

UNIVERSITY OF  
ARKANSAS

# DEPARTMENT OF GEOSCIENCES

## GRADUATE STUDENT HANDBOOK

2022-2023

## INTRODUCTION

This handbook addresses requirements and recommendations for students in graduate programs sponsored by Department of Geosciences at University of Arkansas. It is intended to be in harmony with the U of A's [Graduate Catalog](#), the [Graduate School and International Education \(GSIE\) Graduate Student Handbook](#), and guidance from [Fulbright College of Arts & Sciences](#) and all other applicable entities at the U of A. In case of conflict, university-level requirements prevail, followed by college, department, and program-specific guidelines.

Geosciences graduate students are required to read this handbook and **sign the contract page** that states that the student understands the procedures and guidelines and agrees to abide by them. A department representative then countersigns each student's handbook, and a final copy is provided for the student's records.

Geosciences sponsors Master of Science (MS) degrees in Geography (GEOGMS) and Geology (GEOLMS), a Doctor of Philosophy (PhD) in Geosciences (GEOSPH), and a Graduate Certificate in Geospatial Technologies (GISTGC). Each graduate program has separate requirements and graduate coordinators. The current graduate coordinators are:

**MS Geography** – Edward Holland, 119 GEAR, 479-575-6635, [echollan@uark.edu](mailto:echollan@uark.edu)

**MS Geology** – Andrew Lamb, 115 GEAR, 479-575-8685, [aplamb@uark.edu](mailto:aplamb@uark.edu)

**PhD Geosciences** – Matt Covington, 28 GEAR, 479-575-3876, [mcoving@uark.edu](mailto:mcoving@uark.edu)

**Graduate Certificate in Geospatial Technologies** – Katie Wyatt, 327 JBHT, 479-388-0122, [kw001@uark.edu](mailto:kw001@uark.edu)

The department actively participates in interdisciplinary graduate programs in both Environmental Dynamics (ENDY) and Space and Planetary Sciences (SPAC). Each offers both MS (ENDYMS, SPACMS) and PhD (ENDYPH, SPACPH) degrees. The department's geography and geology master's degrees (GEOGMS, GEOLMS) include space and planetary sciences as an optional area of study. The interdisciplinary program coordinators are found below:

**ENDY** – JoAnn Kvamme, 336 MAIN, 479-575-6603, [jkvamme@uark.edu](mailto:jkvamme@uark.edu)

**SPAC** – Larry Roe, F50 STON, 479-575-3750, [lar@uark.edu](mailto:lar@uark.edu)

Geosciences enjoys a close collaboration with Center for Advanced Spatial Technologies (CAST), a research department that sponsors many of the geographic information science (GIScience) research and educational activities at the U of A. The director of CAST is Jack Cothren, 309 JBHT, 479-575-5421, [jcothre@uark.edu](mailto:jcothre@uark.edu).

The Geosciences department office is located in 216 GEAR (Gearhart Hall). The members of the office staff are here to keep the department running smoothly and to help with whatever problems and concerns that may occur. Each staff member is responsible for specific aspects of the department. Please ensure they are given the utmost respect; they will be invaluable to your success. Administrative specialists Jessica Eckberg (479-575-6812, [jeckberg@uark.edu](mailto:jeckberg@uark.edu)) and Jill Kizer (479-575-3355, [jkizer@uark.edu](mailto:jkizer@uark.edu)) oversee a variety of department-sponsored communication and financial activities. The administrative support supervisor is Richard Del Soto, 479-575-3159, [rdelsoto@uark.edu](mailto:rdelsoto@uark.edu). The interim department chair is Jason Tullis, 479-575-8784, [jatullis@uark.edu](mailto:jatullis@uark.edu).

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## AUTHORITATIVE SOURCES

Whether engaged in scholarship or navigating the many opportunities a research university affords, each graduate student is responsible to **seek and understand the best sources** to enable a successful outcome.

At the university level, the GSIE [Graduate Student Handbook](#) contains a wealth of information on navigating the graduate student experience at the U of A. The academic integrity, procedures, and policies it describes are applicable to all graduate students at the U of A. At the department level, the [Geosciences website](#) contains a [list of](#)

[faculty, instructors, and staff](#), and this can be a good starting point for information about research concentrations, faculty curricula vitae, etc.

