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1 INTRODUCTION

Welcome to the Department of Geophysics at Colorado School of Mines! This new-student handbook is written and updated each semester, in the hope that it will assist you in working through the administrative side of your degree program. We 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.

Please note that while you should find clarification herein regarding your department-specific program requirements, this document is subject to change and is not intended to replace or repeat information provided in the Colorado School of Mines Graduate Bulletin. The Bulletin is the legal contract between you and the School. You are strongly encouraged to become familiar with it; it is important that you clearly understand the details outlined in that document. The Bulletin can be accessed at bulletin.mines.edu.

For your convenience, we have divided this handbook into separate sections. The first section contains general information of benefit to all Geophysics graduate students. The subsequent three sections target the three graduate programs 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!
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.

☐ 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.

☐ See Dawn to have your photo taken for our group bulletin board.

Consult with your interim advisor to register for courses and research credit (9-15
credits is considered full-time status). Registration must be complete not later

IF YOU ARE BEING PAID THROUGH COLORADO SCHOOL OF MINES:

- Complete background check paperwork as required by the University.
- Submit completed employment paperwork to Human Resources (all TAs and
RAs are included in this). 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, 2016.
3 USEFUL GROUPS, PEOPLE, AND OFFICES

3.1 Graduate School

Get to know the staff in the Graduate School, for they will provide vital assistance to you throughout your program. Consult their website, gradschool.mines.edu, regularly. They post current deadlines, Graduate Bulletin information, and most of the forms that you will need to complete and submit at some point during your program.

The Graduate School is the 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 Guggenheim Hall, in the first (bottom) level, on the south end of the building.

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, 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 chairman of the GAC is Dr. Bob Benson (rbenson@mines.edu).

3.3 Society of Geophysics Graduate Students (SGGS)

The SGGS is Geophysics’ official grad student organization. They help facilitate communication between the graduate students and the Department faculty and CSM 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. The current president of the SGGS is Liz Maag (emaag@mymail.mines.edu). We encourage you to participate in the opportunities they make available.

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

Contact information for the SGGS officers is on the Department website, http://geophysics.mines.edu/GEO-Student-Organizations.
3.4 Geophysics Department – Key Faculty and Department Staff

Terry Young, Department Head  
Green Center Room 240B, x3454; tkyoung@mines.edu  
As Department Head, Terry 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 come by and see Terry. His calendar is on-line at http://inside.mines.edu/~tkyoung/ and he manages his own schedule. Please, stop by and say hello!

There are currently seven staff members in the Department of Geophysics and its research centers, to help you navigate the administrative aspects of your program. All of these individuals are happy to answer whatever questions you may have. If they don’t have a ready answer, they will know who does!

Michelle Szobody  
Green Center Room 240C, x3935; mszobody@mines.edu  
Michelle oversees Department operations and budgetary matters, handles student administration, including graduate student coordination and curriculum scheduling, and manages Department outreach programs.

Dawn Umpleby  
Green Center Room 240, x3451, dumpleby@mines.edu  
Dawn handles day-to-day administrative matters for the Department of Geophysics and coordinates logistics for Geophysics Field Camp. She covers administrative matters specific to CGEM, Hydrogeophysics, Rock Physics, EM, and Planetary Geophysics, and generates the annual Department magazine. She’s the person you’ll see to have your photo taken for our bulletin board.

Brian Passerella  
Green Center Room B52, 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)

Pam Kraus
**Green Center Room 260C, x2178, pkraus@mines.edu**
Pam handles business and contract matters for the Center for Wave Phenomena. She also handles travel arrangements, student and faculty personnel matters and meeting logistics for CWP and its faculty and students.

Shingo Ishida
**Green Center Room 260K, x3552, sishida@mines.edu**
Shingo is responsible for all publications-related matters within CWP, including the CWP Research Leaders brochure, their annual newsletter, and Project Review materials.

Reservoir Characterization Project (RCP)

Sue Jackson
**Green Center Room 280P, 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.

3.5 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 Green Center building is 924 16th Street, Golden.

**CSM Human Resources**
**Located in Guggenheim Hall, Basement Floor, North End of Building, x3250**
For all personnel matters, including employee benefits.

**CSM International Student Scholar Services**
**Student Center, right next to the Cashier’s Office**
**Brandon Samter, x3589, bsamter@mines.edu**
The CSM International Office handles matters related to the unique needs of our students and scholars who come from outside the United States.

**CSM Parking Services**
**Nan Braddock, nan.braddock@is.mines.edu**
The Parking Office is located in the Facilities Management Main Office, across from the Geology Museum, on Maple Street. Anyone who parks on campus must either pay for an annual parking permit, or pay one of the kiosks, to park within campus boundaries.
CSM Access Services
Access Services (more commonly known as the Key Shop, or Lock Shop) is located west of the Facilities Management Main Office, across from the Geology Museum on Maple Street, in a small, gray building. 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; see the Facilities Management website through inside.mines.edu for more information.

CSM Cashier, x3298
Located in 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. The CSM Bookstore, located at the south end of the Student Center, sells postage stamps.

Social Security Administration
www.ssa.gov; 1-800-772-1213
Nearest office is at 13151 West Alameda Parkway, Lakewood
Open 9:00 a.m. to 4:00 p.m., Monday through Friday (Federal holidays excluded)
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. We recommend you visit this office early on a Wednesday or Thursday morning, when the lines are usually shorter.

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 at https://www.colorado.gov/pacific/dmv/node/46216/.

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.
The Department of Geophysics endeavors to foster a professional working and learning environment that is ethical 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.

In the past, the Department has had the rare, but unfortunate, case of academic misconduct among its graduate students. Academic misconduct harms not only the student committing the act but harms also the Department’s reputation and the University’s, by association. It is important that you 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 Bulletin*.

All students, faculty and staff on the Colorado School of Mines campus are entitled to a work environment that is free of harassment. 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, 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 Bulletin, bulletin.mines.edu.

Also in place is a policy regarding personal relationships between employees, including between graduate students. For the full text, Refer to http://inside.mines.edu/UserFiles/File/PoGo/Policies/HRS/HRS_Personal_Relationships_Policy.pdf
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 two projectors that students may use for presentations, including comps and thesis defenses, as availability permits. Please see Dawn or Michelle to reserve this equipment. You are responsible for the setup of the equipment and for returning the projector and all of its peripherals when you have finished. Please do not take either projector without having first reserved the equipment.

