



**COLORADO SCHOOL
OF MINES
DEPARTMENT OF GEOPHYSICS**

**GRADUATE STUDENT
HANDBOOK**

FALL 2018

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1 INTRODUCTION

Welcome to the Department of Geophysics at Colorado School of Mines! This student handbook is written and updated each semester, and should assist you in working through the administrative side of your degree program. We strongly encourage you to use it as a reference as you proceed through your program, as it will help answer the most commonly asked questions that our students have.

While you should find clarification in these pages regarding your department-specific program requirements, this document is subject to change and is not meant to replace or repeat information provided in the [Colorado School of Mines Graduate Catalog](#). The Catalog is the legal contract between you and the institution. We recommend you become familiar with it, as it is important that you clearly understand the details outlined there.

For your convenience, we have divided this handbook into sections. The first section contains general information of benefit to *all* Geophysics graduate students. The subsequent three sections target the three graduate degree programs currently offered in the Department (Master of Science, Professional Masters in Petroleum Reservoir Systems, and Doctor of Philosophy).

We are glad you're here. Good luck!

2 NEW STUDENT CHECKLIST

- Obtain campus Blaster Card.
 - If you are a thesis-based graduate student who will have office space in the Department, see a member of the administrative staff to complete a hard key request for Access Services.
 - Create your campus e-mail account and confirm your access to Trailhead, Canvas, and other institutional systems.
 - Verify that you are on the Department's internal email distribution lists. Set your spam filter/forwarding so that all Mines-related email gets through.
 - (Optional) See the Department to have your photo taken, and provide permission to use your likeness in newsletters, the Department's website, and other materials.
 - Consult your advisor to register for courses and research credit (9-15 credits is considered full-time status). Registration must be complete not later than Census Day, **Tuesday, September 4, 2018.**
- IF YOU ARE PAID THROUGH COLORADO SCHOOL OF MINES:
- Complete background check paperwork as required by the University.
 - Submit completed employment paperwork to Human Resources. International Students: Bring your visa documentation for review by Human Resources.
 - Return to the Department with your orange verification slip so that you can sign your TA or your RA contract.
- Provide Social Security card to Human Resources. International Students: Initially, you will not have a Social Security card but bring your Social Security number application and HR will make a copy of this. You will then need to provide them with the actual card once you receive it. ***Failure to provide this information may result in a delay in receiving your first stipend payment.***
- Arrange to attend Sexual Harassment Prevention Training through the Human Resources Office. Register on blackboard.Mines.edu. This is required of all employees of the School, including teaching and research assistants.
 - US CITIZENS AND PERMANENT RESIDENTS: Contact the Registrar's Office for information about obtaining Colorado residency and [begin the application process](#). **You must submit your application before the first day of the Fall Semester, 2019.**

3 USEFUL GROUPS, PEOPLE, AND OFFICES

3.1 Office of Graduate Studies

Get to know the staff in the Office of Graduate Studies (OGS), for they will provide vital assistance to you throughout your program. Consult their [website](#) regularly. They post current deadlines, Graduate Catalog information, and most of the forms that you will need to complete and submit at some point during your program.

OGS is the institutional authority for the Mines Graduate Program; the Department consults with them regularly for guidance in campus-wide policy, and with individual graduate students. They are located in the Student Center, Suite E140.

3.2 Graduate Advisory Committee

The Graduate Advisory Committee (GAC) is the body of Department faculty and a representative from among the Geophysics graduate students who oversee most aspects of the graduate program. They are an excellent resource for questions or concerns regarding the more general aspects of the program. In addition to reviews and recommendations for graduate applications, the GAC reviews all graduate requests for Independent Study, Thesis Committee or Advisor requests, and programmatic exception requests, coordinates teaching assistant (TA) assignments, and addresses matters regarding the general processes of the program like the Qualifying (Comps) Process for PhD students, or reconciliation of background deficiencies.

The current chair of the GAC is Dr. Yaoguo Li, ygli@Mines.edu.

3.3 Society of Geophysics Graduate Students (SGGS)

The SGGS is Geophysics' official graduate student organization. They help facilitate communication between the graduate students and the Department faculty and MINES Administration on a variety of matters. They also organize student activities throughout the year and raise money to assist students with travel to professional meetings and to support their yearly activities. We encourage you to participate in the opportunities they make available.

The SGGS elects new officers each fall. The President acts as student representative of the GAC.

3.4 Graduate Student Government (GSG)

The Graduate Student Government (GSG) is the governing body of graduate students at Mines. The GSG Council includes one graduate student representative from each academic department that offers one or more graduate degree program. For more information about how the GSG supports and serves Mines graduate students, or for information about how to participate in meetings or on the Council, please visit their [website](#).

3.5 Geophysics Department – Key Faculty and Department Staff

John Bradford, Department Head

1318 Maple #6, Room 16, jbradford@Mines.edu

As Department Head, Dr. Bradford is ultimately responsible for all Geophysics Department matters. He is final the approving authority for thesis committees, candidacy forms, and thesis defenses. He leads the faculty in determining course offerings and schedules, curriculum, and in fact, teaches several courses himself throughout the year. If you need program guidance or assistance, or if you have an issue regarding the Department program that you would like to discuss, you are encouraged to make an appointment to see him. Please see Debra Marrufo to arrange a meeting.

Michelle Szobody, Office Manager

1318 Maple #6, Room 17, x3935; mszobody@Mines.edu

Michelle oversees all Department operations and budgetary matters, handles student administration, including graduate student coordination, travel arrangements, meeting logistics, student contracts, and curriculum scheduling, and manages Department outreach programs.

Debra Marrufo, Administrative Assistant

1318 Maple #6, Room 18, x3451, dmarrufo@Mines.edu

Debra handles day-to-day administrative matters for the Department of Geophysics, including travel and expenses, and coordinates logistics for Geophysics Field Camp. Debra also generates the annual Department newsletter, as well as manages a number of other operations.

Brian Passerella, Laboratory Coordinator

CoorsTek 2nd Floor, bpassere@Mines.edu

Brian manages the Department technical equipment and inventory, and administers all of our field equipment for our courses, including Field Session, and assists with undergraduate lab courses. Among other things, he is an excellent resource for teaching assistants in need of equipment for class projects.

Center for Wave Phenomena (CWP)

CWP Administrator

1318 Maple #5, Room 07, x2178

This position, in transition at the time of this writing, handles business and contract matters for the Center for Wave Phenomena. It also coordinates all communications and publications, manages the CWP website, and handles travel arrangements, student and faculty personnel matters and meeting logistics for CWP and its faculty and students. Currently, if you need assistance regarding administration for CWP, please see Michelle or Debra.

Reservoir Characterization Project (RCP)

Sue Jackson, RCP Program Manager

1318 Maple #5, Room 13, x3458, sujackso@Mines.edu

Sue manages publications, the website, and other special projects for the Reservoir Characterization Project. She also coordinates between RCP students and industry sponsors and oversees the technical presentations given at RCP semi-annual meetings.

Larry Irons, Information Technology Specialist

1318 Maple #5, Room 20, x2557, irons@Mines.edu

Larry manages all IT hardware and software for RCP, as well as provides some IT support to the Department of Geophysics. He also oversees the repository of RCP data.

3.6 On-Campus and Off-Campus Offices

Public Safety, x3333

Report ALL thefts, first to Public Safety and then to Michelle. In the case of an emergency, always call 911, first. The physical address of the Department of Geophysics is 1318 Maple Street, Building 5, Building 6, Building 7 (collectively known as The Trailers), and Building 4 (GRL Annex).

Human Resources, x3259

Guggenheim Hall, Basement Floor, North End of Building

For all personnel matters, including employee benefits.

International Student and Scholar Services, x3210

Student Center, South Wing, Room E110

Brandon Samter, Director, bsamter@Mines.edu

The MINES International Office handles matters related to the unique needs of our students and scholars who come from outside the United States.

Office of International Programs, x3210

Student Center, South Wing, Room E110

Any time a student travels internationally, he or she must visit OIP. This office is a valuable resource regarding study and travel abroad, both for domestic students, and international students.

Blaster Card Office

Elm Hall

Bob Mask, Manager

All students and employees must have a Blaster Card, which is the campus identification card. This card allows access to electronic doors, and secures other services, including Rec Center admission. It may be required for other MINES events and activities. The Blaster Card office also issues RTD bus and light rail passes.

Parking Services

1922 Jones Road, Building 1 Apt 5

parking@Mines.edu

The Parking Office is located in the Jones Road buildings, near Highway 6 and 19th Street. Anyone who parks on campus must either pay for an annual parking permit, or pay one of the kiosks.