Given that information technologies and website contents seem to be in a constant state of flux throughout the year, we maintain a [library of online sources for students, faculty, and staff](#) affiliated with Geosciences. There are many sources to consider, and some will be more important than others for a given instance. When an authoritative or clear source cannot be identified for a particular circumstance, please **ask for help!**

## ADMISSIONS AND PROGRAM REQUIREMENTS

Students wishing to pursue a graduate degree or certificate through Geosciences must be admitted by **Graduate School and International Education (GSIE)** and by the department. Detailed requirements for regular admission to GSIE are outlined in [admissions section of the Graduate Catalog](#). If interested in working as a department sponsored MS or PhD **graduate assistant (GA)** to support teaching and related activities (colloquially referred to as a **teaching assistant or TA**), the student [should so indicate in the application process](#). To assure eligibility for a department GA position, the MS or PhD application must be completed by **January 15<sup>th</sup>** for admission in the upcoming **fall** semester and by **October 15<sup>th</sup>** for admission in the upcoming **spring** semester.

The GA application deadlines do not necessarily apply to those who are interested in working as a **research or other GA** (colloquially referred to as a **research assistant or RA**). These positions are generally negotiated between students, primary investigators and their corresponding

departments and sponsors, and GSIE. Depending on a variety of factors, a student might have the opportunity to start as a TA and later become an RA or vice versa.

The **authoritative** source for **program prerequisites and requirements** is the [department section of the Graduate Catalog](#). The university undergoes a formal approval process to update the catalog, so conflicting advice should be taken with a “grain of salt”. Geosciences requires the GRE for admission into all programs, though this has been [waived for both Fall 2022 and Spring 2023 admissions due to COVID-19](#).

The student’s advisory committee, graduate coordinators, and office staff are available to field questions about the catalog requirements. **Exceptions** to catalog requirements under the purview of the department must be approved by the **graduate coordinator** or the **department chair**. Many questions are necessarily fielded by **GSIE** under the direction of the **graduate students’ dean**.

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## GRADUATE ASSISTANTSHIPS

There are a number of **TA positions** available for qualified students. Students who wish to be considered for a TA position should meet the admissions deadlines noted above. Students are advised that assistantship possibilities for entry in the spring semester are limited. The length of a TA award is specified in writing and signed by the department chair. This same process is used for the awarding of **RA positions** sponsored by Geosciences faculty based on a funding source recognized by the Office of Sponsored Programs. Either type of graduate assistantship (GA), whether TA or RA, can be withdrawn at the end of any semester if a student is demonstrably not carrying out assigned duties.

For TA positions, duties often include lab teaching, lab assistant duties, classroom assistance (grading, etc.), curriculum development, and related activities. Duties are designed to account for 20 hours per week and the assistantship period is from August 15 to May 15. All GA students will receive a 9-month stipend plus paid tuition for up to 21 hours of graduate credit per year. The stipend is paid in semi-monthly installments. The [graduate assistantship page from GSIE](#) is a valuable source for GA-related questions. Students should contact the department office staff for the current level of MS and PhD stipends.

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## GRADUATE COMMITTEES

All graduate students are assigned an academic advisor on entering the program. **During the first semester of a graduate degree program**, a student should ascertain which member of the [graduate faculty](#) would provide the best direction for relevant areas of inquiry and, in consultation with that person should establish a three-person advisory committee for the MS programs (GEOGMS, GEOLMS) or a 4-6 person advisory committee for the PhD program (GEOSPH).

In most cases, the chair of the advisory committee becomes the chair of the MS thesis/PhD dissertation committee. In Geosciences, thesis committees generally have three members, and dissertation committees have 3-5 members. [GSIE has specific forms](#) to obtain all necessary signatures to

establish both the advisory and thesis/dissertation committees. Graduate committee chairs are often referred to as the major advisor, but there are some differences in the role of the advisory versus the thesis/dissertation committees. GSIE provides important guidance on [graduate committees](#) and outlines the process for [changing or revising a committee](#) that has already been approved. All faculty who serve on graduate committees must have sufficient [graduate faculty status](#).