5.2 Building Access
During the academic year, the Green Center’s exterior doors are locked at 10:00 p.m., Monday through Friday. They remain locked until 7:00 a.m. the following weekday morning. In order to access the building during hours when it is locked, you must have your Blaster Card activated for the three card readers on the building (southwest corner, northeast stairwell, bottom of garage ramp). Michelle will activate your card at the time she receives your hard key request.

Access doors to second-floor student offices lock automatically at approximately 5:30 p.m. and remain locked until 7:00 or 7:30 a.m. the next weekday. For security, it is expected, for those offices and labs that do not have electronic locks, that if you are the last person to leave that room, you close the door behind you. Therefore, most thesis-based students who have been assigned office space will need also a standard key to access the student offices inside the building. See a member of the Department staff with your Blaster Card to complete a key request form. 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 access to the building a convenience. Therefore, abusing the privilege will result in your building access being suspended. Do not lend your Blaster Card or your key to anyone. The card readers record which cards are read and at what times. And if there should be some problem outside of normal business hours, your card is on the record as having been used and that is of the first things Public Safety looks at if we must report anything.

Unless you are actively moving equipment in or out of a room or the building, do not prop open any interior or exterior door of the Green Center. 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 Conference Phone
The Department is pleased to provide a conference phone for the use of its students and faculty. This may be of some use to you particularly for thesis committee meetings, and occasionally (with Department Head approval), defenses. The conference phone must be reserved in advance. Make a reservation to include plenty of time for you to become familiar with how the equipment works. As with the projection equipment, it is your responsibility to return the phone and all of its peripheral speakers and cabling when finished.

5.4 Copying/Scanning
The copy room is across the hall from the main Geophysics office. The machine is accessible only by a code. If you are a TA who has copying to complete for the course with which you are assisting, please see Michelle or Dawn 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, the campus Copy Center, or the machines in the Arthur Lakes Library. If you have trouble with the machine, please do not try to fix it yourself; see the staff for assistance.

5.5 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. It is important that you 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 its own, internal distribution lists for faculty and students. 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 a usable email address; GeophysicsFan1947@yahoo.com is not.
5.6 Fax Machine
Email is the usual medium, but the Department does have a fax machine. Any of the staff will be happy to send your fax for you. Generally, we will not send personal faxes. However, one exception would include a transmission related to an internship or post-graduation employment.

5.7 Green Center Facilities
There are two conference rooms located on the second floor. The Adams Room (GC 270) is the larger of the two, where the Department holds staff meetings and most defenses. The Adams Room doubles as a place where graduate students, faculty, and staff can visit in small groups (aka a “lounge”), when the room is not otherwise in scheduled use. Room 237 is a smaller conference room, ideal for Thesis Committee meetings and other small, short-term gatherings. See the Department to check availability and to reserve either of these rooms.

Emergency alarms make an unmistakable sound when set off in the Green Center. If the 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 is permitted to re-enter the building until permitted by the Golden Fire Department.

Food storage and break rooms are available on the second floor. There are two small kitchenettes, one in 260 and one in 280, with refrigerators and sometimes other small appliances that students have contributed over time. The appliances in these locations are meant to be shared among all occupants in the office cluster. You are welcome to use these facilities to store and prepare your lunch/coffee/snacks each day; however, please be respectful of your colleagues and clean spills and debris from the counters and appliances, do not leave food to expire in the refrigerators, and do not bring in amounts of food so large that they prevent others from using refrigerator space.

For your convenience, courtesy of the SGGS, each kitchenette in 260 and 280, and room 287, is equipped with a Keurig individual coffee brewer. Students and other users of the machines provide their own K-cups, and are responsible for the cleaning and maintenance of the machines.

There is a break room/lounge directly across the hall from the main Department office. In it, you will find a refrigerator, microwave, toaster oven, and several tables where you may prepare and eat meals. Again, please clean up after yourself. In this room, the nozzle to the right of the faucet on the sink delivers filtered water from the cold-water faucet only.

Temperature control of Geophysics offices is administered by Facilities Management. If the temperature in your office is uncomfortably cold or warm report this to one of 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.
Note that due to the configuration of the building and the age and condition of its air
handling system, and campus policies concerning office temperature ranges, it may take
several hours for the temperature to change, if it can be adjusted at all. We strongly
recommend that you dress in layers, and always keep a sweater or lightweight jacket on
hand in the office to guard against feeling too warm or too cold.

Space heaters are forbidden in the community office space and labs because of the potential
fire hazard, and the stress they place on the building’s already loaded electrical system. If
found, they will be confiscated and disposed of. Space heaters are occasionally used in the
faculty/staff offices, because of the windows in the building, but are discouraged.

As a Geophysics thesis-based graduate student, workspace is provided for you in the
Green Center. Arrangements are often made by the Department of Geophysics in advance
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 the building; please be mindful of the volume of books, papers,
computer equipment, and personal items you are actually using in the office. Also, 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.

5.8 Reading Room
The Department of Geophysics possesses numerous books dedicated not only to
Geophysics but to a number of other disciplines, as well. The Reading Room is located in
the extreme northwest corner of the second floor, 240A. We invite you to use that room to
read and study quietly. Occasionally the room is available for meetings when the
conference rooms are booked; see one of the staff to inquire.

We ask that you not remove materials from the Reading Room unless necessary, and please
return materials to the appropriate shelves when you are done using them. There is no
librarian on duty, and your assistance with this is much appreciated by the staff.

Theses published by every graduate student to complete a graduate degree in the CSM
Department of Geophysics are shelved in the main Department office. You are welcome to
access theses (they are behind locked cabinet doors—ask Dawn for the key) and check
them out for not more than one month to read and refer to. We urge you, however, to
check to see whether the thesis is available on-line before becoming responsible for the
physical copy. Theses are expensive to replace, if lost.
5.9 Student Mailboxes/Campus Mail
Every Geophysics graduate student is issued a shared box for receiving Mines-related mail. These boxes are located in the main Department Office, across from Dawn’s desk. The mailboxes are generally reconfigured to accommodate new students within the first week or two after the semester starts. Be sure to check your mailbox regularly to keep it clear for new mail.