Access Services

Access Services (more commonly known as the Key Shop, or Lock Shop) is located west of the GRL Building, across the driveway from the Geophysics offices. They handle all hard key requests and are the office at which you will turn in your key when you check out of the program. Their hours are limited each day due to campus need.

Cashier, x3298

Student Center, North Wing, Main Floor

Use the Cashier's Office to pay parking fines and other expenses levied to your student account. The Cashier will also cash small-balance personal checks.

Social Security Administration

<https://www.ssa.gov/>; 1-800-772-1213

Nearest office is at 13151 West Alameda Parkway, Lakewood

Hours vary; consult website for up-to-date information

ALL Mines employees, including graduate and undergraduate students paid through the School, are required to have a federal Social Security number to receive wages through the School. For new arrivals from outside the US, see the International Office immediately upon arrival in Golden (this information is also conveyed to international students during orientation before the start of the semester). The personnel there can direct our international visitors and students concerning the Social Security number process.

Drivers License Office

16950 West Colfax Avenue, Suite 104, Golden, CO 80401; (720) 497-1182

Open Monday through Friday, 8:00 a.m. until 5:00 p.m.

Contact the office directly for information on appropriate documents for obtaining a State of Colorado Driver's License or office identification card. We recommend you schedule several hours to visit the driver's license office, as the queue can become quite long. Or, schedule an appointment [on-line](#).

US Post Office

Nearest office is at 12th and Jackson Streets in Downtown Golden

Open 9:00 a.m. to 5:00 p.m., Monday through Friday (Federal holidays excluded)

There are also a post office box and Federal Express drop-box located on Illinois Street, in front of the Arthur Lakes Library.

4 DEPARTMENT EXPECTATIONS AND CODE OF CONDUCT

The Department of Geophysics endeavors to foster a professional working and learning environment that is ethical, collegial, and safe. To that end, we hold all students, faculty, and staff to the highest standards of integrity and professional conduct both on campus, and when representing the Department and the University off-campus.

Academic misconduct harms not only the student committing the act, but harms also the Department's reputation and the University's reputation, by association. It is important to understand what constitutes academic misconduct, and you are urged to read and become familiar with the University's Standards and Code of Conduct, Honor Code, and policies on Academic Integrity and Misconduct, all published in the [*Graduate Catalog*](#).

All students, faculty and staff on the Colorado School of Mines campus are entitled to a work environment that is free of harassment, and are committed to fostering such an environment. Employees of the University, including graduate students funded as teaching and research assistants, are required to attend training sessions on the prevention of sexual harassment and sexual violence, in particular. The University also has in place a policy regarding sexual harassment and to address harassment cases, should they arise. That policy appears in the [*Graduate Catalog*](#).

Also in place is a policy regarding personal/romantic relationships between employees, including graduate students. A copy of that policy is available [here](#).

Click [here](#) for the full library of Colorado School of Mines policies.

5 OTHER USEFUL INFORMATION

The information below should answer most day-to-day questions you will have about the Department and its facilities. If you have additional questions, you should see your academic advisor or a member of the staff. Your more senior colleagues are also a great resource.

5.1 Audio-Visual Equipment for Presentations

The Department owns LCD projectors and a conference phone that students may use for presentations, including comps and thesis defenses, as availability permits. Please see Debra to reserve this equipment. You are responsible for the setup of the equipment and for returning the projector and all of its peripherals, including slide advances, adapters, and cords, when you have finished. Please do not take either projector without having first reserved the equipment.

5.2 Building Access

The exterior doors to the GRL Annex are locked at 10:00 p.m., Monday through Friday, during the academic year, and at 5:00 p.m. Monday through Friday during the summer terms. They remain locked until 7:00 a.m. the following weekday morning. In order to access the building outside of regular business hours, you must have your Blaster Card activated. Debra or Michelle will activate your card at the time she receives your hard key request.

Some students may be assigned to work in the same building as the faculty and staff offices, and in those cases the students would be issued a hard key to access their desk. Occupants of this building are responsible for locking all entry doors at the end of the day, so student occupants must then check all doors as they depart, if they are the last to do so for that day. See a member of the Department staff with your Blaster Card to complete a key request form. Debra or Michelle will approve the form, and you will then visit Access Services to check out your key. Key replacement cost is \$65. Failure to return your key or pay the fine will result in a hold on your diploma and transcript.

The Department considers building access a convenience. Therefore, abusing the privilege will result in suspension of building access. Do not lend your Blaster Card or your key to *anyone*. If there should be some problem outside of normal business hours, your card is on the record, which is one of the first things Public Safety looks at if we report anything.

Unless you are actively moving equipment in or out of a room or the building, do not prop open *any* door of the Department Offices or the GRL Annex. Doing so can be a violation of the City of Golden Fire Code and a security concern. A persistent habit of leaving doors propped may result in a removal of building access.

5.3 Copying/Scanning

The copy room is across is in Building 6 of the faculty/staff offices. The machine is accessible by a code. If you work as a TA and have copying to do for the course with which you are assisting, please see the Department office for the correct code. If you have research-related copying authorized by the research center with whom you are working, you will need the code from the appropriate administrative staff. Please direct personal copying and scanning to Kinkos, or to the campus [Copy Center](#). If you have trouble with the machine, please do not try to fix it yourself. See the staff for assistance.

5.4 E-Mail

One of the first things you should do upon or before your arrival on campus, is set up your campus email account, using CCIT instructions and guidelines. Adhere to CCIT's guidelines for virus protection, data encryption, passwords, and other computer-related matters.

The official mode of communication at Mines is through your Mines email address. Check your email at least once each day and read everything you receive so that you do not miss critical information. Adjust your spam filters so that they do not filter out Mines-related email. The School's administrative offices will not accept this as an excuse if you miss an important deadline.

The Department of Geophysics has internal distribution lists for faculty and students, to which all new graduate student emails are added. We will permit you to use a personal email address on these internal distributions; however, the address must be identifiable as yours. For example, John.Smith@gmail.com is an email address that the Department would permit. GeophysicsFan1947@yahoo.com is not permissible.

The Daily Blast is a daily email of announcements covering a spectrum of topics, from upcoming meetings, to activities and news items of interest to students, faculty, and staff, to lecture announcements. Links to more information through the Blast are usually available. The campus uses the Blast to distribute many important messages that you may not receive otherwise. Therefore, it is to your benefit to read, or at least scan through, the Daily Blast each morning.

5.5 Fax Machine

The Department of Geophysics decommissioned its fax machine in 2017. If you need fax services, consider Alphagraphics in downtown Golden, the UPS Store near Safeway on Jackson Street, or the Fed Ex location on South Golden Road.

5.6 Department Facilities

At the time of this edition of the Handbook, the Cecil H. and Ida Green Graduate and Professional Center (known colloquially as the Green Center), where the Department of Geophysics was housed since 1972, is undergoing significant renovation. The Department expects to return operations to that building in late 2019 or early to mid-2020.

While the Green Center construction takes place, the Department faculty, staff, and students, as well as several Department computer and experimental labs, are housed in the three trailers (1318 Maple Street, #5-7), and in the GRL Annex (1318 Maple Street #4).

There is a larger **conference room** located in GRL Annex, Room 107. The room soon will be equipped with a large TV monitor, suitable for presentations. There is an HDMI cable connect via an outlet on the wall. Users are responsible for any needed adapters to connect, and must leave the HDMI cable connected to its port.

In the trailers are three smaller conference spaces: Building #7, Room 04; Building #6, Room 12; and the larger breakout space in Building #5. These spaces are suitable for small groups, though in the third case, especially, users should be mindful of the traveling sound and occupants in the neighboring offices.

Users are responsible for reserving the space(s) through Debra in advance, and are expected to leave each room in the same or better condition than the condition in which they found it.

Emergency alarms make an unmistakable sound when active. If an alarm sounds, regardless of whether it is an actual emergency or a drill, **leave the building immediately**, closing doors behind you, and move at least 75 feet from the building. No one may re-enter the building until cleared by the Golden Fire Department.

Food storage and a break room/lounge is available on the first floor of the GRL Annex. There you will find a shared full-sized refrigerator, microwave, and Keurig coffee machine for general use. You may use these facilities to store and prepare lunch/coffee/snacks each day. Please respect your colleagues by cleaning spills and debris from the counters and appliances, do not leave food to expire in the refrigerators, and do not bring amounts of food so large as to prevent others from using refrigerator space.

In the trailers, also, are full-sized refrigerators, microwaves, and Keurig machines, as well as water coolers, which department staff, faculty, and students may use. As with the GRL Annex Café, please be considerate of other users.