The mentoring and/or advising role of committee members is critical to each graduate student’s success. Once a graduate committee has been formed, the student should maintain regular contact with the major advisor and should keep the rest of the committee informed of his/her program progress on a regular basis.

## RESEARCH AND GRADUATION CHECKLIST

The process of proposing, researching, writing, submitting, and defending an MS thesis or PhD dissertation takes time. All research conducted at the U of A is subject to [research compliance](#) under the auspices of the Office of Research Integrity and Compliance. Theses/dissertations must be formatted per GSIE's [thesis and dissertation guide](#).

Important dates and guidelines for graduation can be found in the [graduation checklists](#) provided by GSIE. Students are encouraged to start with the goal in mind and reserve plenty of time for unforeseen delays in the research, scholarship, and graduation process.

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### PHD GEOSCIENCES EXAMINATION FOR CANDIDACY

As described in the [Graduate Catalog under the department section on PhD in Geosciences requirements](#), two rigorous candidacy exams include: **1) a written review paper and 2) an oral defense of a written dissertation proposal**. Both these exams, administered by the advisory committee, are intended to evaluate the level of scholarship of the student by assessing the student's command of knowledge gained and determining the adequacy of the student's intellectual preparation for independent dissertation research. As such, successful completion of these examinations marks an important milestone in the student's progress toward the degree as they make a transition from largely classroom-oriented study to individually make a research contribution that is the hallmark of the doctoral tradition of academic achievement.

Students may **schedule the written exam** to begin after they have completed at least 12 hours of graduate study a PhD student and have taken GEOS 5612 Research Methods in Geosciences and GEOS 5011 Colloquium. This is typically the start of their third semester. The written exam will be taken over a 30-day period during the fall or spring semester when classes are in session, but not during final exams. The written exam may also be taken during the summer, although the committee may choose not to evaluate it until the following fall semester. By way of illustration, if a student is enrolled in at least six credits per semester, the written exam should be taken in the third or fourth semester. Students who have not attempted the written exam two full semesters after they have become eligible [may be dismissed from the program due to lack of academic progress](#). This policy is the same regardless of whether a student begins GEOSPH with a bachelor's versus a master's degree.

The **written exam will be organized** by a meeting with the advisory committee. The student will make a <30-minute presentation on the topic they wish to study and choose a 30-day window to take the exam, under the constraints outlined above. If the student has already begun a dissertation proposal (see below), they should summarize that work. The student's preparation (research experience and courses taken) should be presented. The student may suggest topics that they may wish to review for the written exam at this time. After exploratory questioning, the committee will meet without the student to determine a topic for the review paper (see below). The advisory committee

chair will communicate this **topic and any exam instructions** in writing to the student, with the GEOSPH coordinator receiving a copy, at the beginning of the 30-day exam period.

**At the end of the 30-day exam period**, the student will submit two documents to the advisory committee, including 1) the **review paper** as the result of the written candidacy exam, and 2) a written **dissertation proposal** in preparation for the second candidacy exam. This allows the advisory committee to a) evaluate review paper (first exam), and b) provide feedback to the student prior to the oral defense of the dissertation proposal (second exam). Both printed and electronic versions of the review paper and dissertation proposal should be submitted if requested by committee members.

