

MATERIALS SCIENCE & ENGINEERING

Graduate Program in Metallurgical Engineering

Graduate Program Handbook

Last Revised: August 24, 2021

*For updates and feedback,
contact Sara Wilson,
sara.j.wilson@utah.edu,
801.581.4449*

<http://www.mse.utah.edu>

Welcome to the Graduate Program in Metallurgical Engineering in the Department of Materials Science & Engineering

The purpose of this manual is to provide information to graduate students who are considering enrolling or have enrolled for a degree in Metallurgical Engineering in the Department of Materials Science & Engineering, so that they may better plan their studies and research during their stay at this University. As such, it is intended to supplement information found in *The University of Utah General Catalog*. In addition to the Departmental requirements listed in this manual, all the University requirements specified in the Graduate Information section of *The University of Utah General Catalog* must be satisfied. Therefore, the student should become familiar with both the Departmental and University requirements as soon as possible after they start graduate work. *The University of Utah General Catalog* contains additional useful information on areas outside the scope of the department, e.g., campus facilities and student housing.

Precedence of Policies

In the event there is a conflict between Department policy and University policy, the University policy shall take precedence.

Table of Contents

Welcome to the Department of Materials Science & Engineering Graduate Program in Metallurgical Engineering	i
Precedence of Policies	i
Table of Contents	ii
Contact Information	1
Administrative Staff.....	1
Faculty & Leadership Contacts	2
Student Contacts	2
Departmental Listings	4
Teaching Faculty	4
Important Deadlines.....	7
University Deadlines	7
Timeline of Objectives for Graduate Degrees	8
First Year	8
Second Year	8
Third Year and Beyond (Ph.D.)	9
Semester before Graduation.....	9
Semester of Defense (Final Oral Examination)	9
After Defense and/or during the Semester of Graduation.....	10
Program Requirements.....	12
Graduate Programs in Metallurgical Engineering through the Department of Materials Science & Engineering	12
Expected Learning Outcomes.....	12
Admission Requirements & Procedures	12
Transfer Credits	13
International Students	13
Program Coursework	14
Requirements for All Degrees	14
Prerequisites	14
Graduate-Level Courses	14
Core Courses for M.S. and Ph.D. Programs.....	14
Course Fees	16
Graduate Seminar Attendance	16
Independent Study	16
Maximum Registration	17
Option for Credit/No-Credit Grading	17

Nonmatriculated or Correspondence Work	17
Master of Science	18
General Coursework and Study Requirements for the M.S.	18
Program of Study	18
Doctor of Philosophy (Ph.D.)	18
General Coursework and Study Requirements for the Ph.D.	18
Program of Study	18
Master of Engineering (M.E.)	19
Admission to Candidacy, M.E.	19
Course Requirements, M.E.	19
Final Report and Examination	19
Language Requirements	20
Mandatory Exams and Milestones	20
Admission to Candidacy for the M.S. Program	20
Admission to Candidacy for the Ph.D. Program — Qualifying Examination	20
Supervisory Committee Formation	21
Chair	21
Committee Selection	21
Master of Science	21
Doctor of Philosophy (Ph.D.)	21
Master of Engineering	22
Required Meetings	22
Master of Science	Error! Bookmark not defined.
Doctor of Philosophy (Ph.D.)	Error! Bookmark not defined.
Master of Engineering	Error! Bookmark not defined.
Supervisory Committee Roles	22
Expectations for Participation	22
Seminar	22
Professional Society Meetings and Conferences	23
Town Hall Meetings	23
Professional Development	23
Thesis/Dissertation/Project	23
Requirements for All Degrees	23
Research Topic and Thesis Advisor	23
Laboratory Notebook	23
Semester Research Report	24
Research Equipment	24
Research Proposal Requirements	24
Additional Research Proposal Requirements for Ph.D.	24
Requirements for Both Master of Science and Doctor of Philosophy	25
Submission of Thesis or Dissertation	25
Thesis or Dissertation Formatting	25
Final Oral Examination (Thesis or Dissertation Defense)	25
Thesis Correction, Approval, and Release	26
Ph.D. Dissertation Requirements	26

Applying for Graduation.....	26
Thesis Release	27
Graduation Ceremonies	27
Leaving the Graduate Program.....	27
Academic Requirements and Policies.....	28
Minimum GPA	28
Residency.....	28
State Residency	28
Study Residency, M.S.	28
Study Residency, Ph.D.	28
Continuous Registration	28
Leave of Absence	29
Family & Medical Leave.....	30
Vacations and Leave (within a Semester)	30
Leaving the Program Early.....	31
Changing Committee Chair & Committee Members	31
Time Limit to Degree	32
Dismissal Policies & Procedures	33
Termination of a Graduate Student/Thesis Advisor Relationship.....	33
Policy on Dismissal from the Program.....	34
Financial Support, Employment, Tuition Benefit, and Awards.....	35
Teaching Assistant Responsibilities & Policies	35
Research Assistant Responsibilities & Policies.....	35
Tuition Waivers	35
Qualifying for the Tuition Benefit.....	35
Tuition Benefit Limits	36
Student Health Insurance.....	37
Residency.....	37
Other Financial Support.....	37
College/University Fellowships and Awards	37
Student Loans	37
External Fellowship & Award Opportunities	38
Student Travel Assistance	38
Student Awards and Honors	38
Employment and Support Resources	38
Employment	38
Tuition	38
Support, Awards & Fellowships.....	39

Travel Assistance Awards	39
Personal Services	39
Student & Faculty Code	40
Graduate School Code of Conduct	40
Informal Dispute Resolution.....	40
Formal Dispute Resolution	41
Equal Opportunity, Affirmative Action, and Title IX	41
Student Safety and Well-Being.....	42
Laboratory Safety and Work-Related Injuries.....	42
Occupational Safety	42
Radiation Safety.....	43
Reporting Safety Issues	43
Safety Resources.....	43
Health, Wellness, and Recreation Services	43
Crisis or Emergency Services	44
Research Policies & Training	45
Student Access to Physical Resources.....	45
RATS Courses	45
Institutional Review Board	45
Export Controls.....	45
Research Misconduct.....	46
Intellectual Property Policies	46
Student Resources: General	47
Departmental Resources	47
Graduate School Resources	47
University ID Card	47
Communication Resources	47
Email.....	47
Postal Mail.....	48
Computing Resources	48
Wireless Connections	48
Software.....	48
Hardware	48
Food and Housing.....	48
Housing.....	48
Meals & Food	49

Mass Transit.....	49
Events, Arts, Entertainment and Recreation.....	49
Student Resources: Academic.....	50
Admissions	50
Administrative & Records	50
Graduation	50
Professional Development	50
Training & Workshop Programs	50
Writing & Manuscript Editing.....	51
Graduate Writing Center & Graduate Student Reading Room	51
University Libraries	51
Student Resources: Code of Conduct, Dispute Resolution, Diversity, Support Groups, and Leadership.....	52
Advocacy and Dispute Resolution.....	52
Title IX Compliance	52
Diversity, Equal Opportunity, Affirmative Action, and Title IX; Support Groups and Services.....	52
Resources for International Students	54
International Student and Scholar Services	54
Admission	54
Tuition and State Residency	54
Continuous Registration and Full-Time Status.....	54
Leave of Absence	55
Employment.....	55
Research Restrictions.....	55
After Defense and/or during the Semester of Graduation.....	55
Resources for International Students	55
Important Forms.....	56
Academic Forms	56
Purchasing Forms	56
Employment Forms	56
Research and Other Forms.....	56
Request for Disability, Religious, or Pregnancy Accommodation.....	56
Glossary	57

Contact Information

Administrative Staff



Sara Wilson

Administrative Manager/Graduate Academic Advisor

sara.j.wilson@utah.edu

801.581.4449

Office: CME 304

The Graduate Academic Advisor assists students in all aspects relating to Materials Science and Engineering graduate degrees, including policies and procedures, graduation, tuition benefit and student health insurance. All graduate students in the Department of Materials Science and Engineering are expected to meet regularly with the Academic Advisor as they progress towards their degree to ensure that procedures and forms are properly completed.



Angela Nelson

Administrative Officer

angela.nelson@utah.edu

801.585.6919

Office: CME 304



Joshua Hansen

Clerk

hansen@mse.utah.edu

801.581.6863

Office: CME 304



Kay Argyle

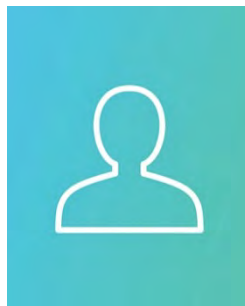
Executive Secretary

kay.argyle@utah.edu

801.581.6386

Office: 412 WBB

The Executive Secretary assists students in all aspects relating to applications and admissions.



Natalie Eastwood

Undergraduate

Academic Advisor

801 581 6864

Office: CME 307

Faculty & Leadership Contacts



Dr. Sivaraman Guruswamy

Director of Graduate Studies
in Metallurgical Engineering
s.guruswamyl@utah.edu
801.581.7217
Office: 425 WBB

The Director of Graduate Studies oversees policies and procedures for all graduate degrees offered through the Department of Materials Science and Engineering. The DGS is available to answer general questions about the graduate program and to provide recommendations regarding coursework. They also serve as the default research advisor for new students who have not yet established a research advisor.



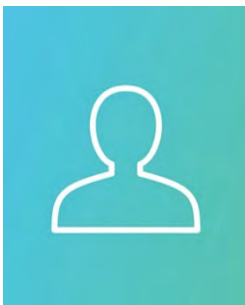
Dr. Michael Simpson

Chair, Department of Materials Science and Engineering
michael.simpson@utah.edu
801.581.4013
Office: CME 304

The Department Chair oversees all research, academic, service and administrative functions of the department. The chair is responsible for setting the strategic direction for the department and ensuring that resources are provided for its different department functions in serving the university mission.

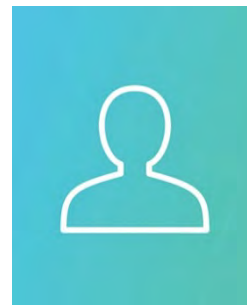
Student Contacts

GSAC or Student Organization Co-Presidents



Ashwin Velraj
u1350938@utah.edu

Olivia Dale
u0984379@utah.edu



The Departmental Student Advisory Committee consists of two undergraduate and two graduate students from within the department, who are elected yearly at the end of the Spring semester for the following academic year. This body then meets to elect a Committee Chair and to appoint any additional members deemed necessary.

The primary objective of the Department SAC is to promote purposeful communication between the student body and the faculty on a professional and technical as well as a social level. The following duties are illustrative of the ways in which this can be accomplished:

- (a) It is the aim of the SAC, with the assistance of the faculty, to promote a feeling of professionalism among the students and to prepare the students for what will be expected of them in their careers. Special emphasis is placed on those intangible items that are difficult to transmit in a classroom environment (e.g., the demands of an industrial environment as opposed to an academic one: job availability and interviewing).
- (b) Department SAC chair or its selected/elected representative serves as a member of the College Student Council.
- (c) As required by university policy the SAC provides -input on any faculty member being considered for retention, tenure or promotion.
- (d) The SAC assists in selecting the faculty member to receive the Mellow Met Award for Excellence in Teaching Metallurgical Engineering and the teaching assistant to receive the department award for best teaching assistant.
- (e) In cases of disputes involving students and faculty the SAC acts as intermediary. In addition the SAC is prepared to offer information and counseling to any student involved.

Departmental Listings

Teaching Faculty

More details on faculty research specialties, and information on research, adjunct, or other auxiliary faculty, may be found on our website.



Faculty Member &
Area of Specialization

Zlatan Aksamija.
Associate Professor

Nano-scale Thermal
Transport, Thermo-electrics.



