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**FW402 – FISH CULTURE (4 CREDITS)**  
**SYLLABUS**

**Instructor:**

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**Required Materials**

- Aquaculture: An Introductory Text by R.R. Stickney, 2<sup>nd</sup> Edition (in bookstore)
- Assigned readings (see end of syllabus)
- Calculator

**Recommended Materials**

- Old clothes for lab periods because we will be working with pipes, silicone, water, mud, and yes, even fish.
- Chest waders
- USB flash drive
- Three-ring binder for handouts

**Course Goals**

The goal of this course is to give students a foundation in fish culture, with an emphasis on system design and assembly, water quality measurement and management, and general culture techniques. Students will be exposed to various culture systems and techniques through term projects on culture system design and operation. By the end of the course, students should have assimilated sufficient knowledge to design a pilot fish culture operation or compete effectively for a position as a Colorado Fish Culture Technician III (entry-level hatchery position with Colorado Parks and Wildlife).

**Term Project – Pilot Ornamental Species Culture System Design**

Students will work in pairs to prepare a written report and 20 to 25-minute lecture on the biology, pilot culture system, and culture techniques used to raise an ornamental fish or aquatic invertebrate species of their choice. These presentations and reports will be delivered to the class. You will receive more information on the projects early in the semester. Note: If you have previously written a report on fish culture for another course, you *will not* be allowed to re-use that report for this course.

**Prerequisites**

FW300 (Ichthyology)

## Assigned Readings

Students will be expected to complete a set of readings over the course of the semester. Readings are considered testable material for the indicated exam.

<p style="text-align: center;"><b>References</b></p> <p style="text-align: center;"><b>Students are responsible for securing their own copy of the readings. They are all available through the CSU Library.</b></p>	<p style="text-align: center;"><b>Paper Discussion</b></p>
<p>Green, B. W., S. D. Rawles, S. A. Fuller, B. H. Beck, and M. E. McEntire. 2016. Hypoxia affects performance traits and body composition of juvenile hybrid striped bass (<i>Morone chrysops M. saxatilis</i>). <i>Aquaculture Research</i> 47(7):2266-2275.</p>	<p style="text-align: center;">#1</p>
<p>Nuwansi, K. K. T., A. K. Verma, C. Prakash, V. K. Tiwari, M. H. Chandrakant, A. P. Shete, and G. Prabhath. 2016. Effect of water flow rate on polyculture of koi carp (<i>Cyprinus carpio</i> var. koi) and goldfish (<i>Carassius auratus</i>) with water spinach (<i>Ipomoea aquatica</i>) in recirculating aquaponic system. <i>Aquaculture International</i> 24(1):385-393.</p>	<p style="text-align: center;">#1</p>
<p>Torrans, L., B. Ott, and B. Bosworth. 2015. Impact of Minimum Daily Dissolved Oxygen Concentration on Production Performance of Hybrid Female Channel Catfish Male Blue Catfish. <i>North American Journal of Aquaculture</i> 77(4):485-490.</p>	<p style="text-align: center;">#2</p>
<p>Yu, D. H., S. Y. Gong, Y. C. Yuan, and Y. C. Lin. 2013. Effects of replacing fish meal with soybean meal on growth, body composition and digestive enzyme activities of juvenile Chinese sucker, <i>Myxocyprinus asiaticus</i>. <i>Aquaculture Nutrition</i> 19(1):84-90.</p>	<p style="text-align: center;">#2</p>
<p>Feuerbacher, O. G., J. A. Mapula, and S. A. Bonar. 2015. Propagation of Hybrid Devils Hole Pupfish Ash Meadows Amargosa Pupfish. <i>North American Journal of Aquaculture</i> 77(4):513-523.</p>	<p style="text-align: center;">#3</p>
<p>Fui, C. F., A. Miura, Y. Nakagawa, K. Kato, W. Sakamoto, K. Takii, S. Miyashita, and S. Senoo. 2016. Aeration rate adjustment at night to prevent sinking syndrome-related death in the tiger grouper <i>Epinephelus fuscoguttatus</i> (Perciformes:Serranidae) larvae. <i>Aquaculture research</i>. 47(1):165-175.</p>	<p style="text-align: center;">#3</p>