Neither the Department staff nor the custodians are responsible for maintaining Keurig machines. Users of the Keurigs must supply their own coffee; we recommend a reusable K-Cup, available at most retail outlets for a small cost.

Temperature control of Geophysics offices is administered by Facilities Management. If the temperature in your office or lab is uncomfortably cold or warm, report it to the staff, who will submit a request for someone to make necessary adjustments. In the interest of not duplicating work orders, please do not submit the request yourself.

Due to the configuration of the buildings, and campus policies concerning building temperature, it may take several hours for the temperature to change, if it can be adjusted. Please plan accordingly.

Space heaters are not allowed in the community office space and labs because of the potential fire hazard and power draw. If found, they will be confiscated and disposed of. Space heaters are occasionally used in the faculty/staff offices, but are discouraged unless absolutely necessary.

As a Geophysics thesis-based graduate student, **workspace** is provided for you in the GRL Annex. A few students may occupy desk space in the faculty/staff offices. Michelle will assign desk space ahead of the start of the semester; if you have not yet been notified of where your workspace has been assigned, please see Michelle, or your research group advisor.

Space is a premium in all buildings; please be mindful of the volume of books, papers, computer equipment, and personal items you are actually using in the office. Do NOT introduce new furniture to the area, without prior approval from the Department of Geophysics, as it adds to the flammable material in the area and can create other fire code violations and interfere with your neighbors' spaces.

Please take telephone calls and longer conversations and meetings to empty offices or conference rooms. Keep your desk reasonably tidy, as we have off-campus visitors and consortium representatives who visit the building occasionally. It is beneficial to clean your workspace periodically; you may use your own cleaning products, or the Department has a supply.

5.7 Student Mailboxes/Campus Mail

Every Geophysics graduate student has a mailbox for receiving Mines-related and paper mail. The boxes are located in the main Department Office, Building #6, Room 02. Check your mailbox regularly to keep it clear for new mail.

Mines does not permit the sending or receiving of personal mail or shipping. If you need to send or receive a personal package, please do so through the US Postal Service, or a UPS or Fed Ex office. If you are not comfortable with having packages sent to your residence when you will not be home, request to have it sent to the address of a trusted friend or neighbor.

For your own security, do not have bank or credit card statements, or other documents of a personal nature, sent to the Department. Mailboxes are a publicly accessible space. They are not secure and not regularly monitored. For the benefit of mailbox volume, please consider having professional journals sent to your home address, or receiving them electronically.

5.8 Campus Theft and Personal Safety

Though reported thefts and other crimes on campus are relatively rare, they happen. Do not leave valuables like laptop computers, cameras, phones, and other personal entertainment devices, or anything else that you would not wish to lose, unattended. Carry these items with you when you come and go from the office, or leave them at home.

If you must leave something of value behind, store it in a locked cabinet or office, or ask a member of the staff to store it for you. Purchase a locking security cable for your laptop computer. Do not assume that a locked office, cabinet or cable will prevent theft completely, but storing your items in the short term in that manner should deter most thefts. Close and lock, if possible, office or workroom doors if you are the last to leave.

Never prop open a locked office or lab door at any time, or for any reason.

Report any campus theft immediately to the Public Safety Office, and then notify the Department.

6 GENERAL PROGRAM INFORMATION

The next several pages are handouts that in past years were distributed loose-leaf to new graduate students. For your convenience we now include them bound with the other items. Those handouts are listed and explained below.

All forms provided or discussed below can also be found on either the Department of Geophysics [website](#), or on OGS [website](#).

6.1 Heiland Lecture

The Carl Heiland Lecture Series (commonly referred to as “the Heiland”) is a tradition in the Department of Geophysics, named for Carl Heiland, the Department’s first Head and pioneer of modern geophysics. The lecture takes place every Wednesday at 4:00 p.m. during the fall and spring semesters.

We distribute Heiland Lecture announcements by email, on bulletin boards and the Department website, and in the Daily Blast. We also send reminders by email shortly before the lecture each week. You will find the semester’s schedule of lectures also on the Department website.

Is there a noted geophysicist you think would be an interesting addition to the Heiland schedule? We encourage you to invite him or her to be a part of the tradition. Talk to the Department Office for details and logistics.

6.2 GPGN581 and GPGN681

The Heiland Lecture Series is part of the Geophysics Graduate Seminar course, GPGN581 (MS) and GPGN681 (PhD). All students enrolled in thesis-based graduate programs must register for the appropriate one of these two courses each semester for 0.0 credits until their last semester. During the last semester, they register for 1.0 credits. Students not enrolled in a thesis-based program need not register for the course; however, we strongly encourage all students to attend lectures, as the speakers are often interesting, and attending enables our students to become better acquainted with their colleagues.

As part of this course, students must give an individual scientific presentation at an off-campus professional conference:

- For PhD students, this requirement must be satisfied by giving an oral or poster presentation at conference or workshop of a professional organization, such as (but not limited to) SEG, AGU, LPSC.
- Master of Science (MS) students may complete the requirement by giving a poster or oral presentation at a professional conference or workshop, or at the MINES Graduate Research Conference (GRADS), held each spring term on campus.

Students completing the presentation component of the course must [document](#) the experience to receive final credit for the course, and before scheduling any thesis defense. Therefore, it is important that the student plan early in his or her program to fulfil this requirement successfully.

Master of Science students, under extraordinary circumstances, may apply for an exception to complete this requirement by giving an individual presentation at a research consortium meeting.

This is NOT a regularly accepted method of fulfilling the requirement, and must be proposed by the student to the Graduate Advisory Committee (GAC) not later than the semester prior to the term during which the student expects to present. The oral presentation must be an individual effort. ***Consortium meeting poster presentations are never acceptable as exception requests.***

The Department awards a grade of PRG for each student who regularly attends the Heiland Lectures and completes the individual presentation. The PRG will remain on the student's transcript, and the student will receive 1.0 credit of coursework toward the appropriate degree.

6.3 Thesis Committee Composition and Responsibilities

General Department Rules for Thesis Committees

A thesis committee should be both diverse and rigorous, while composed of members whose expertise and involvement will assist you with producing a high-quality thesis.

The Department of Geophysics requires for MS students: three members, minimum, two of whom must be full-time, active Department of Geophysics faculty. The GAC will entertain requests for exceptions to this requirement on a case-by-case basis. Full-time research faculty, who are approved Graduate Faculty through OGS, may serve as primary advisors and regular committee members. See the OGS [website](#) for a full list of approved Graduate Faculty. A member of the Adjunct Geophysics faculty, or an off-campus geoscience professional, may be acceptable as a third committee member. A minor representative would be in addition to the three core members and must be a full-time member of the faculty in the Department where the student would hold the minor program.

For PhD students: five total members, including your advisor, at-large/chair, and minor representative. Your advisor and two regular committee members must be from the Department of Geophysics; exceptions to that may be entertained on a case-by-case basis. All five primary committee members must be full-time members of the Mines faculty or approved [Graduate Faculty](#). Adjunct Geophysics faculty and off-campus professionals may serve as committee members but would be in addition to the five core members.

If a student requests more than one committee member, on-campus or off-campus, who is affiliated with the same research group, then the Department also expects the student to include one additional committee member who is not affiliated with that research group. For example, if an MS student requests two committee members from CWP (say, his advisor and one other CWP faculty member), then the Department will require the student to add a fourth member from outside the CWP group to diversify the committee.

Committee Members Who Have Left Mines

If a student's thesis advisor or a member of the student's committee has left his/her full-time faculty position at Mines, whether through retirement, resignation, or other circumstance, the student may have up to one year to complete the graduate program with the same advisor/committee member, provided both the student and the committee member agree to the retention. This additional year is subject to OGS approval.

If the committee member/advisor and student agree that it is best for the committee member to rotate off the committee right away, or if the Department or OGS requires it, then the student must file a Thesis Committee Change form. This may require adding a new committee member, depending upon the current composition of the committee.

Thesis Committee Roles and Responsibilities

You will find both paperwork for establishing or changing a thesis committee, as well as very useful quick-references regarding committee composition and qualifications, on OGS's [website](#).

Below is language from OGS, to define the roles and expectations Mines has of faculty as members of Thesis Committees and of students engaged in research-based degree programs.

Thesis Advisor

The Thesis Advisor has the overall responsibility for guiding the student through the process of successfully completing a thesis that fulfills the expectations of scholarly work at the appropriate level, and meets the requirements of the Department/Division and the School. The Advisor shall:

1. be able and willing to assume principal responsibility for advising the student;
2. have adequate time available for this work and be accessible to the student;
3. provide adequate and timely feedback to both the student and the Committee regarding student progress toward degree completion;
4. guide and provide continuing feedback on the student's development of a research project by providing input on the intellectual appropriateness of the proposed activities, the reasonableness of project scope, acquisition of necessary resources and expertise, necessary lab or computer facilities, etc.;
5. establish key academic milestones and communicate these to the student and appropriately evaluate the student on meeting these milestones.

