Objectives: Biology of Fishes covers the systematics, evolution, structure, function and biology of fishes. Emphasis will be placed on recent developments in systematics and evolution. The laboratory will provide hands-on experience with the morphological diversity of fishes.

Instructor: Phil Hastings
Office: Vaughan Hall 201 (822-2913; phastings@ucsd.edu)
Office Hours: by appointment

Class Meetings: Lecture & Lab: Tuesday/Thursday, 1:00-4:50 (Vaughan Hall 243)

Books & Readings

Required:

Recommended:

Additional books on reserve in SIO Graduate Department

Additional Readings: posted on TED website

Project/Paper. Each student is expected to write a short paper (12-15 pages double spaced) on some aspect of fish biology or evolution that includes an up-to-date Literature Cited section. This could be a literature review on a question of particular interest or original research. Students should discuss their selected topic with the instructor by the middle of the quarter.

Important Dates (subject to change)
Lab Exam 1  4/28
Lecture Exam 1  5/5
Paper due  5/28
Lab Exam 2  6/4
Final (Lecture Exam 2)  6/8 (Monday), 3:00-6:00 pm

Grading: Letter grades are roughly based on a percentage of 700 points
Lab Exams: 2 x 150 = 300 points
Lecture exams: 2 x 150 = 300 points
Project/paper = 100 points
A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; E = < 60%
(S/U grading option is available with instructor’s consent)
**SIO 294 Biology of Fishes, Spring 2015, Lecture schedule** (tentative)
Week 1. Diversity; Phylogenetic biology & classifications; Early evolution of fishes
Week 2. Agnathans; Gnathostomata; Osteology & internal anatomy
Week 3. Chondrichthys; Biology of chondrichthyans
Week 4. Sarcopterygii; Actinopterygii - evolutionary trends
Week 5. Swimming; Sensory Systems
Week 6. Lecture EXAM 1. Feeding; Respiration
Week 7. Reproduction
Week 8. Biogeography; Speciation
Week 9. Habitats
Week 10. Radiations; Adaptations

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**SIO 294 Biology of Fishes, Spring 2015, Lab schedule** (tentative)
Week 1. Major groups of fishes; External and internal anatomy of fishes; Osteology
Week 2. Osteology (continued)
   Agnatha – jawless fishes
Week 3. Osteology (continued)
   Chondrichthyes – cartilaginous fishes
Week 4. Osteichthyes – Bony fishes; Sarcopterygii – Lobe-finned fishes;
   Actinopterygii 1 – Ray-finned fishes: Polypteriformes to Ostariophysi
Week 5. Lab exam 1
   Actinopterygii 2 – Ray-finned fishes: Argentiniformes to Beryciformes
Week 6. Actinopterygii 3 – Ray-finned fishes: Mugiliformes to Scorpaeniformes
Week 7. Actinopterygii 4 – Ray-finned fishes: Perciformes to Carangiformes
Week 8. Actinopterygii 5 – Ray-finned fishes: Labriformes to Scombriformes
Week 9. Actinopterygii 6 – Ray-finned fishes: Stromateiformes to Tetraodontiformes
Week 10. Lab exam 2
   Convergence; Local fishes