Graduate Departments and Programs

Colorado School of Mines offers several certificate and degree programs for those who have completed an undergraduate degree program. These programs lead to the awarding of Post-Baccalaureate Certificates, Graduate Certificates, Professional Master's degrees, thesis and non-thesis Master of Science degrees, non-thesis Master of Engineering degrees, and Doctor of Philosophy degrees. This section describes these certificates and degrees and explains the minimum institutional requirements for each. Students may apply to, and be admitted in, multiple graduate programs simultaneously. In this case, a student may use the same graduate course credits to satisfy the requirements for each certificate or degree.

Students enrolled simultaneously and/or sequentially in two Mines Master's degree programs may use up to half of the course credits required for the Master's degree program with the smallest course credit hour requirement toward both degree programs. Before the Office of Graduate Studies will count these credits toward each degree requirement, the student must obtain written permission to do so from each department, division or program granting the degree. This permission should be submitted with the student's Degree Audit form and should clearly indicate that each degree program is aware that the specific credits are being counted toward the requirements of multiple master's degrees. For thesis-based students this permission should be provided by the student's thesis committee and department head, or division/program director. For non-thesis and certificate programs, permission should be obtained from advisors and department head or division/program director.

Students simultaneously and/or sequentially enrolled in a Master's degree and Doctoral degree may, with departmental approval, count course credits toward each degree without limit. Approval to count credits towards a Master's degree and Doctoral degree will be indicated by the committee's and department head's or division/program director's signature on the Degree Audit form.

Course credits may never be applied toward more than three graduate degrees.

I. Responsible Conduct of Research Requirement

All students supported at any time in their graduate career through the National Science Foundation (NSF), as research assistants, hourly employees or fellowship awardees, must complete training in the responsible conduct of research (RCR). This requirement is in addition to all other institutional and program requirements described below and in the appropriate program sections of this Catalog.

To satisfy the RCR requirement students must complete one of the following options:

- HASS565 - Option available to all students
- SYGN502 - Option available to all students
- Chemistry Program Option - Option available only to students in the Chemistry program
- Physics Program Option: Option available only to students with physics faculty advisors or co-advisors

For additional information on program-specific options, contact the program.

By whatever means chosen, the NSF-RCR requirement must be completed prior to a candidate submitting the Degree Audit form. Students and advisors certify successful completion of the RCR requirement on the Degree Audit form.

II. Professional Programs

A. Post-Baccalaureate Certificate and Graduate Certificate Programs

Post-Baccalaureate Certificate and Graduate Certificate Programs at Mines are designed to have selective focus, short time to completion and consist of coursework only. The two are distinguished by the amount of undergraduate level coursework constituting the program. In general, Graduate Certificate programs have no more than 3 credit hours of undergraduate courses (400 level and below). Post-Baccalaureate Certificate programs allow for a higher proportion of undergraduate courses. For more information about specific certificate programs, please refer to the “Graduate Degree Programs and Description of Courses” portion of this Catalog.

1. Academic Requirements

Post-Baccalaureate Certificates and Graduate Certificates require a minimum of 9 total credit hours. Specific credit-hour requirements are detailed within the “Graduate Degree Programs and Description of Courses” portion of this Catalog. Students may not, on an individual basis, request credit hours be transferred from other institutions as part of the Certificate requirements. Some Certificates, however, may allow the application of specific, pre-approved transfer credits, or credits from other institutions with whom Mines has formal agreements for this purpose toward fulfilling the requirements of the Certificate. All courses applied to a specific Certificate are subject to approval by the program offering the Certificate.

If a student has earned either a Post-Baccalaureate Certificate or a Graduate Certificate and subsequently applies and is accepted into a Master's or PhD program at Mines, credits earned in the Certificate Program may, with the approval of the advanced degree program, be applied to the advanced degree subject to all the applicable restrictions on credit hours that may be applied toward fulfilling the requirements of the advanced degree.

2. Graduation Requirements

A list of prerequisites for each Post-Baccalaureate or Graduate Certificate, if required, will be published by each program. If a student is admitted with deficiencies, the appropriate department head, division director or program director will provide the student with a written list of courses required to remove these deficiencies. This list will be given to the student no later than one week after the start of classes of his/her first semester in order to allow for adding/dropping courses as necessary.

Upon completion of Certificate requirements, a student must apply to graduate in Trailhead and complete the Graduation Check-Out course by the posted deadlines.
B. Professional Master’s Program

Mines awards specialized, career-oriented non-thesis Master’s degrees with the title of “Professional Master (descriptive title).” These are custom-designed, interdisciplinary degrees, each with a curriculum meeting the career advancement needs of a particular group of professionals in a field that is part of Mines’ role and mission. For more information about these programs, please refer to the “Graduate Degree Programs and Description of Courses” portion of this Catalog.

