



# ATLAS Institute Ph.D. Program Handbook (2021)



College of Engineering  
& Applied Science

UNIVERSITY OF COLORADO BOULDER

# ATLAS Ph.D. Program Handbook (2021)

***THIS IS NOT A SUBSTITUTE FOR READING THE GRADUATE SCHOOL RULES. READ AND UNDERSTAND THOSE GUIDELINES HERE:***

<http://www.colorado.edu/graduateschool/policies>

This document describes the major requirements of the ATLAS Ph.D. program. The ATLAS Ph.D. program works in conjunction with the CU Graduate School Rules; you are bound by both policies. When the two conflict, the Graduate School takes precedence. If you have questions about the Graduate School Rules, you may talk with the ATLAS graduate advisor or with Graduate School Graduate Advisors. Please note that, in addition to the explicit requirements listed here and in the Graduate School Rules, there are many other implicit expectations of Ph.D. students, such as interacting regularly with the general ATLAS research community, attending lab meetings in your respective research group, submitting fellowship applications, at times working as a Teaching Assistant (TA) or Research Assistant (RA), etc. Please work with your research adviser to make sure you understand these other expectations.

The rules described in this document may change during your time in the program. If this happens, you will be allowed to adhere to the rules that were in effect at the time of your admission or to the most recent version of the rules.

Any requests for review by the Graduate Committee (e.g., exceptions, as allowed under these policies) should be submitted in writing by sending an email to the Graduate Committee at [atlas-gradcomm@lists.colorado.edu](mailto:atlas-gradcomm@lists.colorado.edu) while ccing your advisor. Alternatively, such petitions may be submitted to the Graduate Committee by filling out the [ATLAS Graduate Petition Form](#).

## Overview

ATLAS values interdisciplinarity, intellectual breadth, and diversity. There are a variety of pathways to success in such a broad program. Many resources exist to help students in the completion of their Ph.D., including their advisor, the graduate coordinator, and the ATLAS graduate committee. However, the ultimate responsibility for completing a Ph.D. lies solely with the student. This document specifies expectations and program milestones to help students navigate this process successfully and in a timely manner. Communication between students, advisors, and the ATLAS Graduate Committee will help tailor this general plan to the student's specific goals.

ATLAS PhD students work in many different areas at the intersections of creative

technology and design. Doctoral-level education entails a combination of coursework and research experience; neither alone is sufficient. The foundational curricula and coursework common to all students shall:

- Be interdisciplinary, covering a breadth of technical, social, and creative content. Coursework will typically include courses offered by least two departments.
- Take the ATLAS Research Methods class, the ATLAS Research Professional Development class and the ATLAS Colloquium at least once each during the first two years of study.
- Compete a minimum of thirty credit hours of coursework numbered 5000 or above. Students must receive a B grade or higher in all coursework.
- Compete a minimum of thirty additional credit hours of dissertation work.

PhD students may transfer up to 21 semester hours of graduate coursework from prior graduate work towards the 30-credit-hour requirement; however, such transfer credit must be approved by the student's advisor and by the ATLAS Graduate Committee<sup>1</sup>.

All PhD students are expected to gain experience individually, with faculty, and/or with other students in writing papers for publication in peer-reviewed journals and/or conference proceedings, in presenting their research at professional workshops, conferences, and/or exhibitions, and in writing grant proposals. Students with a deficiency in spoken or written English must take courses in spoken or written English or complete other remediation to address this deficiency. All students are expected to attend professional lectures and colloquia on campus and in the region, in addition to the ATLAS Colloquium (ATLS 7000) in fields relevant to their interests.

The ATLAS Graduate Committee will ask students regularly for documentation of their scholarly and research activities. The ATLAS Graduate Committee and faculty advisors will review these documents in order to assess each student's progress in the program.

