

Geosciences

John A. and Katherine G. Jackson School of Geosciences

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Mission

As civilization enters an era of increasing challenge, it is imperative that leaders, professionals, and citizens be well educated and be competently and realistically able to address issues of local to global scope. With regard to the origin, history, structure, and processes of the planet Earth, and the use and management of its resources, the John A. and Katherine G. Jackson School of Geosciences aims to provide such an education. The objective of every natural science, including geological sciences, is to understand the realm of physical nature. Geological sciences, or geosciences, is a synthetic subject that examines the Earth through such traditional subdisciplines as geophysics, hydrogeology, paleontology, petrology, stratigraphy, and structural geology. Geoscientists also draw upon discoveries from mathematics, geography, archaeology, engineering, and the other sciences to meld an approach that is interdisciplinary, yet uniquely geological.

The need for well-educated geoscientists in industry, government, and education promises a bright future for geoscience professionals in the coming decades. As the human population expands, it is essential to develop sufficient resources and to maintain a livable environment. Geoscientists understand the dynamics of the Earth and its systems—the occurrence of natural resources and the diverse time scales of natural and human-induced change.

Every university seeks to enrich the education of its student body generally. Study of geosciences enhances a liberal arts or arts and sciences education. Geoscientists use experiments and observations to explore origins and processes, whether of the Earth itself, of geologic phenomena, or of the history of life. They operate in the conventional three dimensions of space and in the fourth dimension of deep geologic time. Both in the laboratory and in the field, geoscientists examine the Earth on all scales, from atomic nuclei, to a hand sample of rock, to an entire landscape, to continents and oceans, to the planet as a whole.

Vision

The [Jackson School of Geosciences](#) at The University of Texas at Austin is among the most established and well-regarded geosciences programs in the world. The school includes the University's [Department of Earth and Planetary Sciences](#), one of the country's oldest geological sciences departments, and two world-renowned research units, the [Institute for Geophysics](#) and the [Bureau of Economic Geology](#). The school is home to the world's largest academic geosciences community of alumni, research scientists, and faculty members as well as one of the largest combined graduate and undergraduate enrollments of any major geoscience program.

The Jackson School is both old and new. It traces its origins to the Department of Geology founded in 1888 but became a separate unit at the level of a college on September 1, 2005. The school's formation resulted from one of the most generous gifts in the history of higher education when the late John A. and Katherine G. Jackson bequeathed endowments and assets toward "the subjects of geology; geophysics; energy, mineral and water resources; as well as the broad areas of the earth sciences, including the Earth's environment." The charge of their

gift and the responsibilities that come with it are reflected in the school's vision:

To become the preeminent geosciences program in the country with international prominence in geology, geophysics, energy, mineral and water resources, and in the broad areas of the earth sciences, including the Earth's environment. To realize this vision, the Jackson School will pursue initiatives that:

- Place the school at the forefront of research.
- Place the school at the forefront of education, student services, and student opportunities.
- Create the fabric of a great college.
- Increase competitiveness for top talent.

Financial Assistance Available through the School

Through the Geology Foundation, the Jackson School of Geosciences (JSG) is able to provide financial assistance to its students through funds established by individuals, foundations, and industrial or research organizations. Scholarships are currently awarded on the basis of academic standing and performance including, but not limited to, grade point average, progress towards degree, and hours completed. Additional scholarship opportunities that may be available while enrolled in the Jackson School include recruitment scholarships, academic support scholarships and field course financial assistance. All students may also seek financial assistance through the University's Office of Scholarships and Financial Aid. Additional information for all of the [JSG Financial Assistance](#) programs is available online.

Student Services

The mission of the Jackson School of Geosciences Student Services Office is to facilitate students' development and advancement in the Jackson School community and beyond. Services provided to all Jackson School majors and non-majors such as professional academic advising and career counseling are available to students year-round.

Academic Advising

The JSG Academic Advising office, located in the Holland Family Student Center serves the undergraduate students of the Jackson School by offering academic advising and guidance. Each undergraduate student is expected to meet with a JSG academic advisor at least once per semester to review his/her academic progress and prepare to register for the next semester. Information related to JSG academic programs and opportunities is frequently distributed to students via email which is considered an official form of communication by the University. Students are responsible for reading this information and taking the necessary actions in a timely manner. JSG Student Services staff is available to meet with students throughout the year to address any issues or questions they may have.

Counseling and Referral Services

The Jackson School of Geosciences Student Services office advises and counsels students about problems or concerns they have about their academic work or life in the school. In addition, University counseling services are available from the [Counseling and Mental Health Center](#), the Telephone Counseling Service, the [Sanger Learning Center](#), and [University Health Services](#). These offices are described in the *General Information Catalog*.