Mines does not permit personal mail or shipping to be sent or received through the School. 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 that it be sent to the address of a trusted friend or neighbor.

For your own security, do not have bank or credit card statements sent to the Department. For the benefit of mailbox volume, please consider having professional journals sent to your home address, or receiving them electronically.

5.10 Campus Theft and Personal Safety
Though reported thefts here in the Green Center are relatively rare, they do happen. Do not leave valuable items such as laptop computers, cameras, iPods, and other personal entertainment devices, cellular phones, or anything else that you would not wish to lose, unattended. It is best to carry these items with you when you come and go from the office, or simply leave them at home.

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

Never prop open an 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.

Golden and the Mines campus are generally safe places to live and work, and crimes against persons in Golden are rare. However, it is always wise to take certain common-sense precautions to maximize your personal safety. When walking after dark, stay in well-lit areas and walk with a friend or colleague. Public Safety will provide an escort for you, if you contact them! Pay attention to your surroundings at all times. Invest in devices for securing windows and doors in your home.
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 be found on either the Department of Geophysics website, geophysics.mines.edu, or on the Graduate School website, http://gradschool.mines.edu/GS-Forms.

6.1 GP Seminar

This is not the same graduate seminar as GPGN581/GPGN681. Rather, this is a weekly series during which the Geophysics faculty introduce themselves to you. This is an excellent opportunity to consider which faculty you might like to involve in your thesis research. The seminar takes place each Tuesday in the fall semester, only, so you will be included in this program with your colleagues who began their graduate programs in January, 2015. Seminar starts promptly at noon in the Adams Room (GC 270). A full schedule and weekly reminders are sent to you by email. Lunch is not served, but you may bring your own lunch and eat during the discussion.

6.2 Heiland Lecture

The Carl Heiland Lecture Series (commonly referred to as “the Heiland”) is a tradition in the Department of Geophysics, named for a member of the founding Department faculty, Carl Heiland. It takes place every Thursday at 4:00 p.m. during the fall and spring semesters. It is held on the first floor of the Green Center, usually (but not always) in Metals Hall.

Heiland Lecture announcements are made by email and put on bulletin boards around the building and appear on the Department website. Reminders are also sent out 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 Terry for details and logistics.

6.3 GPGN581 and GPGN681

The Heiland Lecture Series is held as part of the Geophysics Graduate Seminar course, GPGN581 (MS) and GPGN681 (PhD). All students enrolled in thesis-based graduate programs are required to register for the appropriate one of these two courses, only once, during the first semester of their graduate program. Students are then expected to attend the regular lectures throughout their programs at Mines, as part of the course provisions.
Students not enrolled in a thesis-based program are not required to register for the course; however, we strongly encourage you to attend the lectures, as the speakers are often quite interesting to hear, and attending enables you to become better acquainted with the faculty and your fellow students.

Also, as part of this course, students must give an individual scientific presentation at a high-caliber 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) the SEG, the AGU, or the 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 CSM Conference on Earth and Energy (CEER), held each spring term on the campus.

Completion of the presentation component of the course must be documented, approved, and on file in the Department for the student to receive final credit for this course, and before the student may schedule his or her 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 may, under extraordinary circumstances, apply for an exception to complete this requirement by giving an individual presentation at a research consortium meeting. This is NOT regarded by the Department as 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. Note: the oral presentation must be an individual effort. *Consortium meeting poster presentations are not acceptable as such exception requests.*

Fulfilment of the presentation requirement is documented in the format published on the Department of Geophysics website. A continuing grade of PRG will be issued 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 credit of coursework toward the appropriate degree.

### 6.4 Thesis Committee Responsibilities

The Department of Geophysics requires for MS students: three members minimum, two of whom must be full-time, active Department of Geophysics faculty. Adjunct Department faculty may be acceptable as committee members. For PhD students: five total members, including your advisor, at-large/chair, and minor representative. A majority of your committee must be from the Department of Geophysics; exceptions to that may be entertained on a case-by-case basis. If a student requests more than one committee member in his or her base committee, on-campus or off-campus, who is affiliated with the same research group, then the Department also requires that the student include one additional committee member 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 student will be asked to add a fourth committee member from outside the CWP group to balance the committee.

It is expected that your committee be both diverse and rigorous, while still composed of members whose expertise and involvement will assist you with producing a high-quality thesis. The information you find below was written by the staff in the Office of Graduate Studies. 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 the Grad School’s website.

The Office of Graduate Studies regularly fields questions from faculty and students regarding the appropriate roles and the institutional expectations of students, Thesis Advisors and the various Thesis Committee members in directing, completing and monitoring thesis-based graduate programs. While many of us assume that these roles are obvious and should be known to all parties, experience has shown that this may not always be the case. And, when there is confusion about roles and expectations, this can lead to persistent problems that become increasingly difficult to resolve as a student progresses through their degree program.

Below, is an attempt 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 the successful completion of a thesis that fulfills the expectations of scholarly work at the appropriate level as well as 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 laboratory 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 Committee has the following added responsibilities:

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 has the following added responsibilities:

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 the Office of Graduate Studies 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 it is expected that the student receives 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 have the following responsibilities:

1. to formally establish a Thesis Advisor and Committee by the end of their first year of residence in their degree program;
2. to call meetings of the Thesis Committee as needed;
3. to actively inform and solicit feedback from the student’s Advisor and Committee on progress made toward degree;
4. to respond to, and act on feedback from the student’s Advisor and Committee in a timely and constructive manner;
5. to 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. to know, understand and follow deadlines defined by the institution and the degree program related to all aspects of the student’s degree program.

6.5 Establishing or Changing a Thesis Committee

6.5.1 Establishing Your Committee

You are required by CSM to 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. The Thesis Committee request/change form is available on the Graduate School website. Read the Bulletin carefully to ensure that your committee meets the Bulletin requirements, before you submit your request to the Department. Geoprofessionals outside CSM may be accepted as thesis committee members, with the approval of the Department.