Deadlines specified in this document refer to Fall and Spring semesters only (i.e., the third semester is generally the Fall semester of a student's second year). We adhere to the Graduate School policy on leave<sup>2</sup>. Semesters on leave are not counted as part of this progression.

Students may change advisors and/or committee members at any time during their

---

<sup>1</sup> See Graduate School Rules: section 3, p.12 "Transfer Credits"

<sup>2</sup> Graduate School Rules, Section 11: Time Limits for Completion of Degrees

studies. Students must notify the ATLAS Graduate Committee of any changes to their advisor via the online [Advisor Form](#) or committee members via the online [Committee Form](#). The Graduate Committee must approve new advisors; changes to committee members require only advisor approval. Any such changes shall not require revisiting any previously completed milestones, except as may be required by a new advisor. A student may not remain in the program without an advisor longer than two semesters.

## Outline of Program Requirements

To fulfill requirements for the ATLAS Ph.D. program a student takes the following steps (see also Table 1):

1. Develop the Plan of Study with Advisor
2. Coursework (30 hours)
3. Pass the Preliminary Exam
4. Pass the Comprehensive Exam (“Comps”)
5. Complete 30 hours of dissertation credits (original research supervised by dissertation committee)
6. Write and defend the Dissertation

Semesters 1-2 Coursework, <b>Plan of Study</b>	<ul style="list-style-type: none"> <li>• Take 2-3 classes each semester as determined in consultation with the student’s advisor.</li> <li>• <b>Deadline:</b> Develop Plan of Study with advisor no later than end of Semester 2.</li> </ul>
Semesters 3-4 Coursework, <b>Preliminary Exam</b>	<ul style="list-style-type: none"> <li>• Take 2-3 classes each semester as determined by the student’s plan of study.</li> <li>• Form Preliminary Advisory Committee.</li> <li>• <b>Deadline:</b> Take Research Methods, Research Professional Development, and Colloquium at least once. Take Preliminary Exam no later than the end of Semester 4.</li> </ul>
Semesters 5-8 Coursework, Research, <b>Comprehensive Exam</b>	<ul style="list-style-type: none"> <li>• Take 0 - 3 courses each semester as determined by the student’s plan of study, including dissertation credits.</li> <li>• Form Dissertation Committee.</li> <li>• <b>Deadline:</b> Pass Comprehensive Exam no later than end of Semester 8 and advance to candidacy<sup>3</sup>.</li> </ul>
Semesters 9-12 Research, Dissertation & <b>Defense</b>	<ul style="list-style-type: none"> <li>• Take 0 - 3 courses each semester as determined by the student’s plan of study, including dissertation credits. The Graduate School requires registering for 5 credit-hours during the final semester.</li> <li>• Complete and Defend Dissertation.</li> </ul>

**Table 1. Expected timeline for ATLAS PhD completion.**

<sup>3</sup> A PhD *student* becomes a PhD *candidate* only upon passing the Comprehensive Exam.

## **Step 1: Develop the Plan of Study with Advisor (“Plan”)**

Each student shall work with their advisor during their first two semesters to design a customized plan of study that addresses that student’s interests and provides the breadth and depth of knowledge needed for their dissertation research. To maintain good standing in the program, all students must complete and submit the plan of study by the end of their second semester using the online [Plan of Study Form](#).

An ATLAS Plan of Study:

- Includes general research area and courses to be taken and other research/disciplinary-appropriate activities planned
- is a 3-5 page document that is approved by the student’s advisor and the ATLAS graduate committee (the student is not required to have an advisory committee at this point, but may choose to, with input from their advisor)

Students who fail to complete the Plan of Study are placed on probation and are ineligible for RAships or TAships. Students on probation must schedule a meeting with the Graduate Committee and will be dismissed from the program if the Plan of Study has not been completed by the end of the following (i.e., third) academic semester.

## **Step 2: Coursework**

Thirty (30) hours of coursework are required to graduate with a PhD; these courses may be taken throughout the course of study and may include independent (directed) studies.