1. Academic Requirements

Each Professional Master’s degree consists of a minimum of 30 total credit hours. Students must complete at least 21 credit hours at Mines in the degree program. The remaining hours may be transferred into the program. Requests for transfer credit must be approved by the faculty according to a process defined by the student’s home department, division, or program. Transfer credits must not have been used as credit toward a Bachelor’s degree. The transfer limit includes Mines distance learning courses. Up to six credit hours of Special Topic or Independent Study may be in the form of project credits done on the job as an employee or as a graduate intern. If project credits are to be used, the project proposal and final report must be approved by a Mines faculty advisor, although direct supervision may be provided by the employer. Students must maintain a cumulative grade point average of 3.0 or better in Mines course work.

2. Graduation Requirements

Full-time students must complete the following requirement within the first calendar year after enrolling into a Professional Master’s degree program:

- complete all prerequisite and core curriculum course requirements of their program.

If students are admitted with deficiencies, the appropriate department heads, or division/program directors will provide the students written lists of courses required to remove the deficiencies. These lists will be given to the students no later than one week after the start of classes of their first semester in order to allow them to add/drop courses as necessary. Completion of prerequisites and deficiencies will be monitored by the department.

Upon completion of the above defined requirements, students must submit a Degree Audit form documenting satisfactory completion of the core curriculum requirements. Deficiency and/or prerequisite courses may not be listed on the Degree Audit form. The form must have the written approval of all members of the advisor and thesis committee, if appropriate.

To graduate, all Professional Master students must submit all required forms, apply to graduate in Trailhead, and complete the Graduation Check-Out course by the posted deadlines.

III. Master of Science and Master of Engineering Programs

A. General Requirements

Graduate study at Mines can lead to one of a number of thesis and non-thesis based Master’s degrees, depending on the interests of the student. All Master’s degree programs share the same academic requirements for grades and definition of minor programs.

1. Academic Requirements

A Master’s degree at Mines requires a minimum of 30 total credit hours, with some degrees requiring additional credits. As part of this minimum 30 hours, departments and divisions are required to include a research or design experience supervised by Mines faculty. For more information about the specific research/design requirements, please refer to the appropriate department/division section of the “Graduate Degree Programs and Description of Courses” portion of this Catalog.

For non-thesis Master’s degrees, students must complete at least 21 credit hours at Mines in the degree program. All other coursework credits may be completed as transfer credits into the degree program. For thesis Master’s degrees, no more than 9 coursework credits may transfer.

The transfer credit limit includes any credits listed on a Mine’s undergraduate transcript and/or any credits taken at another university, including credits taken under the Exchange Reciprocal Agreement. Transfer credits must not have been used as credit toward a Bachelor’s degree, must not be pre-requisites or deficiencies, must have a letter grade of C or better, must be graduate level credits and must be required for the degree. Requests for transfer credit must be approved by the faculty according to the process defined by a student’s home department or division. All credits applied toward degree, except transfer credits, must be earned on campus. Students must maintain a cumulative grade point average of 3.0 or better in Mines course work.

2. Minor Programs

Students may choose to have a minor program or programs at the Master’s level. A minor program may not be taken in the student’s major area of study. A designated minor requires a minimum of 9 semester hours of graduate course work and must be approved by the student’s advisor, home department head/division director, and a faculty representative of the minor area of study. Less than half of the credit hours applied toward the minor degree program may be in the form of transfer credit hours. Transfer credit hours applied toward the minor are included as part of the overall transfer limitation applied to the degree as defined above.

3. Graduation Requirements

Full-time students must complete the following requirements within one calendar year of enrolling into the Master’s degree program:

- have a thesis committee appointment form on file in the Office of Graduate Studies (thesis based students only), and
- complete all prerequisite and core curriculum course requirements of their department, division or program.

If students are admitted with deficiencies, the appropriate department heads, division directors or program directors will provide the students written lists of courses required to remove the deficiencies. These lists will be given to the students no later than one week after the start of classes of their first semester in order to allow them to add/drop courses as necessary. Completion of prerequisites and deficiencies will be monitored by the department.

Upon completion of the above defined requirements, students must submit a Degree Audit form documenting satisfactory completion of the core curriculum requirements. Deficiency and/or prerequisite courses may not be listed on the Degree Audit form. The form must have the written approval of all members of the advisor and thesis committee, if appropriate.
Depending on the admit term, some students may not need to submit a Degree Audit form. Students who do not need to submit a Degree Audit form will be notified the first semester of study. Students who do not need to submit a Degree Audit form will however need to submit a form to transfer credits, double count credits and/or substitute courses.