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

1. Complete the Thesis Committee Request form, and have your committee members sign or initial next to their names. Off-campus members may email their acknowledgment and approval, or you can scan/fax the form for them and they can scan/fax the form back with their signature.
2. Add a page to the form, with a line or two describing your research. The GAC will use this information while reviewing your request.
3. Any non-CSM member, who has voting status, must provide a current CV.
4. Give the completed, signed/initialed form to Michelle.
5. The GAC will review your request at their next meeting after you submit your form. If they have any feedback, Michelle will relay that information to you. Otherwise, if they approve as you have submitted it, Michelle will pass the request along to Terry.

6. Then, Terry will review. If he has any feedback, again, Michelle will contact you. Otherwise, once the request is approved, Michelle will forward the form to the Graduate School and notify you that she has done so.

7. The Grad School will send the Department a scan copy of the fully approved form, which Michelle will then forward to you for your records.

6.5.2 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, then complete a new Thesis Committee Request with the names of all members in the new committee composition. The form must be initialed by your thesis advisor, your committee chair, the new committee member(s), and any member(s) who are dropping off the committee. Bring the form to Michelle, who will submit it to Terry for review and comment or approval.

6.6 Degree Audit, Admission to Candidacy, and Reduced Registration

Degree Audit is the formal process with the Grad School, by which a student and his/her committee that all course work and programmatic requirements for a graduate program have been completed. Admission to Candidacy is the formal process for confirming that a PhD student has completed the qualifying/comprehensive process, and is now ready to finish, write, and defend the 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 submitting this paperwork. You may inquire at any time with Michelle, about whether your program requirements are documented.

The Graduate School has submission deadlines for both Degree Audit, and Admission to Candidacy forms, for any student who is applying for reduced registration, or who expects to graduate in the next semester or beyond. Take care to read email from the Graduate School, and adhere to the deadlines for these processes.

The Department will not approve Degree Audit or Admission to Candidacy forms for any student who has not completed all course work or program-specific requirements, or who is not registered for his or her final semester of course work completion (with all other requirements having already been met). Therefore, it is to your benefit to complete and document these requirements as early as possible in your program, so that you may focus on your thesis research and finish your degree.
6.6.1 Professional Masters/Petroleum Reservoir Systems Students – Degree Audit

Petroleum Reservoir Systems students will use the Degree Audit form for a non-thesis Masters program, downloadable from the Grad School website. Using an unofficial copy of your transcript, available on Trailhead, complete the form by inputting the list of courses you have completed, or are in the process of completing, including any transfer credit, under the appropriate headings. Students who were admitted into the combined program will include the double-counted credit from the CSM Bachelor’s degree on this form. Sign the form as instructed, and then your advisor of record will sign. Bring the completed, signed form to Michelle for further review and Department approval.

For any classes you are currently completing, or will be completing in the next semester, leave the grade cell blank.

This form, with all approval signatures, must be submitted to the Grad School by their posted deadlines, the semester before the term in which you plan to graduate.

6.6.2 MS Students – Degree Audit

Master of Science students will use the Degree Audit form for the thesis-based Masters program, downloadable from the Grad School website. Using an unofficial copy of your transcript, available on Trailhead, complete the form by inputting the list of courses you have completed, or are in the process of completing, including any transfer credit, under the appropriate headings. Minor credit is also included here. Be sure you have followed Bulletin requirements for minor coursework.

Students who were admitted into the combined program will include the double-counted credit from the CSM Bachelor’s degree on this form. Sign the form as instructed, and then your advisor of record, and your thesis committee, will sign. Bring the completed, signed form to Michelle for further review and Department approval.

List GPGN581 with a grade of PRG. Unless you are not making satisfactory progress in this course, this is the final grade notation that will appear in your transcript. If you have not completed the individual presentation requirement, you will not be permitted to schedule your thesis defense until you have done so.

For any classes you are currently completing, or will be completing in the next semester, leave the grade cell blank.

This form, with all approval signatures, must be submitted to the Grad School by their posted deadlines, the semester before the term in which you plan to graduate, or plan to be eligible for reduced registration.
6.6.3 PhD Students – Degree Audit Form and Admission to Candidacy Form

PhD students will use both the Degree Audit form for the PhD program, and the Admission to Candidacy form, downloadable from the Grad School website. Using an unofficial copy of your transcript, available on Trailhead, complete the form by inputting the list of courses you have completed, or are in the process of completing, including any transfer credit, under the appropriate headings.

You must complete and sign the Responsible Conduct of Research statement on Page 2 of the form, even if you did not receive funding from NSF.

List GPGN681 with a grade of PRG. Unless you are not making satisfactory progress in this course, this is the final grade notation that will appear in your transcript. If you have not completed the individual presentation requirement, you will not be permitted to schedule your thesis defense until you have done so.

For any classes you are currently completing, or will be completing in the next semester, leave the grade cell blank.

This form, with all approval signatures from you, your advisor, and your thesis committee, must be submitted to the Grad School by their posted deadlines, the semester before the term in which you plan to graduate, or plan to be eligible for reduced registration.

6.6.4 Reduced Registration

Reduced (thesis) registration is afforded by the School to students who have accumulated a requisite number of course and research credit and have an approved Admission to Candidacy and/or Degree Audit form on file with the Graduate School. See the Bulletin for specific requirements, but usually, MS students finishing their third semester, and PhD students finishing their sixth semester, may be eligible.

Once you are eligible for reduced registration, you do not need to reapply for it each semester. It is important that you notify the Department administrative personnel when the Graduate School contacts you with your eligibility confirmation, so that your funding paperwork can be completed accurately in subsequent semesters.

Note that as a reduced-registration student, you will register for 4 credits of research, and will be considered a full-time student. If you choose to enroll in a course after becoming reduced-registration eligible, there will be additional tuition assessed. Do not register for additional credits without first consulting with the faculty member responsible for your funding.
6.7 Defenses and Comprehensive Exams

Students are encouraged to attend the defenses of their fellow students, 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!

6.7.1 General Department/CSM Policies for Defense Scheduling

1. Your comps/thesis manuscript must be complete and distributed to your committee and to the Department Head before a defense date will be confirmed by the Department.
2. You must be registered during the semester in which you schedule any defense.
3. Standard days and times set aside for defenses are Wednesdays and Fridays at 3:00 p.m.
4. Non-standard defense days/times are available only with Department Head approval. Mondays are not acceptable days for defenses.
5. Defenses are not permitted during the summer term, or Spring or Winter Break.
6. Defenses should be scheduled 2-3 weeks ahead of the defense, to allow preparation time for the student and committee, and for advertising the defense. A manuscript must be distributed to the committee at least 3 weeks ahead of the defense date.
7. The Department’s Defense Request Form is available on the Department website, at http://geophysics.mines.edu/UserFiles/Image/geophysics/Defense%20Form.pdf. The form is required to schedule any defense and must be approved by all thesis committee members before submitting to the Department.