Regular Committee Member

With the exception of the student's advisor, all voting members of the Thesis Committee are considered Regular Committee Members. The Regular Committee Member shall:

1. have adequate time to assume the responsibilities associated with serving on a student's Thesis Committee;
2. be accessible to the student (at a minimum this implies availability for Committee meetings to be held no less than once per semester and availability to participate in a student's qualifying/comprehensive examinations – as dictated by the practices employed by the degree program – and the thesis defense);
3. ensure that the student's work conforms to the highest standards of scholarly performance within the discipline, within the expertise provided by the Committee member;
4. provide advice to both the student and the student's advisor(s) on the quality, suitability and timeliness of the work being undertaken;
5. approve the student's degree plan (e.g., courses of study, compliance with program's qualifying and comprehensive examination process, thesis proposal, etc.), assuring that the plan not only meets the intellectual needs of the student, but also all institutional and program requirements;
6. review thesis and dissertation drafts as provided by the student and the advisor and provide feedback in a timely fashion; and
7. participate in, and independently evaluate student performance in the final thesis defense.

Minor Committee Member

In addition to the responsibilities of a Regular Committee Member, the Minor Representative shall:

1. provide advice for, and approval of coursework required as part of a student's minor degree program in a manner that is consistent with institutional and minor program requirements;

2. participate in, as appropriate, the student's qualifying and comprehensive examination process to certify completion of minor degree requirements; and
3. work individually with the student on the thesis aspects for which the Minor Committee member has expertise.

Thesis Committee Chairperson

In addition to the responsibilities of a Regular Committee Member, the Chairperson of Committee shall:

1. chair all meetings of the Thesis Committee including the thesis defense;
2. represent the broad interests of the Institution with respect to high standards of scholarly performance;
3. represent OGS by ensuring that all procedures are carried out fairly and in accordance with institutional guidelines and policies;
4. provide a non-specialist's view of the quality of the work, ensuring that the student's mastery of the subject matter is broad and comprehensive;
5. ensure there are no conflicts of interest with the departments/divisions of the student, advisor(s) or the minor field of study and effectively address or manage, as appropriate, conflicts that may arise.

Student Responsibilities

While we expect that the student seek guidance and support from their advisor and all members of the Thesis Committee, the student is responsible for actually defining and carrying out the program approved by the Thesis Committee and completing the thesis/dissertation. As such, it is expected that the student assumes a leadership role in defining and carrying out all aspects of his/her degree program and thesis/dissertation project. Within this context, students shall:

1. formally establish a Thesis Advisor and Committee by the end of their first twelve months of residence in their degree program;
2. call meetings of the Thesis Committee as needed;
3. actively inform and solicit feedback from the student's Advisor and Committee on progress made toward degree;
4. respond to, and act on feedback from the student's Advisor and Committee in a timely and constructive manner;
5. understand and then apply the institutional and programmatic standards related to the ethical conduct of research in the completion of the student's thesis/dissertation; and
6. know, understand and follow deadlines defined by the institution and the degree program related to all aspects of the student's degree program.

6.4 Establishing or Changing a Thesis Committee

Establishing Your Committee

You must establish a thesis committee not later than the end of the first 12 months of your program. The Department encourages students to establish committees as early as possible. Thesis Committee request/change forms are available on OGS [website](#). Read the Catalog and OGS requirements carefully to ensure that the proposed committee meets institutional and departmental criteria *before* you submit the form to the Department. Geoprosessionals outside Mines could be thesis committee members, with the approval of the Department, but must be in addition to the core required members.

Thesis-based MS and PhD students should use the following process.

1. Complete the Thesis Committee Request [form](#) appropriate to your program, and have committee members sign where indicated. Off-campus members may email approval, or you may scan/fax the form for them and they may email/fax the form back with their signature.
2. Add a second page to the form, with a sentence or two describing your research. The GAC will use this information while reviewing the request.
3. Any off-campus member with voting status must provide a current, abbreviated CV.
4. Give the completed, signed form and research description to Michelle.
5. The GAC will review the request. If they have any feedback, Michelle or your advisor will relay that information. Otherwise, Michelle will pass the request along to the Dr. Bradford.
6. Dr. Bradford will review. If he has any feedback, Michelle will communicate that. Otherwise, upon approval of the request, Michelle will forward the form to OGS and notify you that she has done so.
7. OGS will send the Department a scanned copy of the fully approved form, which Michelle will then forward to you for your records.

Changing Your Committee

From time to time and for various reasons, a student may wish to add, remove, or change a thesis committee member. If the committee composition changes dramatically, the request will go to the GAC for full review under the process outlined above. If the change is limited to a single member, complete a new Thesis Committee Request form and check the box to indicate a change to the committee. Committee members dropping off a committee must sign their acknowledgment. Bring the form to Michelle, who will submit it to Dr. Bradford for review and comment or approval.

6.5 Changing a Degree Program

From time to time, a graduate student's circumstances change, either professionally or personally, and the student is compelled to move to a different program. See below for guidelines concerning the most common transfers from one program to another.

Petroleum Reservoir Systems to Master of Science/Thesis

Students wishing to move from the Professional Masters / Petroleum Reservoir Systems program to either Master of Science, Geophysics or Master of Science, Geophysical Engineering must apply to the new program through the [institutional application system](#).

A reduced application fee is assessed. Students MUST adhere to the published deadlines for applying to all new programs, and provide the following as part of the application:

- New Statement of Purpose
- Unofficial transcripts from prior post-secondary degree programs, including the current PMPRS
- Three new letters of recommendation

The Department will accept GRE and TOEFL or IELTS scores from the Petroleum Reservoir Systems application, if preferred by the applicant. Upload the reports with the new application, or contact Graduate Admissions to include them your new application.

Master of Science / Thesis to PhD

Students currently in the Master of Science, Geophysics or Master of Science, Geophysical Engineering program, who wish to apply to the PhD program in either Geophysics or Geophysical Engineering, must apply to the new program through the [institutional application system](#):

A reduced application fee is assessed. Students MUST adhere to the published deadlines for applying to all new programs, and provide the following as part of the application:

- New Statement of Purpose
- Unofficial transcripts from prior post-secondary degree programs, including the current Master of Science program
- Three new letters of recommendation

The Department will accept GRE and TOEFL or IELTS scores from the Petroleum Reservoir Systems application. Please upload the reports with the new application, or contact Graduate Admissions to include them your new application.

MSc, Geophysics to MSc, Geophysical Engineering MSc, Geophysical Engineering to MSc, Geophysics PhD, Geophysics to PhD, Geophysical Engineering PhD, Geophysical Engineering to PhD, Geophysics

Students currently in one of the thesis-based programs in either Geophysics or Geophysical Engineering, who wish to move to the other discipline, must apply through the [institutional application system](#).

Graduate Admissions considers this changing to a new program and, therefore, the Department, OGS, and the International Office, if appropriate, must review the change. A reduced application fee is assessed. Students **MUST** adhere to the published deadlines for applying to all new programs, and *MUST apply to the other program by the posted deadlines at least one semester prior to the planned program completion.*

Provide the following as part of the application:

- New Statement of Purpose, documenting the reason(s) for switching to the other program
- If applying to Geophysical Engineering, document the engineering course work taken to satisfy the engineering requirement of that program
- A letter of recommendation from your current thesis advisor

In the case of this category of this situation, only, the Department waives the requirement for all other credentials. Please notify Michelle after you have submitted your application so that she can coordinate with the Graduate Admissions Office to receive the file with reduced credentials.

PhD to Master of Science/Thesis

On rare occasions, students choose to switch from the PhD program in either Geophysics or Geophysical Engineering, to the Master of Science program in Geophysics or Geophysical Engineering.

If the student is switching between Geophysics and Geophysical Engineering, regardless of degree level, he or she must apply through the campus application system and submit to the guidelines outlined in the section just above this.

If the student is moving from PhD to MS in the Department, but not switching between Geophysics and Geophysical Engineering, the student must submit a Degree Level Change Request to complete this process fairly simply. Start by [downloading the form](#). The student and his/her advisor must sign, and then bring the form to Michelle, who will obtain the Department Head signature and forward the paperwork to OGS.

6.6 Degree Audits, Admission to Candidacy, and Reduced Registration

Degree Audit

Every student enrolled in any graduate program at Mines must complete a Degree Audit, which OGS must approve before the student may apply to graduate, or qualify for reduced registration status (described later), but is typically done during the semester in which the student expects to complete all of his/her course work.