To graduate, all Master of Science and Master of Engineering students must submit all forms, apply to graduate in Trailhead, and complete the Graduation Check-Out by the posted deadlines. In addition, thesis-based students must submit a signed Thesis Defense Form, upload a content-approved thesis and have the formatting approved by the posted deadlines.

B. Non-thesis Option

Non-thesis Master’s degrees (both non-thesis Master of Science and Master of Engineering) are offered by a number of departments, divisions and programs. In lieu of preparing a thesis, non-thesis master’s program students are required to complete a research or design experience taken as a special problem or as an independent study course. See the department/division section of the “Graduate Degree Programs and Description of Courses” portion of this Catalog for more information. Although non-thesis master’s students are not assigned a Thesis Committee, students in this program are assigned a faculty advisor by the student’s home department. The advisor is subject to approval by the Office of Graduate Studies.

C. Thesis Option

Thesis-based Master of Science degrees require completion of a satisfactory thesis and successful oral defense of this thesis. Academic credit toward completion of the thesis must include successful completion of no fewer than 6 credit hours of masters-level research credit. The thesis is expected to report on original research that results in new knowledge and/or techniques or on creative engineering design that applies state-of-the-art knowledge and techniques to solve an important problem. In either case, the thesis should be an exemplary product that meets the rigorous scholarship standards of the Colorado School of Mines. The student's faculty advisor and the Master's Thesis Committee must approve the program of study and the topic for the thesis. The format of the thesis must comply with the appropriate guidelines promulgated by the Office of Graduate Studies.

1. Faculty Advisor Appointment

When admitted, each thesis-based Master’s student is assigned a faculty advisor by the department. Students who are assigned temporary advisors at admissions will work with their department to have a permanent advisor assigned. Master’s students changing a temporary advisor to a permanent advisor or selecting a new advisor will need the new faculty advisor approved by the Office of Graduate Studies by the end of the second semester at Mines.

Advisors will provide advice regarding the student’s thesis direction, research and selection of courses. To be approved by the Office of Graduate Studies, advisors must be designated as Mines Graduate Faculty. Please refer to the Faculty Handbook for a definition of what constitutes Mines Graduate Faculty. Upon approval by the Graduate Dean, adjunct faculty, teaching faculty, visiting professors, emeritus professors and off-campus representatives may be designated additional co-advisors.

The Director of the degree program, often times the head of the student’s home department or division, and the Graduate Dean must approve all faculty advisor appointments.

2. Thesis Committee

The Graduate Dean will approve a Thesis Committee whose members have been recommended by the student, the student’s faculty advisor, the student’s department head and whose members meet the minimum requirements listed below. Students should have a thesis committee approved by the end of their second semester.

This Committee will have a minimum of three voting members, including the student’s advisor, who are familiar with the student’s area of study.

1. Of these three (3) Committee members, the first member will be the student’s advisor. The advisor must be Graduate Faculty.

2. The 2nd member must be designated as Mines Graduate Faculty, Teaching Faculty, Professor of Practice, Research Faculty, External Joint Appointee or Emeritus Faculty from the home department or, in the case of interdisciplinary degree programs, designated as Mines faculty in any of the categories above in the interdisciplinary program.

3. The 3rd member of the committee may be Mines faculty (any category of Mines faculty) or an off campus member.
   - Off-campus members can be assigned to the Committee as the 3rd member or as additional members. If assigned as the 3rd member, the member must be a voting member.
   - Off-campus members nominated for voting status on the committee request form must include a brief resume of their education and/or experience that demonstrates their competence to judge the quality and validity of the thesis. Such members also must agree to assume the responsibilities expected of on-campus Committee members including, but not limited to, attendance at Committee meetings, review of thesis proposals and drafts and defense.

4. Additional members (more than the 3 required), either Mines faculty or off campus members may serve either with full voting status or in a non-voting capacity. Off-campus members with voting status assume all of the responsibilities of on-campus Committee members with respect to attendance of Committee meetings, review of thesis drafts, participation in oral examinations and thesis defense sessions.

5. If a thesis co-advisor is assigned, an additional member, Mines faculty or off campus member, must be added to the committee. Co-advisors must be voting members of the committee.

6. Students who choose to have a minor program at the Master’s level must select a representative from their minor department of study to serve on the Thesis Committee. Minor representatives must be designated as a Mines Graduate Faculty or Teaching Faculty member in the Minor department.