Dmitry Bedrov
Associate Professor
d.bedrov@utah.edu

Computational Polymers



Ravi Chandran
Professor
ravi.chandran@utah.edu

Physical Metallurgy



Michael Free
Professor
michael.free@utah.edu

Hydrometallurgy
Electrometallurgy



Faculty Member &
Area of Specialization

Jeff Bates
Assistant Professor (Lecturer)
jeff.bates@utah.edu

Polymers



Darryl Butt
Professor & Dean of the
College of Mines and Earth
Sciences
Office: FASB 205
Phone: 801-581-8767
darryl.butt@utah.edu
[Ceramics](#)



Zak Fang
Professor
zak.fang@utah.edu

Metals for Energy Storage
Powder Metallurgy



Sivaraman Guruswamy
Professor
s.guruswamy@utah.edu

Physical metallurgy
Magnetic Materials

Faculty Member &
Area of Specialization



Huiwen Ji

Assistant Professor
Office: *CME 212*
Phone: 801-585-7171
huiwen.ji@utah.edu

Correlated Disorder, Energy
Storage



Jan Miller

Distinguished Professor &
Ivor Thomas Professor of
Metallurgical Engineering
jan.miller@utah.edu

Mineral Processing



Michael Scarpulla

Associate Professor
scarpulla@eng.utah.edu

Electronic Materials



York Smith

Assistant Professor
york.smith@utah.edu

Chemical Metallurgy
Metal Recycling



Taylor Sparks

Associate Professor and
Associate Chair
sparks@eng.utah.edu

Ceramics



Faculty Member &
Area of Specialization

Feng Liu

Professor
fliu@eng.utah.edu

Computational
Electronic Materials



**Swomitra "Bobby"
Mohanty**

Assistant Professor
swomitra.mohanty@utah.edu

Nano-technology
Sensors



Michael Simpson

Professor and Chair
michael.simpson@utah.edu

Nuclear Materials
Molten Salts



Hong Yong Sohn

Distinguished Professor
h.y.sohn@utah.edu

Chemical metallurgy



Gerald Stringfellow

Distinguished Professor
Office: *MEB 3110*
Phone: 801-581-8387
stringfellow@coe.utah.edu

Electronic Materials

Faculty Member &
Area of Specialization



Ashutosh Tiwari
Professor
tiwari@eng.utah.edu

Nanotechnology/
Electronic Materials



Chen Wang
Assistant Professor

Polymers, Recyclable
Plastics, 3D printing,

Faculty Member &
Area of Specialization



Anil Virkar
Distinguished Professor
Office: CME 316-315
Phone: 801-581-5396
anil.virkar@m.cc.utah.edu

Ceramics



Ling Zang
Professor
lzang@eng.utah.edu

Nanomaterials

Important Deadlines

University Deadlines

Academic calendar deadlines

- <https://registrar.utah.edu/academic-calendars>

International Teaching Program deadlines

- <https://gradschool.utah.edu/ita/important-dates-and-deadlines>

University Fellowship deadlines, including Teaching Assistantship & Research Assistantship deadlines

- <https://gradschool.utah.edu/tbp/graduate-fellowship-opportunities>

Thesis Office manuscript submission deadlines

- <https://gradschool.utah.edu/thesis/calendar>

Graduation deadlines

- <https://registrar.utah.edu/graduation>

Timeline of Objectives for Graduate Degrees

To stay on schedule, the graduate student should complete the objectives within the time given. See appropriate sections in this handbook for additional information. The student is expected to provide necessary information for the department to prepare the required online forms. For specific deadline dates in any semester, see the calendars for the graduate program and the thesis office on the Graduate School website (see Important Deadlines).

Unless otherwise specified, requirements apply to both M.S. and Ph.D.

First Year

Familiarize yourself with the requirements in the *Graduate Catalog: Policies and procedures for graduate students* (see the Graduate School website) and in the department's *Graduate Student Handbook*.

To plan your coursework, ask the departmental Graduate Academic Advisor how many semesters of tuition benefit you may be eligible for.

Take Chemical Hygiene Safety Training every year.

Each semester, register for and attend at least 75% of graduate seminars. Credit is based on attendance.

M.S. Register for seminar each Fall and Spring semester for two years.

Ph.D. Register for seminar each Fall and Spring semester for three years.

If a thesis advisor was not selected during admission, select one during the first or second semester. Select a research topic. Take the recommended core courses in a chosen area during the first and second semester to prepare for qualifying examination.

Ph.D. If you have received a Master's degree, consult with your thesis advisor and the departmental Director of Graduate Studies whether any M.S. courses may be used to waive required Ph.D. coursework.

M.S. During the second semester, form a Supervisory Committee. Request the departmental Graduate Academic Advisor, in writing, to enter the Supervisory Committee in the online record.

Ph.D. Take the Ph.D. Qualifying Examination the first April after admission.

Second Year

Domestic students apply for residency.

Take Chemical Hygiene Safety Training each year.

Each semester, register for and attend at least 75% of graduate seminars. Credit is based on attendance.

Ph.D. Form a Supervisory Committee after the qualifying exam, during the second year of graduate work. Request the departmental Graduate Academic Advisor, in writing, to enter the Supervisory Committee in the online record.

Ph.D. Present the research proposal within 12 months after the Qualifying Exam & before the end of the second year. Give a printed copy to the supervisory committee two weeks before the oral presentation.

M.S. Present a graduate seminar.

M.S. Finish at least twenty credit hours of course work and ten hours of MET E 6970 *Thesis Research* within two years or four semesters and in under 84 hours, before tuition benefit support ends.

Third Year and Beyond (Ph.D.)

Ph.D. Take Chemical Hygiene Safety Training once a year.

Ph.D. Each semester, register for and attend at least 75% of graduate seminars. Credit is based on attendance.

Ph.D. Present a graduate seminar.

Ph.D. Finish at least 30 hours of course work and 24 hours of MET E 7970 *Thesis Research*, in less than 84 credit hours, before tuition benefit support ends.

Semester before Graduation

M.S. This will probably be the third semester of graduate studies (that is, starting the second year).

Ph.D. This will probably be the fifth or a later semester of graduate studies (that is, starting the third year).

Familiarize yourself with *A Handbook for Theses and Dissertations*, available on the Thesis Office website. Use it while drafting your thesis. Check the Thesis Office Calendar for deadlines.

File a graduation application with the Office of the Registrar, Graduation Division.

After completion of all graduate coursework, provide a worksheet to the departmental Graduate Academic Advisor showing which courses you have selected to be used for the “Program of Study”. Submit official transcripts of transfer credits to the department and the Admissions Office for graduate work completed elsewhere.

Semester of Defense (Final Oral Examination)

Register for at least three credit hours.

To graduate during the same semester as the Final Oral Examination is taken, schedule the Final Oral Examination during the first few weeks of the semester.

Submit a draft of the thesis or dissertation to the Committee Chair at least three weeks before the Final Oral Examination, and to the Supervisory Committee at least two weeks before.

Before the defense, prepare the forms “Report of the Final Oral Examination” and “Supervisory Committee Approval”. Get them signed during the defense.

During a given semester, the last possible day to defend the thesis or dissertation is the last day before the next semester starts.

After Defense and/or during the Semester of Graduation

International students apply for Optional Practical Training, if appropriate.

Make changes in the thesis or dissertation required by the Supervisory Committee. Get the “Final Reading Approval” signed by the thesis advisor.

Check with the departmental Graduate Academic Advisor that all required forms and documentation has been submitted.

Submit one copy of the defended, committee-approved thesis or dissertation manuscript, plus the Final Reading Approval, to the Thesis Editor. To expedite thesis clearance process, the thesis office has shifted the primary responsibility of checking formatting, grammar and proof-reading to the advisor, supervisory committee and the department before final reading approval. Make any changes to the manuscript that the committee may require after the oral defense and get the final reading approval within two weeks of oral thesis defense. ***The thesis/dissertation manuscript should be submitted to the Thesis Office within 2 weeks of the successful defense date.*** The target date for submission to the thesis office of the final reading approved manuscript is one week before the last day of classes for the semester. The thesis office is working continually on improving the clearance process. Please check the Thesis office for updated guidelines and deadlines.

Submit a PDF copy of the thesis or dissertation that has been publicly defended and approved by the supervisory committee, the final reader, and the chair of the department to the Thesis Office for Format Approval. Submit your manuscript by following the directions on this page. gradschool.utah.edu/thesis/online-thesis-submission/ You will need the unids of all your committee members and the chair of your department. Electronic signatures are gathered through this system. After you submit your manuscript, the online system will send emails with links to the approval forms for your committee members and department chair to sign. You should give the committee members and department chair notice to look for these emails. Your chair will receive 2 emails with 2 different links for the 2 different forms they need to sign. Manuscripts remain in a holding queue until the signatures from your committee chair, department chair, and the majority of the rest of the committee members have signed the electronic forms. You will receive an email as each signature is completed. Once these signatures are received your manuscript will move into the working queue. You will also receive a notice when this happens. To be considered for graduation in a particular semester, the defended and committee-approved thesis or dissertation should be submitted 2 weeks prior to the closing date of the semester.

IMPORTANT: The manuscript submitted must adhere to the formatting guidelines in the thesis handbook in order to qualify as meeting the deadline. If manuscripts are submitted after the Format Approval target date (see the Calendar on The Graduate School website), they will be handled on a best-effort basis for graduation in that semester. Manuscripts are reviewed in the order in which they are received.

After notification by the Thesis Office that the submitted manuscript has been read, you may email your editor with any questions regarding any requested corrections. Once all corrections have been made, a Format Approval is issued.

After receiving Format Approval, the student will be given instructions for uploading a PDF file to ProQuest/UMI. The final manuscript should be uploaded no later than the Monday before examination week (the final week of the semester; see final submission date listed in the Calendar on The Graduate School website). If the final manuscript is satisfactory, the dean of The Graduate School signs the Final Reading Approval form and a Thesis Release is issued. All processing of the manuscript must be completed by the last day of the semester for graduation in the semester.

M.S. Graduate within four years of entering the program.

Ph.D. Graduate within seven years of entering the program.

Before leaving the university, properly dispose of chemicals and samples, give laboratory notebooks and other research products/samples to the thesis advisor, return keys and library books, and provide a forwarding address, a short biographical statement, and a recent photograph of yourself to the department office.

Program Requirements

Graduate Programs in Metallurgical Engineering through the Department of Materials Science & Engineering

The Department of Materials Science & Engineering offers M.S., M.E., and Ph.D. degrees in metallurgical engineering as well as in materials science and engineering.

Expected Learning Outcomes

The expected learning outcomes for the Master of Science program are

1. Advanced knowledge of their selected area of research at a level that exceeds undergraduate expectations.
2. Ability to conduct supervised research.
3. Effective written and oral technical communication skills.
4. Ability to write technical reports and peer-reviewed papers.

The expected learning outcomes for the PhD program are

1. An ability to conduct independent research, generate novel ideas, design and execute a research program.
2. Made scholarly contribution to the selected area of research as evidenced by the publication of at least two peer-reviewed papers in journals, transactions, or proceedings.
3. Demonstrate expertise in their selected area of research that is comparable or exceeds that of the members of the supervisory committee.
4. An ability to effectively communicate the results of their research.

Admission Requirements & Procedures

Students wishing to do graduate work in the department must submit a completed application to the University of Utah, along with letters of recommendation, a Statement of Purpose, unofficial transcripts of all university or college courses completed at other institutions, and unofficial certification of degrees obtained. Official transcripts and certification are required to be submitted upon acceptance.

Graduate Record Examination (GRE) general test (verbal, quantitative, and analytical) scores are required. There is no minimum score requirement, and scores are used in conjunction with student background for assessment.

See our website or contact the Chair of Graduate Admissions for the degree in Metallurgical Engineering, Dr. Guruswamy, or Kay Argyle, Executive Secretary, for more information.

To be admitted, applicants must meet the admissions requirements of the department, the Graduate School, and the university. Admissions requirements for the Grad School are at <https://gradschool.utah.edu/graduate-catalog/admissions>, and for the University at <https://admissions.utah.edu/apply/graduate>.

The Admissions Office website is <https://admissions.utah.edu/>. The International Admissions Office's website is <https://admissions.utah.edu/international/index.php>.

A beginning graduate student may receive counseling on academic issues from the departmental Graduate Academic Advisor, Sara Wilson, or the Director of Graduate Studies, Dr. Guruswamy.

Transfer Credits

Graduate credit may be transferred from other institutions and applied toward fulfillment of graduate degree requirements.

