NOTE to prospective students: This syllabus is intended to provide students who are considering taking this course an idea of what they will be learning. A more detailed syllabus will be available on the course site for enrolled students and may be more current than this sample syllabus. Summer term courses may be accelerated – please check the Ecampus Schedule of Classes for more information.

FW 476/576

Fish Physiology

COURSE CREDIT:
(4) This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits.

PREREQUISITES, CO-REQUISITES AND ENFORCED PREREQUISITES:

COURSE DESCRIPTION:

FW 476. FISH PHYSIOLOGY (4).
Physiological specializations and adaptations of major groups of fishes. PREREQS: FW 315 [D-].

FW 576. FISH PHYSIOLOGY (4).
Physiological specializations and adaptations of major groups of fishes. PREREQS: FW 315 or equivalent course work.

CONTACT INFORMATION:

Instructor – Scott Heppell

For more information, contact: BRUCE DUGGER, NASH 166, 541-737-2465

Sample syllabi may not have the most up-to-date information. For accuracy, please check the ECampus Schedule of Classes to see the most current instructor information. You can search for contact information by name from the OSU Home Page.

LEARNING RESOURCES:

There is no required textbook for this course. Readings are selected from the primary literature and chapters from relevant books.

COURSE SPECIFIC MEASURABLE STUDENT LEARNING OUTCOMES:
By the end of the class, FW476 students should be able to:
1. Identify different parts of the basic fish anatomy
2. Explain the role of anatomy in various physiological functions
3. Describe various physiological functions and how they relate to fish survival
4. Compare how physiological functions differ among different fishes.
5. Synthesize and analyze the impacts of the environment on physiology

By the end of the class, FW576 students should be able to:
1. Achieve all of the SLO measures above
2. Effectively lead discussions on each of the 10 weekly discussion topics related to fish physiology
3. Demonstrate in-depth knowledge of a specific component of fish physiology
4. Identify specific fish physiology research questions and the methods to answer them

COURSE CONTENT AND POLICIES:

COURSE CONTENT

<table>
<thead>
<tr>
<th>Week</th>
<th>Subject</th>
<th>Weekly Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, Nervous System</td>
<td>#1 Lab: Fish anatomy</td>
</tr>
<tr>
<td>2</td>
<td>Sensory Systems</td>
<td>#2 Olfaction Assignment (reading &amp; synthesis)</td>
</tr>
<tr>
<td>3</td>
<td>Endocrinology &amp; Stress Physiology</td>
<td>#3 Blood Lab</td>
</tr>
<tr>
<td>4</td>
<td>Respiration</td>
<td>#4 Respiration/ Metabolic rate Lab</td>
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<tr>
<td>5</td>
<td>Circulation</td>
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<td>6</td>
<td>Feeding &amp; Digestion</td>
<td>#5 Protein lab</td>
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<tr>
<td>7</td>
<td>Hydro-mineral Balance</td>
<td>Midterm Exam</td>
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<tr>
<td>8</td>
<td>Buoyancy</td>
<td>#6 Buoyancy</td>
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<tr>
<td>9</td>
<td>Growth</td>
<td>#7 Growth Rate Lab</td>
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<tr>
<td>10</td>
<td>Reproduction</td>
<td>Research Proposal DUE (FW576)</td>
</tr>
<tr>
<td>11</td>
<td>Final Exam</td>
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</tr>
</tbody>
</table>

Readings
There is no required textbook for this course. Therefore, I have chosen different articles from the literature for each week’s subject matter. The articles are available in Canvas in the appropriate weekly model in .PDF format. Your understanding of the material presented in the lectures will be greatly enhanced by reading the required readings.
Lectures
The weekly PowerPoint lectures are designed to be summaries of the major concepts for each week. They are not intended to be the entirety of what you need to know. Therefore, you should read the required readings and to ask questions if there is anything in the readings that you do not understand. You are expected to be resourceful to promote your learning on each week’s subject.

Discussions
Please read the Discussion Board instructions for information on the requirements for the discussion assignments and the marking scheme.

Weekly Assignments
In addition to the lectures, readings and discussion board, we will explore fish physiology through some simulated labs and the primary literature. There are 7 weekly assignments. Some are lab exercises and some are assignments associated with readings. The weekly instructions will contain the directions for each assignment. All weekly assignments will be handed in via Canvas.

Research Proposal
Students enrolled in FW576 are required to complete a Research Proposal. Graduate students will prepare a research proposal on a subject of your choosing, with the instructor’s approval. Further details and instruction for these projects can be found in the Research Proposal Instructions.

Exams
There will be one mid-term and one final for all students. Exams will be essay style (typically one page per question) and will cover information from lectures, labs and readings. Exams in this class are timed; if you exceed the time limit on an exam, you will be assessed a penalty of 10% for every five minute interval beyond the time limit.