7. A Thesis Committee Chairperson is designated by the student at the time he/she requests the formation of his/her thesis committee. The chairperson is responsible for leading all meetings of the thesis committee and for directing the student’s thesis defense. In selecting a Thesis Committee chairperson, the following guidelines must be met:
   - The chairperson cannot be the student's advisor or co-advisor and
   - The chairperson must be a designated as a Mines graduate faculty member.
Shortly after its appointment, the Committee will meet with the student to hear a presentation of the proposed course of study and thesis topic. The Committee and the student must agree on a satisfactory program and the student must obtain the Committee approval of the written thesis proposal at least one semester prior to the thesis defense. The student’s faculty advisor assumes the primary responsibility for monitoring the program and directing the thesis work. The award of the thesis-based Master’s degree is contingent upon the student’s researching and writing a thesis acceptable to the student’s faculty advisor and Thesis Committee.

3. Thesis Defense

The student submits an initial draft of his or her thesis to the faculty advisor, who will work with the student on necessary revisions. Upon approval of the student’s advisor, the revised thesis is circulated to the Thesis Committee members at least one week prior to the oral defense of the thesis. The oral defense of the thesis is scheduled during the student’s final semester of study. Students must be registered in that semester to be able to defend their thesis. This defense session, which may include an examination of material covered in the student’s course work, will be open to the public.

Following the defense, the Thesis Committee will meet privately to vote on whether the student has successfully defended the thesis. Three outcomes are possible: the student may pass the oral defense; the student may fail the defense; or the Committee may vote to adjourn the defense to allow the student more time to address and remove weaknesses or inadequacies in the thesis or underlying research. Two negative votes will constitute a failure regardless of the number of Committee members present at the thesis defense. In the event of either failure or adjournment, the Chair of the Thesis Committee will prepare a written statement indicating the reasons for this action and will distribute copies to the student, the Thesis Committee members, the student’s department head and the Graduate Dean. In the case of failure or adjournment, the student may request a re-examination, which must be scheduled no less than one week after the original defense. A second failure to defend the thesis satisfactorily will result in the termination of the student’s graduate program.

Upon passing the oral defense of the thesis, the student must make any corrections in the thesis required by the Thesis Committee. The final, corrected copy and an executed signature page indicating approval by the student’s advisor and department head must be submitted to the Office of Graduate Studies for review of the thesis format. (Instructions on Mines thesis format policy are available on the Office of Graduate Studies website and should be thoroughly read before beginning work on the thesis.) Any necessary revisions to the format of the thesis must be completed by the student and approved by the Office of Graduate Studies prior to the posted deadlines for completion of the student’s graduate degree.

4. Time Limitations

A candidate for a thesis-based Master’s degree must complete all requirements for the degree within five years of the date of admission into the degree program. Time spent on approved leaves of absence is included in the five-year time limit. Candidates not meeting the time limitation will be notified and withdrawn from their degree programs.

Candidates may apply for a one-time extension of this time limitation. This application must be made in writing and approved by the candidate’s advisor, thesis committee, department and Graduate Dean. The application must include specific timelines and milestones for degree completion. If an extension is approved, failure to meet any timeline or milestone will trigger immediate withdrawal from the degree program.

If the Graduate Dean denies an extension request, the candidate may appeal this decision to the Provost. The appeal must be made in writing, must specifically state how the candidate believes the request submitted to the Dean met the requirements of the policy, and must be received no later than 10 business days from the date of notification of the Dean’s denial of the original request.

If a candidate is withdrawn from a degree program through this process (i.e., either by denial of an extension request or failure to meet a timeline or milestone) and wishes to re-enter the degree program, that candidate must formally reapply for readmission. The program has full authority to determine if readmission is to be granted and, if granted, to fully re-evaluate the Candidate's work to date and determine its applicability to the new degree program.

IV. Doctor of Philosophy

A. Credits, Hour and Academic Requirements

The Doctor of Philosophy degree requires completion of a minimum of 72 semester hours beyond the Bachelor degree. At least 24 semester hours must be research credits earned under the supervision of a Mines faculty advisor and at least 18 credit hours of course work must be applied to the degree program. Course requirements for each department or division are contained in the “Graduate Degree Programs and Description of Courses” section of this Catalog.

The degree also requires completion of a satisfactory doctoral thesis and successful oral defense of this thesis. The Doctoral Thesis is expected to report on original research that results in a significant contribution of new knowledge and/or techniques. The student’s faculty advisor and the Doctoral Thesis Committee must approve the program of study and the topic for the thesis.