The [degree audit application](#) is available on the OGS website. Download and complete the form applicable to your program. Make sure that you complete the sections properly, with course work listed in appropriate sections, and obtain all necessary approvals from your committee. Failure to do so could result in your degree audit being delayed or rejected.

Scan signatures from committee members are acceptable. Email approval is also acceptable; however, the committee member approving by email must specify that he or she has reviewed your degree audit form, and approves.

After completing the form and obtaining committee approvals, bring the form to Michelle, who will review the application for the Department, process the paperwork, and submit the departmentally approved form to OGS.

OGS has submission deadlines for degree audits, for any student who is applying for reduced registration or who expects to graduate in a specific semester. Read email from OGS as appropriate to this topic, and adhere to the deadlines. You must submit your paperwork to Michelle at least 3 – 4 business days ahead of OGS deadlines, to ensure enough time for a departmental review.

OGS encourages Degree Audit submissions as early as possible; however, the Department generally will not approve any degree audit form for a student who has not successfully completed all course work, or who is not actively enrolled for his or her final semester of course work completion. It is, therefore, to your benefit to formulate a course plan with your advisor as early as possible in your graduate program, and adhere to that plan.

- Petroleum Reservoir Systems students typically can expect to complete a Degree Audit during the third semester of their programs.
- Master of Science students can also expect to complete the Degree Audit process during the third semester of their graduate programs. Completing and documenting the GPGN581 individual requirement is not mandatory for the Department to approve a degree audit form. However, students are strongly encouraged to have met this requirement by that time, and *may not schedule any thesis defense until the requirement is met, and documented.*
- PhD students should be able to complete a Degree Audit form within two to 2-1/2 years after the start of their programs. Completing and documenting the remaining PhD programmatic requirements is not mandatory for the Department to approve the degree audit form. However, PhD students are strongly encouraged to meet those additional requirements at the earliest possible time, to avoid unnecessary administrative delays. See the Admission to Candidacy section below for more information.

Some hints for completing your Degree Audit application:

- Do not duplicate line items. For example, if you have received approval to have a transfer course apply toward your minor program, list that course under “Minor Courses” but do not also list it under “Transfer Credit”.
- The approval from your committee to use transfer credit must be on file with the Department.
- Your research credit will be accounted for and OGS will confirm that you have accumulated enough research credit to graduate. Therefore, you may estimate the amount of research credit you expect to have accumulated by the time of graduation on the Degree Audit form.
- Complete and sign the Responsible Conduct of Research statement on Page 2 of the form. If you did not receive any support from the National Science Foundation, then you are generally exempted from this institutional requirement. Note, however, that all PhD students whose programs began on or after January, 2013, are required to complete SYGN502, Introduction to Research Ethics, and therefore meet the requirement through that medium.
- Remember to list GPGN581 or GPGN681.
- For course work in which you are currently enrolled, list the course, but leave the grade blank.
- 300-level course work does not count toward a graduate degree; do not list these courses.
- Proofread your form before you obtain signatures, and verify that course numbers, course titles, grades, and semesters of enrollment are all accurate.

Admission to Candidacy (PhD Only)

Admission to Candidacy is the formal process for confirming successful completion of the PhD Qualifying process, and that the student is now prepared to finish, write, and defend his or her thesis. We strongly encourage you to make use of your graduate progress checklist, to better track the completion of your program requirements as you proceed toward admitting to candidacy in the PhD program. You may inquire at any time with the Department about whether your program requirements are documented as having been met.

The PhD [Admission to Candidacy application](#) is available on the The OGS website.

As with degree audits, OGS has submission deadlines for Admission to Candidacy, for any PhD student who is applying for reduced registration or who expects to graduate in a specific semester. And, as with degree audits, plan to submit your Admission to Candidacy application to Michelle at least 2 – 3 days ahead of OGS deadlines.

Neither the Department nor OGS will approve an Admission to Candidacy form for any PhD student who does not have an approved degree audit form on file. The Department will approve an Admission to Candidacy form only after a student has successfully completed both steps of the Geophysics PhD Qualifying Examination.

A PhD student may submit a Degree Audit and an Admission to Candidacy form at the same time.

A PhD student may submit both a Degree Audit and an Admission to Candidacy form without having met the foreign language, practical teaching, and GPGN681 individual requirements. However, PhD students are strongly encouraged to complete all of these requirements before admitting to candidacy, and *may not schedule any thesis defense until all remaining programmatic requirements are met and documented.*

Reduced Registration

Mines will award Reduced Registration status to thesis-based graduate students who have accumulated a requisite number of credits and have approved Degree Audit and Admission to Candidacy (for PhD students) forms on file with OGS. See the Catalog for specific requirements, but MS students finishing their third semester, and PhD students finishing their sixth semester, are usually eligible for this status. Non-thesis programs are not eligible for reduced registration status.

Once a student is eligible for reduced registration, he or she need not reapply each semester. Notify the Department when OGS confirms eligibility, for accuracy of funding paperwork.

As a reduced-registration student, you will register for 3 credits of research *plus* 1 credit of either GPGN581 or GPGN681, and will be considered a full-time student. If you must, or choose to, enroll in additional course work after becoming reduced-registration eligible, Mines will charge additional tuition. Do not register for additional credits without first consulting with the faculty member responsible for your funding.

6.7 Comps and Thesis Defenses

We strongly encourage student to attend the defenses of their colleagues, both from within their own research groups, as well as from other groups. Not only will this prepare you for the process of your own defense, but it will increase your knowledge about the research beyond your specialty, and can inspire future collaborative opportunities!

General Department/Mines Policies for Defense Scheduling

1. Your comps/thesis manuscript must be complete and distributed to your committee before you may tentatively schedule the defense, and the Department Head must approve the defense before you may confirm the schedule.
2. You must enroll for the term in which you schedule any defense.
3. You may schedule a defense any time during the regular workweek, depending upon committee and Department Head approval, and space availability.
4. The Department does not hold defenses during the summer terms, unless truly extraordinary circumstances require it. Students may not schedule a defense during Spring or Winter Break, under any circumstances.
5. Plan to schedule a defense at least 2-3 weeks ahead of the defense date, to provide adequate preparation time for the student and his/her committee and for advertising of the defense.
6. The Department's Defense Request Form is available on the Department [website](#). Use the version appropriate to the degree level. The form is required to schedule any defense and must be approved by all thesis committee members before submitting to the Department.

Specific Requirements for Comprehensive (Comps) Defenses

1. Refer to the PhD Qualifying Process document on page 48 or [download](#) from the Department website. Hereafter, we will refer to the PhD qualifying process as "First Comps" and "Second Comps", or generally "Comps" or "Comps process" for simplicity.
2. The First Comps process must be complete (e.g., you must have submitted your paper to a peer-reviewed journal) before you may schedule your Second Comps (thesis proposal) defense.

Specific Requirements for Thesis Defenses

You must have an approved Degree Audit, and for PhD students, an approved Admission to Candidacy form on file with OGS, before you may schedule a thesis defense. Additionally, all other program requirements must be completed and on file with the Department, *before* scheduling a thesis defense.

The next few pages will provide the logistical guidance needed for scheduling a defense. Following that is a list of frequently asked questions regarding defenses.

Instructions for Scheduling a Thesis Defense

1. Be sure that you have completed and documented all departmental requirements, and [all institutional milestones, including submitting your graduation application](#).
2. Accept the invitation from the CANVAS system to enroll in the defense/checkout process and complete the Pre-Thesis Defense Quiz. Make sure you understand institutional defense rules as published [here](#).
3. Download the applicable [Thesis Defense Request Form](#), from the Department website.
4. Notify your committee *and the Department Head* a minimum of 3 weeks ahead of when you anticipate defending, of your intention to defend. Attach an updated copy of your thesis manuscript for review and feedback. **Dr. Bradford will NOT approve your defense until he has your committee approvals and properly formatted manuscript!**
5. Complete the Defense Request Form and circulate among your committee for approval. Email approvals are acceptable, but the form is preferred.
6. Send the signed form to Michelle for Department Head approval. Michelle will not confirm or announce your defense without full approval.
7. Forward your updated abstract to Michelle. *Helpful hint: if you copy Michelle when you email the manuscript to your committee and to Dr. Bradford, she can use the abstract from the manuscript and save you a step.*
8. Reserve appropriate audio-visual equipment for your defense, if necessary.
9. Michelle will confirm your room reservation and send you the paperwork you'll need for after your defense. Follow instructions carefully to avoid delays afterward.
10. Thesis Defenses Only: Complete the GP Program Assessment Survey and on-line exit survey. Email the assessment data to Michelle before your defense.
11. Thesis Defenses Only: Schedule an exit interview with Dr. Bradford. See Debra to get on his calendar.
12. Set up the room for your defense.
13. Upon completion of your defense, *regardless of the outcome*, you must return the signed defense form to Michelle for the Department and institutional files.