Career Services

The Jackson School of Geosciences (JSG) Career Services Office, located in the Holland Family Student Center, serves the undergraduate and graduate students of the Jackson School by offering career development workshops, job search resources, and opportunities to network with alumni, recruiters and members of industry.

The JSG Career Services Office assists Jackson School students in researching, preparing for and identifying opportunities for full-time or part-time jobs and internships. The staff posts job opportunities throughout the year and hosts company information sessions as well as on-campus interviews with recruiters each fall and spring. The Jackson School of Geosciences Career Fair, which brings students and employers together every fall, provides another forum for geosciences students to learn about different career opportunities.

Career services for students who plan to teach are provided by Education Career Services in the College of Education and by UTeach-Natural Sciences. See [Preparation for Teacher Certification](#) for additional information.

Requirements & Policy

Mathematics Placement

Mathematics is required for all geological sciences degrees. To enroll in a calculus or statistics course at the University, students must first take the mathematics placement exam per the College of Natural Sciences, Department of Mathematics. All Jackson School students are required to complete the placement exam immediately before the semester they intend to enroll in a mathematics, calculus or statistics course. First-year incoming students are required to complete this placement exam during summer orientation.

Consent of Instructor

Some courses in the Jackson School of Geosciences require that consent of instructor be obtained prior to registering. To be able to register for such a course, the student must first ask for and receive the instructor's written email consent. The student is responsible for submitting the instructor's written approval to a JSG advisor and then adding the course to their semester schedule by the published deadlines.

Minimum Scholastic Requirements

Students must earn a grade point average of at least 2.00 is required in geological sciences courses counted toward the major requirement. The student must earn a grade of at least C- in each course used to fulfill any prescribed work or major requirement. For more information about grades and the grade point average, see the [General Information Catalog](#).

Academic Warning and Dismissal

Students are expected to make continuous progress toward the degree while maintaining the University minimum scholastic requirements. A student is placed on academic warning if his or her grade point average falls below 2.00. University regulations on academic warning and dismissal are given in the [General Information Catalog](#).

Students in the Bachelor of Science in Geosystems Engineering (BSGE) degree program must maintain the scholastic requirements of the Cockrell School of Engineering. Although BSGE students have an active student status in the Jackson School, they are subject to the academic policies and procedures of the Cockrell School of Engineering.

Satisfactory Progress

Students are expected to make continuous progress toward the degree by completing required geological sciences coursework each semester, as outlined in the suggested arrangement of courses for each degree plan.

Repetition of a Course

A student may not enroll in any course in the Jackson School more than twice, even if the course is needed to meet degree requirements, without first obtaining written consent from the Director of Student Affairs. The symbol *Q* or *W* counts as an enrollment unless it has been approved by the Director of Student Affairs as nonacademic.

Undergraduates in a Graduate Course

The Jackson School encourages undergraduates who excel academically and would benefit from further challenges to enroll in graduate courses. With permission, undergraduates may count graduate courses toward their undergraduate degrees or may reserve them for graduate credit. To enroll in a graduate course, undergraduates must meet the University's eligibility requirements and must receive permission from the course instructor, the graduate advisor for the offering department, and the dean's office. Undergraduates reserving courses for graduate credit must also receive permission from the vice provost for graduate and postdoctoral studies. More information is available in the section [Coursework in the Office of Graduate and Postdoctoral Studies and the School of Law](#).

Petitions for Degree Requirements

Petitions for modifications to degree requirements, with the exception of the University-wide Core Curriculum, are handled through the JSG Student Services Office. Students must meet with an advisor to submit their petition before. An academic advisor initiates the petition on the student's behalf and routes it through the review process.

Attendance

Jackson School students are expected to attend all meetings of the classes for which they are registered. Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have attendance requirements; these should be made known to students during the first week of classes. With the approval of the dean, a student may be dropped from a course with a grade of *F* for repeated unexcused absences.

Portable Computing Devices

Students entering the geological sciences major are required to have access to a portable computing device capable of running the software tools required for undergraduate computational sciences analyses (MATLAB, Word, etc.) and accessing the remote server for the department. This device may not need to be brought to campus on a daily basis, but individual courses may require that the device be brought to certain labs, lectures, and/or exams. Minimum and recommended specifications may be found on the department website and/or in the course syllabus.

Graduation

All students must fulfill the [general requirements](#) for graduation. Students in the Jackson School must have a grade point average of at least 2.00 in geological science courses counted toward the major requirements. Students in the Geological Sciences Departmental Honors Program must have a University grade point average of at least 3.00 and

a grade point average in geological science courses counted toward the major requirements of at least 3.50.