B. Residency Requirements

Doctoral students must complete a residency requirement during the course of their graduate studies. The purpose of this requirement is as follows:

- require students to become engaged in extended and focused research activities under the direct supervision of Mines faculty;
- allow students to become immersed in the culture of an academic environment;
- ensure students have access to the research tools and expertise needed for their chosen research activity;
- ensure the conduct of cutting-edge research with the expectation that this research will be completed in a timely fashion so that it is still relevant to the larger research community;
- provide Mines faculty with the ability to directly evaluate the research and academic credentials of a student and as such protect the integrity of the degree, department and the institution;
- ensure the research produced by students claiming a Mines degree is actually the product of Mines’ intellectual environment; and
- make it clear that the intellectual property developed while in the degree program is the property of Mines as defined in the Faculty Handbook.
The residency requirement may be met by completing two semesters of full-time registration at Mines. The semesters need not be consecutive. Students may request an exception to the full-time registration requirement from the Graduate Dean. Requests for exception must be in writing, must clearly address how the student's learning experience has met the goals of the residency requirement, as articulated above, and must be submitted by both the student and the student's thesis advisor and be approved by the student's Department Head/Division Director.

Students in online doctoral programs are exempt from this residency requirement.

C. Transfer of Credits

Up to 24 semester hours of graduate-level course work may be transferred from other institutions toward the PhD degree subject to the restriction that those courses must not have been used as credit toward a Bachelor degree, must not be prerequisites or deficiencies, must have a letter grade of C or better and must be graduate level credits. Requests for transfer credit must be approved by the faculty according to a process defined by the student’s home department or division. Transfer credits are not included in calculating the student’s grade point average at Mines.

In lieu of transfer credit for individual courses defined above, students who enter the PhD program with a thesis-based Master’s degree from another institution may transfer up to 36 semester hours in recognition of the course work and research completed for that degree. The request must be approved by the faculty according to a process defined by the student’s home department or division.

D. Faculty Advisor Appointments

When admitted, each doctoral student is assigned a Graduate Faculty advisor by the department. Students who are assigned temporary advisors at admissions will work with their department to have a permanent advisor assigned. PhD students changing a temporary advisor to a permanent advisor or selecting a new advisor will need the new faculty advisor approved by the Office of Graduate Studies by the end of the second semester at Mines.

Advisors will advise students with respect to the student’s thesis direction, research and selection of courses. Advisors must be designated as a Mines graduate faculty member. Please refer to the Faculty Handbook for a definition of what constitutes Mines graduate faculty. Upon approval by the Graduate Dean, adjunct faculty, teaching faculty, visiting professors, emeritus professors and off-campus representatives may be designated additional co-advisors.

The Director of the doctoral degree program, often times the head of the student's home department or division, and the Graduate Dean must approve all faculty advisor appointments.

E. Minor Programs

Students may choose a minor program or programs at the PhD level consisting of 12 course credits in the minor program. The student’s faculty advisor and Doctoral Thesis Committee, including an appropriate minor committee member as described below, approve the course selection and sequence in the selected minor program. Students may choose to complete multiple minor programs. Each program must consist of at least 12 credit hours approved by the faculty advisor and Doctoral Thesis Committee, including the appropriate minor committee members. Less than half of the credit hours applied toward the minor degree program may be in the form of transfer credit hours. Transfer credit hours applied toward a minor are included as part of the overall transfer limitation applied to the degree as defined above.

F. Doctoral Thesis Committees

The Graduate Dean will approve a Doctoral Thesis Committee whose members have been recommended by the student, the student’s faculty advisor, the student’s department head and whose members meet the minimum requirements listed below. Students should have a thesis committee approved by the end of their second year of study. This Committee must have a minimum of four voting members that fulfill the following criteria:

1. The Committee must include an advisor who must be classified as Graduate Faculty and must meet the qualifications defined above. If two advisors are appointed, advisor and co-advisor, both shall be voting members of the Committee.
2. The Committee must have at least two voting members knowledgeable in the technical areas of the thesis in addition to the advisor(s) and who are designated as either Mines Graduate Faculty, Teaching Faculty, Professor of Practice, Research Faculty or Emeritus Faculty.
3. The fourth, required member of the Committee must be designated as a Mines Graduate Faculty, Teaching Faculty or Professor of Practice. The 4th member may not be an advisor, co-advisor, or minor representative, and must be from outside of the student's doctoral, home department and minor program area(s) – if appropriate. This committee member acts as Thesis Committee Chairperson.
4. If a thesis co-advisor is assigned, an additional member, Mines faculty or off campus member, must be added to the committee. Co-advisors must be voting members of the committee.
5. If a minor field is designated, an additional committee member must be included who is an expert in that field. Minor representatives must be designated as Mines graduate faculty members who are participating faculty in the minor program area. If multiple minor programs are pursued, each must have a committee representative as defined above.
6. Off-campus representatives may serve as additional committee members. If off-campus members are nominated for voting status, the committee request form must include a brief resume of their education and/or experience that demonstrates their competence to judge the quality and validity of the thesis. Such members also must agree to assume the same responsibilities expected of on-campus Committee members including, but not limited to, attendance at Committee meetings, review of thesis proposals and drafts, and participation in oral examinations and defense.

