

The 2024+ Masters Examination

The goal of this examination is to evaluate students on a variety of topics. The relative point values give some indication of their relative importance.

General Rules

The full faculty reserve the right to consider extenuating/mitigating circumstances for individual students and grant exceptions to these guidelines when appropriate. Students have the right to request exceptions to any of the following guidelines. The procedure for requesting such an exception is for the student and a faculty advocate to submit a written petition to the Graduate Coordinator who will bring this for discussion by the full faculty for their evaluation and decision. The graduate curriculum committee is charged with revising this rubric every 2 years, which will then apply to the incoming class.

Points-based Rubric

Target: 100 total points are possible. 60 are required to pass and receive a Masters, 70 to continue to the PhD. These points must be achieved by the end of the fourth academic semester (not including summers).

Roughly 0.45 research, 0.4 coursework, 0.15 misc

Research	Number of Points (max 45, min 20)	Details
Publishing Papers (1st author)	10 points each for submission to journal	Limited to: No pay-to-publish / predatory journal Must be Refereed, or SPIE Must be astronomy Paper must be submitted after you start grad program at UF (it is expected to be work primarily carried out at UF)
Publishing Papers (nth author)	1 each, up to 5	Also includes research notes as 1st author Also includes conference proceedings more than a page in length as first author
Masters Committee Formation / First Year Spring Check-in	Up to 5 points	The student will assemble their committee and present a research plan by the end of their 2nd semester. This reporting will be awarded 5 points: <ul style="list-style-type: none"> • Assemble the committee and schedule a meeting time • Present a summary of the project (summarize the project idea in student's words) • Present preliminary progress (e.g., an initial plot or summary of background research) • Develop and present a timeline for completion of the project (2 points)
Masters Presentation + writeup	Min 10, max 25	Presentations & writeup will have associated rubric, which will be judged by your committee. External reviews (e.g. referee reports) cannot be substituted for the judgement of the committee. <i>Note that a Masters is not possible without a completed masters project & presentation. To progress to the PhD, a score of 18 points on the rubric is required. Revisions and/or redo after the presentation may be required.</i> Rubric: See Draft of Masters Project Rubric Section
Research presentations (either outside university or inside)	1 per presentation, up to 5	<ul style="list-style-type: none"> • Grad symposium talk (1 point) • Outside department: colloquia, seminars, contributed talks, posters • Must be astronomy-related

Attending a science meeting	1 per meeting, up to 5	<ul style="list-style-type: none"> • Conferences will automatically count, collaboration meetings and workshops will count with the approval of the advisor • This is in addition to any points gained from presenting at the meeting
Proposal Submission (observing, funding, computing time, fellowships including GRFP, FINESST, etc)	2 for everything except GTC (1 pt), up to 8	<p>If a student brings a fellowship (e.g., NSF GRFP), they receive the points.</p> <p>The student must lead the proposal.</p> <p>Significant code submissions to astro software repositories may count. The student should include a short paragraph stating the significance of their contribution in the IDP (see “Reporting” below).</p> <p>Students get points for applying; the proposal does not need to be successful to get points.</p> <p>Note that proposals with limited or negligible scientific components (e.g., travel funding) do not count for points.</p>
External Awards (e.g., Chambliss)	2 per, up to 4	

Coursework	Number of Points (max 40, min 20)	Details
Core Classes (GPA)	5 for A, 3 for B+, 1 for B	<p>Core courses must have final exams (except obstech).</p> <p>No points are awarded for a B- but a retake is not required in that case.</p> <p>Students receiving a C+ or lower in a core course have failed the course, and their case will require a discussion of the case in a faculty meeting.</p>
Elective Classes (GPA)	5 for A, 3 for B+, 1 for B	Points are only granted for performance in the top 3 elective classes.
Arxiv, colloquium	1 per sem for each	<p>Points are awarded for attendance.</p> <p>A minimum of 60% attendance is required for credit.</p> <p>ArXiv points will be awarded for spring, summer, and fall semesters, while colloquium is spring and fall.</p>

Service	Max 15, no minimum	
TAing	2 per class (assuming reasonable job) 3 additional for each "outstanding" 3 additional for each "developing new materials"	<ul style="list-style-type: none"> Developing new course materials and/or renewing Outstanding TA: win award, nominated The points are awarded per semester, so half assignments to two courses in a single semester is still awarded 2 points. Students attempting to get points for developing new materials are expected to have discussed this with the TA supervisor in advance.
Outreach	1 per event, cap 10	<ul style="list-style-type: none"> Points are for showing up or organizing
Mentoring	2 per semester (group mentoring) or 2 per student per semester (individual mentoring in a scientific context), cap 6	<ul style="list-style-type: none"> The student should include a short paragraph describing their mentoring contribution in the IDP (see "Reporting" below) in order to be awarded these points. These points can be awarded either for significant mentoring of a single student, or for more general mentoring of a larger number of students Points can be awarded either for scientific mentoring or for career mentoring

Failure Policy

For those who are under 60 or fail to meet the minimum in any category at the end of 4th semester and aim to get a terminal Masters:

- There is *one* additional semester (Summer C) to get over the 60 point mark in order to award the degree.