Post-Defense Instructions

1. Return all furniture in the room to the arrangement in which you found the space. Clean off table surfaces, dispose of trash/leftover food, etc. Cleaning supplies are available in the Department office.
2. Complete revisions as instructed by your committee.
3. Complete and print the Thesis Defense Form in the CANVAS course administered by OGS. *This is different from the Geophysics defense form which your committee will sign at the defense, itself.*

4. After obtaining all committee signatures, bring the CANVAS form to Michelle with the thesis submittal page. Michelle will obtain the Department Head signatures after confirming the following:
 - a. You have submitted all software code and an electronic copy of your final thesis to your research group/center;
 - b. You have returned any department materials currently in your possession; and
 - c. You have completed the on-line exit survey and exit interview.
5. Submit this final, signed form to OGS by their upload deadline. Along with the uploaded thesis, this will drive format review.
6. Submit your thesis electronically through ProQuest for format review, on or before the deadline published by OGS.
7. Complete the Graduation Check-Out and Deadlines Quiz in the CANVAS system by the OGS deadlines.
8. Watch for notifications regarding your reviewed thesis, make any necessary formatting adjustments, and follow instructions for resubmitting the final version to the electronic thesis system.
9. Return your building key, if you have one, to Access Services.
10. Provide your forwarding address to OGS via Trailhead, so that they have an address to which to mail your diploma.

Thesis Defense and Graduation FAQ's

These are some of the most common questions from students completing their programs. We encourage you to read this, as it may save you from unanticipated snags on your road to graduation.

Q: May I schedule a room before obtaining final approval for the defense date?

A: Once a manuscript is distributed and you are ready to poll your committee for availability, Michelle will tentatively schedule your defense and request a room. However, the reservation will remain unconfirmed until the Department Head and your committee have fully approved the defense.

Q: May I schedule a defense during Winter Break or during the summer?

A: Winter and Spring Break defenses are not permitted because school is not in session. Summer defenses are possible, in theory, but because of faculty travel schedules and because so many of your colleagues are also off-campus over the summer, we do not schedule defenses during the summer terms unless special circumstances require it.

Q: I cannot get my entire committee to agree on a schedule. What do I do?

A: For MS candidates, this is a problem because usually, there are only 3 members of the committee. You should be trying to find a schedule that will accommodate your committee, either in person or via Skype.

With PhD committees, the absence of one committee member for good and sufficient reason is often less of an issue. If the absent committee member is a non-voting member, then his or her absence is not a problem. However, seek the advice of both the Department Head and your advisor on whether you should proceed without that missing committee member, or find another date for your defense.

Any absent committee member must document the expectation to be absent, and that he/she agrees to read the manuscript and submit all questions to your committee chair. The committee chair will cast the absent committee member's vote by proxy. If the committee member is has participated in the defense via Skype or other video conference, then the member must send email to the Department after the defense to cast his/her vote.

Q: What if one of my committee members is off-campus and cannot sign the defense request?

A: Faxed or scanned signatures, or email, are acceptable. Send the form to them electronically and have them sign and return in a similar manner. We will also accept an email from the committee member in lieu of a signature, but the committee member must state specifically they approve the defense to move forward, and are available at the proposed date/time.

Q. I'm a PhD student and have completed the teaching requirement (or the foreign language requirement); I just don't have the documentation. Can I still schedule my defense?

A: The Department policy is that you cannot defend without having fulfilled and documented having completed all program requirements.

Q: Do I have to supply food for my defense?

A: This has become a tradition and attendees certainly welcome the offering. However, you are in no way obligated to supply food or beverage for those who attend your defense.

FAQ's for Students Returning Specifically to Defend and/or Graduate

Q: Do I need to register for classes?

A: You must register for credits during the semester in which you defend your thesis. This is an institutional requirement. Contact OGS with questions. There is a window of time during the first part of a term where, if you have enrolled in the immediately preceding term, and have defended AND COMPLETELY CHECKED OUT by specified deadlines, you may not have to register for that semester. Contact OGS or Michelle for details.

Q: What if I cannot be on campus to complete the checkout process after I defend?

A: You must appoint a trusted colleague on campus to do this on your behalf, but please be available to sign and email documentation as necessary. If you leave campus before completing this process, BE SURE you return your key to Access Services before you go—it will hold up your transcript and your diploma!

7 PROFESSIONAL MASTERS PROGRAM, PETROLEUM RESERVOIR SYSTEMS

We encourage you to coordinate closely with your advisor at the beginning of your program regarding a course plan. The checklist on the next pages and located on the Department [website](#), is specific to the Professional Masters program may be of assistance as you complete your course work, although upon your first meeting with your program advisor you will likely have a course plan document to use, as well.

Graduate Student Progress Checklist
Professional Masters: Petroleum Reservoir Systems¹

Student: _____

Advisor(s): _____ **Semester of Admittance:** _____

1. Meet with program advisor at the beginning of the first semester in attendance to establish an appropriate sequence of courses. Date of meeting: _____
2. At least one formal meeting of the student and program advisor each semester, if deemed necessary. Submit minutes from those meetings with your advisor to the Department, as file copies.

Meeting dates:

3. Course Requirements.

400-Level Courses. You may use up to 9 credits of 400-level course work toward your degree. Any 400-level courses taken specifically to satisfy deficiencies do not count toward the degree.

Specific Course Requirements (1). Select one course from the following:

- GPGN419/PEGN419 Well Log Analysis and Formation Evaluation
- GPGN438 Petroleum Geology

Specific Course Requirements (2). Select two courses from the following:

- GEOL609 Advanced Petroleum Geology
- GEGN503/GPGN503/PEGN503 Integrated Exploration and Development
- GEGN504/GPGN504/PEGN504 Integrated Exploration and Development

Remaining Course Requirements. An additional 9 credits must consist of one course each from GP, GE, and PE.² The remaining 18 credits may consist of course work from any of the 3 participating departments or other courses approved by the program committee. Up to 6 hours may consist of independent study, including an industry project.

¹ This checklist applies to all students entering the PMPRS program during Fall 2018 or after. For specific requirements in the program prior to Fall 2018, consult the Department or an earlier Catalog.

² If one or more of these courses is cross-listed among the three departments, it is preferred for record-keeping purposes, that you enroll in the section that will ensure that your transcript confirms your having completed one course in each department.

400-Level Courses: No more than 9 credits may be used to fulfill GP course requirements. Course sequence shall be decided upon at the beginning of the student's first semester in the Professional Masters program.

Course	Semester Completed	Credits Awarded
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Specific Course Requirements (1). One course selected from the following:

- _____ GPGN419/PEGN419 Well Log Analysis and Formation Evaluation; OR
- _____ GEGN438 Petroleum Geology

Specific Course Requirements (2). Two courses selected from the following:

- _____ GEOL609 Advanced Petroleum Geology
- _____ GEGN503/GPGN503/PEGN503 Integrated Exploration and Development
- _____ GEGN504/GPGN504/PEGN504 Integrated Exploration and Development

Remaining graduate (500- and 600-level) courses taken at MINES: Course sequence shall be decided upon at the beginning of the student's first semester in the Professional Masters program.

Course	Semester Completed	Credits Awarded
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Total Course Credits Approved: _____

NOTE: Total *must be 36 credit hours or more* beyond B.S. degree. Up to 9 credits of approved 400-level coursework may be included with committee approval.

5. Degree Audit Form submitted and approved: _____
6. Graduation Application submitted on Trailhead: _____
7. Checkout process completed with OGS: _____

8 MASTER OF SCIENCE PROGRAM

You should work closely with your advisor and thesis committee to ensure that you stay track to complete your degree in the planned length of time. The at-a-glance information is a good fingertip resource for ensuring that you complete all your program requirements. The [checklist](#) that follows is highly useful for recording the requirements as you fulfill them.