6.7.2 Specific Requirements for Comprehensive (Comps) Defenses

1. Refer to the PhD Qualifying Process document on page 61, or download from the Department website. Hereafter, we’ll refer to the PhD qualifying process as “1st Comps” and “2nd Comps”, or generally “Comps” or “Comps process” for simplicity.
2. Reminder: Your First Comps process must be complete (e.g., your paper must have been submitted to a peer-reviewed journal publication) before you may schedule your Second Comps (thesis proposal) defense.

6.7.3 Specific Requirements for Thesis Defenses

You must have an approved Admission to Candidacy form on file with the Graduate School, and all other program requirements completed and on file with the Department, before you may schedule a thesis defense.

The next few pages will provide the logistical guidance needed for scheduling a defense. Following that, you will find a list of frequently asked questions regarding defenses. We encourage you to use this information as you get closer to the time when you will defend either a comprehensive project or your thesis.
6.7.4 Instructions for Scheduling a Defense

1. Download the Thesis Defense Request Form from the Department’s website.
2. Notify your committee members and Terry that you and your advisor agree that you are ready to defend your thesis. Attach an updated copy of your thesis manuscript for review and feedback. **Terry will not sign your defense form until he has your manuscript!**
3. Standard thesis defense times in Geophysics are Wednesdays and Fridays from 3:00 to 5:00 p.m. See Michelle to identify 2 or 3 available dates to provide as options for your committee to consider.
4. Complete the Defense Request Form and circulate among your committee for approval.
5. Take the form to Michelle, who will obtain Terry’s signature approval. Your defense will not be confirmed or announced without full approval.
6. Forward your thesis abstract to Michelle, who will announce your defense to the Department, and send a reminder shortly before the defense date.
7. Reserve appropriate audio-visual equipment for your defense.
8. Michelle will confirm your room reservation, send you the paperwork you’ll need for after your defense. Follow instructions carefully to avoid delays afterward.
9. Complete the GP Program Assessment Survey. A printed version may be brought to your defense, upon advisor request. Email the form to Michelle before your defense.
10. Set up the room for your defense. Please adhere to the Department rules for moving furniture, food/beverage, etc.
11. Upon completion of your defense, regardless of the outcome, you must return the signed defense form to Michelle for the Department files.

Post-Defense Instructions

1. Return all furniture in the room to the arrangement in which you found it. Clean off table surfaces, dispose of trash/leftover food, etc.
2. Complete thesis revisions as instructed by your committee.
3. Sign your thesis submittal page, have your advisor sign, and then bring it to Terry for the Department Head signature.
4. Submit the fully signed Work Completion form to Terry with the thesis submittal page.
5. Submit both the Work Completion and the submittal page to the Graduate School. 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 the Grad School.
7. Receive an email regarding your reviewed thesis, make any necessary changes, and follow instructions for resubmitting the final version to the electronic thesis system.
8. If you work with a Department research center or group, submit an electronic copy of your thesis to the appropriate administrator. If you owe software code to your research group, make sure they have that in-hand, complete, with proper commenting and fully executable BEFORE you leave campus.
9. Return any Department-owned books and materials to their proper locations. Return cabinet/desk keys to the Department.
10. Schedule an appointment with Terry for a Department exit interview.
11. Circulate with your blue checkout card to the necessary campus departments and complete any other checkout paperwork.
12. Return your building key, if you have one, to Access Services.
13. Provide your forwarding address to the Graduate School so that they have an address to which to mail your diploma.
6.7.4 Thesis Defense and Graduation FAQ’s

These are some of the most common questions from grad students on the verge of 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:** Upon receiving word that you are close to finalizing a date, Michelle will put your name tentatively on the schedule. However, the reservation will not be confirmed until the approved form is received from you and signed by Terry.

**Q:** I can’t get my committee together on one of the set-aside days for defenses. What do I do?
**A:** It’s important to keep Terry in the loop and work with him and with your committee to find a time when they CAN meet. Terry has final approval on the date, and if you really do need to hold your defense on a day other than Wednesday or Friday afternoon, you need to explain this to and obtain special approval.

**Q:** May I schedule a defense during Winter Break or during the summer?
**A:** Winter and Spring Break defenses are not possible because school is not in session. Summer defenses are possible, but because of faculty travel schedules and because so many of your colleagues are also off-campus over the summer, we do not currently schedule defenses during the summer terms.

**Q:** I can’t get my entire committee to agree on any regular defense day. What do I do?
**A:** For MS candidates, this is a problem because usually, there are only 3 members of the committee. In that case, you either should try to find a Wednesday or Friday other than the dates you initially looked at, or secure a date outside of that routine schedule, in which case, you need to seek special approval from Terry.

PhD committees tend to be larger, and the absence of 1 committee member for good and sufficient reason is sometimes less of an issue. If the absent committee member is a non-voting member, then their absence is usually not a problem. However, you should still seek the advice of both Terry and your advisor on whether you should proceed without that missing committee member, or find another date for your defense. Note that committee members can sometimes attend the defense remotely, via the internet.

**Q:** What if one of my committee members is off-campus and cannot sign the defense request?
**A:** Faxed or scanned signatures are acceptable—send the form to them electronically or by fax 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.
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 something of a tradition and the offering would certainly be welcomed by attendees. However, you are in no way required 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 be registered for credits during the semester in which you defend your thesis. This is a non-negotiable CSM requirement. Contact the Grad School with questions. Note: There is a window of time during the first part of a semester where, if you are defended AND COMPLETELY CHECKED OUT by the drop/add (census) deadline, you may not have to register for that semester. Contact the Grad School or Michelle for details.