Up to six hours of transfer credit from graduate-level courses taken at other institutions may be applied towards the fulfillment of master's degree requirements. For PhD students, up to 12 hours of transfer credits from courses taken at other institutions may be applied towards the fulfillment of PhD degree course requirements. Course credits used for a Master's degree at the University of Utah may be used without limit to fulfill the course credit requirement for the Ph.D. degree. Transfer credit must be

- a) of high grade (B- or higher), and
- b) recommended by the student's Supervisory Committee with approval by the Director of Graduate Studies.

Research Advisor

If the graduate student has entered the program without an assigned thesis advisor, the Director of Graduate Studies may serve as or appoint another faculty member as a temporary thesis advisor. The graduate student should discuss possible research projects with all faculty members in the student's area of interest and select a topic and a thesis advisor. Graduate students are required to choose a research thesis topic before the end of their second semester of study.

International Students

Proof of English proficiency is required for international applicants. Minimum scores are 80 internet-based (IBT) on the Test of English as a Foreign Language (TOEFL), or a band score of 6.5 on the International English Language Testing System (IELTS). Scores are valid for only two years. The English proficiency requirement may be waived if the applicant is from an English-speaking country (see International Admissions for a list of accepted countries) or if the applicant is completing or has recently completed a degree from a university in the U.S. or another English-speaking country.

International students should familiarize themselves with the relevant visa requirements and compliance.

Program Coursework

The university confers graduate degrees upon candidates who meet the requirements designated by the appropriate graduate committees, the Graduate Council, and the faculty of the university. Credit toward a graduate degree is recognized only for those courses for which the student is registered or those credits that are transferred with the Department's approval.

Requirements for All Degrees

PREREQUISITES

As a prerequisite to acceptance to the graduate program, students normally should have completed all courses required for the award of the degree of B.S. in Metallurgical Engineering as detailed in *The University of Utah General Catalog*, or equivalent courses at other universities.

In cases where the student has not completed these courses, s/he includes in her/his course of study for a higher degree those courses required to satisfy the requirement. Exceptions must be approved by the Supervisory Committee. Courses completed for undergraduate credit do not normally qualify for graduate credit.

In order to plan your coursework, ask the departmental Graduate Academic Advisor how many semesters of tuition benefit you may be eligible for. If you have received a Master's degree, consult with your thesis advisor and the departmental Director of Graduate Studies whether any Master's degree courses may be used to satisfy part of required Ph.D. coursework.

GRADUATE-LEVEL COURSES

All courses numbered 6000 or above are considered graduate-level courses. No 5000-level or lower courses are accepted for graduate credit without the prior written approval of the student's Supervisory Committee and the Director of Graduate Studies.

See The University of Utah General Catalog for a list of graduate courses: <https://www.utah.edu/students/catalog.php>

CORE COURSES FOR M.S. AND PH.D. PROGRAMS

A series of core courses have been established for the graduate program. The strongly recommended core courses are also shown below. Additional core courses are highly recommended and are considered basic for each discipline. See the departmental Graduate Academic Advisor for more information.

M.S. Program Core Courses for Different Focus Areas

Mineral Processing

MET E 6670 Mineral Processing I

MET E 6750 Transport and Rate Phenomena

Chemical Metallurgy

MET E 6700 Low Temperature Chemical Processing
MET E 6750 Transport and Rate Phenomena
MET E 6710 High-Temperature Chemical Processing

Physical Metallurgy

MET E 6260 Physical Metallurgy I
MET E 6450 Mechanical Metallurgy
MET E 6780 Metals Processing

PhD Program Required Core Courses for Different Focus Areas

Physical Metallurgy

MET E 6260 Physical Metallurgy I
MET E 6450 Mechanical Behavior
MET E 6780 Metals Processing
MET E 7270 Physical Metallurgy II

Chemical Metallurgy

MET E 6750 Transport and Rate Phenomena
MET E 6710 High Temperature Chemical Processing
MET E 6700 Low Temperature Chemical Processing

Minerals Processing

MET E 6670 Minerals Processing I
MET E 6690 Process Engineering Statistics
MET E 6680 Mineral Processing II

Additional Recommended Core Courses for MS and Ph.D. Students

Mineral Processing

MET E 6730 Flotation Chemistry
MET E 6760 Process Design & Economics I

Chemical Metallurgy

MET E 6600 Corrosion Fundamentals and Minimization
MET E 6760 Process Design & Economics I

MET E 6765 Process Design & Economics II
CHEM E 6553 Chemical Reaction Engineering

Physical Metallurgy

MET E 6300 Alloy and Material Design
MET E 6800-011 Solid State Thermodynamics/ MSE 6032 Adv. Thermodynamics
MET E 6240 Principles and Practice of Transmission Electron Microscopy
MET E 6250 X-ray Diffraction
MET E 6270 - Powder Metallurgy

COURSE FEES

All students registered for laboratory courses in the department are assessed a fee to offset the cost of replacing reagents, glassware and other expendable materials used or damaged during the semester. Course fees may also be assessed for courses with field trips.

GRADUATE SEMINAR ATTENDANCE

All graduate students are required to attend *Graduate Seminar* (MET E 7800) every semester that they are at the university. Registration for *Graduate Seminar* is required Fall and Spring semesters each academic year, for two years for an M.S. degree and for three years for a Ph.D. degree. No more than two credits (four half credits) for graduate seminar may be applied towards an M.S. degree. No more than three credits (six half credits) may be applied towards a Ph.D. degree.

If the student completes all work on the degree in less than two years for an M.S. or three for a Ph.D., the requirement is 75% attendance during this shorter time. If the student attends at least 75% of seminars during each semester, s/he receives credit for the course.

If the student is unable to attend due to conflicts with other courses, employment, etc., the student should discuss this with the departmental Graduate Academic Advisor beforehand. Substitution may be available for conference attendance/presentations.

Each student is required to present a seminar at least once during degree program.

INDEPENDENT STUDY

Time spent on research preparation, bibliographic work, acquiring new mathematical or computer skills, or developing new instrumentation are to be counted toward fulfilling an *Independent Study* (MET E 7920) class requirement. An M.S. student may register for up to three *Independent Study* hours per semester and may take up to six credit hours of *Independent Study* coursework total. A Ph.D. student may register for up to a limit of five credit hours of *Independent Study* per semester and may take up to sixteen hours total.

The instructor will typically be the student's research supervisor but may in special cases be another faculty member. A student needs approval from her/his thesis advisor or an individual

instructor before registering for *Independent Study*. Each faculty member's *Independent Study* class is identified by a section number in the course catalog.

MAXIMUM REGISTRATION

No candidate for a graduate degree may register for more than sixteen credit hours in any one semester. This includes evening resident credit and daytime classes. Teaching fellows and others employed approximately halftime are limited to a maximum registration of twelve credit hours.

OPTION FOR CREDIT/NO-CREDIT GRADING

A graduate student is granted the option, subject to the approval of his/her major department and review by the Graduate Dean, to enroll in some courses in which s/he will be graded on a credit/no credit (CR/NC) basis, rather than on a letter basis.

It is hoped that, with the CR/NC grades, a student will feel freer to extend her/his studies to areas outside his/her major or specialty and to take classes which s/he might not take if s/he had to compete with majors for a letter grade.

1. During her/his first year in the Graduate School of the University of Utah, the student, if the department concurs, may register for one class each semester on a CR/NC basis.
2. The department has maximum flexibility to work out a satisfactory program with the student. In all cases, whether the student is in his/her first year or is in advanced stages of her/his program, the choice of courses to be taken on a CR/NC basis is subject to the approval of his/her Supervisory Committee.
3. No student may elect to register for CR/NC courses in her/his major field.
4. All courses which are listed for one hour or less are graded on a simple CR/NC basis, unless the use of regular letter grades is approved by the Graduate Council.
5. A graduate student should earn a grade of "C" or better to be entitled to "credit" for those courses graded on a letter basis. Students who do not wish to register for credit, whether a letter grade or the CR/NC option, should merely audit the course.

See *The University of Utah General Catalog* for other details on this subject.

The graduate student is cautioned that it is important that s/he receive letter grades in order to build a graduate grade point average. This is especially important if the student applies for fellowships or traineeships on a competitive basis or later transfers to another institution.

NONMATRICULATED OR CORRESPONDENCE WORK

A student may count no more than six credit hours of nonmatriculated work toward a graduate degree, unless the student's registration for additional credit is specifically approved in advance by the Supervisory Committee Chair. Courses taken by correspondence or home study are not eligible for graduate credit.

Master of Science

GENERAL COURSEWORK AND STUDY REQUIREMENTS FOR THE M.S.

Candidates for the Master of Science degree must earn a minimum of thirty semester hours in graduate courses and thesis research. A minimum of twenty semester hours must be in coursework in Metallurgical Engineering or related technical subjects, with the balance (ten semester hours) in thesis research. The student is required to maintain at least a 3.0 grade point average. Faculty Consultation (MET E 6980) does not count toward fulfillment of degree requirements.

PROGRAM OF STUDY

Once the student has completed his/her coursework, but at least one semester before graduation, the student obtains approval of her/his coursework from the committee. The student provides the necessary information, in writing, on approved coursework to the departmental Graduate Academic Advisor to prepare the online "Program of Study" form. The Program of Study must also be approved by the supervisory committee, Director of Graduate studies and the Dean of the Graduate School. Subsequent changes must be approved by the student's Committee and a new Program of Study submitted.

Doctor of Philosophy (Ph.D.)

The Ph.D. degree represents the highest scholarly achievement demonstrated by independent research and is not awarded simply for the fulfillment of resident or credit requirements.

GENERAL COURSEWORK AND STUDY REQUIREMENTS FOR THE PH.D.

The student must do three or more years of approved graduate study, including one year (that is, two consecutive semesters) in full-time continuous residence at the University of Utah.

A minimum of fifty-four semester hours of credit is required for the degree, of which thirty credit hours are course credits in Metallurgical Engineering or related technical fields (for example chemical engineering, materials science, nuclear engineering, chemistry, etc.), and twenty-four are dissertation research credits. Faculty Consultation (MET E 7980) does not count toward fulfillment of degree requirements.

Courses taken for a master's degree may be used to waive parts of the total credit hours required for the doctoral degree.

The student is strongly encouraged to take the Ph.D. core courses in a chosen area. Also, a student is encouraged to take core courses from areas other than her/his own main area. For instance, mineral processing students may take physical metallurgy and extractive metallurgy classes and vice versa.

PROGRAM OF STUDY

It is suggested that the student find a thesis advisor as soon as possible, because the burden of convincing the Supervisory Committee of the course hours falls upon the student otherwise. Each

semester the student must get the thesis advisor's approval of the classes for which s/he is planning to register. Finally, the Supervisory Committee must also approve the student's coursework.

The student provides the necessary information, in writing, to the departmental Graduate Academic Advisor to enter the Program of Study in the online record. Subsequent changes must be approved by the Supervisory Committee and a new Program of Study submitted.

Master of Engineering (M.E.)

This degree is not based solely on the accumulation of a given number of hours of course work but should be built around providing specialized training for the student. All requirements for the M.S. degree with the exception of the thesis apply to the M.E. degree. In place of a thesis defense the candidate must take a comprehensive oral and/or written examination conducted by his/her Supervisory Committee.

ADMISSION TO CANDIDACY, M.E.

The qualifications for admission to the Master of Engineering Program are the same as those of the Graduate School.

Once the student has completed his/her coursework, but at least one semester before graduation, the student obtains approval from the committee of her/his coursework. The student requests the departmental Graduate Academic Advisor to enter the Program of Study in the online record and provides the necessary information, in writing, on coursework. Subsequent changes must be approved by the student's Committee and a new Program of Study submitted.

COURSE REQUIREMENTS, M.E.

Information of the specific requirements for the degree may be obtained from the department or *The University of Utah General Catalog*.

The Master of Engineering degree requires completion of a minimum of thirty credit hours of graduate, professionally oriented course work. These hours may include both graduate courses and approved undergraduate courses. Twenty credit hours are in the major area and include special topics courses of four to six credit hours. Special topics are individual work in some aspect of engineering design and must result in a final report.

Thesis research hours do not apply towards the total hours required. Thus, the actual coursework requirements are greater than for an M.S. Be aware of this particularly if changing status from an M.S. to an M.E.

The Program of Study for each Master of Engineering degree candidate is carefully planned by the student and her/his Supervisory Committee of three faculty members, who may request the assistance of additional faculty members.