Degree Audit

All Jackson School students are expected to monitor their degree progress through regular use of the University's [Interactive Degree Audit](#) (IDA) system. IDA provides the students with a report of their progress toward completion of requirements for a specific degree program. The degree audit normally provides an accurate statement of requirements, but the student is responsible for knowing the requirements of the degree as stated in the undergraduate catalog under which the student is eligible to graduate and for registering so as to fulfill all requirements. The student should consult with a JSG academic advisor before registering if in doubt about any requirement.

Applying for Graduation

A student is eligible to graduate if their Jackson School degree audit is 100 percent complete. If an eligible student fails to submit a graduation application by the semester deadline given in the academic calendar, a graduation application may be submitted by the academic dean or designee.

In the semester or summer session in which a student is eligible to graduate, the student must be registered at the University and must file a graduation application form with the JSG Student Services Office. This should be done at the beginning of the semester in which the student intends to graduate; it must be done by the deadline to apply for an undergraduate degree, which is noted in the official academic calendar.

An official degree audit must be on file when the student submits the graduation application. A student who applies for graduation but does not receive the degree must promptly contact a JSG academic advisor to discuss next steps. The student will be required to submit a new graduation application in the semester they intend to graduate.

The student must be registered at the University in the semester or summer session in which the degree is to be granted. This requirement may be fulfilled by registering for courses in residence or by registering in absentia. For information about registration in absentia, the student must consult the JSG Student Services office during the semester in which the student intends to graduate.

Course credit received by credit-by-exam, correspondence, or transfer does not fulfill the residence requirement. Students planning to receive credits by any of these means are expected to monitor their academic record to ensure all documentation is received **before** the semester in which the student intends to graduate.

No degree will be conferred unless all requirements have been fulfilled and all deadlines met.

Commencement

The Jackson School of Geosciences graduation ceremony is held each spring in conjunction with the University-wide commencement ceremony. Students graduating with University Honors, School Honors and Jackson Scholars are recognized at the school's ceremony. Participation in the commencement ceremony does not constitute applying to graduate or official completion and receipt of a degree.

Students who complete all degree requirements in the fall of the same academic year as the school's ceremony may be eligible to participate in the school's spring ceremony which occurs after they graduate. Fall graduates may not participate in the school's spring ceremony which occurs prior to their graduation. Whereas all spring graduates must submit an application to graduate, fall graduates and prospective summer graduates must submit an application to walk by the published

deadline. Summer graduates must have nine or fewer credits in progress during the summer they intend to graduate to be eligible. Final decisions regarding eligibility to participate will be determined by the dean's office if needed.

Degrees Offered

The Jackson School offers the Bachelor of Arts in Geosciences, the Bachelor of Science in Environmental Science, the Bachelor of Science in Geosciences, and, in partnership with the Cockrell School of Engineering, the Bachelor of Science in Geosystems Engineering. Whichever degree they pursue, students must take courses in the Jackson School of Geosciences (JSG), the College of Natural Sciences, and the College of Liberal Arts. These units work together to meet students' individual needs and to ensure that they receive a superior education. Graduation from an accredited program is an advantage when applying for a position in industry, membership in a professional society or for registration as a professional geologist.

Undergraduate Research Courses

The Jackson School supports undergraduate research through numerous programs specifically for undergraduate geological sciences majors. Undergraduates have the opportunity to take part in research experiences that enrich their academic studies and career trajectories. Participating students may be eligible to earn University credit, special departmental honors for exceptional research, and recognition at spring graduation depending on the undergraduate research program they complete.

In order to be eligible to earn University credit for undergraduate research work, students must be enrolled in the BSGS degree program and have a complete undergraduate research contract on file with the JSG Student Services Office prior to registration. Students may count up to six semester hours of geological sciences research courses, as listed below, toward the required total upper-division elective hours in geological sciences.

- Choice 1: GEO 371C and up to three credit hours of GEO 171C, and GEO 271C; or
- Choice 2: *Restricted to students enrolled in the Geosciences Departmental Honors Program*, GEO 171H, GEO 172H, GEO 173H, and GEO 379H.
- Students may not earn course credit for research work completed as a paid undergraduate research assistant.

Simultaneous Majors

A student in the Jackson School may pursue two majors simultaneously. The student must follow all procedures and meet all requirements outlined in the [General Information Catalog](#) as well as those associated with both majors. A JSG student may not pursue any two geosciences majors, including the BS Environmental Science degree option, simultaneously.