Makeup Exams
Makeup exams will be given only for missed exams excused in advance by the instructor. Excused absences will not be given for airline reservations, routine illness (colds, flu, stomach aches), or other common ailments. Excused absences will generally not be given after the absence has occurred, except under very unusual circumstances.

COURSE POLICIES

Excused absences for an assignment
Students who miss any evaluation (quiz, assignment due date, etc.) for documented medical or other legitimate reasons will have their final grades pro-rated on the basis of completed evaluations. In other words, if a student has an excused absence from an assignment, that student’s grade will be calculated as if the missing assignment was never part of the course in the first place. This results in neither a penalty nor an advantage. The best policy for a potential conflict is to communicate with the instructor as early as possible to make
appropriate arrangements. Work turned in after the due date for no legitimate reason and with no prior communication with the instructor will be marked as 0%.

**Incomplete**
Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury), and if the student has turned in 80% of the points possible (in other words, usually everything but the final paper). If you are having any difficulty that might prevent you completing the coursework, please don’t wait until the end of the term; let me know right away.

**EVALUATION OF STUDENT PERFORMANCE:**

### FW476

<table>
<thead>
<tr>
<th></th>
<th>Number of points for each assignment</th>
<th>Number of points in each category</th>
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### FW 576

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<td>Final Exam</td>
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<tr>
<td>Research Proposal</td>
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<tr>
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<td>90-93% A-</td>
<td>87-89% B+</td>
<td>84-86% B</td>
<td>80-83% B-</td>
<td>77-79% C+</td>
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<tr>
<td>74-76% C</td>
<td>70-73% C-</td>
<td>67-69% D+</td>
<td>64-66% D</td>
<td>60-63% D-</td>
<td>&lt;60% F</td>
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COURSE SITE LOGIN INFORMATION
Information on how to login to your course site can be found HERE.

STATEMENT REGARDING STUDENTS WITH DISABILITIES
Oregon State University is committed to student success; however, we do not require students to use accommodations nor will we provide them unless they are requested by the student. The student, as a legal adult, is responsible to request appropriate accommodations. The student must take the lead in applying to Disability Access Services (DAS) and submit requests for accommodations each term through DAS Online. OSU students apply to DAS and request accommodations at our Getting Started with DAS page.

Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 541-737-4098.

Additionally, Canvas, the learning management system through which this course is offered, provides a vendor statement certifying how the platform is accessible to students with disabilities.

ACADEMIC INTEGRITY AND STUDENT CONDUCT (OSU POLICY)
Students are expected to be honest and ethical in their academic work. Intentional acts of academic dishonesty such as cheating or plagiarism may be penalized by imposing an “F” grade in the course.

Student conduct is governed by the universities policies, as explained in the Office of the Dean of Student Life: Student Conduct and Community Standards. In an academic community, students and faculty, and staff each have responsibility for maintaining an appropriate learning environment, whether online or in the classroom. Students, faculty, and staff have the responsibility to treat each other with understanding, dignity, and respect.

Students are expected to conduct themselves in the course (e.g. on discussion boards, email postings, etc.) in compliance with the university's regulations regarding civility. Students will be expected to treat all others with the same respect as they would want afforded to themselves. Disrespectful behavior (such as harassing behavior, personal insults, inappropriate language) or disruptive behaviors are unacceptable and can result in sanctions as defined by Student Conduct and Community Standards.

For more info on these topics please see:
• Statement of Expectations for Student Conduct
•
• Student Conduct and Community Standards - Offenses
• Policy On Disruptive Behavior

PLAGIARISM
You are expected to submit your own work in all your assignments, postings to the discussion board, and other communications, and to clearly give credit to the work of others when you use it. Academic dishonesty will result in a grade of “F.”
• Statement of Expectations for Student Conduct
• Avoiding Academic Dishonesty

TECHNICAL ASSISTANCE
If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the OSU Computer Helpdesk online.
• COURSE DEMO
• GETTING STARTED

TUTORING
For information about possible tutoring for this course, please visit our Ecampus NetTutor page. Other resources include:
• Writing Center
• Online Writing Lab

STUDENT EVALUATION OF TEACHING
The online Student Evaluation of Teaching form will be available in week 9 and close at the end of finals week. Students will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. Students will log in to “Student Online Services” to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted. Course evaluation results are very important and are used to help improve courses and the learning experience of future students. Results from questions are tabulated anonymously and go directly to instructors and unit heads/supervisors. Unless a comment is “signed,” which will associate a name with a comment, student comments on the open-ended questions are anonymous and forwarded to each instructor. “Signed” comments are forwarded to the unit head/supervisor.

REFUND POLICY INFORMATION
Please see the Ecampus website for policy information on refunds and late fees.