For those who are under 70 or fail to meet the minimum in any category and intend to continue in PhD program:

- Requires a proposal submitted to the faculty explicitly planning how the remaining points will be achieved. Deadline for proposal is 2 weeks after grades released. Faculty approval of proposal is required. A date for completion will be decided by the faculty as part of this process; by default it will be 4 weeks before the start of Fall term to allow for TA assignments. (Then they have to meet the proposal requirements to actually continue). Failure to meet the proposed criteria will result in expulsion from the program.

In order to receive a masters degree, students need to reach the required number of points. In order to progress to PhD, students need to earn 18 points out of 25 on the 2nd year project, or need to revise and/or re-present the second year project until it passes that mark. This must be completed by the end of the 4th semester for a standard pass, otherwise it is covered by the standard petition process.

Reporting

- Each semester, the TA lead will report a summary of TA performance to the Graduate Coordinator within 1 week of the end of the semester.
- At the end of the 2nd and 4th semesters, the student is expected to do an Individual Development Plan and discuss it with their supervisor. This IDP should include a predicted number of points toward graduation that will be acquired in the coming semester. During the second meeting, a check-in on the first IDP's predictions is required. An IDP must be on file in order for the masters presentation to be scheduled.
- At the end of the 4th semester, an IDP should be completed that includes the full list of accomplishments with associated point values. Once signed by the student's supervisor, this should be turned in to the Graduate Coordinator.
- Participation in activities will be tracked by the relevant faculty member and reported semesterly to the Graduate Coordinator. These include:
 - The TA supervisor will report on TA duties completed and any outstanding performance to be recognized.
 - The Outreach Coordinator will report on outreach activities participated in.
 - Mentoring is to be recorded in the IDP and co-signed by the research supervisor
- By the end of the 2nd semester, the student is required to form their Masters committee and have a preliminary meeting.

Timing Notes

- The Masters presentation & project are expected to be completed in the 3rd semester. Any project delayed into the 4th semester has total score capped at 20 points. Any project delayed beyond the 4th semester is capped at 18 points.
- As noted in the "Failure Policy", if a student achieves fewer than the required 70 points, they have at most *two weeks* from the release of grades to turn in their proposed work plan for the summer.
- Students who were passed out of a course because of a previous course taken will obtain either the points for the grade they obtained in the original qualifying course, or 3 points, whichever is higher.

Example Cases (theoretical):

- Great student:
 - Service: 9
 - TA 3 semesters: 6
 - Outreach: 3 events
 - Coursework: 40
 - 5 As, 3 Bs = 34
 - Come to arxiv & colloq 3 of 4 semesters = 6 pts
 - Research: 38
 - 5 points for first-year check-in
 - 22/25 on Masters because they did a solid job
 - 2 presentation (2 pts)
 - 1 proposal (2 pts)
 - 2 n'th author papers (2 pts)
 - 1 1st-author paper (5 pts)
 - Total points: 9 service, 40 coursework, 30 research = 87 total
 - *A solid student achieving good grades and contributing to the field and the department on several fronts. Easy pass on to PhD.*
- Average student, maybe a little behind on research:
 - Service: 8
 - TAs 4 semesters: 8
 - Coursework: 38
 - 4 As, 4 Bs = 32
 - Come to arxiv & colloq 3 of 4 semesters = 6 pts
 - Research: 23
 - 5 points for first-year check-in
 - 15/25 on Masters because they did an OK job
 - 1 presentation: 1 point
 - 1 proposal: 2 points
 - Total points: 8 service, 38 coursework, 23 research = 69 total
 - *A totally solid student doing a reasonable job both in classes and in research. They needed only a tiny additional effort to pass to the PhD.*
- Outstanding Teacher
 - Service: 15
 - TAs 4 semesters: 8
 - Develops course materials for 1 courses: 3pt, got outstanding once: 2pt
 - 1 outreach event
 - Courses: 35
 - 4 As, 4 Bs = 32
 - 2 semesters of arXiv 1 of colloq = 3 pts
 - Research: 21
 - 5 points for first-year check-in
 - 13/25 masters
 - 1 presentation: 1 point