FINAL REPORT AND EXAMINATION

In place of the Master's Thesis the student must write a paper involving an aspect of engineering design which represents an equivalent effort of four to six semester credit hours. The

paper may include process design, field studies or other appropriate topics. The candidate must take a comprehensive oral and/or written examination conducted by his/her Supervisory Committee.

The candidate must be regularly enrolled for three or more credit hours at the university during the semester or term in which the final report is submitted and the examination conducted.

Language Requirements

Degrees in Metallurgical Engineering do not include a language requirement.

Mandatory Exams and Milestones

Admission to Candidacy for the M.S. Program

The requirement to take the Master's Comprehensive Examination is waived for M.S. students in Metallurgical Engineering.

Admission to Candidacy for the Ph.D. Program — Qualifying Examination

All students desiring to study for the Ph.D. degree must take a Qualifying Examination in the field of Metallurgical Engineering. The Qualifying Examination is based on undergraduate work and is an oral exam followed if necessary by a written exam. During the first year of graduate study, the students are strongly encouraged to take specific core courses as noted earlier for each focus area prior to taking the qualifying examination. In addition to the performance in the oral examination, the committee may consider performances in these course and research in making their decision. Upon passage, the departmental Graduate Academic Advisor enters the date of the examination in the student's online record. If the examining committee deems it necessary, the committee may also require the candidate to take and pass courses in certain areas.

The Qualifying Examination is given in April of each year. Students with a prior degree in Metallurgical Engineering who start the Ph.D. program in Summer Term or Fall Semester should take the Qualifying Examination the following April. Students arriving Spring Semester take the Qualifying Examination in April of the following year. A student without a lower degree in Metallurgical Engineering who desires to obtain a Ph.D. in this discipline may take the exam the second April s/he is on campus, as s/he has to take undergraduate courses to achieve competency in this field.

A departmental Qualifying Examination Committee considers the student's scholastic record (GPA, master's thesis, performance in coursework after the master's degree, etc.), together with performance in the exam, in order to reach a decision on whether or not to admit him/her to candidacy for the Ph.D. degree.

Students are not normally allowed to take the Qualifying Examination a second time. If a student is not granted admission to the Ph.D. program and s/he feels that the decision should be reconsidered, s/he may submit a written petition to the faculty containing all pertinent information which could affect the decision. The quality of the petition is reviewed by the faculty, and a final decision rendered.

The student must pass the Research Proposal Examination within twelve months after the Qualifying Examination.

Supervisory Committee Formation

Chair

The faculty member directing the research becomes the student's faculty and thesis advisor and Supervisory Committee Chair. It is important to note that thesis advisor and project selections usually require sponsored research funding unless the student is supported on a fellowship. Thus, project selections usually are restricted to externally funded projects.

Committee Selection

Appointments to Graduate Supervisory Committees of persons who do not have a regular, research, lecture, adjunct, clinical, or other instructional appointment in the university, must be approved by action of the Graduate Council on the recommendation of the Supervisory Committee Chair and (for M.S. or Ph.D.) the Dean of the Graduate School. Members of the supervisory committee must hold a PhD degree in Metallurgical Engineering or related discipline.

Once Supervisory Committee members have agreed to serve, the student requests the departmental Graduate Academic Advisor, in writing, to prepare the form "Request for Supervisory Committee." Provide the names of the prospective committee members and their affiliations. See deadlines.

MASTER OF SCIENCE

By the end of the second semester of a student's graduate work, the student, in consultation with his/her thesis advisor, forms a Supervisory Committee, which is approved by the Department. The Committee normally consists of three faculty members, including one faculty member from outside the major field. At least two members must be tenured or tenure-track faculty in the Department. Exceptions must be approved by the Director of Graduate Studies and by the Graduate School.

DOCTOR OF PHILOSOPHY (Ph.D.)

After passing the Qualifying Examination, the student, in consultation with his/her thesis advisor, forms a Supervisory Committee, which is approved by the Supervisory Committee Chair. The Committee normally consists of five faculty members, including three tenure-track faculty members in the Department, one University of Utah faculty member from outside the Department, and one other faculty member or researcher either from within or outside the Department. Four of the five members must be tenured or tenure-track. An exception may be made when in the opinion of the Supervisory Committee Chair and the Director of Graduate Studies the work of the Committee will be strengthened by a departure from this rule.

By the end of the second semester of a student's graduate work, the student, in consultation with his/her thesis advisor, forms a Supervisory Committee, which is approved by the Department. The Committee normally consists of three faculty members, including one member from outside the major field. Two of the three members must be tenured or tenure- track faculty.

Required Meetings

The Supervisory Committee for an M.S. candidate meets during the student's thesis defense (Final Oral Examination).

The Supervisory Committee for a Ph.D. candidate meets during the student's proposal presentation and during the student's dissertation defense (Final Oral Examination).

The Supervisory Committee for an M.E. candidate meets during the student's report presentation.

Supervisory Committee Roles

The Supervisory Committee consults with the student in planning her/his degree program and thesis or dissertation research. The Committee is responsible for approval of the student's Program of Study; research proposal; thesis, dissertation, or final research report; and Final Oral Examination. If a Supervisory Committee finds a graduate student's preliminary work deficient, the student may be required to take supplementary undergraduate courses, for which graduate credit will not be allowed.

The faculty member who directs the thesis or dissertation work (the thesis advisor) usually serves as the Committee Chair of the Supervisory Committee.

Expectations for Participation

Seminar

Each graduate student must present at least one graduate seminar during her/his graduate residency. The student is expected to present his/her work in a clear and concise manner, although the research may still be in progress. Presentations should follow good technical procedures and include objective, background, experimental results, and discussion. Equipment is available to supplement the talk with appropriate visual aids. Visual aids should be simple, avoiding too much information on one screen.

The student is evaluated by the faculty and by other students on her/his presentation. Each year an outstanding presentation award is made for the best graduate student speaker as determined by peer evaluation.

Professional Society Meetings and Conferences

Students may be expected to attend and to present research at professional society meetings and conferences.

Town Hall Meetings

The Department will hold regular Town Hall meetings but no less than once each semester to get student feedback and share important information. The meetings will be conducted by the Director of Graduate Studies, Graduate Academic Advisor and the Department Chair. The meetings will be open meetings. Department faculty may be invited to the meetings to appropriately respond to graduate student concerns.

Professional Development

Students are encouraged to participate in the local chapter of professional societies, particularly the Material Advantage joint student chapter. Students may receive career coaching through the Career & Professional Development Center, <https://utah.craniumcafe.com/group/graduate-student-career-coaching>.

Thesis/Dissertation/Project

See <https://gradschool.utah.edu/thesis> for specifications and formatting requirements for theses and dissertations.

Resident tuition is charged if a student's total registration includes only Thesis Research (6970 or 7970) and/or Faculty Consultation (6980 or 7980).

Master of Engineering students must write a Final Report rather than a thesis or dissertation.

Requirements for All Degrees

RESEARCH TOPIC AND THESIS ADVISOR

If the student is not assigned to a particular thesis advisor upon starting the program, the graduate student should discuss possible research projects with all faculty members in the student's area of graduate studies and select a topic and a thesis advisor. Graduate students are required to choose a research thesis topic before the end of their second semester of study.

Every person who works in the departmental laboratories must be either a registered student, an employee of the University, or an appointed visiting researcher or scholar.

LABORATORY NOTEBOOK

All research should be recorded in a laboratory notebook, issued by the Department. Proper laboratory notebook usage should be followed under the guidance of the faculty thesis advisor.

SEMESTER RESEARCH REPORT

All graduate students who are registered for Thesis Research — Masters (MET E 6970) or for Thesis Research — Ph.D. (MET E 7970) must write a semester research report. The report must be typed, complete and concise, and submitted by email to the Department office and to the thesis supervisor by the last day of classes. No research grade is given without a report.

RESEARCH EQUIPMENT

Some research equipment is used in common by all graduate students. A student must be trained and qualified in the use of a piece of equipment before using it. When using equipment, the use- time must be logged in.

If equipment is moved, the student is responsible to notify the department of its new location. The department must account for all equipment once a year.

For use of equipment under a research group, permission from the faculty in charge of the group is needed. For equipment under recharge centers, a project or activity number must be provided. If no project or activity to which it can be charged is available, special permission for use must be obtained from the faculty in charge of the recharge center or from the Department Chair.

RESEARCH PROPOSAL REQUIREMENTS

The student outlines the course of research to be pursued in collaboration with his/her research advisor. The proposed research plan is then presented to the Supervisory Committee for approval. In the proposal, the student should clearly state his/her research objectives and plan of attack and what s/he hopes to accomplish.

ADDITIONAL RESEARCH PROPOSAL REQUIREMENTS FOR PH.D.

The Research Proposal Examination is given by the student's Ph.D. Supervisory Committee. The examination consists of an oral defense of a written research proposal on a subject either on or not on the student's research topic, at the discretion of the Committee. The examination should occur within six to twelve months of passing the Qualifying Exam.

The research proposal should be organized as follows:

1. Abstract
2. Introduction
3. Literature Survey
4. Proposed Research Program
5. Conclusions
6. Nomenclature
7. References

The proposal should be between fifteen and twenty double-spaced typed pages of text plus tables, figures, and appendices.

The proposal should be submitted to the Committee at least two weeks in advance of the oral presentation to the Committee. The student then defends the proposal and answers all questions of the Committee.

The Committee determines whether 1) the student is passed, 2) after proper revision of the proposal as directed by the Committee, if successful, the student is passed, or 3) the proposal and defense are inadequate and the student should repeat the entire process with a new research proposal. A maximum of two attempts is permitted.

Requirements for Master of Science and Doctor of Philosophy

SUBMISSION OF THESIS OR DISSERTATION

Upon completion of his/her research, the student submits a typed draft of the thesis or dissertation to her/his Supervisory Committee Chair and final versions to his/her Supervisory Committee.

THESIS OR DISSERTATION FORMATTING

Formatting instructions are given in Handbook for Theses and Dissertations, available from the Thesis Office, either online or for a small deposit for a printed copy. The primary style guide for theses produced in our department is Handbook for Authors from American Chemical Society Publications, American Chemical Society. Alternative standards are suggested in the Handbook for Theses and Dissertations.

FINAL ORAL EXAMINATION (THESIS OR DISSERTATION DEFENSE)

Upon acceptance of his/her thesis or dissertation by the Supervisory Committee Chair, the student is required to orally defend his/her thesis or dissertation before the Supervisory Committee.

The candidate must be regularly enrolled at the university for three or more credit hours or for three credit hours of Faculty Consultation (MET E 6980 or 7980) during the semester or term in which the Final Oral Examination is taken.

The Final Oral Examination is given by the candidate's Supervisory Committee. The Committee Chair normally chairs the examination.

The student submits a draft of his/her thesis or dissertation to the Committee Chair at least three weeks before the Final Oral Examination and a typed copy to the Supervisory Committee at least two weeks before the examination.

Once the Final Oral Examination is scheduled, the student provides the departmental Graduate Academic Advisor with information on the date, time, and place of the examination, and the title of her/his presentation (usually the thesis title). This should be done at least a week before the examination.

The student prepares the form "Report of the Final Oral Examination", to be signed by the Supervisory Committee at or after the examination, indicating whether the student has passed the Final Oral Examination. The student submits the signed Report to the departmental Graduate

Academic Advisor, Sara Wilson, who enters the date of the Final Oral Examination in the student's online record.

The examination must be passed at least six weeks before graduation. For deadlines in a particular semester, see the Graduate School Thesis Office calendar.

THESIS CORRECTION, APPROVAL, AND RELEASE

Following the defense, the student makes corrections in the thesis or dissertation as required by her/his Committee Chair and Committee.

If an international student does not receive thesis clearance the same semester as the Final Oral Examination, s/he needs to have obtained Optional Practical Training authorization to be effective right after the semester when he/she completed the Final Oral Examination. As immigration policies are frequently changing, please consult the International Student and Scholar Services office well in advance of your graduation to ensure that you are always in status.

After the Committee Chair signs the "Final Reading Approval," the student submits a printed copy of the thesis or dissertation to the Thesis Editor. The student makes corrections required by the Thesis Editor.

Following approval by the Thesis Editor, the student provides an electronic copy (pdf) of the thesis or dissertation to the Thesis Editor and to the department.

