading participation.

### ATTENDANCE

Attendance will be taken during every lecture, and is considered mandatory. If you must miss a lecture, please have this absence excused beforehand so that it will not be counted against you with respect to your participation grade. Extra credit materials will not be available to substitute for poor participation or testing performance.

### ACADEMIC HONESTY

In order to ensure the highest standards of academic honesty and ethical behavior, the NSU policies on cheating and plagiarism will be strictly enforced. See the NSU Student Handbook for more information at <http://www.nova.edu/cwis/studentaffairs/forms/ustudenthandbook.pdf>. I am empowered by the policy to penalize a student suspected of academic dishonesty, plagiarism, or otherwise misrepresenting work and I will do so and report that student to the Dean of the OC. Nova Southeastern University has contracted with **turnitin.com** to provide plagiarism detection services, and I will submit any suspicious documents to this service.

The use of cell phones, or any other electronic devices not specifically allowed by me, during an exam is not permitted. The use of such devices for any reason will be assumed to be for the purposes of cheating and will result in your dismissal from class and administrative action up to permanent expulsion from all NSUOC programs. If you need the phone for emergency

notifications, or the like, leave the phone with me or the proctor at the start of class. You will be immediately notified if there is an incoming call.

## **EXPECTATIONS**

You can expect that I will arrive on time for lectures and be well prepared. You can expect that I will be clear about my expectations and the criteria I use in assigning grades and that I will be fair and equitable. I will treat everyone in the class with consideration and respect.

I expect you to come to class, arrive on time, and be prepared for lecture and lab. I expect you to turn off your cell phones, pagers, and hand-held electronic devices as a gesture of reciprocal respect. If you bring a computer to class, I expect you to use it to take notes and record classroom information. I expect you to stay awake, take notes, participate in discussions and ask questions.

## **SUGGESTIONS**

In order to maximize your performance in this course, I suggest that you attend every lecture, pay close attention, take good notes, and participate in the discussion. Later, rewrite your class notes in order to ensure that you understand everything. If you wait until the week before an exam to begin studying, it is my experience that you will not do well in this class. I strongly recommend studying as you go.

It is a good idea to read the appropriate chapters in the textbooks prior to the lecture. This will facilitate your comprehension and organization of the lecture material. When rewriting your lectures, refer again to the textbook to check the correct spelling of terms, the logical sequence of events, and/or difficult concepts.

## **X: UNIVERSITY-WIDE POLICY STATEMENTS**

**A. Academic Misconduct:** Academic misconduct appears in a variety of forms (including plagiarism). It is a violation of NSU academic policy and may be punished in a variety of ways, from failing the assignment and/or the entire course to academic probation, suspension or expulsion. If you have questions about what constitutes academic misconduct before handing in an assignment, see your instructor or the NSU Student Handbook at <http://www.nova.edu/cwis/studentaffairs/forms/ustudenthandbook.pdf>.

**B. ADA Policy:** Nova Southeastern University provides accommodations for students with documented disabilities. If you have a disability for which you believe you require accommodation, please contact Academic Services (<http://www.nova.edu/disabilityservices/>, 954-262-7189).

**C. Last Day to Withdraw:** It is your responsibility to formally withdraw from this course by completing the appropriate forms before the fourth week of the quarter in order to receive a partial refund (<http://www.nova.edu/ocean/coursepolicy.html>). A request for tuition refund must be made in writing at the time of withdrawal. Refunds will be made solely at the option of the university and will be based on the legitimacy of the reason for withdrawal. Should you fail to appropriately

withdraw from this course, and then earn a grade below your expectations, I will do what I can to see that the grade is reported on your transcript. I will NOT backdate paperwork so that you can avoid earning a grade lower than you like.

**D. Email Policy:** All email communications between students and faculty must be conducted via NSU email accounts (<http://www.nova.edu/common-lib/policies/emailcomm.policy.html>). This requirement will assist NSU in communicating more effectively and protecting your privacy. Emails sent to faculty from non-NSU accounts will be returned to the sender with instructions to resend the communication from your NSU account. To set up an NSU email account or to get help with an existing account, go to [https://www.nova.edu/sbin/account\\_request](https://www.nova.edu/sbin/account_request). Also, the computer help desk is available to assist you with questions regarding your NSU email account. It can be reached at 954-262-HELP (4357).

**E. Student Course Evaluations:** Student comment and feedback evaluating each college class is an important tool to evaluate program effectiveness. Participation in this process is a responsibility of each student.