American University of Beirut  
Faculty of Arts & Sciences  
Department of Biology

Course number: BIOL 258L  
Course title: Aquaculture Laboratory  
Credit hours: 1 Credit  
Time and Location:

Instructor:  
Name: Imad Saoud, PhD  
Office: Biology bldg, room 315  
Tel: 3913  
Email: is08@aub.edu.lb

Pre- or Co-requisite: BIOL 258, Introduction to Aquaculture.

Course description:  
An introduction to the practical side of aquaculture. Students will get their hands wet. They will set up fish maintenance systems, evaluate progressive changes in water chemistry, evaluate effects of water chemistry on aquatic animal health and learn how to develop diets based on nutritional requirements of animals. The lab will include video demonstrations of techniques that cannot be performed at AUB.

Learning outcomes (and assessment):  
By the end of the course the students should be able to  
- Demonstrate knowledge of aquatic biology vocabulary. (Exams)  
- Demonstrate knowledge of aquatic animal rearing systems. (Exams and log book)  
- Understand the environmental principles that influence body functions in aquatic animals. (Exams and log book)  
- Be able to discuss aquaculture topics reasonably well. (Oral assessment)  
- Understand chemical and physical processes of water that affect animals. (Exams and class discussions)  
- Demonstrate a scientific attitude and aptitude. (All assessments)

Assessments and grade distribution:  
- Attendance and drop quizzes------------ 20%  
- Lab notes (Log)-------------------- 30%  
- Oral midterm exam--------------- 10%  
- Final exam (written and practical)----- 30%  
- Work, attitude and behaviour--------- 10%
Policies:

Attendance

Class attendance is highly recommended. Absence of a student does not exempt him/her from the responsibility of the work done or from any announcement made during the missed session. **Attendance will be taken at the beginning AND end of each lab session.**

Course content (by week)

All lab sessions will start with a short lab lecture.

I. Set up aquarium and filter; Introduction to recirculating systems.

II. Seed and acclimate filter; watch video on water quality management.

III. Acquire water quality data; use kits and chemical methods to evaluate NH$_3$ and NO$_2^-$.

IV. Stock aquaria; test salinity and pH using various methods and compare.

V. Do water quality tests on aquaria, clean filter; watch video on hatchery techniques

VI. Make feed tables based on protein, fat and essential AA requirements.

VII. Formulate diets based on various ingredient contents. Make fish diet.

VIII. Assess growth, survival and condition index of fish they stocked in week 4.

IX. Dissect fish, identify organs and make observations on health based on organ conditions.

X. Saturday whole day field trip Hermel

XI. Discuss report and how to present it; video on disease recognition, control and vaccination.

XII. Terminate aquarium study and evaluate growth parameters and health of fish.

XIII. Submit report and sit for exam.

Catalogue description.

BIOL 258L. Aquaculture Lab. This course will demonstrate techniques used in aquatic animal maintenance for scientific, commercial and ornamental uses. *Pre-, Co-requisite: BIOL 258. Spring semesters.*