



**KENTUCKY STATE  
UNIVERSITY**

## **AQUACULTURE (AQU)**

---

### **AQU 507: Fish Genetics**

An overview of fish genetics including basic principles and methods of selective breeding in aquaculture.

**Prerequisite:** Consent of instructor

**Credit Hours:** 3

**Contact Hours:** 3

### **AQU 508: Intro Geog Info Systems**

This graduate course will expose students to the concepts, software, data and analysis processes of Geographic Information Systems (GIS). Students will develop a real world, working knowledge of GIS through hands-on work with mapping software, its potential, its limitations and future trends in the mapping industry. Graduate students will develop a real world project that examines existing spatial data and utilizes modeling software to create a production quality, full scale, mapping product.

**Prerequisite:** Consent of instructor

**Credit Hours:** 3

**Contact Hours:** 3

### **AQU 509: Biostatistics**

Basic principles of experimental design and data analysis with emphasis on their applications in aquaculture research.

**Prerequisite:** Consent of instructor

**Credit Hours:** 3

**Contact Hours:** 3

### **AQU 510: Fish Diseases Laboratory**

AQU 510 teaches students proper microscope use and an advanced approach to identifying various fish pathogens and plausible disease treatments. Writing will be emphasized by completing lab reports at an advanced scientific level.

**Credit Hours:** 1

**Contact Hours:** 1

### **AQU 511: Fish Diseases**

An in-depth study of clinical diagnosis of fish diseases; necropsy of diseased fish; and formulation of corrective measures for disease control. (Three hours of lecture, two hours of laboratory per week)

**Prerequisite:** Consent of instructor

**Credit Hours:** 3

**Contact Hours:** 3

### **AQU 512: Fish Morphology/Physiology**

An overview of fish morphology and physiology with emphasis on comparative and adaptive aspects among Osteichthyes (true bony fish). (Three hours of lecture, two hours of laboratory per week)

**Prerequisite:** Consent of instructor

**Credit Hours:** 4

**Contact Hours:** 3-4

### **AQU 513: Aquatic Ecology**

This course investigates the interaction of aquatic organisms with their biotic and abiotic environment. Sampling and laboratory methods for limnological analysis will be covered.

**Prerequisite:** Consent of instructor

**Credit Hours:** 4

**Contact Hours:** 3-4

### **AQU 514: Basics of Fish Diseases**

Students are introduced to pathogens and environmental factors that cause disease in aquatic animals. Prevention, identification and treatment of these diseases are included. Review paper is required.

**Prerequisite:** Consent of instructor

**Credit Hours:** 3

**Contact Hours:** 3

### **AQU 516: Computer App in Statistics**

This course will teach students how to use Microsoft Excel and SAS to solve statistical problems in biology, environmental sciences, economics, and business/MBA. Students will learn how to develop statistical models and implement them using software and interpret the corresponding results.

**Prerequisite:** Successful completion of an upper division statistics course is recommended

**Credit Hours:** 1

**Contact Hours:** 1

### **AQU 521: Fish Nutrition**

A graduate approach to the study of fish nutrition including nutrient requirements, nutrient chemistry, ration formulation, and practical feeding. (Three hours of lecture per week)

**Prerequisite:** Consent of instructor

**Credit Hours:** 3

**Contact Hours:** 3

### **AQU 522: Principles of Aquaculture**

Introduction to principles underlying aquatic productivity and management with a survey of domestic and foreign cultures of fish and aquatic vertebrates.

**Credit Hours:** 3

**Contact Hours:** 3

### **AQU 525: Aqua Economics and Market**

Aquaculture economics, marketing channels and consumer preferences for fish products will be presented. (Three hours of lecture, two hours of laboratory per week)

**Prerequisite:** Consent of instructor

**Credit Hours:** 4

**Contact Hours:** 5

### **AQU 527: Fish Reproduct/Spawning Tech**

An overview of basic biology of fish reproduction and techniques of artificial spawning for common aquaculture species.

**Credit Hours:** 3

**Contact Hours:** 3

### **AQU 528: Fish Reproduction Labs**

AQU 527 may be taken concurrently. This course will provide practical training and skills on investigation of reproductive system in fish and spawning techniques for several aquaculture species.

**Credit Hours:** 1

**Contact Hours:** 1

**AQU 551: Survey of Production Methods**

An overview of alternative production methods including ponds, cages, net/pens, raceways, and recirculating systems with application to suitable species.

**Prerequisite:** Consent of instructor

**Credit Hours:** 3

**Contact Hours:** 3

**AQU 552: Aquaponics**

An overview of the Aquaponic production systems including the aquaculture and hydroponic components, as well as their interactions and management.

**Credit Hours:** 3

**Contact Hours:** 3

**AQU 560: Water Quality Management**

A survey of theory and practice into the understanding and manipulation of the biological, chemical, and physical aspects of water quality in aquaculture production. (Three hours of lecture, two hours of laboratory per week)

**Prerequisite:** Consent of instructor

**Credit Hours:** 3

**Contact Hours:** 3

**AQU 561: Water Quality Management Lab**

AQU 561 teaches students advances water quality principles related to pond management. Laboratories include use of equipment, solving water quality problems and doing in-depth analysis of a specific body of water.

**Credit Hours:** 1

**Contact Hours:** 1

**AQU 580: Intro to Geog Info Systems**

**Credit Hours:** 3

**Contact Hours:** 3

**AQU 590: Internship: Aquaculture**

**Credit Hours:** 1-3

**Contact Hours:** 2-6

**AQU 591: Internship: Aquaculture**

Intensive experience involving practical on-site participation working at an aquaculture facility (University, state, or private) for graduate students. CREDIT: 1 TO 4 SEMESTER HOURS.

**Prerequisite:** Consent of instructor

**Credit Hours:** 1-4

**Contact Hours:** 1-4

**AQU 600: Research Aquaculture**

Laboratory or field research on approved thesis topic in aquaculture or related aquatic sciences

**Credit Hours:** 1-9

**Contact Hours:** 1-9

**AQU 601: Thesis**

Preparation of research based thesis on approved topic. CREDIT: 1 TO 3 SEMESTER HOURS.

**Credit Hours:** 1-3

**Contact Hours:** 1-3

**AQU 699: Research & Thesis Completion**

This course is to permit the completion of research and thesis. Graded pass/fail.

**Prerequisite:** Consent of aquaculture graduate student coordinator or major professor

**Credit Hours:** 1-9

**Contact Hours:** 1-9

**AQU 797: Res Credit Thesis/Prof Prj**

Graduate students who have already earned the maximum credit allowed for program thesis or project courses may be registered for this course.

This course establishes graduate candidacy status for purposes of access to university resources.

**Prerequisite:** graduate student status; completion of the program thesis or project course; approval of advisor

**Credit Hours:** 0

**Contact Hours:** 0