MS (Thesis Based) “At-A-Glance” (Geophysics)¹

Requirements

1. Satisfy background coursework requirements specified at entry by the Graduate Advisory Committee (GAC).
2. Establish a Thesis Committee by the end of your second semester.
3. Complete at least 26 credits of coursework and at least 12 credits of research, as approved by your committee and as dictated by the following criteria:
 - a. All credits applied to the degree must be at the 400-level or above.
 - b. Complete 12 research credits (GPGN707) under your Mines faculty advisor.
 - c. Complete the following required courses:
 - i. LICM501 Professional Oral Communication (1 credit)
 - ii. GPGN581 Graduate Seminar (1 credit)²
 - d. Background requirements may be in addition to the above course requirements for your degree.
4. Achieve a cumulative GPA of at least 3.0.
5. Submit a Degree Audit and apply for Reduced Registration status by published deadlines.
6. Research, write and defend your MS thesis.
7. Complete required thesis corrections; provide any associated software code and electronic copy of your finished thesis to your Center administrator (if working within one of the research centers).
8. Apply for graduation, and attend the ceremony in your honor!

¹ Typical completion time for a MS in Geophysics is 4-6 semesters.

² MS students enroll in GPGN581 for 0.0 credits each semester in residence until the last semester. During the last semester, they register for 1.0 credits. Students must attend Heiland Lecture regularly until graduation, and complete the GPGN581 individual presentation requirement. Credit is awarded with a grade of PRG, in the semester in which the student graduates.

MS (Thesis-Based) At-A-Glance (Geophysics)

Recommended timeline for success¹

What	By When
Meet with interim advisor regarding background coursework and registration	First week in the program
Make formal appointment of advisor and committee; obtain committee approval of planned coursework	Middle of 1 st semester
Choose thesis topic; begin background research for thesis	Not later than 2 nd semester
Complete course requirements and thesis research	3 rd semester
Submit Degree Audit form to Department Office	Late October, 3 rd semester
Submit application to graduate	Early November, 3 rd semester
Finish writing and defend thesis	Middle to end of 4 th semester
Complete thesis revisions and check out	See OGS website for deadlines and processes
GRADUATE!	End of 4 th semester
Attend Geophysics graduation event in your honor	Graduation Day

¹ Timeline is based on a students' starting during the Fall semester.

Graduate Student Progress Checklist
Master of Science Degrees: Geophysics and Geophysical Engineering

Student: _____ **Minor Program:** _____

Advisor: _____ **Semester of Admittance:** _____

1. Official formation of thesis committee, including selection of advisor. Thesis Committee must be approved within the first calendar year from start of program. Requirements appear on the OGS website. Form to establish a committee is available from OGS website. Official form must be submitted to the Department for approval before the Department submits it to OGS.

Date committee request filed with the Department: _____

2. At least one formal meeting of the student and thesis committee each semester. Thesis Advisor or Committee Chair should take minutes and submit for Department files.

Meeting dates:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. Course Requirements.

Background Recommendations. The student and advisor should plan the coursework using the list of "Background Recommendations" completed by the GAC. The advisor must submit a memo or email listing the plan to address identified background deficiencies. The Committee shall provide written justification for resolving deficiencies in a method other than taking recommended courses. If GPGN486 is determined to be a background requirement, then student must complete that course during the first summer of his/her program.

Transfer Credit. The thesis committee may allow transferring up to 9 hours of credit for individual graduate-level courses at another institution. Students must supply the committee with written documentation describing these courses for which they wish to receive credit. Courses cannot appear as part of a student's undergraduate transcript.

400-Level Courses. There is a 9-credit maximum for 400-level courses allowed toward this degree. Any 400-level courses taken specifically to satisfy deficiencies do not count toward the degree.

Combined Program: Students approved for the Combined Program may use up to 6 credits of 400- or 500-level course work from their undergraduate program at Mines toward this degree. 400-level course work included as part of the combined program counts toward the 9 total credits of 400-level course work allowed overall toward the Master of Science degree.

NOTE: Total *must be 38 credit hours or more* beyond B.S. degree, including at least research credits, 400-level course work, specific course requirements, and any minor course work (if the student declares a minor).

Engineering Courses: Students in the Master of Science Degree in Geophysical Engineering must either have a Bachelor's degree in Engineering, or complete 16 credits of engineering coursework (included in the 26 total course credits required for a Master of Science degree). These courses may be taken at Mines or be transferred into the Mines program as indicated above.

Course	Semester Completed	Credits Awarded
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

- Thesis Proposal: Discussion in a thesis committee meeting of a written proposal for the planned thesis research. Typical length of the proposal is 5 to 15 typewritten pages. To help the committee evaluate the prospects for successful and timely completion of the thesis, the proposal should include
 - Scientific background
 - Indication of the purpose for and type of research to be performed
 - Specific research targets
 - Estimated target date for completion

Scope and topic of thesis agreed upon: _____

Thesis proposal reviewed and approved: _____

- [GPGN581 Individual Oral/Poster Presentation:](#)

Name of Professional Meeting: _____

Date of Presentation: _____ Oral/Poster: _____

Approved by Department: _____

- [Degree Audit Form](#) submitted and approved: _____

- Thesis completed presented, and defended: _____

- Thesis corrections completed: _____

- Graduation Application submitted on Trailhead: _____

- Checkout process completed with OGS: _____

9 DOCTOR OF PHILOSOPHY PROGRAM

You should work closely with your advisor and thesis committee to stay on track to complete your degree in a planned length of time. The at-a-glance information is a good fingertip resource for ensuring that you complete all your program requirements. The checklist that follows is highly useful for recording the requirements as you fulfill them. Given the expanded program requirements for Doctor of Philosophy, we strongly encourage making use of this checklist.

PhD “At-A-Glance” (Geophysics)¹

Requirements

1. Satisfy background requirements specified by the GAC.
2. Establish a Thesis Committee by the end of your second semester.
3. Complete 72 credits beyond a Bachelors Degree as follows:
 - a. Transfer up to 36 credits for a thesis-based Masters Degree.
 - b. Complete 24 research credits (GPGN707) under your Mines faculty advisor.
 - c. Complete 12 credits in a minor program, as approved by your committee.
 - d. Complete the following required courses:
 - i. LICM501 Professional Oral Communication (1 credit)
 - ii. SYGN502 Introduction to Research Ethics (1 credit)²
 - iii. GPGN681 Graduate Seminar (1 credit)³
 - e. Complete two of the following three courses:
 - i. SYGN501 Research Skills for Graduate Students (1 credit)
 - ii. SYGN600 College Teaching (2 credits)⁴
 - iii. LAIS601 Academic Publishing (2 or 3 credits)
 - f. Count no more than 9 credits at the 400-level for graduate credit
4. Achieve a cumulative GPA of at least 3.0.
5. Submit your Degree Audit to the Department and OGS for approval.
6. Propose, complete and defend a PhD Qualifying Project (First Comps) within your first 18 months at Mines.
7. Write and defend a PhD thesis proposal (Second Comps) before the start of your third year at Mines.
8. Apply for Admission to Candidacy and reduced registration.
9. Document the foreign language requirement: one year of college-level or two years of high-school-level courses in a single foreign language, or demonstrate fluency in a language other than English.
10. Participate in a practical teaching experience.
11. Research, write and defend a PhD thesis on original work that results in new knowledge and/or techniques.
12. Complete required thesis corrections; provide an electronic copy of your thesis and any associated software code to your Center administrator and check out with OGS.
13. Apply for graduation, and attend the ceremony in your honor!

¹ Typical completion time for a PhD in Geophysics is 8 – 9 semesters.

² Students who begin the PhD program during or after the January 2013, must complete this course.

³ PhD students enroll in GPGN681 for 0.0 credits each semester in residence until the last semester. During the last semester, they register for 1.0 credits. Students must attend Heiland Lecture regularly until graduation, and complete the GPGN581 individual presentation requirement. Credit is awarded with a grade of PRG, in the semester in which the student graduates.

⁴ SYGN600 does not substitute for the PhD practical teaching requirement.

PhD At-A-Glance (Geophysics)

Recommended timeline for success¹

What	By When
Meet with interim advisor regarding background coursework and registration	First week of program
Make formal appointment of advisor and committee; obtain committee approval of planned coursework	End of 1 st semester
Choose First Comps project	End of 1 st semester
Present proposal for First Comps project	Early in 2 nd semester
Begin research for First Comps project	Middle of 2 nd semester
Choose thesis topic	2 nd semester
Begin background research for thesis	Middle of 3 rd semester
Defend and submit First Comps paper	End of 3 rd semester
Complete prereqs and specific required courses Submit Degree Audit form Defend thesis proposal Submit application for candidacy and reduced registration status ²	End of 4 th semester ³ : <ul style="list-style-type: none"> • Degree Audit by April of 4th semester • Admission to Candidacy by 1st day of class, 5th semester
Begin writing thesis	Middle of 6 th semester
Finish thesis research	7 th semester
Submit final thesis draft to committee and schedule defense	≥ 3 weeks before defense
Defend thesis	Middle of 8 th semester
Submit application for graduation to OGS	Published OGS deadline
Complete thesis revisions and check out	See OGS website for deadlines
GRADUATE!	End of 8 th semester
Attend Geophysics graduation event in your honor	Graduation Day

¹ Timeline is based on a students' starting during the Fall semester.