The student may submit one or more unbound printed copies of the approved thesis or dissertation with a fee for bookbinding to the Bookstore if the student wishes for a bound copy for him/herself or if the thesis advisor desires a printed bound copy.

Thesis Office (including handbook and calendar): <http://www.gradschool.utah.edu/thesis/>

PH.D. DISSERTATION REQUIREMENTS

The dissertation must embody the result of independent research and constitute a contribution of knowledge in the student's field. The intellectual and creative matter presented in the dissertation must meet the standards of the particular college, department, and the student's Supervisory Committee. The dissertation may take the form of a manuscript or manuscripts to be submitted for publication in a scholarly journal, with the graduate student as senior author. See *The University of Utah General Catalog* for further details.

Applying for Graduation

All graduate students are required to complete a graduation application and submit it to the Office of the Registrar, Graduation Division the semester before they plan to graduate. This can be done online: <https://registrar.utah.edu/handbook/graduategraduation.php>. See the Registrar's website for more details.

Check with the departmental Graduate Academic Advisor that all necessary information has been entered in the online record. This includes Supervisory Committee, Qualifying Examination (if applicable), Program of Study, and Final Oral Examination.

Graduation Division, <http://www.sa.utah.edu/regist/graduation/applying.htm>
Office of the Registrar

Thesis Release

A student's semester of graduation is the semester in which the "Thesis Release" (Graduation Release) is signed, not necessarily the semester in which the student passes the Final Oral Examination. To graduate during a particular semester, the Thesis Release must be submitted to the Graduate Records Office before the Registrar's closing date for the semester (the last day of finals). See the Thesis Office website for details.

Graduation Ceremonies

The university holds graduation ceremonies once a year, after Finals during Spring Semester. Commencement is for all graduating student in the university. Each college holds a Convocation for its own students. Students who graduated the previous Summer term or Fall Semester, or who expect to graduate that Spring or Summer, are encouraged to participate. Students may also participate early if, for instance, they expect to finish Fall or the following Spring but anticipate they will have left the university before the end of Spring semester, or for other reasons. See the department office for more details.

Leaving the Graduate Program

When graduating or leaving the graduate program, prior to departure the student must

1. Check in equipment and supply items, including computers.
3. Give laboratory notebooks and other research products/samples to the thesis advisor.
3. Properly dispose of any remaining chemicals and samples.
4. Return all borrowed books to their owners (e.g., your advisor, or university libraries).
5. Return all keys to the department office and get your deposit.
6. Provide to the department a forwarding address, a photograph, a short biographical statement, and information on current employment.

Academic Requirements and Policies

Minimum GPA

The candidate is required to maintain a 3.0 or higher GPA in course work listed on the Program of Study for master's and doctorate degrees. A grade below C- is not accepted by the University toward a graduate degree.

Residency

The terms *resident*, *residence*, or *residency* have two separate usages: state residency and study in residence. State residency is determined by where the student or the student's parents live. Study residency refers to whether the student takes classes on-campus and whether the student is full-time or part-time.

State Residency

Domestic students who are, or whose parents are, residents of the state of Utah pay resident or in-state tuition. All international students, or domestic students who are not and whose parents are not residents of the state of Utah, pay nonresident tuition.

Go to <https://admissions.utah.edu/apply/residency/> for details on how to qualify and how to apply for residency reclassifications.

Study Residency, M.S.

At least twenty-four credit hours must be in resident study at the university.

Study Residency, Ph.D.

At least one year (that is, two consecutive semesters) of the doctoral program must be in full-time academic work at the university. For the purpose of fulfilling the residency requirement, a full load is nine hours. When a student proceeds directly from a master's degree to a Ph.D. degree with no break in the Program of Study (except for authorized leaves of absence), the residency requirement may be fulfilled at any time during the course of study.

Continuous Registration

Every graduate student must register for every fall and spring semester until s/he completes all requirements for her/his degree including the defense of the project, thesis, or dissertation, unless granted an official leave of absence. Students should be registered for graduate-level courses (5000-6000 level for masters; 6000-7000 level for doctoral).

Ph.D. students completing research or dissertation writing and no longer taking courses yet requiring consultation with faculty or otherwise using University facilities (e.g., the library) are required to take at least three credit hours each semester.

During any semester when a student is off-campus and does not enroll in regular courses, seminars, independent study, or thesis research, and yet requires consultation with the faculty, or otherwise uses University facilities, s/he must register for three credit hours of Faculty Consultation (MET E 6980 or 7980).

A domestic student for whom a Supervisory Committee has been appointed, who is not registered as indicated above and will not be using any university research facilities or offices may meet the continuous registration requirement by registering for Continuing Registration (MET E 7990) and paying the Continuing Registration charge. International students are not eligible for this option. Students may register for no more than four semesters of Continuing Registration.

Students not on campus and not using University facilities are not expected to register for summer term. Any student who takes the Final Oral Examination during the Summer term must be registered during that Summer term.

Full-time status is described in The University of Utah General Catalog. For international graduate students, compliance with current U.S. Immigration and Customs Enforcement (ICE) regulations requires that they maintain full-time student status. International students need to check with International Student and Scholar Services (ISSS) if exceptions are needed to avoid potential difficulties with Immigration.

If a student does not comply with this continuous registration policy and does not obtain an official leave of absence, s/he will be automatically discontinued from graduate study. In this case, the student will be required to reapply for admission to the University through Graduate Admissions upon approval of the home department.

Leave of Absence

International students are not eligible to take a leave of absence. U.S. Immigration and Customs Enforcement requires international students to take a vacation semester each summer.

A domestic student who wishes to discontinue his/her studies for one or more semesters (other than summer term) must complete a Request for Leave of Absence Form. The form must be approved and signed by the supervisory committee chair and department chair and then forwarded to the Registrar's Office for processing.

Requests for leaves of absence may be granted for up to one year for circumstances related to:

- a serious health condition of the student or family member,
- parental leave to care for a newborn or newly adopted child,
- a call to serve in military service, or
- other compelling reasons that the student's department believes is in the best interests of both the student and the University.

The form requesting a leave of absence for a current semester must be completed and received in The Office of the Registrar by the last day of classes of that semester. Leaves of absence are not granted retroactively. Students must officially withdraw from classes in any semester for which a leave is granted; failure to formally withdraw results in the reporting of E or EU grades for all

classes. For more information about official withdrawal, see Grading Policies in the Undergraduate Information section of the Catalog.

The period during which a leave of absence is granted does not count toward the period allowed to complete the degree. Leaves are granted for a maximum of one year at a time, and may be renewed by submitting a new form to The Office of the Registrar. The leave of absence is void if a student registers for classes in a semester for which a leave was granted.

Family & Medical Leave

The Department of Materials Science & Engineering will reasonably accommodate the needs of its graduate assistants when they become parents or adopt a child of five years of age or younger. This applies to both mothers and fathers. A graduate assistant who becomes a parent is eligible for paid leave under this guideline.

Graduate assistants desiring a new parent paid leave must submit a written request to the Department. The request should be made as soon as possible after the date of the anticipated birth or adoption is known. The decision to approve/deny the paid leave is made by the Department Chair after appropriate consultation with the thesis advisor and the Graduate School.

If the leave is approved, the graduate assistant will be excused from his/her regular assistantship duties for a period of up to six weeks, or until the end of the appointment (whichever occurs first). If extended time is needed beyond the six weeks leave, written approval for an unpaid Leave of Absence must be requested, and approval obtained from the student's Thesis Advisor and Department Chair. Note that individual fellowships, such as the NSF Graduate Fellowships, may require sponsor approval for extended leaves of absence. Specific guidelines should be consulted.

During this period, students may postpone course assignments, examinations, and other academic requirements but remain active full-time students, with access to Department facilities and to faculty and staff. While students will continue to be fully funded off any existing funding sources (e.g., fellowship, assistantship) during the leave period, students will be excused from regular teaching or research duties. However, it is the student's professional responsibility to work with her/his advisor or faculty member to prepare for the absence in advance of the leave. This includes reviewing the status and continuation of research projects, adequately preparing those who will assume teaching responsibilities during the student's absence, and arranging for a smooth transition in any other responsibilities.

Vacations and Leave (within a Semester)

While the department does not specify the number of vacation days permitted, it is understood that students demonstrating quality performance may arrange with their thesis advisor for time off. It is the responsibility of the student to plan all leaves and vacations with his/her thesis advisor. Leave necessary for presentation of research work, a job interview, etc., should also be planned in advance. Any absences not approved in advance by the thesis advisor may not be compensated for if the student is funded through a sponsored project.

As a general guideline, research assistants should be allowed at least two weeks of vacation each year if they are achieving satisfactory progress on their project. If the thesis advisor does not allow this time off, the student may appeal to the director of graduate studies and/or the department chair. If on the Tuition Benefit program, check with the payroll secretary that unpaid leave does not drop earnings below the amount necessary to qualify.

Leaving the Program Early

IMPORTANT: Students adding and/or dropping courses after the semester's published add/drop deadlines are responsible for any and all charges incurred, including withdrawals. Tuition benefit will not pay for withdrawn credit hours, and if registration falls below nine credit hours at any time during the semester, a student becomes ineligible for TBP participation and will be billed the full tuition for that semester.

Prior to departure the student must

1. Check in equipment and supply items, including computers.
3. Give laboratory notebooks and other research products/samples to the thesis advisor.
3. Properly dispose of any remaining chemicals and samples.
4. Return all borrowed books to their owners (e.g., your advisor, or university libraries).
5. Return all keys to the department office and get your deposit.
6. Provide to the department a forwarding address, a photograph, a short biographical statement, and information on current employment.

Changing Committee Chair & Committee Members

When a member of the student's Supervisory Committee becomes unavailable, the student should file a new Request for Supervisory Committee to replace her/him.

See the section Student and Faculty Code for conflict resolution resources provided by the University.

A student who wants to leave a research group or change to a new research group is obligated to give the thesis advisor, the Department and the Director of Graduate Studies 30 days' written, signed, and dated notice outlining the reasons for leaving the group.

During the 30 days, the research task(s) should be brought to a point where it could be easily passed on to a new person. All notebooks, computer files, and data should be returned to the thesis advisor before the student is put on another faculty member's payroll. It is the student's responsibility to identify a new thesis advisor if the student wishes to continue in the Program. Failure to identify a new advisor by the end of the 30-day period may result in dismissal from the Program. Failure to obtain written approval from the supervisory committee within six months of switching advisors may result in dismissal from the Program.

The student should also reconstitute her/his supervisory committee. If the student has already presented a research proposal to the initial supervisory committee, the student must prepare a new research proposal outlining the new thesis project within five months of joining the new research group and present it to the new supervisory committee.

As discussed elsewhere in this graduate student handbook, regular review of student progress will be via a performance review with the student's thesis advisor at the beginning of each semester. A student progress report form will be required to be submitted to the Director of Graduate Studies.

IMPORTANT: Students adding and/or dropping courses after the semester's published add/drop deadlines are responsible for any and all charges incurred, including withdrawals. Tuition benefit will not pay for withdrawn credit hours, and if registration falls below nine credit hours at any time during the semester, a student becomes ineligible for TBP participation and will be billed the full tuition for that semester.

Time Limit to Degree

All work offered for the Master's Degree must be completed within four consecutive calendar years from matriculation. This includes transfer credits. The department may modify or waive this requirement in meritorious cases on recommendation from the student's Supervisory Committee.

All work offered for the Ph.D. Degree must be completed within seven consecutive calendar years from matriculation. The department may modify or waive this requirement in meritorious cases on recommendation from the student's Supervisory Committee.

All work offered for the Master of Engineering Degree must be completed within four consecutive calendar years unless an extension is granted by the dean of the college.

If a student exceeds the time limit and is not granted a modification or waiver, the department has the option to discontinue the student. Students whose studies have been interrupted for long periods of time and who have been granted extended time to complete their degrees may be required to complete additional courses, to pass examinations, or otherwise to demonstrate that they are current in their field.

