M.S.T. in Astronomy Academic Assessment Plan 2012-2013

College of Liberal Arts and Sciences
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Office of the Provost

University of Florida

Institutional Assessment

Continuous Quality Enhancement

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Academic Assessment Plan for M.S.T. in Astronomy

College of Liberal Arts and Sciences

A. Mission

The overall mission of the MST program in Astronomy is closely tied to that of the University of Florida and strives to offer a broad education for our students while engaging in leading-edge research and providing service to the citizens of Florida, our country and the world. We aim to uphold the primary mission of the College of Liberal Arts and Sciences through leading the academic quest to understand our place in the Universe, and to help shape our society and environment.

The education of both undergraduate and graduate students is a central cohesive element in the Department of Astronomy and an important part of the mission for the MST program. Formal education in the classroom setting for our graduate students links our efforts in the areas of research, teaching, instrumentation, and service. Our graduate curriculum focuses on preparing students for careers in astronomical research, instrumentation, and teaching. Graduates are also trained to understand the importance of reaching out and educating our community through public events and school activities that convey the excitement of astronomy to our society. We aim to produce scientists and educators working to address the central questions about the nature of our Universe while advancing the goals of education and service to the community around us.

B. Student Learning Outcomes and Assessment Measures

SLO Type	Student Learning Outcome	Assessment Method	Degree Delivery
Knowledge	#1 Students will identify, define and describe the fundamental astrophysics covered by the core curriculum.	Students will be required to pass a written exam on the core curriculum, which will be graded by a committee of faculty teaching these courses and reviewed by the full graduate faculty.	Campus
Skills	#2 Students will effectively teach astronomy.	Faculty members observe labs and lectures given by students serving as teaching assistants, and solicit written and verbal feedback from the undergraduate students in these courses. They evaluate TA performance in consultation with one another.	Campus

Professional Behavior	#3 Students will effectively communicate with their peers in a professional environment.	Students will make both oral and written presentations during their second year on either guided research or an astronomical teaching internship, demonstrating the ability to clearly convey the results of their experience. A committee of three faculty members will evaluate the quality of the presentations.	Campus

C. Research

Students obtaining the degree of MST in Astronomy are introduced to various research projects during their first semester through our Frontiers in Astronomy class. Professors present their research topics and possible projects for students during this seminar course. By the end of the first semester, students are encouraged to choose a project and begin working on their research topic. This project concludes with a Master's Research talk at the end of their 3rd semester when they submit a paper suitable for publication in an astronomical research journal and present their results during a 30-minute talk. Students assemble a committee of at least three graduate faculty to supervise these projects and assess the results. Throughout their education, students are exposed to prominent researchers from around the world during our weekly Colloquium speaker series. Students also participate in our Journal Club seminar, presenting recent research papers to the department, in addition to weekly research paper discussion groups. Students are also encouraged to write papers, grant proposals, and telescope proposals throughout their graduate education.

D. Assessment Timeline

Program M.S.T. in Astronomy College of Liberal Arts and Sciences

Assessment SLOs	Assessment 1
Knowledge	
#1	Comprehensive exam End of 4th semester
Skills	
#2	Evaluation of teaching performance Each semester
Professional Behavior	
#3	Master's research presentation End of 3rd semester

E. Assessment Cycle

Assessment Cycle for:
Program M.S.T. in Astronomy College of Liberal Arts and Sciences
Analysis and Interpretation: May - June
Program Modifications: Completed by August 31
Dissemination: Completed by September 30

Year SLOs	10-11	11-12	12-13	13-14	14-15	15-16
Content Knowledge						
#1						
Skills						
#2						
Professional Behavior						
#3						

*We currently do not have any students pursuing the MST in Astronomy. If any students should enroll in this program, we will begin the assessment cycle at that time.

F. Measurement Tools

The measurement tools involve a combination of methods. The knowledge SLO is primarily assessed through demonstrated achievement in the core courses. Students must pass a comprehensive exam covering the material presented in these courses at the end of the 4th semester.

The skills SLO is assessed by faculty members who sit in on labs and lectures given by students serving as teaching assistants. These faculty members solicit both written and verbal feedback from the undergraduate students in these courses and evaluate the TA performance in consultation with one another.

Professional behavior SLOs is assessed primarily through the oral and written presentations given during their second year on either guided research or an astronomical teaching internship. In this way, they demonstrate the ability to clearly convey the results of their experience. A committee of three faculty members evaluates the quality of these presentations. Students also make presentations in the core courses and in AST 6936 (Journal Club), which are graded by the faculty and assessed by the other graduate students in the program (see Appendix A). Members of the graduate faculty look for students to demonstrate in these talks satisfactory ability to make a scientific presentation.