Students are responsible for ensuring that they comply with Graduate School Rules regarding coursework, including:

- Completing a minimum of 30 hours of coursework.
- Completing a minimum of 30 hours of dissertation credits. Students must be enrolled in a minimum of 5 dissertation credit hours the semester they take the Comprehensive Exam and a minimum of 5 credit hours the semester they do their Dissertation Defense. (Students are limited to a 10 credit dissertation hour maximum per semester)<sup>4</sup>

## **Step 3: Pass the Preliminary Exam (“Prelims”)**

---

<sup>4</sup> Graduate School Rules, Section 10: Thesis/Dissertation Requirements, p. 21

To maintain good standing in the ATLAS PhD program, all students must complete their Preliminary Exam by the end of the second semester of their second year (i.e., their fourth total semester in the program). The Preliminary Examination will demonstrate the student's preparation for scholarly work in their chosen area.

**ATLAS Preliminary Exams** are administered by a Preliminary Advisory Committee of at least three (3) members of the faculty (the student's advisor and two (2) other members, who must either be regular members of the CU Graduate Faculty or hold special Graduate Faculty appointments to serve on advisory committees). The student is responsible for apprising the Graduate Coordinator of the membership of the Preliminary Advisory Committee before scheduling the Preliminary Exam by completing the online [ATLAS PhD Exam Form](#). The student's Preliminary Advisory Committee is responsible for assessing the student's performance and potential for success in the program going forward.

ATLAS Preliminary Exams comprise two components:

1. A written exam: The format is at the discretion of the student's Preliminary Advisory Committee.
2. An oral exam: The student shall complete the oral component of the Preliminary Exam no later than 7 days after the written exam is due. The oral component of the Preliminary Exam shall be open to the public.

The outcome of the Preliminary Exam may be "pass," "fail," or "conditional pass." In the latter case, the advisory committee must specify the additional required work and a deadline by which it must be completed. If the student fails to submit the completed work by the specified deadline, they will be deemed to have failed the Preliminary Exam.

A student who fails the written and/or oral components of the Preliminary exam has only one opportunity to retake the failed component(s) of the exam. The retake must occur before the end of the next academic semester. A student who fails the Preliminary Exam twice will be dismissed from the program.

Students who have failed to complete their Preliminary Exam by the end of their 5th academic semester (i.e., 2.5 years into the program) are placed on probation and not eligible for RAships or TAships. Students on probation are required to schedule a meeting with the graduate committee and will be dismissed from the program if the Preliminary Exam has not been successfully completed at the end of the third year.

Once finished, students must complete the [Preliminary Exam Completion form](#) and submit to the Graduate Coordinator.

After passing the Preliminary Exam, the student shall form a Dissertation Committee, which may (but need not) be identical to the Preliminary Advisory Committee. The student is responsible for completing the online [Committee Form](#) and for notifying the Graduate Coordinator via email of the membership of the Dissertation Advisory Committee before scheduling the Comprehensive Exam.

## **Step 4: Pass the Comprehensive Exam (“Comps”)**

To maintain good standing in the program, all students must complete their Comprehensive Exam (also known as dissertation proposal) by the end of their fourth year in the program. The Comprehensive Examination shall cover the student’s completed research and proposed research agenda.

### **ATLAS Comprehensive Exams:**

**Comprehensive Exams** must be scheduled with the ATLAS Graduate Committee (through the Graduate Coordinator) no later than 21 days prior to the exam. The first step is to complete the online [ATLAS PhD Exam Form](#). The Coordinator will then work with the student to:

- Fill out required graduate school forms (comprehensive exam form and candidacy for an advanced degree form).
- Announce the oral component of the exam.

The student is responsible for verifying with the Coordinator that all paperwork has been approved by the graduate school and returned no later than 7 days in advance of the exam.