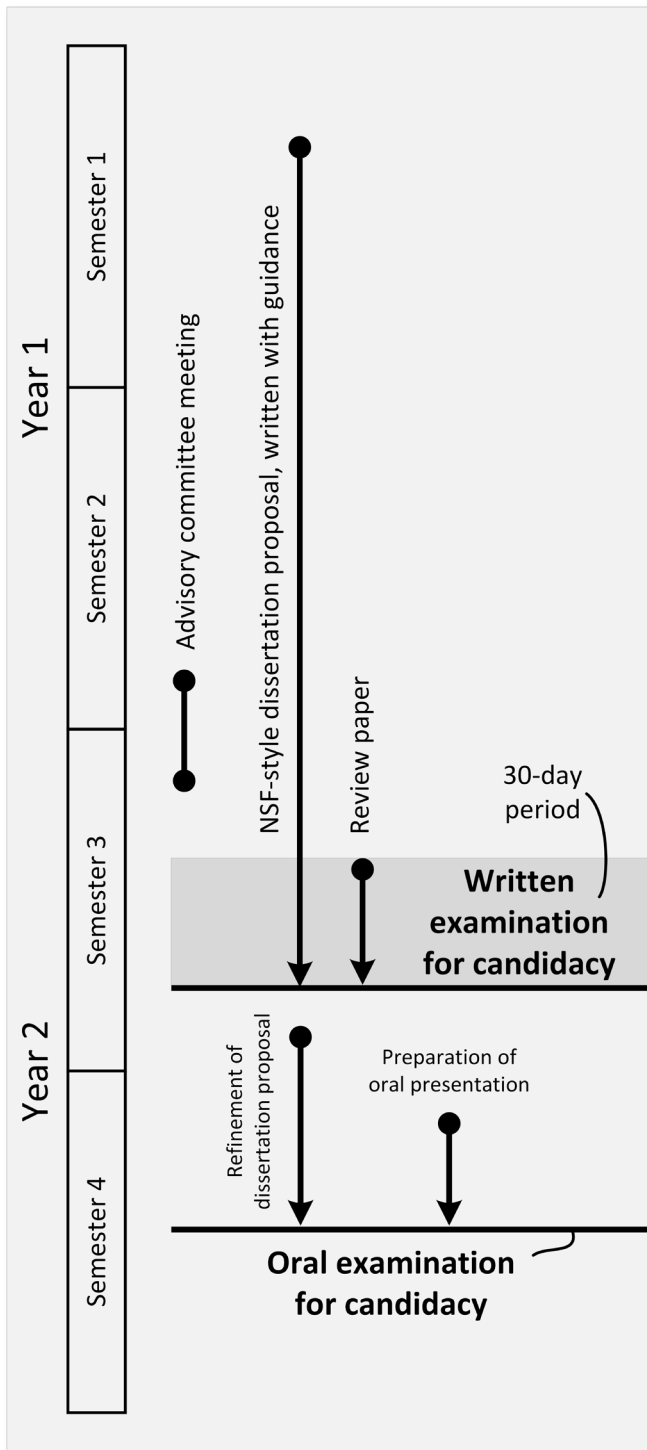
#### Written examination for candidacy: Review paper

The first of two candidacy exams will be a comprehensive, scholarly review of a topic relevant to the student's intended dissertation research based on a topic given by the committee at the beginning of the exam period. This review paper will be considered sufficient for passing based on three equally weighted criteria:

1. Critically examines and synthesizes extant knowledge in the topic area, including any recent work (less than 2 years old)
2. Adequately describes significant concepts and controversies related to the topic
3. Discusses gaps in knowledge or open questions related to the topic that may lead to new understanding

The review paper should conform to the style, formatting, and page length requirements of a specific academic journal to be determined and agreed upon by the advisory committee. If no journal is recommended, then the American Geophysical Union's [Grammar and Style Guide](#) together with the corresponding [author resources and guidelines for review articles](#) may serve as a default.

It is the duty of the advisory committee to **review and evaluate the written review paper** promptly, critically, and objectively. The committee will convene without the student to discuss its strengths and weaknesses. Evaluation will take the form of "Pass" or "No Pass," depending on



Example timeline of Ph.D. Geosciences candidacy exams.

whether the student has sufficiently addressed the criteria for the review outlined above. If the committee assessment is not unanimous, the [GSIE policy on split decisions within advisory committees takes effect](#). Students must receive a “Pass” assessment in order to be permitted to proceed with the oral defense of the dissertation proposal (second candidacy exam), which may be scheduled as soon as is convenient for the student and advisory committee. Following

evaluation of the first exam (review paper), the committee will report their assessment directly to the student and to the GEOSPH coordinator.

Should the student not pass the first exam, they will receive detailed written guidance about the insufficient aspects of their previous work. A second and final opportunity will be granted to rewrite the review paper by a date to be determined by the advisory committee. Additional work may be required according to the committee’s written guidance. Students may appeal a not-passing grade in writing to the advisory committee and the GEOSPH coordinator. A second failure of the written exam will be final, and the student [will be dismissed from the program due to lack of academic progress](#).

