

# **M.S. in Fisheries and Aquatic Sciences Academic Assessment Plan 2012-2013**

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*Office of the Provost*

*University of  
Florida*

*Institutional  
Assessment*

*Continuous Quality  
Enhancement*

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# 2012-2013 Academic Assessment Plan for M.S. in Fisheries and Aquatic Sciences

College of Agricultural and Life Sciences

## A. Mission

The mission of the Fisheries and Aquatic Sciences Program (FAS) is to advance basic and applied knowledge of the biological structure, function, and productivity of freshwater, estuarine, and marine ecosystems. This mission includes providing knowledge of factors that influence the biological structure, function and productivity of Florida's diverse aquatic environments. Knowledge from this program shall promote the wise management of Florida's and the Nation's aquatic biological resources, aquaculture and, more generally, the environmentally-sound use of the State's overall water resources.

FAS affirms the basic philosophy of America's land-grant universities that education should be open to all people and that education should be practical as well as classical. FAS is therefore committed to the three-fold mission of the college and university of teaching, research, and public service to provide Floridians with knowledge needed for future management of Florida's diverse aquatic resources. FAS also supports the missions of the college and university to serve the nation's and state's critical needs by contributing to a well-qualified and broadly diverse citizenry, leadership and workforce through graduate education and to expand our understanding of the natural world, the intellect and the senses through graduate student research.

## B. Student Learning Outcomes and Assessment Measures

SLO	Student Learning Outcome	Assessment Method	Degree Delivery
Knowledge	Describe and explain key concepts, theories and information in to their discipline.	1) Student performance is reviewed annually by the student's major professor and supervisory committee with oral and written assessments provided to the student. 2) The supervisory committee assesses the student's ability to evaluate the primary literature utilizing a faculty-developed rubric. 3) The supervisory committee administers a final written/oral exam with assessment done using a faculty-developed rubric. 4) Students are periodically assessed regarding their progress towards meeting this SLO by their faculty advisor, and these data are annually collected and	Campus

		tabulated.	
Knowledge	Apply the scientific method and the appropriate methodologies to the generation of new knowledge.	1) Students will present their research proposal and defend their thesis to their supervisory committee, and will be evaluated utilizing a faculty-developed rubric. 2) Students are periodically assessed regarding their progress towards meeting this SLO by their faculty advisor, and these data are annually collected and tabulated.	Campus
Skill	Communicate effectively in both written and oral form.	1) Written communication skills will be assessed by the approval of the student's written research proposal and thesis by their supervisory committee. 2) Student observations of written communication skills will be shared with the supervisory committee and evaluated utilizing a faculty-developed rubric. 3) Oral communication skills are assessed during the required oral presentation at the FAS Graduate Student Spring Symposium and during their required exit seminar. Evaluations will be performed by members of the supervisory committee, utilizing a faculty-developed rubric. 4) Students are periodically assessed regarding their progress towards meeting this SLO by their faculty advisor, and these data are annually collected and tabulated.	Campus
Skill	Develop and execute proper experimental or sampling designs.	1) Assessment of research proposal and final thesis by the supervisory committee using a faculty-developed rubric. 2) Students are periodically assessed regarding their progress towards meeting this SLO by their faculty advisor, and these data are annually collected and tabulated.	Campus

Skill	Utilize critical thinking to evaluate spoken and written communications.	1) Students will be evaluated at annual meetings by their supervisory committee, and at the time of their final written/oral examination, utilizing a faculty-developed rubric. 2) Students are periodically assessed regarding their progress towards meeting this SLO by their faculty advisor, and these data are annually collected and tabulated.	Campus
Professional Behavior	Work in teams with peers; interact honestly, ethically and with cultural sensitivity; translate skills, knowledge and motivation into observable behaviors related to success in specific situations.	1) During their degree program, students adhere to the University of Florida's Honor Code. Observations will be made by faculty of professional behavior during class activities, the annual FAS Graduate Student Spring Symposium, research work, final examination/defense, exit seminar, and participation in professional societies. These observations will be shared with and evaluated by the student's supervisory committee, utilizing a faculty-developed rubric. 2) Students are periodically assessed regarding their progress towards meeting this SLO by their faculty advisor, and these data are annually collected and tabulated.	Campus

### C. Research

The M.S. in Fisheries and Aquatic Sciences (FAS) requires training and development of graduate students under the direct mentoring of their major advisor and supervisory committee. The supervisory committee is selected from among the Graduate Faculty to represent specialties pertinent to a student's research interests. Together, the major advisor and supervisory committee prescribe coursework for the student to acquire the theoretical framework and research methods necessary for thesis research in the student's area of interest. The student prepares an original research proposal that is critiqued by the major advisor and committee, with research plans revised accordingly prior to approval. Master's research is conducted under the direct supervision of the major advisor and often one or more committee members, which entails regular one-on-one and small group interactions. Every student is also required to participate in an annual FAS Graduate Student Symposium and is expected to present their research at scientific meetings. These experiences hone communication skills and expose students to critiques of their research by broader audiences. Similarly, Master's students are expected to prepare their thesis for publication

in peer-reviewed journals. The thesis is written by the student to synthesize their research procedures, findings and contributions to the field. The thesis is evaluated by the supervisory committee and defended by the student during their final examination. Successful completion of these developmental processes ensures that M.S. graduates from FAS are strong, technically proficient researchers.