A petition for an extension of a Graduate student career beyond the established time limits will consist of a formal letter of request to the Graduate Dean. The letter will demonstrate that the student is in good standing. Good standing requires that the student has a satisfactory GPA for graduation, formed a supervisory committee, that a program of study has been completed and approved by the faculty and directors of graduate studies/department chair, and that they have taken all required preliminary exams and thesis proposal exams required by the department. These must be fully updated in Grad Tracking. The letter must demonstrate a firm commitment by the department, research supervisor, and the student to complete the agreement, including any commitments for financial support, and must provide a demonstration that the proposed path to graduation is feasible. The letter will be accompanied by a written completion plan that is signed by the student, the research supervisor, and the director of graduate studies or department chair.

The completion plan lays out specific milestones leading to completion, and dates for the completion of the milestones. The milestones must include formal evaluation meetings with the supervisory committee at least once per semester (if a thesis defense does not occur within the semester). Failure to complete the milestones by the specified deadline may result in the dismissal from the program (the supervisory committee would review such a situation and make a recommendation). The petition may request either a one-semester or two-semester extension.

Further extensions will be considered for single semester extensions only, and any such request must provide a written update and a revised completion plan with updated milestones, dates, and signatures.

Formal letters of petition should be sent to dean@gradschool.utah.edu.

Dismissal Policies & Procedures

Sometimes it becomes necessary to terminate a research relationship between a graduate student and his/her thesis advisor or to dismiss a graduate student from the program. Either the graduate student or the thesis advisor may terminate a student/thesis advisor relationship.

Termination of a Graduate Student/Thesis Advisor Relationship

When a faculty thesis advisor is dissatisfied with the research effort of a student, the thesis advisor should communicate to the student the concerns he/she has regarding research quality, productivity or professional conduct not meeting expectations. If the deficiencies persist, the thesis advisor must communicate to the student in writing the unsatisfactory aspects of the student's research performance, inform the student that he/she is being placed on probation, and allow the student a reasonable time (at least 30 days) to correct the deficiencies. The letter should include recommendations for corrective actions and desired improvements, and should indicate a date by which improvement is expected. A copy of this letter should be sent to the Chair of the Department and to the Director of Graduate Studies. A copy of the letter will be placed in the student's file.

If the deficiencies still persist at the end of the probationary period, it is the prerogative of the thesis advisor to terminate the student/thesis advisor relationship. The following procedure is used:

- a) Notify the student in writing, giving reasons for the termination, indicating a formal termination date at least 15 days after the date of the letter (the "Termination Date"). Send a copy of the letter to the Chair of the Department and Director of Graduate Studies.

If the student is being paid as a Research Assistant, the student should be kept on the payroll for 15 days after the date of the notification letter to allow time to obtain a new thesis advisor, unless a new thesis advisor puts the student on a payroll before the end of the 15 days. As a matter of policy, the department does not provide stipend support beyond 15 days for students as they seek a new thesis lab. The student may lose tuition benefit if total stipend support received for the semester does not meet the current minimum as specified under the tuition benefit program.

- b) If a student cannot find a new thesis advisor by the Termination Date or if the student moves to a different department or position, he/she will be dismissed from the Metallurgical Engineering graduate program.
- c) If the student is being paid as a Teaching Assistant, the Department will continue the current T.A. support until the end of the termination semester, contingent on the T.A. duties being carried out conscientiously.

It is the student's obligation to turn over all data and notebooks arranged in a manner that will allow the thesis advisor to continue the work. If these materials are not turned over by the Termination Date, a hold will be placed on the student's academic records pending return of the materials, and the student may be referred to the University's Dean of Students for disciplinary action. The student is ultimately responsible for ensuring all Graduate School and departmental requirements are met and forms are submitted for the transition. The final outcome of the process shall be documented and placed in the student's file.

Policy on Dismissal from the Program

The following are situations where a student will be considered to not be in good academic standing and may be subject to dismissal from the program. Action on such dismissal will be decided by an ad hoc committee consisting of the department chair, director of graduate studies, and thesis advisor.

- Failure to pass all courses with a grade of B- or better. If a grade less than B- is earned, the student will be placed on probation for a semester. Earning another grade less than B- in the probationary semester is grounds for dismissal.
- GPA (either cumulatively or in a particular semester) of less than 3.0. If a student's GPA drops below 3.0, the student will be placed on probation and allowed one semester to raise his or her GPA to at least 3.0.
- Unsatisfactory completion of laboratory rotation or research performance.
- Failure to pass the Ph.D. qualifying exam.
- Failure to make timely progress toward completion of the doctoral degree as determined by the student's supervisory committee.

If concerns arise due to behavioral misconduct, these issues are adjudicated through the Dean of Student's Office. In any such event, the procedures outlined in the "Code of Student Rights and Responsibilities" shall be followed (<http://regulations.utah.edu/academics/6-400.php>).

If a student is dismissed from the Ph.D. program based on a performance issue but has completed a body of work and completed coursework needed to satisfy the requirements for an M.S. degree, the student will be given the opportunity to defend his or her thesis and apply for graduation with an M.S. degree. The student may not necessarily receive stipend or tuition benefit during the period needed to write and defend the M.S. thesis.

Dismissal of a student from the program will be carried out in compliance with "Code of Student Rights and Responsibilities".

Financial Support, Employment, Tuition Benefit, and Awards

Graduate students in most cases do not receive financial support unless working on a research project (in the form of a position as a Research Assistant) or having been awarded a fellowship. Supplemental salary is provided to students who also work as a teaching assistant/grader.

International students on a student visa are not permitted to work off-campus.

Students on research assistantships, teaching assistantships, scholarships, or fellowships are not permitted to engage in regular outside employment without special permission from their Principal Investigator or Supervisory Committee Chair. Permission is granted only in hardship cases or when the outside activity would have no impact on the student's RA or TA responsibilities.

Teaching Assistant Responsibilities & Policies

Teaching assistantships involve teaching responsibilities such as grading papers, leading discussions, or serving as an instructor or laboratory supervisor. Teaching assistantships are available in the Department for selected students. The instructor for each course selects the students. If you are interested in teaching a particular course, you should meet with the instructor at least a month prior to the start of the semester. The department gives an award each year to the teaching assistant with the most favorable student feedback. The winner of the department teaching assistant award is included in the competition for the top teaching assistant award for the College of Mines and Earth Sciences.

Research Assistant Responsibilities & Policies

Research assistants include all graduate students assigned directly to funded research projects. Research assistants are normally selected by the Principal Investigator of the project. See your thesis advisor for what may be available.

Tuition Waivers

Qualifying for the Tuition Benefit

Teaching assistants, research assistants, and graduate fellows who meet minimum financial support requirements through the university for the academic year receive tuition benefit support from the university. Please see the department office for the current amounts and for the availability of tuition benefit support for Summer term. The Tuition Benefit does not cover course fees or differential tuition.

Students receiving a full tuition benefit are required to work on their funded project for twenty hours per week in order to receive the benefit. Three-quarter and half tuition benefits are available for students working fewer hours. Additional work hours each week are typically needed in order for the student to meet the objectives of their thesis research.

The tuition benefit is not provided to students compensated for their work through organizations other than the University, such as internships or fellowships paid directly through another institution or agency.

All students receiving the tuition benefit from the university must be full-time matriculated graduate students. Full-time status for this purpose is defined as registration for at least nine credit hours per semester during the regular academic year. Benefits are valid for a minimum of nine and a maximum as specified by the tuition benefit guidelines. Students whose necessary coursework is less than nine hours should make up the nine hours by registering for Thesis Research (MET E 6970 or 7970).

Students who drop and/or add courses after the published university deadline are responsible for paying any fees incurred, including the tuition charges for the dropped classes. Students are responsible for paying late fees.

If a student withdraws from courses and falls below the required nine hours, receives less than the minimum required compensation for a semester, fails to provide evidence of acceptable SPEAK test scores as applicable, or in any way fails to meet the requirements and restrictions associated with any of the supported graduate student roles or Graduate School policy, the tuition benefit will be revoked and the student billed at the end of a semester for the full tuition for that semester at the applicable resident or nonresident rate. A petition for an exception for a personal emergency such as illness may be made to the Dean of the Graduate School with a letter of support from the student's Department Chair.

Current minimum financial support requirements can be found at <https://gradschool.utah.edu/tbp/tuition-benefit-program-guidelines/#financial-support-requirements>. If your stipend is below these amounts, you should immediately discuss with your thesis advisor, director of graduate studies, and/or department chair.

For more information, see the webpage for the Tuition Benefit Program at <https://gradschool.utah.edu/tbp/>.

Tuition Benefit Limits

Students receiving the tuition benefit have the nonresident portion of tuition waived until they have reached 84 credit hours. The Graduate School benefit then covers the remaining full, three-quarter, or half tuition costs at the in-state (resident) rate. After eighty-four credit hours, students are responsible for the nonresident portion of tuition. Domestic out-of-state graduate students who receive the tuition benefit must apply for state residency at the end of their first year of study.

Students who enter their graduate programs with a baccalaureate degree are limited to two years (or four semesters) of tuition benefit support for the completion of the master's degree, to five years (or ten semesters) for the completion of the doctorate if bypassing the master's, and to five years (or ten semesters) if continuing in the doctoral program after receiving a Master's degree from the University of Utah (two years for a master's degree plus three additional years for a doctorate).

Students who enter a doctoral program holding a master's degree may receive up to four years (or eight semesters) of tuition benefit support.

These restrictions do not limit the number of years or semesters a program, department, or college may choose to support a student in addition to this tuition benefit program. Since this benefit is provided by the university rather than the department, semesters used in a previous major count against the total. A student who receives more semesters of tuition benefit than s/he is eligible for will be billed for the tuition retroactively.

Student Health Insurance

Graduate students that are receiving a 100% tuition benefit may be eligible for the University of Utah's Graduate Subsidized Health Insurance Program (GSHIP). GSHIP includes health insurance through United HealthCare Student Resources, and dental and vision insurance through Educators Mutual. Coverage for dependents is not subsidized. Qualifying students are billed for 20% of the premium through Income Accounting. The Graduate School pays the remaining 80% at the start of the semester. See <https://gradschool.utah.edu/tbp/insurance-information>.

Residency

To maintain TBP eligibility, all domestic nonresident students must apply for Utah residency upon completion of forty graduate-level semester credit hours at the University of Utah. Domestic out-of-state graduate students who receive the tuition benefit must apply for state residency at the end of their first year of study.

Go to www.admissions.utah.edu for details on how to qualify and how to apply for residency reclassifications.

Other Financial Support

College/University Fellowships and Awards

A list of the graduate school awards can be found at <http://gradschool.utah.edu/tpb>. You could check the eligibility and application instructions in the graduate school website. You can also check Union Scholarships/Awards at <https://union.utah.edu/union-scholarships>, as many of these are applicable to graduate students,

University of Utah Graduate Research Fellowships are granted to selected graduate students in all colleges and departments of the university that offer an advanced degree. For the entire university, about fifteen research fellowships are available annually.

University Research Committee Fellowships are administered in the Research Committee Office. Persons interested in the fellowships should contact the department.

Student Loans

Student loans are approved on the basis of merit and need. The student's scholastic standing, credit record, and ability to repay the loan within the specified time are considered. Information on and applications for loan programs may be obtained from the Financial Aids and Scholarships Office (105 Student Services Building).

External Fellowship & Award Opportunities

NSF Graduate Fellowships are offered for study or work leading to advanced degrees in the mathematical, physical, medical, biological and engineering sciences or in the departments of anthropology, economics, geography, history and/or philosophy of science, linguistics, political science, psychology and sociology. Graduate Fellows are selected by the National Science Foundation on the basis of ability from among persons who are citizens or nationals of the United States.

Applicants request application cards from the Graduate Fellowship Office in October, complete the cards, and send them directly to the National Science Foundation. NSF sends each applicant an application to be completed and returned to NSF by the first week in December (exact date set by NSF each year). The Graduate Record Examination is required.

Other graduate research fellowship opportunities through various foundations and federal agencies are also available. Please see the Graduate School website at <https://gradschool.utah.edu/tbp/external-opportunities>. Pivot, a tool for finding foundation funding, is available at <https://osp.utah.edu/news/pivot.php>.

Student Travel Assistance

Conference travel assistance may be available through the department, college, ASUU, the Graduate Student Travel Assistance Award (GSTAA), and the Early Career Professional Development Program (ECPDP). More information on these awards is at <https://gradschool.utah.edu/current-students/graduate-student-travel-assistance-award>.