The simultaneous major option is available only to undergraduates who have completed 30 hours of coursework in residence at the University and who have been admitted to both degree programs.

Length of Degree Program

An eight-semester arrangement of courses leading to the bachelor's degree is given for each of the geological sciences degree plans. The order in which the courses are taken is critical due to the prerequisites for required courses and schedule when courses are offered. A student who registers for fewer than the indicated number of hours for each semester or skips prerequisite courses may need more than eight semesters to complete the degree. The student is responsible for

including in each semester's work any courses that are prerequisite to those the student will take the following semester.

Applicability of Certain Courses

Physical Activity Courses

Physical activity (PED) courses, KIN 106C, and KIN 119 may not be counted toward a degree in the Jackson School. However, they are counted as courses for which the student is enrolled, and the grades are included in the grade point average.

ROTC Courses

The Departments of Air Force Science, Military Science, and Naval Science maintain ROTC units on campus. Information about each program is available from the chair of the department concerned.

Nine semester hours of coursework in air force science, military science, or naval science may be counted toward any degree in the Jackson School. Such credit may be used only as electives or to fulfill the writing requirement, and only by students who are commissioned by the University ROTC program.

Correspondence and Extension Courses

During a long semester students enrolled in the Jackson School are not allowed to take courses at another school or institution or by correspondence or extension at the University unless approved in advance by the Associate Dean for Academic Affairs. Students must submit a concurrent enrollment petition and meet with a JSG academic advisor for approval well in advance of the start of the requested course.

No more than 30 percent of the semester hours required for any degree in the Jackson School may be completed online, by correspondence, or through distance learning, including University Extension courses. These courses are not included in certain metrics, such as total hours, residency status, etc., and therefore may affect students' eligibility for some JSG programs.

Courses Taken on the Pass/Fail Basis

All courses required for all geological sciences degrees must be taken for a letter grade unless the course is offered only on the pass/fail basis. A student may elect to take courses that do not count toward the degree or are being taken to remove a deficiency on the pass/fail basis rather than for a letter grade. To elect the pass/fail system of grading a student must have received at least 30 hours of college credit before registering for any course on the pass/fail basis, unless the course is offered only on the pass/fail basis. Complete rules on registration on the pass/fail basis are given in the [General Information Catalog](#).

Bible Courses

No more than 12 semester hours of Bible courses may be counted toward a degree.

Minors

Students admitted to transcript-recognized minors must contact their academic advisors to have approved minors added to their degree audit profiles. This allows progress toward the credential to be tracked and ensures that minors are added to official transcripts upon graduation, if all requirements are met.

Minors for Geosciences Majors

While a minor is not required as part of any geosciences degree program, students may choose to complete a minor in a field of study other than

their major and to which they gain entry. Students may declare only one minor or certificate to supplement their Jackson School major.

Jackson School students should declare their minor/certificate intentions before they have completed 65 percent of their degree requirements, as indicated on the Interactive Degree Audit (IDA).

Minors for Non-Geosciences Majors

The minors offered by the Jackson School of Geosciences promote the understanding of Earth as a system, its resources, and environment, for the lasting benefit of humankind. Any non-geosciences student with a University grade point average of at least 2.5 may apply to a JSG minor. Students must apply for admission to the minor, have it added to their degree profiles, successfully complete all requirements, and apply to graduate for it to appear on their transcript.

Admission

Admission and readmission of undergraduate students to the University is the responsibility of the Office of Admissions. All students who wish to major in geological sciences must be admitted to the University according to the procedures given in the [General Information Catalog](#).

Students admitted to the University with deficiencies in high school units must remove the deficiencies as prescribed in the [General Information Catalog](#).

Admission to the Jackson School is granted for the fall semester only. All freshmen and external transfer students are expected to attend New Student Orientation the summer before they enter the school.

Admission to the Environmental Science Program

Admission information is found on the [program pages](#).

Admission to the Geological Sciences Program

Freshman Admission

Freshman applicants seeking admission to the Jackson School must meet the published University admissions requirements for the major by the official admissions application deadline. More information about admission requirements are available through the University Admissions Office or [online](#).

Applicants to the Jackson School of Geosciences must follow the application instructions outlined on the Office of Admissions website and select one of the Jackson School's majors at the time of application. Those students interested in applying to the environmental science degree program should refer to the information provided above. Those students interested in applying to the geosystems engineering degree program should refer to the information provided below.

External Transfer Admission

Students who wish to transfer to the University from another college or university must apply to the Office of Admissions as described in the [General Information Catalog](#). External transfer applicants seeking admission to the Jackson School of Geosciences must meet all published University admission requirements for the major and submit a complete application by the official admissions application deadline.