Q: What if I cannot be on campus to complete the checkout process after I defend?
A: You will need to appoint a trusted colleague on campus to do this on your behalf, but please make yourself available to sign and fax back 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!
6.8 Program Checkout Instructions

After you have submitted your thesis to the Graduate School for format review, the staff there will hand you a packet of information for you to use to “check out” of the program. One of their requirements is for you to have your blue checkout card signed by the Department. Michelle is responsible for signing these cards, and will sign your card after confirming that you have done the following.

1. Schedule and complete an exit interview with Terry.
2. Return all Department materials to appropriate faculty and staff. This includes but is not limited to books from the Reading Room, thesis volumes, and computer equipment.
3. Return the key to your file cabinet (if applicable) to Michelle.
4. If you are affiliated with a research group in the Department, make sure that research group has received any computer code they expected from you, as well as an electronic copy of your thesis that they can distribute to sponsors, if necessary.
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 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 an excellent course plan document to use, as well.
Graduate Student Progress Checklist
Professional Masters Degree: Petroleum Reservoir Systems

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. Minutes should be taken and submitted by your advisor for Department files.

Meeting dates:

____________________________________  ____________________________

____________________________________  ____________________________

3. Course Requirements.

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

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

   - GPGN419/PEGN419 Well Log Analysis and Formation Evaluation
   - GPGN519/PEGN519 Advanced Formation Evaluation

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

   - GEGN439/GPGN439/PEGN439 Multi-Disciplinary Petroleum Design
   - 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. 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.

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1 If one or more of these courses is cross-listed among the three departments, it is preferred for record-keeping purposes, but not required, 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.

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<th>Course</th>
<th>Semester Completed</th>
<th>Credits Awarded</th>
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Specific Course Requirements (1). One course selected from the following:

- _____ GPGN419/PEGN419 Well Log Analysis and Formation Evaluation; OR
- _____ GPGN519/PEGN519 Advanced Formation Evaluation

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

- _____ GEGN439/GPGN439/PEGN439 Multi-Disciplinary Petroleum Design
- _____ GEGN503/GPGN503/PEGN503 Integrated Exploration and Development
- _____ GEGN504/GPGN504/PEGN504 Integrated Exploration and Development

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

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**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 to the Grad School: _________________________

7. Checkout paperwork submitted to the Grad School: _________________________
8 MASTER OF SCIENCE PROGRAM

You should work closely with your advisor and thesis committee to make sure that you stay on 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 for you at admission 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 a CSM 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 Degree Audit and apply for reduced “thesis” registration.
6. Research, write and defend an MS thesis.
7. Complete your required thesis corrections; provide any associated software code 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 only their first semester at CSM but attend Heiland Lecture every week until graduation. Credit for satisfactory progress 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 success\(^1\)

<table>
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<th>What</th>
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<tr>
<td>Meet with interim advisor regarding background coursework and registration</td>
<td>Upon arrival</td>
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<tr>
<td>Make formal appointment of advisor and committee; obtain committee approval of planned coursework</td>
<td>Middle of 1(^{\text{st}}) semester</td>
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<tr>
<td>Choose thesis topic; begin background research for thesis</td>
<td>Not later than 2(^{\text{nd}}) semester</td>
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<td>Complete course requirements; complete thesis research</td>
<td>3(^{\text{rd}}) semester</td>
</tr>
<tr>
<td>Submit degree audit and application for reduced registration</td>
<td>End of 3(^{\text{rd}}) semester or beginning of 4(^{\text{th}}) semester(^2)</td>
</tr>
<tr>
<td>Finish writing and defend thesis</td>
<td>Middle to end of 4(^{\text{th}}) semester</td>
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<tr>
<td>Submit application for graduation to Grad School</td>
<td>Beginning of 4(^{\text{th}}) semester</td>
</tr>
<tr>
<td>Complete thesis revisions and check out</td>
<td>ASAP after defense</td>
</tr>
<tr>
<td>GRADUATE!</td>
<td>End of 4(^{\text{th}}) semester</td>
</tr>
<tr>
<td>Attend Geophysics graduation luncheon in your honor</td>
<td>Graduation Day</td>
</tr>
</tbody>
</table>

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\(^1\) Timeline is based on a student's starting during the Fall semester.

\(^2\) MS students may register for reduced tuition (4 credits of research) after completing 36 hours of course and research credit (no more than 12 hours awarded toward reduced registration in a single semester) and submitting an approved Degree Audit form.
Graduate Student Progress Checklist
Master of Science Degrees: Geophysics and Geophysical Engineering

Student: ___________________________  Minor Degree Program: _______________
Advisor(s): _________________________  Semester of Admittance: _______________

1. Official formation of thesis committee, including selection of advisor. Thesis Committee must be declared by the end of the second semester’s attendance and requirements appear in the Graduate Bulletin. Request form is downloadable from the Graduate School website. The official form must be submitted to the Department for approvals before the Department submits it to the Graduate School.

Date filed with the Department: _______________

2. At least one formal meeting of the student and thesis committee each semester. Minutes should be taken and submitted by your Thesis Advisor or Committee Chair for Department files.

Meeting dates:

__________________________________________  ______________________________________
__________________________________________  ______________________________________
__________________________________________  ______________________________________
__________________________________________  ______________________________________
__________________________________________  ______________________________________
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__________________________________________  ______________________________________

3. Course Requirements.

Background Recommendations. The student and advisor are supposed to plan the coursework using the list of “Background Recommendations” completed by the GAC. The advisor must submit a memo listing the courses the student will take to address the background deficiencies identified by the GAC. Deficiencies resolved in a method other than taking recommended courses must be justified by the Committee. If GPGN486 is determined to be a background requirement that course MUST be completed during the student’s first semester 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 or work experiences for which they wish to receive credit.
400-Level Courses. There is a 9-credit maximum for 400-level courses allowed toward your degree. Any 400-level courses taken specifically to satisfy deficiencies, however, do not count toward the degree.

Transfer Credits: The committee may allow transferring up to 9 hours of credit for individual graduate-level courses.

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<th>Transfer Description</th>
<th>Course/Requirement Fulfilled</th>
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400-Level Courses: No more than 9 credits may be used to fulfill GP course requirements. These courses may not be used to satisfy deficiencies.