Student Awards and Honors

The Department of Materials Science & Engineering gives an annual award for Best Teaching Assistant. Awards may also be given for Outstanding MS and PhD Students.

Employment and Support Resources

Employment

Payroll time reporting: <https://www.kronos.utah.edu/>.

Paychecks & Direct Deposit: <https://www.hr.utah.edu/payroll/paycheck.php>

Tuition

Residency for in-state tuition: <https://admissions.utah.edu/apply/residency/>

Tuition Benefit Program: <https://gradschool.utah.edu/tbp/>.

TBP support requirements: <https://gradschool.utah.edu/tbp/tuition-benefit-program-guidelines/#financial-support-requirements>.

Student insurance through TBP: <https://gradschool.utah.edu/tbp/insurance-information>.

Support, Awards & Fellowships

Graduate Fellowship Opportunities: <https://gradschool.utah.edu/tbp/graduate-fellowship-opportunities>

Graduate research fellowship: <https://gradschool.utah.edu/tbp/external-opportunities>.

Thesis & Dissertation Awards: <https://gradschool.utah.edu/current-students/awards>

Union Scholarships/Awards at <https://union.utah.edu/union-scholarships>,

Pivot, for finding foundation funding: <https://osp.utah.edu/news/pivot.php>.

Travel Assistance Awards

Graduate Student Travel Assistance Award: <https://gradschool.utah.edu/current-students/graduate-student-travel-assistance-award>

Early Career Professional Development Program: <https://gradschool.utah.edu/current-students/graduate-student-travel-assistance-award>

ASUU travel funding: <https://www.asuu.utah.edu/travel-funding/>

Personal Services

Personal Money Management Center: <https://personal-money-management.utah.edu>

Feed-U Pantry: <https://union.utah.edu/resources-spaces/feed-u-pantry/hours-about-us>

Student & Faculty Code

Graduate School Code of Conduct

See <http://regulations.utah.edu/academics/6-400.php> for the university's Code of Student Rights and Responsibilities

The Graduate School is committed to fostering excellence in our community of scholars and leaders. We recognize that diverse and inclusive teams are most likely to produce creative and impactful scholarship and are eager to ensure that each member of our academic community is respected and valued for their unique contributions. This Code of Conduct upholds the Graduate School's commitment to conduct graduate and postdoctoral education according to the highest ethical and professional standard in compliance with all applicable University, state, and federal regulations.

The Graduate School is committed to providing a safe, harassment-free and discrimination-free environment for everyone. Harassment includes offensive comments or denigrating jokes related to nationality, gender, sexual orientation, disability, age, physical appearance, body size, race, religion, or veterans status, sexual images in public spaces, deliberate intimidation, stalking, following, harassing photography or recording, inappropriate physical contact, unwelcome sexual attention, and harassment through social media.

All University faculty, staff, and students are expected to comply with the applicable anti-harassment, anti-discrimination, and scientific and professional ethics laws and policies in effect at the University of Utah and at the institutions where they may be visiting.

Members of the University of Utah community who wish to report a violation of this Code of Conduct are encouraged to speak to or contact the appropriate administrator or Dean, including the Department Chair or Director of Graduate Studies of their academic program, the Dean of the Graduate School and/or Associate/Assistant Deans of the Graduate School, or the University's Title IX coordinator. See the Student Resources section for contact information.

Visitors, including participants at any University or Graduate School sponsored events, are expected to comply with these same standards, as well as to policies at their place of employment. In addition to any applicable reporting requirements at their home site, visitors are encouraged to report violations here as above.

Informal Dispute Resolution

Students are encouraged to go to the departmental Director of Graduate Studies for conflict resolution, if appropriate. Students are also welcome to make an appointment with one of the Graduate School deans to voice complaints or concerns. This can be requested through info@gradschool.utah.edu or by calling 801.585.5529.

The University Ombudsman's Office provides dispute resolution, resources, and the potential for mediation. For more information, see <https://academic-affairs.utah.edu/office-for-faculty/facultyombudsman>.

Formal Dispute Resolution

Policy 6-400 covers the process of Academic Appeal (<https://regulations.utah.edu/academics/6-400.php>).

Equal Opportunity, Affirmative Action, and Title IX

The Office of Equal Opportunity and Affirmative Action (OEO/AA) is dedicated to providing a fair and equitable environment for all to pursue their academic and professional endeavors and to equally access University programs. You may contact the Title IX Coordinator for the University at <https://oeo.utah.edu/contact-us>. Information on Title IX can be found at <https://sexualassault.utah.edu/reporting/title-ix-on-campus-reporting>.

Student Safety and Well-Being

Your safety is our top priority. In an emergency, dial 911 or seek a nearby emergency phone (throughout campus). Report any crimes or suspicious people to 801-585-COPS; this number will get you to a dispatch officer at the University of Utah Department of Public Safety (DPS; dps.utah.edu). If at any time, you would like to be escorted by a security officer to or from areas on campus, DPS will help — just give a call.

The University of Utah seeks to provide a safe and healthy experience for students, employees, and others who make use of campus facilities. In support of this goal, the University has established confidential resources and support services to assist students who may have been affected by harassment, abusive relationships, or sexual misconduct.

A detailed listing of University Resources for campus safety can be found at <https://registrar.utah.edu/handbook/campussafety.php>

Your well-being is key to your personal safety. If you are in crisis, call 801-587-3000; help is close.

The university has additional excellent resources to promote emotional and physical wellness, including the Counseling Center (<https://counselingcenter.utah.edu>), the Wellness Center (<https://wellness.utah.edu>), and the Women's Resource Center (<https://womenscenter.utah.edu>). Counselors and advocates in these centers can help guide you to other resources to address a range of issues, including substance abuse and addiction.

Laboratory Safety and Work-Related Injuries

Anyone working in a university laboratory must take Chemical Hygiene Training annually.

Chemical Hygiene Training:

https://education.research.utah.edu/class_details.jsp?offeringId=106

The preferred provider for work-related injuries is

Monday through Friday 8:00 a.m. to 5:00 p.m.

OccMed Clinic at Redwood Health Center

1525 West 2100

South Salt Lake City UT 84119

(801) 213-9777

After hours:

Urgent Care at the Redwood Health Center (801) 213-9700

or University of Utah Emergency (801) 581-2291

Occupational Safety

The Office of Environmental Health & Safety is responsible for environmental health and safety on the U's campus. Please see <https://oehs.utah.edu> for policies and procedures.

Radiation Safety

Information on radiation safety is at <https://rso.utah.edu>.

Reporting Safety Issues

Report safety issues in laboratories and offices to your faculty advisor or to the Safety Chair for the department, Dr. Guruswamy. Safety issues in the William Browning Building may be reported to Wil Mace, College Safety Committee, <https://cmes.utah.edu/safety/>. Information on reporting issues of personal safety or maintenance anywhere on campus is available at <https://safeu.utah.edu/how-do-i-report/>.

Safety Resources

University of Utah Department of Public Safety (DPS), a.k.a. University Police:
<https://dps.utah.edu>

Phone: 911 or 801-585-COPS (801.585.2677)

Escort by a security officer to or from areas on campus is provided upon request.

Campus safety resources: <https://safeu.utah.edu/>

A comprehensive website for all safety-related information, reporting and support resources, training and more at the University of Utah

Chemical Hygiene Training:

https://education.research.utah.edu/class_details.jsp?offeringId=106

Office of Environmental Health & Safety: <https://oehs.utah.edu>

College of Mines and Earth Sciences Safety Committee, <https://cmes.utah.edu/safety/>

Campus safety resources: <https://registrar.utah.edu/handbook/campussafety.php>

The Office of the Dean of Students: <http://deanofstudents.utah.edu>
Room 270, Olpin Union Building

Health, Wellness, and Recreation Services

Student Health Center: <https://studenthealth.utah.edu>

Madsen Health Center, 555 Foothill Drive, Phone: 801.581.6431

Workplace Injury: <https://www.hr.utah.edu/absenceMgt/workerscomp.php>

Center for Student Wellness: <https://wellness.utah.edu>

University Counseling Center (including Mindfulness Center):
<https://counselingcenter.utah.edu>

Room 246, Student Services Building (SSB), Phone: 801.581.6826

Campus Recreation Services: <https://campusrec.utah.edu>

Crisis or Emergency Services

Crisis Line (24/7): <https://healthcare.utah.edu/uni/programs/crisis-diversion.php>
Phone: 801.587.300

For crisis intervention, emotional support, and mental health needs

Suicide Prevention Hotline – Utah: <http://www.suicide.org/hotlines/utah-suicide-hotlines.html>

Crisis Prevention – SafeUT Smartphone App: <https://www.uofuhealth.org/safeut>
Free 24/7 access to counselors for crisis prevention and emotional support

Sexual misconduct or assault. Crisis, reporting, counseling, medical resources, or definitions: <https://sexualassault.utah.edu/>

Title IX: <https://sexualassault.utah.edu/reporting/title-ix-on-campus-reporting>.

Sexual Assault Victim Advocacy: <https://advocate.wellness.utah.edu>
Room 328, Student Services Building (SSB), Phone: 801.581.7779

Women's Resource Center: <https://womenscenter.utah.edu>
Room 411, Olpin Union Building.

Research Policies & Training

See the section on Student Safety and Well-Being for information on laboratory safety.

Student Access to Physical Resources

See <https://mse.utah.edu/building-access-key-requisition/> for information on acquiring keys or card access to laboratories, offices, and buildings. Upon entering the department, a student is entitled to a key or card entry to her/his laboratory space and to a key or card entry to the building entrance. Access to other laboratory space may be obtained as the student's research necessitates. The student is required to pay a deposit with the first request. If the laboratory you are assigned has a keypad lock, see your advisor for the combination.

Lending keys is grounds for termination from the university. Keys may be transferred to another person; see the department office to do this.

Prior to leaving the university, keys must be returned to the department office. The deposit is refunded when the keys are returned. A hold may be placed if keys are not returned.

RATS Courses

The University provides Research Administration Training Series on a variety of research subjects which may be interesting or important to students. Information about RATS courses can be found at <https://fbs.admin.utah.edu/training/training-rats>.

Institutional Review Board

The Institutional Review Board (IRB) is charged with the review of all research projects that involve humans to ensure compliance with local, state, and federal laws, as well as the high ethical standards set forth in University policy. If students are working with human subjects in their research, they should be familiar with and compliant to IRB rules. More information is at <https://irb.utah.edu>.

Export Controls

A number of United States export laws directly affect University research, specifically:

- The Export Administration Regulations (EAR), controlled by the Department of Commerce,
- The International Traffic in Arms Regulations (ITAR), managed by the State Department, and
- The sanction regulations governing the transfer of assets governed by the U.S. Department of Treasury through its Office of Foreign Assets Control (OFAC).

If research involves technological, biological, and chemical and military-related technologies, the government may exert control and supervision of the research and require the University to obtain a license or find and record an exception to the law before allowing foreign nationals to

participate in the research, before partnering with a foreign company, or before sharing research results in any manner (including by publication or presentation at conferences) with persons who are not U.S. citizens or permanent resident aliens. Licenses are not easily obtained and require careful preparation and an inordinate amount of lead-time.

See <https://osp.utah.edu/policies/export-controls.php>.

Research Misconduct

The Office of Sponsored Projects provides a handbook on research policies at <https://osp.utah.edu/policies/handbook/>. See <https://integrity.research.utah.edu/> for parameters and consequences of research misconduct.

Intellectual Property Policies

See <https://tvc.utah.edu/inventor-resources/inventors-guide> for intellectual property policies guiding student work and ethical behavior.

Student Resources: General

Take advantage of the numerous resources and services created to help students of all kinds prosper during their time at the U.

In addition to this resource section, see the following sections of this handbook for information on particular types of resources:

<u>Section</u>	<u>Resources</u>
Important Deadlines	calendar and deadline
Financial Support, Employment, Tuition Benefit, and Awards	support, employment, and other financial resources
Student Safety and Well-Being	health and safety, including laboratory safety and on-the-job injuries
Research Policies and Training	research, including access to university space
Communication Resources	email and postal mail
Student and Faculty Code	Title IX and disabilities

Departmental Resources

The departmental website, <http://www.mse.utah.edu>, offers much necessary information.

A copier is available in the departmental office.

