

**GGSC 415/GGSC 615: Aquatic Animal Models of Human Disease**  
**Fall Semester, 2019**  
**Syllabus, Course Objectives, and Policies**

**Credit Hours: 3.0**

**Location:** VH G011

**Day and Time:** Tuesdays/Thursdays from 2:00 to 3:15

**Pre-requisites:** BY 210, CH 117 and CH 118, and GGSC 310

**Course Instructor:** Susan Farmer DVM, PhD; Asst. Director, Animal Resources; Asst. Prof. Genetics

**Office:** 1800 9<sup>th</sup> Avenue South, RSB 220F

**Email:** [sfarmer@uab.edu](mailto:sfarmer@uab.edu)

**Phone:** 205-934-5563

**Office Hours:** By appointment. Please email or call me to set up a specific date and time.

**Course Description:** This course will describe basic anatomy, biology, life history, husbandry, and research applications for a variety of aquatic organisms used as animal models of human disease in biomedical research. Species discussed will include zebrafish, Medaka, Xiphophorus, Onchorynchus, Xenopus, and Axolotls. This course includes traditional instruction with written examinations.

**Course Objectives:** Be able to explain how and why individual animals are used to model human diseases. Be able to explain basic anatomy, biology, and husbandry for animal models discussed.

**Student Expectations:**

- Arrive to class on time and prepared
- Ask questions and participate in discussions
- Interact with all in a respectful manner

**Recommended textbook:** There is no required textbook. Reading assignments will be posted in Canvas or sent to you by email. I will put a few general reference books on reserve in Sterne Library.

**Grading and Evaluation for Undergraduate Credit:** The course will include four written exams. The points earned on these exams will count for 90% of the course grade.

**Tests: 90 points available**

Test 1:	22.5 points
Test 2:	22.5 points
Test 3:	22.5 points
Test 4:	22.5 points
Total from tests:	90 points

**Attendance: 10 points available**

Each student can earn up to 10 points for attendance. Only one unexcused absence is permitted before loss of points. I will deduct 2 points per missed lecture after the first unexcused absence as follows:

- Two unexcused absences: 2 points deducted
- Three unexcused absences: 4 points deducted
- Four unexcused absences: 6 points deducted
- Five unexcused absences: 8 points deducted
- Six unexcused absences: 10 points deducted

**Grading and Evaluation for Graduate Students:**

As for undergraduate students, graduate students can earn up to 90 points on the four exams and can earn up to 10 points for attendance. Graduate students will have an additional project worth 25 points. This project will be preparation of a topic that will be presented to the class during the last week. The subject for this project should be approved by Dr. Farmer by 10/31. The grade for the course will be based on the total of the 125 points earned (90 from exams, 10 from attendance, 25 from the project). The project will be graded as follows: 10 points for content, 10 points for oral class presentation, 5 points for your evaluation of your colleague's presentations.

**Grading scale for Undergraduate and Graduate Students:**

- A: 90 to 100% earned of total points available
- B: 80 to 89% earned of total points available
- C: 70 to 79% earned of total points available
- D: 60 to 69% earned of total points available
- F: 59% or below earned of total points available

**Class Attendance:** All students must sign in at the beginning of each class. You will be allowed one unexcused absence. If you will be absent, you must notify Dr. Farmer by email immediately about your absence, prior to the start of the class. Excused absences are illness, death in the immediate family, or other extenuating circumstances approved by the instructor in advance. Make-up of missed work is the student's responsibility. It is the student's responsibility to contact the instructor within 48 hours of the missed class to schedule a make-up of missed work due to an excused absence.

The following are also accepted as excused absences with a prior notification and documentation:

- Jury or military duty

- Disability-related absences for students registered with the UAB Disability Services

- Official participation in UAB-sponsored activities when the student represents the university as a critical participant.

Before the add/drop deadline, the student must provide a schedule of absences with a letter documenting their nature from the director of the sponsoring unit. If a change in the absence schedule occurs, the student must provide advance written notification from the director of the sponsoring unit.

**Audio recording, videotaping or photography:** In general, any form of audio and/or video capture of lectures is not permitted without written consent of the instructor.