Shortly after its appointment, the Doctoral Thesis Committee meets with the student to hear a presentation of the proposed course of study and thesis topic. The Committee and student must agree on a satisfactory program. The student’s faculty advisor then assumes the primary responsibility for monitoring the program, directing the thesis work, arranging qualifying examinations, and scheduling the thesis defense.

Upon completion of all prerequisite and core curriculum course requirements of their department division or program, students must submit a Degree Audit form documenting satisfactory completion of the core curriculum requirements. Deficiency and/or prerequisite courses may not be listed on the Degree Audit form. The form must have the written approval of all members of the advisor and thesis committee, if appropriate.
G. Admission to Candidacy

Full-time students must complete the following requirements within the first two calendar years after enrolling into the PhD program.

- have an approved thesis committee form on file;
- complete all prerequisite and core curriculum course requirements of their department, division or program;
- demonstrate adequate preparation for, and satisfactory ability to conduct, doctoral research; and
- be admitted into full candidacy for the degree.

If students are admitted with deficiencies, the appropriate department heads, division directors or program directors will provide the students written lists of courses required to remove the deficiencies. These lists will be given to the students no later than one week after the start of classes of their first semester in order to allow them to add/drop courses as necessary. Completion of prerequisites and deficiencies will be monitored by the department.

Each program also defines the process for determining whether its students have demonstrated adequate preparation for, and have satisfactory ability to do, high-quality, independent doctoral research in their specialties. These requirements and processes are described under the appropriate program headings in the section of this Catalog on Graduate Degree Programs and Description of Courses.

To graduate, all PhD students must submit all required paperwork, apply to graduate in Trailhead, complete the Graduation Check-Out course, complete the Survey of Earned Doctorate and submit the signed Thesis Defense Form by the posted deadlines. In addition, PhD students must upload a content approved thesis and have the formatting approved by the posted check-out deadlines.

H. Thesis Defense

The doctoral thesis must be based on original research of excellent quality in a suitable technical field, and it must exhibit satisfactory literary merit. In addition, the format of the thesis must comply with Mines policy according to the guidelines upheld by the Office of Graduate Studies. (Formatting requirements are listed on the Office of Graduate Studies website and students should thoroughly read these guidelines before beginning work on the thesis.)

The thesis topic must be submitted in the form of a written proposal to the student’s faculty advisor and the Committee. The Committee must approve the proposal at least one year before the thesis defense.

The student's faculty advisor is responsible for supervising the student's research work and consulting with other Doctoral Thesis Committee members on the progress of the work. The advisor must consult with the Committee on any significant change in the nature of the work. The student submits an initial draft of his or her thesis to the advisor, who will work with the student on necessary revisions. Upon approval of the student’s advisor, the revised thesis is distributed to the other members of the Committee at least one week prior to the oral defense of the thesis.

The student must pass an oral defense of his or her thesis during the final semester of studies. Students must be registered to defend. This oral defense may include an examination of material covered in the student’s course work. The defense will be open to the public.

Following the defense, the Doctoral Thesis Committee will meet privately to vote on whether the student has successfully defended the thesis.

Three outcomes are possible: the student may pass the oral defense; the student may fail the defense; or the Committee may vote to adjourn the defense to allow the student more time to address and remove weaknesses or inadequacies in the thesis or underlying research. Two negative votes will constitute a failure regardless of the number of Committee members present at the thesis defense. In the event of either failure or adjournment, the Chair of the Doctoral Thesis Committee will prepare a written statement indicating the reasons for this action and will distribute copies to the student, the Thesis Committee members, the student’s department head and the Graduate Dean. In the case of failure, the student may request a re-examination, which must be scheduled no less than one week after the original defense. A second failure to defend the thesis satisfactorily will result in the termination of the student’s graduate program.