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<th>Course</th>
<th>Semester Completed</th>
<th>Requirement Fulfilled</th>
<th>Credit Awarded</th>
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Required Courses: For students in the Geophysics MS program

a. Heiland (GPGN581) (Register in first semester of program and grade will show “PRG” with regular attendance and completion of individual presentation.)

b. Professional Oral Communication (LICM501)

c. GPGN707 (12+ credits)

Graduate (500- and 600-level) courses taken at CSM: These include the individual required courses from the previous page and any graduate level courses from CSM to satisfy the minor program.
NOTE: Total must be 38 credit hours or more beyond B.S. degree, including at least 12 research credits. Up to 9 credits of approved 400-level course work and up to 9 transfer credits may be included with thesis committee approval.

Engineering Courses: Students requesting the Master of Science Degree in Geophysical Engineering must either have a Bachelor’s degree in engineering, or complete 16 credits of engineering coursework. These courses may be taken at CSM or be transferred into the CSM program beyond the 9 credit limit indicated above. All courses applied to the Engineering component of the Geophysics Engineering degree and the thesis topic must be approved by the Geophysics faculty at large prior to the awarding of this degree.

4. 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: ________________________________________

5. GPGN581 Individual Oral/Poster Presentation:
   Name of Professional Meeting: _______________________________________________
   Date of Presentation: ________________  Oral/Poster: ________________

6. Degree Audit Form submitted and approved: _________________________________

7. Thesis completed presented, and defended: ___________________________________

8. Thesis corrections completed: ______________________________________________

9. Graduation Application submitted to the Grad School: __________________________

10. Checkout paperwork submitted to the Grad School: ____________________________
9 DOCTOR OF PHILOSOPHY PROGRAM

You should work closely with your advisor and thesis committee to make sure that you 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 increased program requirements for Doctor of Philosophy, we strongly encourage making use of this checklist.
Requirements

1. Satisfy background requirements specified by the Graduate Advisory Committee (GAC).
2. Establish a Thesis Committee by the end of your second semester.
3. Complete 72 credits beyond a Bachelors Degree, approved by your committee, as follows:
   a. Transfer up to 24 credits of individual graduate-level courses, or up to 36 credits for a
      thesis-based Masters Degree from another institution.
   b. Complete 24 research credits (GPGN707) under a CSM faculty advisor.
   c. Complete 12 credits in a minor program of study, 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)
      iii. GPGN681 Graduate Seminar (1 credit)
   e. Complete two of the following three courses:
      i. SYGN501 The Art of Science (1 credit)
      ii. SYGN600 College Teaching (2 credits)
      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. Propose, complete and defend a Doctoral Research Qualifying Project (1st Comps) within
   your first 18 months.
6. Write and defend a PhD thesis proposal (2nd Comps) before the start of your third year.
7. Complete the foreign language requirement (if English is your native language): 1 year of
   college or 2 years of high-school courses in a single foreign language. Document meeting
   the requirement to the Department.
8. Participate in a practical teaching experience.
9. Submit Degree Audit, Apply for Admission to Candidacy and reduced registration.
10. Research, write and defend a PhD thesis on original work that results in new knowledge
    and/or techniques.
11. Complete your required thesis corrections; provide an electronic copy of your thesis and any
    associated software code to your Center administrator (if working within one of the research
    centers) and check out with the Grad School.
12. Apply for graduation, and attend the ceremony in your honor!

---

1 Typical completion time for a PhD in Geophysics is 8 semesters.
2 Required for students funded by NSF, or who begin the PhD program during or after the Spring 2013 semester.
3 PhD students enroll in GPGN681 their first semester at CSM but attend Heiland Lecture every week until
   graduation. Credit for successful progress is awarded with a grade of PRG.
4 SYGN600 does not meet the PhD practical teaching requirement.
5 Students admitted to the PhD program in Geophysics typically become qualified for candidacy by the time they
   complete a two-step process consisting of a research project and a PhD thesis proposal.
PhD At-A-Glance
(Geophysics)

Recommended timeline for success

<table>
<thead>
<tr>
<th>What</th>
<th>By When</th>
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<tbody>
<tr>
<td>Meet with interim advisor regarding background coursework and registration</td>
<td>Upon arrival</td>
</tr>
<tr>
<td>Make formal appointment of advisor and committee; obtain committee approval of planned coursework</td>
<td>Middle of 1st semester</td>
</tr>
<tr>
<td>Choose 1st Comps project and supervisor</td>
<td>End of 1st semester</td>
</tr>
<tr>
<td>Present proposal for 1st Comps project</td>
<td>Early in 2nd semester</td>
</tr>
<tr>
<td>Begin research for 1st Comps project</td>
<td>Middle of 2nd semester</td>
</tr>
<tr>
<td>Choose thesis topic</td>
<td>2nd semester</td>
</tr>
<tr>
<td>Begin background research for thesis</td>
<td>Middle of 3rd semester</td>
</tr>
<tr>
<td>Defend 1st Comps paper</td>
<td>End of 3rd semester</td>
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<tr>
<td>Complete prereq. and core curriculum requirements</td>
<td>End of 4th semester¹</td>
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<tr>
<td>Defend thesis proposal</td>
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<td>Submit degree audit and application for candidacy</td>
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<tr>
<td>Complete coursework, register for thesis-only reduced tuition</td>
<td>ASAP²</td>
</tr>
<tr>
<td>Begin writing thesis</td>
<td>Middle of 6th semester</td>
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<tr>
<td>Finish thesis research</td>
<td>7th semester</td>
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<tr>
<td>Submit final thesis draft to committee and schedule defense</td>
<td>≥ 3 weeks before defense</td>
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<tr>
<td>Defend thesis</td>
<td>Middle of 8th semester</td>
</tr>
<tr>
<td>Submit application for graduation to Grad School</td>
<td>Published Grad School deadline</td>
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<tr>
<td>Complete thesis revisions and check out</td>
<td>ASAP after defense²</td>
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<tr>
<td>GRADUATE!</td>
<td>End of 8th semester</td>
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<tr>
<td>Attend Geophysics graduation luncheon in your honor</td>
<td>Graduation Day</td>
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¹ This is a CSM deadline, not a recommendation.
² PhD students may register for reduced tuition (4 credits of research) after completing 72 hours of course and research credit and submitting a Degree Audit and approved Admission to Candidacy application.
Graduate Student Progress Checklist
Doctor of Philosophy in Geophysics and Geophysical Engineering

Student: ___________________________ Minor Degree Program: _____________
Advisor(s): ________________________ Semester of Admittance: _____________

1. Official formation of thesis committee, including selection of advisor. Thesis Committee
must be declared by the end of the second semester’s attendance and requirements appear
in the Graduate Bulletin. Request form is downloadable from the Graduate School
website. The official form must be submitted to the Department for approvals before the
Department submits it to the Graduate School.