**Electronic devices in the classroom:** All cell phones should be silenced and removed from the desktop at the beginning of class. Use of laptops, tablets, and similar devices for classroom activities is allowed. Use of any devices for other activities, such as searching the internet, checking email, or reviewing materials not related to class is not permitted during class.

**Academic Misconduct:** Students are expected to maintain an acceptable quality of academic performance and to exhibit appropriate conduct. Students are expected to conduct themselves in a manner similar to accepted standards for practicing health care professionals. Academic misconduct may include, but is not limited to, acts such as plagiarism, cheating, misrepresentation, fabrication, or giving or receiving unauthorized aid in tests, examinations, or other assigned work, and will be subject to disciplinary action. Any act of dishonesty in academic work constitutes academic misconduct. Academic misconduct will result in a grade of zero on the assignment and may result in disciplinary action. A student who feels he or she has been unfairly disciplined should contact the program director or departmental chair to request a review of the disciplinary decision. A more detailed description of the *Grievance Procedures for Violations of Academic Standards* is available from the Office of the Associate Dean for Academic and Student Affairs. Students should be familiar with "The UAB Honor Code" available at:

<https://www.uab.edu/students/one-stop/policies/academic-honor-code>

**TURNITIN Policy:** Plagiarism is academic misconduct that will result in a grade of zero on the assignment and may result in dismissal from the University. Presentations submitted for this course may be reviewed using the online plagiarism monitoring software, *Turnitin.com*. Please note that all documents submitted to *Turnitin.com* are added to their database of papers that is used to screen future assignments for plagiarism.

**Special Needs:** If you feel that you may have a disability, please contact the Office of Disability Services (DSS) as soon as possible in order to register with them at UAB. If you are or will be registered, please let me know so that we can verify the availability of any necessary accommodations and complete any necessary paperwork. DSS provides a broad array of services and technologies to make the UAB campus and a UAB education accessible to everyone. You are expected to complete assignments by scheduled due dates. DSS contact email: [dss@uab.edu](mailto:dss@uab.edu). DSS phone: 205-934-4205 (voice) or 205-934-4248 (TDD). DSS website: <https://www.uab.edu/students/disability/>

**TITLE IX:** The University of Alabama at Birmingham is committed to providing an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual discrimination, harassment, misconduct, or assault, we encourage you to report the incident. UAB provides several venues for reporting. For more information, please visit UAB's Title IX Policy and UAB's Equal Opportunity and Anti-Harassment Policy.

### Course Schedule and Topics

<b>Date</b>	<b>Tuesday</b>	<b>Date</b>	<b>Thursday</b>
8/27	Introduction to Course	8/29	Concepts of Modeling
9/3	Sea slugs and the Nobel Prize	9/5	Aquatic Systems
9/10	Zebrafish anatomy, life history, husbandry, research applications	9/12	Zebrafish anatomy, life history, husbandry, research applications
9/17	Tour UAB Zebrafish Facility	<b>9/19</b>	<b>Exam 1</b> through end of class 9/12
9/24	Nothobranchius anatomy, life history, husbandry, research applications	9/26	Oncorhynchus anatomy, life history, husbandry, research applications
10/1	Axolotl anatomy, life history, husbandry, research applications	10/3	Turtle anatomy, life history, husbandry, research applications
10/8	Tour CH Animal Facility	<b>10/10</b>	<b>Exam 2</b> through end of class 10/3
10/15	Medaka anatomy, life history, husbandry, research applications	10/17	Xiphophorus anatomy, life history, husbandry, research applications
10/22	Xenopus anatomy, life history, husbandry, research applications	10/24	Tour UAB Frog facilities
10/29	Behavior and enrichment	10/31	Shrimp, urchins, others
<b>11/5</b>	<b>Exam 3</b> through end of class 10/29	11/7	Hydra anatomy, life history, husbandry, research applications
11/12	Cavefish	11/14	Hydra
11/19	Guest lecture	11/21	Guest lecture
11/26	Thanksgiving Week, no class	11/28	Thanksgiving Week, no class
12/3	Special topics by students	12/5	Special topics if needed, review
12/10	<b>Final Exam</b>		