Upon passing the oral defense of thesis, the student must make any corrections in the thesis required by the Doctoral Thesis Committee. The final, corrected copy and an executed signature page indicating approval by the student’s advisor and department head must be submitted to the Office of Graduate Studies for review of the thesis format. (Instructions on Mines thesis format policy are available on the Office of Graduate Studies website and should be thoroughly read before beginning work on the thesis.) Any necessary revisions to the format of the thesis must be completed by the student and approved by the Office of Graduate Studies prior to the posted deadlines for completion of the student's graduate degree.

I. Time Limitations

A candidate for a thesis-based Doctoral degree must complete all requirements for the degree within nine years of the date of admission into the degree program. Time spent on approved leaves of absence is included in the nine-year time limit. Candidates not meeting the time limitation will be notified and withdrawn from their degree programs.

Candidates may apply for a one-time extension of this time limitation. This application must be made in writing and approved by the candidate’s advisor, thesis committee, department and Graduate Dean. The application must include specific timelines and milestones for degree completion. If an extension is approved, failure to meet any timeline or milestone will trigger immediate withdrawal from the degree program.

If the Graduate Dean denies an extension request, the candidate may appeal this decision to the Provost. The appeal must be made in writing, must specifically state how the candidate believes the request submitted to the Dean met the requirements of the policy, and must be received no later than 10 business days from the date of notification of the Dean’s denial of the original request. The Provost's decision is final.

If a candidate is withdrawn from a degree program through this process (i.e., either by denial of an extension request or failure to meet a timeline or milestone) and wishes to reenter the degree program, that candidate must formally reapply for readmission. The program has full authority to determine if readmission is to be granted, and if granted, to fully re-evaluate the Candidate's work to date and determine its applicability to the new degree program.

V. Roles and Responsibilities of Committee Members and Students

Below are the roles and expectations Mines has of faculty as members of Thesis Committees and of students engaged in research-based degree programs.
Thesis Advisor(s)
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:

- be able and willing to assume principal responsibility for advising the student;
- have adequate time for this work and be accessible to the student;
- provide adequate and timely feedback to both the student and the Committee regarding student progress toward degree completion;
- 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.;
- 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:

- have adequate time to assume the responsibilities associated with serving on a student's Thesis Committee;
- be accessible to the student (at a minimum this implies availability for Committee meetings 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);
- ensure that the student's work conforms to the highest standards of scholarly performance within the discipline and within the expertise provided by the Committee member;
- provide advice to both the student and the student's advisor(s) on the quality, suitability and timeliness of the work being undertaken;
- approve the student's degree plan (e.g., courses of study, compliance with program's qualifying process, thesis proposal, etc.), assuring that the plan not only meets the intellectual needs of the student, but also all institutional and program requirements;
- review dissertation drafts as provided by the student and the advisor and provide feedback in a timely fashion; and
- participate in, and independently evaluate student performance in the final thesis defense.

Minor Field Committee Representative
In addition to the responsibilities of a Regular Committee Member, the Minor Field Committee Representative has the following responsibilities:

- 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;
- participate in, as appropriate, the student's qualifying and comprehensive examination process to certify completion of minor degree requirements; and
- 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:

- chair all meetings of the Thesis Committee including the thesis defense;
- represent the broad interests of the Institution with respect to high standards of scholarly performance;
- represent the Office of Graduate Studies by ensuring that all procedures are carried out fairly and in accordance with institutional guidelines and policies; and
- ensure that any potential conflicts of interest between student, advisor or any other committee member are effectively identified and managed.

Student Responsibilities
While it is expected that students receive guidance and support from their advisor and all members of the Thesis Committee, the student is responsible for actually defining and carrying out the project 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:

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

VI. Combined Undergraduate/Graduate Degree Programs
A. OVERVIEW
Many degree programs offer Mines undergraduate students the opportunity to begin work on a Graduate Certificate, Professional Master's Degree, Master's Degree, or Doctoral Degree while completing the requirements for their Bachelor's Degree. These combined Bachelors-Masters/Doctoral programs have been created by Mines faculty in those situations where they have deemed it academically advantageous to treat undergraduate and graduate degree programs as a continuous and integrated process. These are accelerated programs that can be valuable in fields of engineering and applied science where advanced education in technology and/or management provides the opportunity to be on a fast track for advancement to leadership positions. These programs also can be valuable for students who want to get a head start on graduate education.
The combined programs at Mines offer several advantages to students who choose to enroll in them:

1. Students can earn a graduate degree in their undergraduate major or in a field that complements their undergraduate major.
2. Students who plan to go directly into industry leave Mines with additional specialized knowledge and skills which may allow them to enter their career path at a higher level and advance more rapidly. Alternatively, students planning on attending graduate school can get a head start on their graduate education.
3. Students can plan their undergraduate electives to satisfy prerequisites, thus ensuring adequate preparation for their graduate program.
4. Early assignment of graduate advisors permits students to plan optimum course selection and scheduling in order to complete their graduate program quickly.
5. Early acceptance into a Combined Degree Program leading to a Graduate Degree assures students of automatic acceptance into full graduate status if they maintain good standing while in early-acceptance status.
6. In many cases, students will be able to complete both a Bachelor’s and a Master’s Degrees in five years of total enrollment at Mines.