G. Assessment Oversight

Name	Department Affiliation	Email Address	Phone Number
Vicki Sarajedini	Graduate Coordinator	vicki@astro.ufl.edu	
Jonathan Tan	Graduate Curriculum Committee	jt@astro.ufl.edu	
Elizabeth Lada	Graduate Curriculum Committee	lada@astro.ufl.edu	

Figure 1. University of Florida Graduate/Professional Program Assessment Plan Review Rubric

Related resources are found at http://www.aa.assessment.edu

Program: MST in Astronomy Year: 2013

Component	Criterion	Rating			Comments
		Met	**Partially Met**	**Not Met**	
Mission Statement	Mission statement is articulated clearly.	X			
	The program mission clearly supports the College and University missions, and includes specific statements describing how it supports these missions.	X			
Student Learning Outcomes (SLOs) and Assessment Measures	SLOs are stated clearly.	X			
	SLOs focus on demonstration of student learning.	X			
	SLOs are measurable.				
	Measurements are appropriate for the SLO.	X			
Research	Research expectations for the program are clear, concise, and appropriate for the discipline.	X			
Assessment Map	The Assessment Map indicates the times in the program where the SLOs are assessed and measured.	X			
	The Assessment Map identifies the assessments used for each SLO.	X			
Assessment Cycle	The assessment cycle is clear.	X			
	All student learning outcomes are measured.	X			
	Data is collected at least once in the cycle.	X			
	The cycle includes a date or time period for data analysis and interpretation.	X			
	The cycle includes a date for planning improvement actions based on the data analysis.	X			
	The cycle includes a date for dissemination of results to the appropriate stakeholders.	X			

University of Florida Graduate/Professional Program Assessment Plan Review Rubric, continued

Component	Criterion	Rating			Comments
		Met	Partially Met	Not Met	
Measurement Tools	Measurement tools are described clearly and concisely.	X			
	Measurements are appropriate for the SLOs.	X			
	Methods and procedures reflect an appropriate balance of direct and indirect methods.	X			
	The report presents examples of at least one measurement tool.	X			We include the assessment and feedback form used to assess Journal Club presentations (AST6936). Students must achieve an average ranking of "3" to receive a grade of "satisfactory".
Assessment Oversight	Appropriate personnel (coordinator, committee, etc.) charged with assessment responsibilities are identified	X			

Appendix A. Scientific presentation assessment and feedback form (AST6936: Journal Club)

UF Astro JC Presenter:_____ Reviewer:_____ Date:_____

Journal Club Feedback Form

Summary of the paper's goal and conclusion:

Part 1: Major Components of Talk

Introduction/Motivation/Background: **Comments**	Rating: 1 (poor) - 5 (excellent)
Gave audience a reason to listen (catches interest)	
Appropriate length	
Organized and logical in flow	
Provided information needed to understand the rest of talk, given audience	
Starts with big picture and "zooms in" to the project	

Methods: **Comments**	Rating: 1 (poor) - 5 (excellent)
Provide information to understand methods, without getting lost in details	

Results: **Comments**	Rating: 1 (poor) - 5 (excellent)
Provide enough information to understand & evaluate results, without getting lost in details	

Conclusions/Discussion/Implications: **Comments**	Rating: 1 (poor) - 5 (excellent)
Explains clearly the implications, identifies open questions and the next steps	
Answers audience questions clearly & concisely	

Part 2: Delivery and Visuals/Graphics/Slides

Timing **Comments**	Rating: 1 (poor) - 5 (excellent)
Total length of presentation (<=15 min)	
Amount of number of slides & time spent on each slide	

Slides/Figures/Graphics **Comments**	Rating: 1 (poor) - 5 (excellent)
Amount of information per slide (not too busy/not too much text)	
Easily readable text (fonts, size, colors)	
Figures understandable & adequately explained	
Figure axes labeled; labels & tick mark labels legible	
Figures large enough, points & lines legible (thickness, color)	
No spelling or grammatical errors in text	
Other	

Rapport with Audience **Comments**	Rating: 1 (poor) - 5 (excellent)
Eye contact with audience	
Converyed enthusiasm	

Voice **Comments**	Rating: 1 (poor) - 5 (excellent)
Spoke clearly	
Volume of voice	
Rate of speaking (not too fast, not too slow)	
Minimal vocalized non-words (um, uh)	

Physical Presence **Comments**	Rating: 1 (poor) - 5 (excellent)
Body language & posture	
Avoided nervous mannerisms (fidgeting, etc)	
Effective use of pointer (not used too much or wiggling)	

Other **Comments**	Rating: 1 (poor) - 5 (excellent)

General Comments (reference slide #):