- 1 proposal: 2 points
 - Total: 71 total, advance to PhD
 - *This student performed reasonably, but not outstanding, across classes, and they did fine but not amazing in research, yet their strong contributions as a teacher pushed them over the top.*
- Failing student
 - Courses: 23
 - 6 Bs, 1 C, 1 A
 - Research: 17
 - 5 points for first-year check-in
 - 10/25 masters
 - 1 proposal, 1 symposium talk = 2 pts
 - Service: 8
 - 4 TA, 8pts
 - Total: 48
 - *This student needed to step up across several categories to acquire a masters*
- Research Superstar, Class Clown
 - Courses: 21
 - 5 Bs, 2 Cs, 1 A = 20pts
 - Attended arxiv coffee for 1 semester: 1 point
 - Research: 45 (maxed out)
 - 5 points for first-year check-in
 - 23/25 masters
 - 2 first author papers, 4 n'th: 14 points
 - 2 proposals (4 points)
 - 1 symposium talk, 1 external talk (2 points)
 - 1 fellowship (2 points)
 - Service
 - None
 - Total: 66
 - *This student could have, with planning, attended more colloquia & journal clubs and outreach events to pass to the PhD*
- Aced everything, but didn't do the masters = fail
 - Courses: 40
 - Service: 15
 - Research: 13
 - 5 presentations = 5 points
 - 4 proposals = 8 points
 - 68 points: Does not pass!
 - *A pass is not possible without completing the Masters project.*

Masters Project Rubric:

Section	0 Points awarded	1 point awarded	2 points awarded	3 points awarded
Abstract (0 or 1 points)	<ul style="list-style-type: none">- No abstract is present or- Abstract is seriously lacking in structure, context, or information given the current state of the project	An appropriate abstract for the current state of the project is present in the write up	N/A	N/A