² PhD students may register for reduced tuition (4 credits of research) after completing 72 hours of course and research credit and having approved Admission to Candidacy and Degree Audit forms on file with OGS by posted deadlines.

Graduate Student Progress Checklist
Doctor of Philosophy in Geophysics and Geophysical Engineering

Student: _____ **Minor Program:** _____

Advisor: _____ **Semester of Admittance:** _____

1. Official formation of thesis committee, including selection of advisor. Thesis Committee must be declared within the first 12 months of the student's program. Requirements appear in the Graduate Catalog. Request form is downloadable from OGS [website](#). The official form must be submitted to the Department for approvals before the Department submits it to OGS.

Date filed with the Department: _____

2. The Department recommends at least one formal meeting of the student and thesis committee each semester. Thesis Advisor or Committee Chair should take minutes and submit for Department files.

Meeting dates:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. Course Requirements.

Background Recommendations. The student and advisor should plan coursework using the list of background "deficiencies" completed by the GAC. The advisor must list the courses the student will take to address the deficiencies identified. The Committee must provide written justification for resolving deficiencies in a way other than taking recommended courses. If GPGN486 is a background requirement, then the student complete that course during the first summer of his/her program.

Transfer Credit. The thesis committee may allow transfer of up to 36 credits for a thesis-based MS degree from another institution. Students must supply documentation describing the courses for which they wish to receive credit. With Department approval, students may use an unlimited number of Mines graduate courses from a Mines MSc degree toward the PhD degree. Review the OGS [website](#) for details and exceptions.

Minor Program Credit. All PhD students must take at least 12 credit hours toward a minor program, with the majority of minor credit completed during the PhD program, and at Mines. May include cross-referenced courses, or courses outside the minor discipline, with Department approval. The minor representative must approve all courses.

400-Level Courses. You may use a maximum of nine 400-level credits toward your degree. Any 400-level courses taken specifically to satisfy deficiencies, or which appear on an undergraduate transcript, do not count toward the PhD degree.

Transfer Credits: The committee may allow transferring up to 36 credits for thesis-based MS degree another institution. Transfer credit may apply toward the minor program or specific course requirements, but cannot be counted as both a transfer course *and* fulfillment of another requirement.

Transfer Description	Course Name	Credits Awarded
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Minor Program Credits: Student must complete at least 12 credits toward a minor program. These may include courses that cross-listed with or are outside the minor department. No more than 5.5 total minor credits can be transferred from another institution.

Course	Semester Completed	Credits Awarded
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

400-Level Courses: No more than 9 credits may be used to fulfill Geophysics course requirements. These courses may not be used specifically to satisfy deficiencies.

Course	Semester Completed	Credits Awarded
_____	_____	_____
_____	_____	_____
_____	_____	_____

4. Date [Degree Audit](#) form completed and approved: _____

5. Graduate Teaching Experience ([form](#) and guidelines on page 47):

Semester, course, and faculty mentor: _____

Date form submitted to Department for filing: _____

6. Foreign language requirement: Required of all PhD candidates. Waived for students who come from countries whose primary/official language is not English. For students from English-speaking countries, the requirement may be satisfied through 2 years of a single foreign language in high school, or 1 year of a single, college-level foreign language, or by demonstrating fluency in a language other than English. Documentation for this requirement is a photocopy of your high-school or college transcript, or a statement from a member of the Mines faculty/staff that you have demonstrated fluency in a second language.

How was your foreign language requirement satisfied? _____

7. [GPGN681 Individual Oral Presentation](#):

Name of Professional Meeting: _____

Date of Presentation: _____ Oral/Poster: _____

Approved by the Department: _____

8. [First Comps](#): Students must pass two qualifying exams *during their first four semesters* in the PhD program. This deadline is a Mines requirement; the Department may grant short extensions on a case-by-case basis. For the First Comps, students must complete, present, and defend an original research-based project approved by their committee. The project shall result in a report suitable for conversion into a paper submitted for publication to a peer-reviewed journal.

First Comps successfully completed and presented, DATE: _____

Paper submitted for publication (DATE / JOURNAL): _____

9. [Second Comps](#): The Second Comps must be completed by the fourth semester in the PhD program and is a presentation and defense of the student's *thesis proposal*. NOTE: Students may not schedule Second Comps until the First Comps paper has been submitted to a peer-reviewed journal. The student must successfully submit, present, and defend his/her proposed research for the final PhD thesis. The content of the thesis proposal is determined by the student and his/her thesis committee.

Second Comps, successfully completed and presented, DATE: _____

Scope and topic of thesis agreed upon: _____

10. [Admission to Candidacy](#) Form submitted and approved: _____

11. Thesis completed presented, and defended: _____
12. Thesis corrections completed: _____
13. Graduation Application submitted on Trailhead: _____
14. Checkout paperwork submitted to OGS: _____

Completion of Teaching Experience for PhD Program

Student Name: _____

Advisor: _____

Semester Requirement Completed¹: _____

Course Taught: _____

Professor for Course: _____

Number of Lectures Given/Planned²: _____

Number of Labs Given/Planned/Graded²: _____

Number of Assignments Written and/or

Graded³: _____

Additional Class Time (Details): _____

(Examples: gave and/or proctored exams, _____
quizzes, held additional office hours) _____

Course Materials/Content Taught: _____

(General description of the material _____
taught during the experience) _____

Additional Comments: _____

This form is to state that _____ has satisfactorily completed the Practical Teaching criteria required for the PhD program in the Department of Geophysics.

Approved, Course Professor

Approved, GAC Chair

Approved, Department Head

¹ Experience must take place within a single semester and for a single course.

² Student shall be responsible for planning/delivering a minimum of six lecture hours, or four lecture hours and two labs, to meet requirement. Other combinations must be proposed in advance.

³ Creating and/or grading assignments is recommended but should be at the discretion of the supervising faculty member, based on the format of the course.

PhD Qualifying Process, Department of Geophysics

As set forth in the Graduate Catalog of Colorado School of Mines, within the first two calendar years after enrolling into a PhD program a student is required to "demonstrate adequate preparation for, and satisfactory ability to conduct, doctoral research." In the Department of Geophysics this demonstration is a two-part qualifying exam.

Qualifying Exam, Part I

1. Under the supervision of a Geophysics faculty member, the PhD student performs research which shall result in a manuscript to be submitted in a peer-reviewed journal. This submission of the manuscript must occur prior to a student's scheduling Part II of the Qualifying Exam (Thesis Proposal Defense). The manuscript is defended by the student in front of his supervising committee and peers in the same manner as a thesis.
2. Research conducted for a masters thesis at Mines may be used to generate a manuscript that is submitted for publication and defended as described above to meet the requirements for Part I of the Qualifying Exam. In this case, the student must have his/her PhD committee appointed and present at the defense.
3. Research conducted for a masters thesis at an institution other than MINES can also be used to generate a manuscript that is submitted and defended to satisfy Part I of the Qualifying Exam, provided there is a Mines Geophysics faculty member who is willing to supervise the student in this activity. In this case, the student must have his/her PhD committee appointed and present at the defense.

Qualifying Exam, Part II

1. Under the supervision of the advisor and the thesis committee, a PhD student researches and prepares a thesis proposal in a format that is consistent with formal proposals submitted for funding either (a) to agencies such as NSF, or (b) to industry. Lengths of thesis proposals will vary, but they will normally include, but not be limited to, at least the following elements:
 - Project Summary/Abstract
 - Project Narrative, including:
 - Introduction. What is the research problem/question?
 - Background. Why is this problem important? What related work has already been done by others? What are the key references describing this previous work?
 - Outline. What are the key steps or stages in this research? Give a brief description of each.
 - Method. What approach or method(s) will be used to solve the research problem?
 - Obstacles. What significant obstacles or challenges do you anticipate that could prevent you from success, and how do you expect to overcome them?
 - Budget. Assume you are not already funded. What is an appropriate budget to cover your costs in performing this research?
 - Timeline. What is the timeline for the research, including your estimates of key milestones, decision points, defense, graduation?
 - Publications. How many publications do you imagine will be generated by this thesis, and on what aspects or sub-topics of the overall research?
 - Bibliography and references cited.
 - Biographical sketch.

2. The student defends the thesis proposal before his/her committee and peers in the same manner as a thesis.
3. A PhD student is expected to work more independently on the thesis proposal and require less supervision than for Part I of the Qualifying Exam.