### Oral examination for candidacy: Defense of dissertation proposal

The **written dissertation proposal** describes the primary research project planned for the dissertation. Although the scope and format of finished dissertations vary, it is recommended that the proposal include three significant objectives that could each become a dissertation chapter or publishable paper. These objectives are sometimes altered over the course of the GEOSPH program, but this document serves as an initial project description. The document should provide motivation for the work, justification of important research choices, and a plan of work.

**Development of the dissertation proposal** may be started as soon as the student has decided on a research project, although it is highly recommended that the project be discussed in depth with members of the advisory committee and other faculty for initial feedback. Writing may commence in the first or second semesters, although the proposal may also be written during the 30-day written examination period. Although the written proposal will not be directly evaluated by the advisory committee as part of the written examination for candidacy, it will surely be evaluated in the sense that it serves as the basis for the oral defense as the second candidacy exam.

Unless otherwise specified by the advisory committee, the proposal will be composed in the format typical of a long form grant proposal submitted to **National Science Foundation (NSF)**, and will conform to all proposal formatting requirements as specified in the [NSF Proposal and Award Policies and Procedures Guide \(PAPPG\)](#). In order to make NSF-style writing tasks for this examination more manageable, proposals prepared by GEOSPH students will contain only the following PAPPG sections with corresponding page limits:

- 1) Project summary (II.C.2.b): 1 page single spaced
- 2) Project description (II.C.2.d) including figures, captions and tables: 15 pages
- 3) References cited (II.C.2.e): no limit
- 4) Biographical sketch (II.C.2.f): 2 pages
- 5) Budget and budget justification (II.C.2.g): 1 page



- 6) Facilities, equipment, and other resources (II.C.2.i):  
1 page.

Upon a “Pass” of the written candidacy exam and submission of a written dissertation proposal, a date may be finalized for the **oral defense of the dissertation proposal**. Absent specific guidance from the chair of the advisory committee, a minimum of 120 minutes should be allotted for the exam. The oral defense consists of an approximately 30 minute presentation of the research communicated in the written proposal followed by open questioning by the advisory committee. Teleconferencing may be used for committee members that are off-site, although technology failures may force the exam to be rescheduled.

The advisory committee’s evaluation of the oral defense will consider the **quality of the written proposal**, as well as the **preparation of the student** to execute the work. If an NSF-style proposal format is used, its quality will be considered passing if within the context of GEOSPH it sufficiently answers the questions of the National Science Board’s **merit review criteria** (PAPPG III.A) adapted below for this handbook:

1. What is the potential for the proposed activity to:
  - a. Advance knowledge and understanding within its own field or across different fields; and
  - b. Benefit society or advance desired societal outcomes?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?

3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the primary investigator (either at the home organization or through collaborations) to carry out the proposed activities?

With this context, the **committee will evaluate the oral defense of the dissertation proposal** as either “Pass” or “No Pass.” As with the first candidacy exam, if the committee assessment is not unanimous, the [GSIE policy on split decisions within advisory committees takes effect](#). A “Pass” assessment as recorded and signed using GSIE’s [candidacy exam notification form](#) will signify successful completion of the student’s examination for candidacy. Should the advisory committee determine a “No Pass” for the second candidacy exam, the student will receive detailed written guidance about the insufficient aspects of their oral defense of the dissertation proposal. A second and final opportunity will be granted for the oral defense, with the same appeal and dismissal policies in affect as those tied to the first candidacy exam.

The **advisory committee may alter the requirements** for the examination for candidacy so long as the examination conforms to the requirements in the [Graduate Catalog](#). These altered requirements should be clearly communicated to the student, and both the student and the GEOSPH coordinator should be notified of these changes in writing.

## STUDENT ACTIVITIES

Graduate students are encouraged and expected to take part in the student activities of the department. There are many organizations that encompass both graduate and undergraduate students. **SGE** and **GTU** are the honor societies for Geology and Geography respectively, and graduate students are an integral part of these organizations. In addition, the local Association of Women Geoscientists (AWG) chapter (hAWG) offers outreach activities, research support, and field support. There are also student chapters of the American Association of Petroleum Geologists (AAPG) and the Society of Exploration Geophysicists (SEG). These organizations provide extensive service and social opportunities for all graduate students.