**Comprehensive Exams** are made to a Dissertation Committee that comprises at least 5 members including the student’s advisor. The Dissertation Committee is responsible for assessing the merit of the research and the student’s preparation to conduct the proposed research.

The composition of the Dissertation Committee is governed by the Graduate School

Rules<sup>5</sup>: At least three (3) members of the Dissertation Committee must be CU Boulder faculty members and one member must be external to CU Boulder<sup>6</sup>. Any member who is not a member of the CU Boulder Graduate Faculty must obtain a special Graduate Faculty appointment with approval to serve as an outside member. In addition to these requirements, ATLAS requires that at least two (2) members of the committee must be faculty members rostered in ATLAS. The student is responsible to work with the Graduate Coordinator on the necessary paperwork for all committee member appointments.

The Dissertation Committee will generally serve throughout the student's dissertation research period. Committee changes must be submitted to the graduate committee with the approval of the student's advisor using the [Committee Form](#).

● **Comprehensive Exams** adhere to a set structure and comprise two parts:

1. A written document that:

- Outlines related work (literature review)
- Outlines student's completed research
- Describes research proposed to complete the dissertation
- Is shared with the student's Dissertation Committee no less than 14 days prior to the scheduled exam

2. An oral presentation: made to the Dissertation Committee and members of the public

Successful completion of the Comprehensive Exam is marked by Graduate School acceptance of the signed comprehensive exam form. Students who have not successfully completed their Comprehensive Exam by the end of their 8th academic semester are placed on probation and are ineligible for RAships or TAs. Students on probation must schedule a meeting with the Graduate Committee and will be dismissed from the program if the Comprehensive Exam has not been completed at the end of the ninth semester.

---

<sup>5</sup> The Graduate School Rules specify the composition of committees: "The examination is conducted by a committee appointed by the chair of the major department and approved by the Dean of the Graduate School, which consists of at least five persons, one of whom must be from outside the student's major department. Three of the members must be CU Boulder Graduate Faculty. The chair and outside member of the committee must have regular Graduate Faculty appointments. The other committee members must have either regular or special Graduate Faculty appointments. The outside member must either have a regular Graduate Faculty appointment in a different department at CU Boulder or hold a special Graduate Faculty appointment with approval to serve as outside member"

<sup>6</sup> Note that the requirement that one member must be external to CU Boulder is an ATLAS rule and exceeds the Graduate School specification.



## Step 5: Dissertation Defense (Final Thesis Exam)

Students must adhere to Graduate School rules regarding timelines for completing the Dissertation Defense. Generally students complete the Dissertation Defense during or before the second semester of their sixth year.

**ATLAS Dissertation Defenses** must be scheduled with the ATLAS Graduate Committee (through the Graduate Coordinator) no later than 21 days prior to the defense. The first step is to complete the online [ATLAS PhD Exam Form](#). The Coordinator will then work with the student to:

- Fill out required Graduate School forms (final thesis exam form)<sup>7</sup>.
- Announce the defense date.

The student is responsible for verifying with the Coordinator that all paperwork has been approved by the Graduate School and returned no later than 7 days before the defense.

An ATLAS Dissertation must adhere to Graduate School Rules on formatting and submission deadlines. An ATLAS Dissertation Defense comprises two parts:

1. A written document that complies with Graduate School Rules. This document must be shared with the student's Dissertation Committee and ATLAS Graduate Committee no later than 21 days prior to the scheduled exam. At this stage, dissertation drafts will be shared with ATLAS faculty and students.
2. An oral presentation to the Dissertation Committee and members of the public.

Per the Graduate School Rules (Section 6, p. 18), "A candidate who fails the examination may attempt it once more after a period of time determined by the examination board." The Graduate School Rules (Section 11, p.23) specify "Time Limits for Completion of Degrees."

---

<sup>7</sup> See: <https://www.colorado.edu/graduateschool/academics/thesis-and-dissertation-submission>