Introduction	<ul style="list-style-type: none"> - No introduction is present or - Introduction contains minimal references or - Introduction fails to mention significant relevant context 	<p>An introduction is present, but it is significantly lacking in some areas including:</p> <ul style="list-style-type: none"> - references (number, relevance, etc) - context of the project discuss (limited understanding of the project's context is demonstrated) - Structure (the introduction may be confusing to read, poorly structured, etc) 	<p>A reasonable attempt at an introduction has been made, but some work is definitely still required before publication eg.</p> <ul style="list-style-type: none"> - several key references are still missing - context is confused in a few places - structure needs to be reorganized 	<p>The introduction is almost ready to be published with only minor tweaks.</p>
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Methods	<ul style="list-style-type: none"> - No Methods are described or - Explanation of methods is almost impossible to follow or - Methods are not appropriate for this investigation 	<p>A methods section is present, but it is significantly lacking in some area e.g.</p> <ul style="list-style-type: none"> - citations to the techniques described or tools used - necessary supporting figures or tables - Structure (the methods may be confusing to read, poorly structured, etc) -contradictory or incorrect statements are made 	<p>A reasonable description and understanding of the methods is demonstrated, some work is definitely still required before publication eg.</p> <ul style="list-style-type: none"> - descriptions of minor steps are still missing - structure needs to be reorganized - minor misstatements are made 	<p>The methods section is almost ready to be published with only minor tweaks necessary.</p>
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Analysis	<ul style="list-style-type: none"> - No analysis is described or - Analysis section has scattered plots but limited text that makes it impossible to follow or - Analysis shown is not appropriate for the stated investigation 	<p>An analysis section is present with some text and figures but</p> <ul style="list-style-type: none"> - the number of figures is small and indicates only preliminary analysis has been done or - limited description of the analysis done is included or - the included description does not demonstrate an understanding of the meaning of the results 	<p>An analysis section is present with a significant amount of appropriate text and figures and an initial error analysis. Understanding of the results and critical analysis is demonstrated. However</p> <ul style="list-style-type: none"> - it may still missing some chunks that have yet to be completed or - there are minor contradictory or incorrect statements that demonstrate some remaining misunderstanding of the results or - the structure of the section still requires significant work before it becomes understandable 	<p>The analysis section is almost ready to be published with only minor tweaks necessary.</p>
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Discussion/ Conclusion	<ul style="list-style-type: none"> - No discussion or conclusion is included or - the discussion and conclusion demonstrates only minimal understanding of the purpose of the investigation - the discussion and conclusion demonstrates only minimal understanding of the potential impact of the investigation 	<p>An initial attempt at a discussion and/or conclusions section is present but</p> <ul style="list-style-type: none"> - no citations or references to other studies are included or - it describes the results of the study but not the context of the results or their potential impact on the field or - the text demonstrates that some confusions or misunderstandings of the goal/ purpose/ impact/ etc of the study still exist 	<p>A reasonable attempt at a discussion and/or conclusion section have been made but some work may still be required e.g.</p> <ul style="list-style-type: none"> - describing additional impacts - linking it to important contexts (e.g. those mentioned in the introduction or abstract) - structural rearrangements - removing minor issues or misstatements 	<p>The discussion and/or conclusions sections are almost ready to be published with only minor tweaks necessary.</p>
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Talk (slides)	<p>Talk was not given or</p> <p>Talk organization was almost impossible to follow or</p> <p>Slides were structurally a problem in a way that made them a useless component of the talk</p>	<p>Slides were created for the talk, but they had significant issues including</p> <ul style="list-style-type: none"> - being extremely difficult to read - not ordered in a logical way - there were way too many or way too few slides - 3-4 of the sections (introduction, methods, results, impact) were missing or challenging to follow 	<p>Slides were created for the talk and provided a reasonable order for the presentation. However there were some concerns about the slides that impeded the quality of the talk including</p> <ul style="list-style-type: none"> - the ordering and organization of the information being presented - several necessary slides were missing, or out of order - Several of the slides were challenging to read or understand - 1-2 of the sections (introduction, methods, results, impact) were missing or challenging to follow 	<p>A very good set of slides were prepared that</p> <ul style="list-style-type: none"> - provided adequate introduction - explained the methods of the project - described the results available thus far - and explained the context of the results (what they were important for, why the investigation was done, etc)
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Talk (spoken)	<p>No talk was given or</p> <p>The talk was impossible to understand or</p> <p>the talk did not follow a logical order</p>	<p>The talk was given, but there were significant issues e.g.:</p> <ul style="list-style-type: none"> - many incorrect statements were made - the descriptions given were very challenging to follow - the pieces of the talk were there, but how they were explained needed significant improvement 	<p>A reasonable talk was given but several minor issues or one major issue was present e.g.:</p> <ul style="list-style-type: none"> - a few incorrect statements were made - there were a few places where it was hard to understand what was done - the talk ran rather long or conversely ended rather short of the expected time - reordering the talk would have made a significant improvement in the talk - a few things were not explained, or not explained well - the speaker struggled to answer questions from the audience 	<p>A very good talk was given and the speaker was able to answer the audience's questions</p>
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Questions about the project	The student was unable to answer most of the questions about the project asked by the committee or the responses demonstrated a serious lack of understanding of the project	The student was able to answer some of the committee's questions, but struggled significantly on many of them and lacked the general understanding to take advantage of suggestions from the committee	The student was able to answer most of the committee's questions about the project, and when they struggled, they had the knowledge to take advantage of suggestions or hints from the committee	The student did a very good job answering the committee's questions about the project, and had only a few misstatements or required only minor hints or corrections.
Questions about general context	The student was unable to answer most of the broader questions asked by the committee or -their responses demonstrated a serious lack of understanding of the general astronomical context	The student was able to answer some of the committee's questions, but struggled significantly on many of them and lacked the general understanding to take advantage of suggestions from the committee	The student was able to answer most of the committee's questions about the general astronomy context, and when they struggled, they had the knowledge to take advantage of suggestions or hints from the committee	The student did a very good job answering the committee's general questions about the broader astronomical context, and had only a few misstatements or required only minor hints or corrections.

Total possible points: 25 (12 for the oral section, 13 for the written component). Points will be subtracted for late papers: -1 point for a paper turned in <2 weeks from the deadline, -2 points for papers turned in <1 week from the deadline. At <1 week, the committee may declare that the defense needs to be rescheduled because they have inadequate time to review, in which case the 2-point penalty will be imposed.

Guidelines for faculty committees:

1. Members of the committee are generally expected to have read the student's written document and filled out the portion of the rubric relevant to the written components before the examination begins.
2. The student will give a ~25-40 minute presentation about their second year project, including a period where questions are allowed from the audience (but, generally, not the committee)
3. Everyone will leave the room except for the committee, and the committee will go around, taking turns asking more questions of the student. These questions can be specific to the project or relevant to the broader astronomical context.
4. Once the committee has asked a sufficient number of questions (or roughly an hour of time has passed since the committee-specific question portion began), the advisor will step out of the room for a few minutes so that the committee has the opportunity to speak to the student alone
5. The student will leave and the advisor will return to the room. There will be a short discussion about how the exam went, how the student is doing, etc, and then each member of the committee will finish filling out the rubric.
6. The committee will compare their rubrics and work together to determine a final consensus score for the student. This will be written on a clean rubric so that the student can receive a copy of the result.
7. Once the committee has agreed, the student will come back into the room and be informed both about whether they passed or failed and how many points were achieved on the rubric. If the number of points is below 18 (the required number to progress to the PhD) the committee will explain to the student what changes need to be made to reach the required number of points.