External transfer applicants to the Jackson School must follow the application instructions outlined on the Office of Admissions website and select one of the Jackson School's majors at the time of application. Only courses listed in the student's geosciences degree program, or

equivalent courses approved by the Jackson School of Geosciences, may be counted toward a geosciences degree. A course may therefore be accepted for transfer credit but not be applicable toward a geosciences degree. Prospective students are encouraged to consult the geological sciences degree plans and transfer course equivalency information available online.

Internal Transfer Admission

Students enrolled in another college or school at the University may apply in early spring and fall to be considered for admission to the Jackson School of Geosciences the following fall and spring semester. Students must be in good academic standing for admission and meet the minimum requirements for eligibility listed on the internal transfer website. The minimum requirements for consideration are in addition to the requirements to transfer from one division to another given in the [General Information Catalog](#).

Additional information for all internal transfer applicants:

- Application Deadlines: May 1 for fall entry and December 1 for spring entry.
- Only currently enrolled students may apply.
- Students may apply during the semester they are completing the minimum requirements to be eligible for consideration.
- Interested students are encouraged to attend a Jackson School internal transfer information session prior to the spring they intend to submit an application for internal transfer. A schedule of information sessions as well as additional information about the application process, online application, and submission deadlines are available on the Jackson School undergraduate [website](#).

Internal Transfer within the Jackson School

A geological sciences student interested in transferring to a different degree program within the Jackson School should consult with their Jackson School Academic Advisor to determine eligibility. Current Jackson School students do not need to submit an internal transfer application when requesting to switch to a different major in the Jackson School. Eligibility to change majors within the Jackson School are determined by progress toward degree and demonstrated academic success at the University.

Admission to the Geosystems Engineering Program

The Bachelor of Science in Geosystems Engineering (BSGE) is offered jointly by the Cockrell School of Engineering and the Jackson School of Geosciences. Students are simultaneously registered in both schools after attending orientation.

Freshmen Admission

Admission and readmission of undergraduate students to the University is the responsibility of the Office of Admissions. All students who wish to major in Geosciences must be admitted to the University according to the procedures given in the General Information Catalog.

Applicants to the BSGE program must follow the application instructions outlined on the Office of Admissions website and select Geosystems Engineering at the time of application. When selecting a second-choice major, freshman applicants may choose from one of the many other majors offered at the University.

External Transfer Admission

Students who wish to transfer to the University from another college or university must apply to the Office of Admissions as described in

the [General Information Catalog](#). External transfer applicants must follow the application instructions outlined on the Office of Admissions website and select Geosystems Engineering at the time of application. Requirements for admission as a transfer student vary, but all transfer applicants must submit transcripts of all college and high school coursework.

External transfer applicants will be required to meet the following minimum criteria to be considered for admission to the geosystems engineering major:

- Completion of M 408L, M 408M, or M 408D,
- Completion of PHY 303K and PHY 105M,
- Completion of a minimum of four technical courses. Technical courses include courses offered in mathematics, physics, chemistry, biology, geology, computer science, and engineering.

Admission applications that are not complete by the application deadline may be held to a higher admissions standard than those that are complete, if enrollment limits are reached.

Internal Transfer Admissions

Students interested in transferring to the BSGE program from another division of the University must apply through the Cockrell School of Engineering. Please refer to the [General Information Catalog](#) as well as the Cockrell School of Engineering portion of the Undergraduate Catalog for minimum requirements, application deadlines, and other information regarding internal transfer admissions for the geosystems engineering degree program.

Honors

Criteria for graduation with University Honors are given in [General Information](#). Criteria for graduation with program honors are given in the program page.

School Honors Program

The Jackson School offers a departmental honors program to its majors. Students who wish to participate in the program should submit an application to the Honors Program Faculty Advisors when they have completed 60 semester hours of coursework, including at least 8 semester hours of upper-division coursework in geological sciences. The Jackson School of Geosciences Honors Program receives an increasing number of qualified applications each year and not all applicants are guaranteed acceptance.

Minimum requirements for the completion of this program are:

1. A cumulative University grade point average of at least 3.00, and a grade point average of at least 3.50 is required in geological sciences courses counted toward the major requirement.
2. GEO 171H, GEO 172H, and GEO 173H with a grade of at least B- in each,
3. GEO 379H, with a grade of at least B-,
4. Completion at the University of at least 60 semester hours of coursework counted toward the degree.

An honors student who completes all program requirements will receive the designation "Special Honors in Geological Sciences" on their transcript and be recognized at the Jackson School commencement ceremony.