## D. Assessment Timeline

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Assessment SLOs	Annual Evaluations	Research Plan	Thesis Defense
<b>Knowledge</b>			
#1	X	X	X
#2	X	X	X
<b>Skills</b>			
#3	X	X	X
#4	X	X	X
#5	X	X	X
<b>Professional Behavior</b>			
#6	X	X	X

## E. Assessment Cycle

M.S. in Fisheries and Aquatic Sciences

College of Agricultural and Life Sciences

Analysis and Interpretation:

Annually in June

Program Modifications:

Completed upon evaluation of results July through  
September of 2014 and 2017

Dissemination:

Completed by 2014 and September 2017

Year	10-11	11-12	12-13	13-14	14-15	15-16
<b>SLOs</b>						
<b>Content Knowledge</b>						
#1	D	D	A	D	D	A
#2	D	D	A	D	D	A
<b>Skills</b>						
#3	D	D	A	D	D	A
#4	D	D	A	D	D	A
#5	D	D	A	D	D	A
<b>Professional Behavior</b>						
#6	D	D	A	D	D	A

D = data compiled; A = data compiled and analyzed

## F. Measurement Tools

The Fisheries and Aquatic Sciences program is comprised of numerous inter-related specialties (e.g., fisheries population dynamics, limnology, ichthyology, fish and invertebrate physiology, phycology, behavioral ecology, marine ecology, aquatic animal health and more). As such, core courses are not prescribed in the graduate curriculum for all students, so a course-based assessment or standardized test approach would be impractical. In the FAS degree program, a graduate student's supervisory committee tailors his/her plan of study specifically to the educational needs, research plans and career aspirations of the individual student. In addition to effectively mentoring, the major professor and supervisory committee (typically three faculty members for an M.S.) are also charged with regularly evaluating academic progress of their student and assessing performance relative to professional standards, as judged collectively by the supervisory committee.

The assessment of student progress and achievement of each Student Learning Outcome (SLO) is done by the supervisory committee at every milestone tabled in the Curriculum Map. The same form and scoring scale (Figure 1) is used at every milestone to record and report the professional judgment of the supervisory committee, with respect to each of the six SLOs. It is expected that student scores on the SLOs will improve during their tenure as graduate students, with the highest levels attained at the final milestones just prior to graduation.

Annual evaluations of academic progress are required by the UF Graduate School and used by FAS as a data source, along with traditional milestones of a graduate program. To inform the supervisory committee's professional judgments of progress with respect to SLOs, each FAS graduate student is expected to provide at each milestone a synopsis of their accomplishments and activities that specifically demonstrate progress toward attaining each SLO since their last evaluation. This reflection serves several purposes. It focuses the student on expected outcomes of their graduate program and reinforces their responsibility for their own education. It documents what the student understands to be important to their progress and thus provides the Supervisory Committee information to improve mentoring feedback. It also provides another example with which to judge professional reasoning, critical thinking, communication skills and other components of the SLOs.

To assess academic performance of the FAS program, as a whole, the SLO scores for all students at every milestone will be compiled anonymously, along with "demographic" metrics (i.e. student year, particular milestone, and major professor anonymously coded). Those data will be analyzed by mixed model analyses of variance for significant trends within student tenures and programmatically across years. The results will be summarized and reported to the FAS faculty and appropriate academic administrators.

### G. Assessment Oversight

Here, list the names and contact information of those who oversee the assessment process in your program. Add or delete rows as needed.

Name	Department Affiliation	Email Address	Phone Number
Michael S. Allen	Fisheries and Aquatic Sciences Program; School of Forest Resources and Conservation	msal@ufl.edu	352-273-3624
Daniel E. Canfield, Jr.,	Fisheries and Aquatic Sciences Program; School of Forest Resources and Conservation	decan@ufl.edu	352-273-3620
Jeffrey E. Hill	Tropical Aquaculture Laboratory	jehill@ifas.ufl.edu	813- 671-5230 x 118
William J. Lindberg, Graduate Coordinator	Fisheries and Aquatic Sciences Program; School of Forest Resources and Conservation	wjl@ufl.edu	352-273-3616
Cortney L. Ohs	Indian River Research and Education Center	cohs@ufl.edu	772-468-3922 x 130



## Figure 1: SLO Assessment Rubric for FAS



### Student Learning Outcomes (SLOs)

Term of Evaluation: [Click here to enter a date.](#)

### Fisheries and Aquatic Sciences

**Degree:** ☐ PhD ☐ MS ☐ MFAS ☐ MS non-thesis

How many years has the student been enrolled in this degree program? [Click here to enter text.](#)

Check milestone for this assessment: ☐ Annual Evaluation ☐ Qualifying Exam ☐ Final Exam ☐ Defense of Thesis/Dissertation

Assessment of progress toward SLOs is an opportunity for vital reflection and feedback. This process also generates critical data for ongoing evaluations of FAS degree programs for University SACS Accreditation and as required by Florida legislature. We expect that students, during their graduate education, will advance toward ever higher achievement of program SLOs. Please take this aspect of mentoring and program accountability seriously.

- For each SLO, enter an integer score on a 10-point scale, from 1 = Does Not Demonstrate to 10 = Fully Demonstrates

### Student Learning Outcomes

1. **Student describes and explains key concepts, theories and information relevant to his/her discipline.**

[Click here to enter text.](#)

2. **Student applies the scientific method and appropriate methodologies to the generation or acquisition of new knowledge or synthesis of existing knowledge.**

[Click here to enter text.](#)

3. **Student communicates effectively in both written and oral form.**

[Click here to enter text.](#)

4. **Student develops and executes proper project, experimental, or sampling designs.**

[Click here to enter text.](#)

5. **Student utilizes critical thinking to evaluate spoken and written communications.**

[Click here to enter text.](#)

6. **Student works effectively with peers in teams; interacts honestly, ethically and with cultural sensitivity; and translates skills, knowledge and motivation into observable behaviors related to success in specific situations.**

[Click here to enter text.](#)

Anonymous Faculty Code: \_\_\_\_\_