Date filed with the Department: _______________________

2. The Department recommends at least one formal meeting of the student and thesis
committee each semester. Minutes should be taken and submitted by your Thesis
Advisor or Committee Chair for Department files.

Meeting dates:

_________________________________________
_________________________________________
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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. Those resolved in a
way other than taking recommended courses must be justified by the thesis committee. If
GPGN486 is a background requirement then that course MUST be completed during the
student’s first year of his/her program.

Transfer Credit. The thesis committee may allow transfer of up to 24 credits for
individual graduate-level courses at another institution, or up to 36 credits for a thesis-
based MS degree from CSM or another institution. Students must supply documentation
describing these courses or work experiences for which they wish to receive credit.
**Minor Program Credit.** All PhD students are required to take at least 12 credit hours toward their minor program. Minor courses may include cross-referenced courses, such as Integrated Exploration, which is cross-referenced as GPGN, GEGN, and PEGN. This course, for example, would count toward your total 72 credit hours and it may also satisfy part of your minor program, if your minor is Geology or Petroleum Engineering. Your thesis committee, which includes a minor representative, must approve all courses.

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

**Transfer Credits.** The committee may allow transferring up to 24 hours of credit for individual graduate-level courses or up to 36 credits for thesis-based MS degree from CSM or another institution. Transfer credit may apply toward the minor program but cannot be counted as both a transfer course and a minor course fulfillment.

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**Minor Program Credits:** At least 12 credit hours must be completed to satisfy the minor program. These may include transfer credit or geophysics courses that cross-reference with the minor department.

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

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Required Courses: For students in the Geophysics PhD program

Heiland (GPGN681) (Register in first semester of program and grade will show “PRG” with regular attendance and completion of the individual presentation.)

Introduction to Research Ethics (SYGN502)

*PhD students beginning Spring 2013 and NSF funded students*

Professional Oral Communication (LICM501)

Required two of three (SYGN501, SYGN600, or LAIS601)

GPGN707 (24+ credits)

Graduate (500- and 600-level) courses taken at CSM: These include the individual required courses from above and any other graduate level courses from CSM.

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**Total Course Credits Approved:**

NOTE: Total must be 72 credit hours or more beyond B.S. degree, including at least 24 research credits, 12 credits in a minor program of study, up to 9 credits of approved 400-level coursework, and approved transfer credits. Cross-reference courses may count toward minor program credit.

**Engineering Courses:** Students requesting the PhD in Geophysical Engineering must either have a Bachelor’s or Master’s degree in engineering, or complete 16 credits of engineering coursework. These courses may be taken at CSM or be transferred into the CSM program beyond the 24 credit limit indicated above. All courses applied to the Engineering component of the Geophysics Engineering degree and the thesis topic must be approved by the Geophysics faculty at large prior to the awarding of this degree.
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4. Graduate Teaching Experience (form and guidelines on page 59):
   Semester, course, and faculty mentor: _________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   Date form from faculty member submitted to Department for filing: ________________

5. Foreign language requirement: The Department requires that requires all PhD candidates satisfy a foreign language requirement. The requirement is waived for students who come from countries whose primary language is not English. For students from English-speaking countries, this requirement is usually satisfied through 2 years of foreign language in high school (must be the same language both years), or 1 year of foreign language instruction in college/university (must be the same language both semesters), 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 documentation from the GAC that the student has demonstrated fluency in a second language.

6. How was your foreign language requirement satisfied? ___________________________

7. GPGN681 Individual Oral Presentation:
   Name of Professional Meeting: ________________________________________________
   Date of Presentation: ________________

8. 1st Comps: Students must pass two qualifying exams during their first four semesters in the PhD program. This deadline is a Colorado School of Mines requirement; the Department has the authority to grant short extensions on a case-by-case basis. For the 1st Comps, GP 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 publishable in a peer-reviewed journal. See guidelines for the PhD Qualifying Process on page 61, and on the Geophysics website.

   1st Comps, TITLE: ____________________________________________________________

   1st Comps successfully completed and presented, DATE: _________________________
   Paper submitted for publication (DATE / JOURNAL): _____________________________
9. **2nd Comps**: The 2nd 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: the 2nd Comps cannot be scheduled by the Department until your 1st Comps paper has been submitted to the peer-reviewed journal. The student must successfully submit, present, and defend their proposed research for their final PhD thesis. The content of the thesis proposal is determined by the student and his/her thesis committee. However, in general, the proposal should address the following items:
   - Scientific background
   - Indication of the purpose for and type of research to be performed
   - Specific research targets
   - Estimated target date for completion

2nd Comps, THESIS TITLE: ____________________________________________

2nd Comps, successfully completed and presented, DATE: ________________

Scope and topic of thesis agreed upon: ____________________________

_________________________________________________________________

10. Admission to Candidacy Form submitted and approved: ________________

11. Degree Audit Form submitted and approved: ____________________________

12. Thesis completed presented, and defended: ____________________________

13. Thesis corrections completed: _______________________________________

14. Graduation Application submitted to the Grad School: ________________

15. Checkout paperwork submitted to the Grad School: ___________________
Completion of Teaching Experience for PhD Program

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<td>Advisor:</td>
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Semester Requirement Completed:\n\[ 1 \]
Course Taught:  
Professor for Course:  

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<th>Number of Lectures Given/Planned:\n[ 2 ]</th>
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<th>Number of Labs Given/Planned/Graded:\n[ 2 ]</th>
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<tr>
<th>Number of Assignments Written and/or Graded:\n[ 3 ]</th>
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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

---

1 Experience must take place within a single semester.
2 Student shall be responsible for planning/delivering a minimum of six lecture hours, or four lecture hours and two labs, to meet requirement.
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 Bulletin 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 CSM 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 CSM 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 CSM 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. The faculty believes a PhD student should work more independently on the thesis proposal and require less supervision than for Part I of the Qualifying Exam.