

Guidelines for the Honors Thesis Course ASTR 29900

ASTR 29900 Honors Thesis is an independent research course, supervised by a faculty member (including research faculty) in the Department of Astronomy and Astrophysics, in which the student either contributes to a faculty research project or engages in an approved independent research project. The student's thesis research should consist of substantial and significant enough results to be presented at a large-format scientific conference, e.g. AAS or IAS, or of sufficient import and quality to be submitted to a smaller publication like the AAS Research Notes. Please note that the College does not allow students to receive academic credit for paid work.

This course is open to students who are majoring in Astrophysics with fourth-year standing and approval of a thesis topic. The student must earn a G.P.A. of 3.50 or higher in the required courses for the Major and 3.0 overall – or obtain consent from the Deputy Chair for Academic Affairs – and have an approved research project that will be supervised by a faculty member.

The student must notify Julia Brazas, Academic Affairs Administrator, of the expected enrollment as early as possible in the Autumn Quarter. The student then completes the Honors Thesis Proposal form and returns it to Dr. Brazas before the end of the 3rd week. Eligible students enroll in ASTR 29900 once in any quarter during their fourth year. The form includes the expected quarter for enrollment.

Process

The student consults with Dr. Brazas to obtain guidelines and requirements for ASTR 29900. The student then meets with the Research Advisor to complete the A&A Honors Thesis Form, included at the end of this document. If the student plans to enroll in the Autumn Quarter, the College Reading and Research Form¹ must also be completed.² In addition, the student and Research Advisor should:

- Establish a regular schedule of meetings/communication for the duration of the research project and preparing the thesis. The frequency of these meetings should be once per week.
- Identify the best mechanisms for communication (e.g., if email is likely to get buried it may not be effective) and appropriate time frame to expect a response.
- Establish a process for documenting discussions/feedback that help the student refine thesis content.

As noted above, this process needs to be completed no later than the 3rd week of Autumn Quarter.

¹<https://humanities-web.s3.us-east-2.amazonaws.com/college-prod/s3fs-public/documents/fillable-reading-research-form.pdf>

²This form is completed in the quarter in which the student enrolls in ASTR 29900.

Expectations

Specific expectations of the Research Advisor

- Help the student identify a thesis project of appropriate scope.
- Advise and guide the student in planning the execution of the research to be conducted.
- Provide timely feedback.
- Honor scheduled meetings.
- In consultation with the student, identify two additional readers of the thesis by the end of Winter Quarter. Readers can be selected from among faculty and research professors in the Physical Sciences Division. If appropriate, faculty and research professors from BSD and IME, as well as postdoctoral scholars and Argonne/Fermilab scientists, can be included as readers. The readers will submit their comments/evaluation of the thesis to the Research Advisor, who determines the final grade.
- Submit a final grade for the thesis by 9th week of the Spring Quarter.
- Participate in a public review/presentation of the completed thesis held during the 9th or 10th week of the quarter (depending on the availability of all presenters).

Specific expectations of the student

- As early as possible in the Autumn Quarter, the student provides the Research Advisor with a full description of the research project, an outline or strategy for investigating the problem, and a timeline for completing the project/thesis writings.
- Enroll in one quarter of ASTR 29900 during the fourth year. Please note that the College does not allow students to receive academic credit for paid work.
- Students in ASTR 29900 are expected to work independently on their Honors Thesis project over three quarters, with guidance from their Research Advisor.
- In consultation with the Research Advisor, identify two additional readers of the thesis by the end of Winter Quarter. Readers can be selected from among faculty and research professors in the Physical Sciences Division. If appropriate, faculty and research professors from BSD and IME, as well as postdoctoral scholars and Argonne/Fermilab scientists, can be included as readers. The Research Advisor and additional readers constitute the Thesis Committee.
- Provide drafts to the Research Advisor at mutually agreed upon times.
- The final thesis should be submitted to the Thesis Committee on a date in the Spring Quarter determined by the student and Research Advisor. Usually, this is around the 5th or 6th week of the Spring Quarter, but can be later. The due date should consider the schedules of the additional readers, the potential presentation date, and grade submission deadline.
- At the point when the final thesis is submitted to the Research Advisor, provide a title and abstract to Dr. Brazas.
- Participate in a public review/presentation of the completed thesis in the 9th or 10th week of Spring Quarter.

Thesis Requirements

The Honors Thesis does not have specific format requirements other than being similar to scientific papers published in professional journals; i.e., they should contain a concise abstract, a comprehensive introduction that reviews the general topic (more extensively than a typical publication), followed by presentation of the work itself: the data or theory used, analysis methods, results, and main conclusions. As noted above, the due date for the final thesis should consider the schedules of the additional readers, the potential presentation date, and grading deadlines. Usually, this is around the 5th or 6th week of the Spring Quarter, but can be later.

The Thesis Committee will read the thesis and provide feedback to the Research Advisor, who is responsible for submitting a final grade by 9th week of the Spring Quarter.

Presentation Requirements

All students completing Honors Theses will present their research to members of the Astronomy and Astrophysics Department at a public event in the Spring Quarter. Presentations should last approximately 15-20 minutes, including time for Q&A. The presentation does not have specific format requirements, unless specified by the student's Research Advisor.

Final Details

An electronic copy of the final thesis must be filed with the Department of Astronomy and Astrophysics by email to Dr. Brazas at julia@uchicago.edu. Students may also submit an electronic copy of their presentations along with the thesis.

Exemplary theses will be advanced for consideration in undergraduate research award programs.

Students are strongly encouraged to submit theses to The University of Chicago Library's Knowledge@UChicago <https://knowledge.uchicago.edu/>, an open access repository of scholarly work at Chicago.

Department of Astronomy and Astrophysics Honors Thesis Form (ASTR 29900)

Please complete this form and return it to Julia Brazas, Academic Affairs Administrator (julia@uchicago.edu, ERC 599A), before the end of the Consent Add/Drop period (3rd week) of Autumn Quarter.

Student Name: _____ Date: _____

Preferred email contact: _____

Proposed Honors Thesis Title: _____

Research Advisors' Name and Title (print): _____

(The Research Advisor must be faculty or research faculty in the Department of Astronomy and Astrophysics.)

Campus Address: _____ Phone: _____

Email: _____

Agreement

I have assisted in the definition of this Honors Thesis Proposal and I understand and agree to the expectations for completing the Honors Thesis listed on the preceding page.

Faculty Research Advisor Signature Date

I have assisted in the definition of this Honors Thesis Proposal and I understand and agree to the expectations for completing the Honors Thesis listed on the preceding page.

Student's Signature Date

Expected quarter for enrollment in ASTR 29900: _____