Certain graduate programs may allow Combined Degree Program students to fulfill part of the requirements of their graduate degree by including up to six hours of specified course credits which also were used in fulfilling the requirements of their undergraduate degree. These courses; referred to as double counted courses, may be applied toward fulfilling many graduate degree requirements. Check the departmental section of the Catalog to determine which programs provide this opportunity and any limitations that might apply.

Double counted courses must:
- Meet all requirements for graduate credit, grades are included in calculating the graduate GPA.
- Some degree programs only allow students to double count 500 level courses (not 400 level), so please check the degree program for details.
- Must maintain grades according to undergraduate and graduate program requirements. Some degree programs have stricter limitations, so please check the degree program for details.

B. Admission Process

Students interested in applying into a graduate degree program as a Combined Degree Program student should first contact the department or division hosting the graduate degree program into which he/she wishes to apply.

- It is recommended that contact be made during the Sophomore year, but no later than the end of the Junior year.
- Graduate programs will provide initial counseling on degree application procedures, admissions standards and degree completion requirements.

Admission into a graduate degree program as a Combined Degree student may be granted after the student earns 60 undergraduate credits including transfer credit, and must be granted no later than the semester in which the student intends to apply to graduate with the bachelor’s degree. For example, if a student intends to graduate in May, admission to the graduate program as a combined student must be granted for that same Spring semester. See the Graduate Admissions website for the appropriate deadlines for the semester in which admission is sought.

Once admitted into a graduate degree program, students may enroll in 500-level courses and apply these directly to their graduate degree. To apply, students must submit the standard graduate application package for the graduate portion of their Combined Degree Program. Upon admission into a graduate degree program, students are assigned graduate advisors. Prior to registration for the next semester, students and their graduate advisors should meet and plan a strategy for completing both the undergraduate and graduate programs as efficiently as possible. Until their undergraduate degree requirements are completed, students continue to have undergraduate advisors in the home department or division of their Bachelor’s Degrees.

C. Requirements

Combined Degree Program students are considered undergraduate students until such time as they complete their undergraduate degree requirements. Combined Degree Program students who are still considered undergraduates by this definition have all of the privileges and are subject to all expectations of both their undergraduate and graduate programs. These students may enroll in both undergraduate and graduate courses (see section D below), may have access to departmental assistance available through both programs, and may be eligible for undergraduate financial aid as determined by the Office of Financial Aid. Upon completion of their undergraduate degree requirements, a Combined Degree Program student is considered enrolled full-time in his/her graduate program. Once having done so, the student is no longer eligible for undergraduate financial aid, but may now be eligible for graduate financial aid.

Once admitted into a graduate program, undergraduate Combined Program students must maintain good standing in the Combined Program by maintaining a minimum semester GPA of 3.0 in all courses taken. Students not meeting this requirement are deemed to be making unsatisfactory academic progress in the Combined Degree Program. Students for whom this is the case are subject to probation and, if occurring over two semesters, subject to discretionary dismissal from the graduate portion of their program as defined in the Unsatisfactory Academic Performance section of this Catalog.

Upon completion of the undergraduate degree requirements, Combined Degree Program students are subject to all requirements (e.g., course requirements, departmental approval of transfer credits, research credits, minimum GPA, etc.) appropriate to the graduate program in which they are enrolled.

D. Enrolling in Graduate Courses for a Combined Program

Undergraduate who have been granted admission through the Combined Degree Program into thesis-based degree programs (Masters or Doctoral) may, with graduate advisor approval, register for 700-level research credits.

700-level research credits are always applied to a student’s graduate degree program.

As described in the Undergraduate Catalog, seniors may enroll in 500-level courses. In addition, undergraduate seniors who have been granted admission through the Combined Degree Program into thesis-based degree programs (Masters or Doctoral) may, with graduate advisor approval, register for 700-level research credits appropriate to Masters-level degree programs. With this single exception, while a Combined
Degree Program student is still completing his/her undergraduate degree, all of the conditions described in the Undergraduate Catalog for undergraduate enrollment in graduate-level courses apply. 700-level research credits are always applied to a student’s graduate degree program.