Introduction to Aquaculture  
Course Syllabus, Spring Semester 2015

INSTRUCTOR: Dr. Jesse Trushenski  
OFFICE: Life Science II, Room 175  
PHONE: 536-7761  
EMAIL: saluski@siu.edu  
MEETING TIMES: 12:00 - 12:50 PM, Mondays, Wednesdays, and Fridays  
1:00 PM -2:50 PM on Fridays.  
OFFICE HOURS: By appointment

SUMMARY: Worldwide, aquaculture is one of the most ancient forms of animal husbandry. Currently, culture of aquatic biota for direct consumption, stock enhancement, or other purposes is the fastest growing and most diverse sector of livestock production. The purpose of this course is to develop an understanding of commonly used culture systems, to become familiar with the fundamentals of fish and shellfish husbandry, and to gain an appreciation of aquaculture’s roles in natural resource management, the human food supply, and the global economy.

TEXT: No text book is required for this course, however, the following titles may serve as useful references:

For those more interested in food-fish aquaculture...

For those more interested in stock enhancement...

Lectures and any supplemental reading materials will be provided online at:  
https://sites.google.com/site/trushenskiaquacultureresearch/home/course-materials/zool-477

COURSE OBJECTIVES:

- To become familiar with the design and operation of extensive and intensive culture facilities (ponds, net pens, flow-through systems, recirculating aquaculture systems, integrated aquaculture operations, etc.)

- To understand species-specific culture requirements (temperature, water quality etc.), and how to maintain optimal conditions in the various culture systems

- To become familiar with practical aspects of aquaculture (feeds and feeding; stocking, transport, and harvest techniques; marketing and economics; disease prevention, diagnosis and treatment; etc.)

- To evaluate the state of aquaculture in the U.S. and abroad
EVALUATION: Students’ understanding of lecture materials will be evaluated based on performance on interim exams as well as a final exam. Exams will consist of definitions, multiple choice and short answer questions, etc., to test students’ familiarity with the terms and general concepts of aquaculture; essay questions will be included to further evaluate the depth of students’ understanding of key concepts. Additionally, students will be evaluated based on their participation and contributions to group discussions of readings assigned during the course of the semester.

GRADING: Course grades will be based on total points earned from 1 interim exam, a final exam, and participation in discussion groups:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Exam</td>
<td>175</td>
</tr>
<tr>
<td>Final Exam</td>
<td>175</td>
</tr>
<tr>
<td>Discussion Group Participation</td>
<td>+50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>400</strong></td>
</tr>
</tbody>
</table>

Tentatively, final grades will be assigned using the distribution:

- A = 360 points and above
- B = 320-359 points
- C = 280-319 points
- D = 240-279 points
- F = 239 points and below

The instructor reserves the right to lower these grade distribution ranges, but they will not be raised.

Make-up exams will not be prepared after the exam has been given as originally scheduled. In cases of unavoidable conflicts with the exam schedule, arrangements must be made **1 week prior to the scheduled exam**.

EMERGENCY PROCEDURES: Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on BERT’s website at [www.bert.siu.edu](http://www.bert.siu.edu), Department of Safety's website [www.dps.siu.edu](http://www.dps.siu.edu) (disaster drop down) and in the Emergency Response Guideline pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.
## Tentative Lecture Schedule
*(any changes will be announced by the instructor)*

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC</th>
</tr>
</thead>
</table>
| 1    | Introduction to aquaculture  
      Regional aquaculture perspective |
| 2    | Water sources  
      Water recirculation systems |
| 3    | Farm ponds  
      Ocean-ranching and other systems |
| 4    | Hatcheries |
| 5    | Chemical aspects of water quality |
| 6    | Physical aspects of water quality |
| 7    | Natural and prepared feeds  
      Exam 1 |

**Spring Break March 9-13, 2015**

| 9    | Vitamin and mineral requirements  
      Protein demand |
| 10   | Lipid and carbohydrate requirements  
      Feeding strategies |
| 11   | Broodstock management  
      Aquaculture genetics and ploidy manipulations |
| 12   | Disease prevention and diagnosis, therapeutants in aquaculture |
| 13   | Harvest and transport techniques |
| 14   | Economics and marketing in aquaculture |
| 15   | Foodfish aquaculture, restoration aquaculture, and everything in between |
| 16   | Trends in domestic and global aquaculture  
      Course review |

**Finals Week May 11-15, 2015**

## Tentative List of Lab Activities and Discussion Group Topics
*(any changes will be announced by the instructor)*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tour of SIUC aquaculture facilities</td>
<td>Putting the Red Back in Redfish Lake</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Environmental Performance of Marine Net-Pen Aquaculture in the United States</td>
</tr>
<tr>
<td>Nutrition/ feed-making</td>
<td>Fish In, Fish Out: Perception of Sustainability and Contribution to Public Health</td>
</tr>
<tr>
<td>Fish harvesting/sampling</td>
<td>Raising Shrimp (film)</td>
</tr>
<tr>
<td>Tour of Little Grassy Fish Hatchery</td>
<td>Fish Meat (film)</td>
</tr>
</tbody>
</table>