**Office space:** A limited number of desks are available for Geoscience (GEOS) graduate students and ENDY/SPAC PhD students with a Geosciences advisor. Spaces are allocated by the department chair in consultation with the graduate advisor(s) according to the following criteria:

1. Funded GEOSPH
2. Funded GEOGMS/GEOLMS
3. Funded ENDYPH/SPAC with GEOS advisor
4. Unfunded GEOSPH
5. Unfunded ENDYPH/SPAC with GEOS advisor
6. Unfunded GEOGMS/GEOLMS

Limited office space means that space is rarely allocated to any student that is not receiving department support. Students will be informed that they have desk space close to the start of classes. The allocation of individual desks is decided by the department chair in consultation with faculty members who are the supervisors of the students and the graduate coordinator(s). You will retain your desk from one semester to the next unless notified by the chair or your supervisor.

**Good citizenship:** Geosciences has limited space to accommodate classrooms, laboratories, and faculty, staff and student offices. The student offices typically house desks or

cubicles for several students, resulting in space shared by many. It is imperative that everyone treat their neighbor with respect to ensure tranquility and a comfortable environment for study and research. Do not take over unclaimed space. If additional storage is necessary for scientific samples, contact the department chair or your major advisor. Do not rearrange the furniture, which is ergonomically placed to take into consideration privacy, efficiency, overall space, and common work areas. Do not display materials that others may find offensive. Do not borrow items from fellow students without their permission. Be good citizens toward your colleagues.

**Animals on campus:** U of A policy [prohibits animals on campus, with exceptions](#). When an exception applies, responsibility lies with the handler. For some exceptions, department staff can assist with the approval process.

**Alcohol:** Consumption of alcohol is prohibited in any

space occupied by Department of Geosciences. This includes individual student, staff, and faculty offices, as well as laboratories, classrooms, and department vans. This policy is in keeping with U of A alcohol policies.

**Department colloquium:** Graduate students are expected to attend Geosciences colloquium, usually scheduled on Friday afternoons at 3:05 pm throughout each semester. Other colloquia may occur throughout the semester, and graduate students are strongly encouraged to attend all that their schedule will permit.

**Professional activities:** The Geosciences faculty expect that graduate students will participate in professional activities, particularly in professional meetings. A number of geography, geology, or other geosciences societies offer local, regional, and/or national meetings. GSIE offers limited travel funds for students who present papers at national meetings.

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## DEPARTMENT VANS

Vans are an integral part of Geosciences' capacity. As with all department equipment, vans are to be used only when authorized and only for legitimate university business. Priorities are for field trips associated with department-sponsored classes. Vans must be reserved and signed out in a logbook maintained by the Geosciences staff in GEAR 216.

As a graduate student, particularly if you are a TA, you may be asked to drive a van for a field trip. To be eligible to drive a department van, you must have a clean driving record and a valid driver's license. An [authorization to operate vehicles form](#) must be completed, signed, and submitted to

Risk & Property Management prior to driving any Geosciences vehicle.

Prior to departing on a field trip outside of Washington County, Arkansas, the filing of forms for insurance purposes is required (see Geosciences staff). Students engaged in travel and/or field work should familiarize themselves with [university insurance coverage](#). Keys for the vans are checked-out from the Geosciences office, GEAR 216, after the proper forms are completed. The forms should be turned in to the office at least 48 hours prior to departure to ensure that the information is conveyed to the proper campus entities.



# UNIVERSITY OF ARKANSAS®

I certify that I have read and agree to abide by the procedures and guidelines established in this Department of Geosciences Graduate Student Handbook. In addition, I will follow the [Honor Code for the Graduate School](#) of University of Arkansas:

“On my honor as a graduate student at the University of Arkansas, I certify that I will neither give nor receive inappropriate assistance on the work I do for my degree.”

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(Name of student)

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(Signature of student)

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(Date)

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(Signature of department chair)