Graduate School Resources

Graduate School: http://www.utah.edu/graduate_school/

University ID Card

University card information: <https://ucard.utah.edu>

Communication Resources

Email

All university students are assigned a university email in the form *unid@utah.edu*.

This account will be used for all official university and departmental business. The student should get in a habit of checking it regularly.

A student may set up a more easily remembered pseudonym address for the account in the form *given name dot last name @utah.edu*, and/or set the account to forward to a personal account.

The student may wish to be on informational listservs such as notices of utility shutdowns affecting the student's laboratory.

Postal Mail

Graduate students are assigned a mail slot, usually shared with one or more other students. Student mailboxes are in located WBB 412.

By University policy, the university address is for university business only. All personal mail, such as magazine subscriptions and financial or utility statements, must be sent to the student's home address.

Computing Resources

The student will receive card access to the department's computer laboratory at 212 WBB, which has a printer. Special software used in particular classes may be available on the lab computers. The student may also have access to a computer and printer in his/her lab.

A copier/scanner is available for use in 412A WBB. This office is normally open during office hours.

Wireless Connections

Onboard to Utah wireless: https://onboard.utah.edu/enroll/uofu/prod_3/process

Software

Grammarly Access: <https://gradschool.utah.edu/grammarly>

New Student Guide to Digital Resources:
https://it.utah.edu/help/it_guides/new_student_guide.php

Hardware

University Bookstore: <https://www.campusstore.utah.edu/utah/home>

Surplus & Salvage: <https://fbs.admin.utah.edu/surplus/>

Food and Housing

Housing

Graduate Student Housing Resources & Options: <https://housingoptions.utah.edu/graduate-housing/>

Meals & Food

Utah Meal Plans: <https://housing.utah.edu/dining>

Mass Transit

UTA University pass: <https://commuterservices.utah.edu/mass-transit>

TRAX Schedules & Maps: <https://www.rideuta.com/Rider-Tools/Schedules-and-Maps>

Events, Arts, Entertainment and Recreation

On-Campus Event & Workshop Calendar: <https://gradschool.utah.edu/events-calendar>

Events & Workshops Description: <https://gradschool.utah.edu/upcoming-events>

Arts Pass: <https://www.finearts.utah.edu/arts-pass>

Campus Recreation Services: <https://campusrec.utah.edu>

Student Resources: Academic

Admissions

Graduate School admission requirements: <https://gradschool.utah.edu/graduate-catalog/admissions>

University admission requirements: <https://admissions.utah.edu/apply/graduate..>

Admissions Office: <https://admissions.utah.edu/>.

The International Admissions Office: <https://admissions.utah.edu/international/index.php>.

Administrative & Records

Graduate Records Office: <https://gradschool.utah.edu/graduate-catalog/graduate-records-office>

Electronic Graduate Record File: <https://gradschool.utah.edu/current-students/electronic-graduate-record-file-tutorial>

The University of Utah General Catalog: <https://www.utah.edu/students/catalog.php>

Thesis Office: <https://gradschool.utah.edu/thesis>.

Graduation

<https://registrar.utah.edu/handbook/graduategraduation.php>

Graduation Division, Office of the Registrar:
<http://www.sa.utah.edu/regist/graduation/applying.htm>

Professional Development

Career & Professional Development Center Graduate Student Career Coaching:
<https://utah.craniumcafe.com/group/graduate-student-career-coaching>

Graduate Student Teaching Training from Center for Teaching & Learning Excellence:
https://ctle.utah.edu/events/ctle_events.php

Higher Education Teaching Specialist Program: <https://ctle.utah.edu/hets>

Career & Professional Development Center, <https://utah.craniumcafe.com/group/graduate-student-career-coaching>.

Training & Workshop Programs

International Teaching Assistant Program (ITAP): <https://gradschool.utah.edu/ita>

Three Minute Thesis Training & Competition: <https://gradschool.utah.edu/3MT>

Past Workshops & Trainings: <https://gradschool.utah.edu/resource-library/workshops-videos>

Research Communication: <https://gradschool.utah.edu/science-communication>

Writing & Manuscript Editing

Thesis Office: <https://gradschool.utah.edu/thesis>

Grammarly: <https://gradschool.utah.edu/grammarly>

Graduate Writing Center & Graduate Student Reading Room

Reading Room: <https://writingcenter.utah.edu/grad-student-services.php>. The Graduate Writing Center is located in the Marriott Library in the Graduate Student Reading Room. To access the Reading Room, students must fill out a Graduate Resources Access Form, found at <https://lib.utah.edu/services/education/gradstudents.php>.

eTutoring for Graduate Writing is also available. Students can sign up for this service at <https://writingcenter.utah.edu/graduate-services/e-tutoring.php>

University Libraries

In addition to research offerings, the Marriott Library has events and programs specifically for graduate students. Check <https://lib.utah.edu/services/education/gradstudents.php> for schedules and more information.

Student Resources: Code of Conduct, Dispute Resolution, Diversity, Support Groups, and Leadership

“Code of Student Rights and Responsibilities”: <http://regulations.utah.edu/academics/6-400.php>

Dean of Students Office: <https://deanofstudents.utah.edu>

Graduate School: <https://gradschool.utah.edu/contact-us>

Advocacy and Dispute Resolution

The University Ombudsman’s Office: <https://academic-affairs.utah.edu/office-for-faculty/facultyombudsman>. *Provides dispute resolution, resources, and the potential for mediation*

Faculty Ombudsman: <https://academic-affairs.utah.edu/office-for-faculty/facultyombudsman>

Office of Equal Opportunity and Affirmative Action, phone (801) 581-8365 or oeo@utah.edu.

Academic Appeal, Policy 6-400: <https://regulations.utah.edu/academics/6-400.php>

Graduate School Dean: dean@gradschool.utah.edu

Title IX Compliance

The Office of Equal Opportunity and Affirmative Action (OEO/AA) provides consultation concerning issues of possible discrimination, sexual misconduct, harassment or retaliation and investigation of complaints of discrimination, sexual misconduct (which includes sexual assault or sexual violence), harassment and/or retaliation. See <https://oeo.utah.edu/>.

Diversity, Equal Opportunity, Affirmative Action, and Title IX; Support Groups and Services

International Student & Scholar Services: <https://ic.utah.edu>

The Office of Equal Opportunity and Affirmative Action (OEO/AA): <https://oeo.utah.edu/>

Title IX: <https://sexualassault.utah.edu/reporting/title-ix-on-campus-reporting>.

Women’s Resource Center: <https://womenscenter.utah.edu>, Room 411, Olpin Union Building.

Center for Disability & Access: <https://disability.utah.edu>

Request for disability, religious, or pregnancy accommodation: <https://oeo.utah.edu/resources/forms.php>

Veteran's Support Center: <https://veteranscenter.utah.edu>

LGBT Resource Center: <https://lgbt.utah.edu>

Office for Equity & Diversity: <https://diversity.utah.edu>

Graduate School Diversity Office: <https://gradschool.utah.edu/diversity>

Resources for International Students

The Department of Materials Science and Engineering values the global community we enjoy, and we welcome students from all countries. We recognize that there are unique advantages and challenges to being an international student, especially as you adjust to your studies alongside a new country and new culture. We encourage all our international students to make use of the resources available to them, particularly International Student and Scholar Services, and to seek involvement in departmental, campus, and civic communities.

International Student and Scholar Services

The offices of the International Student and Scholar Services are at 410 Olpin Union, 200 S. Central Campus Dr., Salt Lake City, UT 84112. Their phone number is 801-581-8876.

For general questions, contact ISSS at international@utah.edu.

If you would like to schedule a phone or Zoom appointment to speak with an ISSS advisor, please send an email to Appointment@utah.edu with the following information:

- Your full, official name

- Your uNID

- Your US phone number

- Your specific availability (date and time, between 9:00 AM and 4:00 PM Mountain Time, Mon-Fri).

- A description of what you wish to discuss (the more detail you provide, the better we can assist you)

Admission

Proof of English proficiency is required for international applicants.

Tuition and State Residency

All international students pay nonresident tuition.

Continuous Registration and Full-Time Status

International students are not eligible to meet the continuous registration requirement by registering for Continuing Registration (MET E 7990).

Full-time status is described in The University of Utah General Catalog. For international graduate students, compliance with current U.S. Immigration and Customs Enforcement (ICE) regulations requires that they maintain full-time student status. International students need to check with International Student and Scholar Services (ISSS) if exceptions are needed to avoid potential difficulties with Immigration.

Leave of Absence

International students are not eligible to take a leave of absence. U.S. Immigration and Customs Enforcement requires international students to take a vacation semester each summer.

Employment

International students on a student visa are not permitted to work off-campus.

Research Restrictions

If research involves technological, biological, and chemical and military-related technologies, the government may exert control and supervision of the research and require the University to obtain a license or find and record an exception to the law before allowing foreign nationals to participate in the research.

After Defense and/or during the Semester of Graduation

If an international student does not receive thesis clearance the same semester as the Final Oral Examination, s/he needs to have obtained Optional Practical Training authorization to be effective right after the semester when he/she completed the Final Oral Examination. As immigration policies are frequently changing, please consult the International Student and Scholar Services office well in advance of your graduation to ensure that you are always in status.

Resources for International Students

The International Admissions Office: <https://admissions.utah.edu/international/index.php>.

International Teaching Assistant Program (ITAP): <https://gradschool.utah.edu/ita>

International Teaching Program deadlines: <https://gradschool.utah.edu/ita/important-dates-and-deadlines>

Important Forms

MSE department forms: <https://mse.utah.edu/forms-resources/>

Academic Forms

Request for Supervisory Committee: <https://mse.utah.edu/wp-content/uploads/sites/34/2019/07/MET-E-Supervisory-Committee-request.pdf>

Proposal Presentation: <https://mse.utah.edu/wp-content/uploads/sites/34/2019/07/MET-E-Proposal-pass-fail.pdf>

Program of Study for the MS:

Program of Study for the PhD: <https://mse.utah.edu/wp-content/uploads/sites/34/2021/04/Program-of-Study-PhD-METE.pdf>

Report of Final Oral Examination: <https://mse.utah.edu/wp-content/uploads/sites/34/2019/07/MET-E-Defense-rpt-final-oral-exam.pdf>

Purchasing Forms

Buying Request: <https://mse.utah.edu/wp-content/uploads/sites/34/2020/02/Buying-Request-Form-2.pdf>

Shipping Request: <https://mse.utah.edu/wp-content/uploads/sites/34/2019/07/MET-E-Shipping-Request.pdf>

Employment Forms

New Hire Information: <https://mse.utah.edu/wp-content/uploads/sites/34/2017/06/New-Hire-Form-v.2.pdf>

Teaching Assistant Training: <https://mse.utah.edu/teaching-assistants/>

Research and Other Forms

Travel Worksheet:

Moving Equipment:

Key Request: <https://mse.utah.edu/building-access-key-requisition/>

Request for Disability, Religious, or Pregnancy Accommodation

<https://oeo.utah.edu/resources/forms.php>

Glossary

Definitions of various terms used in this manual appear in the text when first used and are also provided below. Pages referenced in the subject index provide more details.

<i>Term</i>	<i>Definition</i>
Associated Students of the University of Utah	A union of all students attending the University of Utah.
ASUU	An acronym for Associated Students of the University of Utah
continuous registration	A student must register for every fall and spring semester until s/he completes all requirements for her/his degree.
defense	Defense of thesis or dissertation, also known as the Final Oral Examination.
differential tuition	An additional tuition charge for courses offered through the College of Engineering and some other organizations; not covered by the Tuition Benefit Program.
Director of Graduate Studies	A faculty member in the department whose approval is required (in addition to that of the thesis advisor or Supervisory Committee) for various things.
Thesis advisor	A faculty member who advises the student on coursework specific to the student's Program of Study and supervises the student's thesis research.
Faculty Consultation	Course MET E 6980 or 7980, to be registered for during any semester when a student is off-campus and does not enroll in regular courses, seminars, independent study, or thesis research, and yet requires consultation with the faculty, or otherwise uses University facilities.
Final Oral Examination	The student defends her/his thesis or dissertation research work before the Supervisory Committee.
Final Reading Approval	A form signed by the student's thesis advisor, indicating that all corrections requested by the thesis advisor or the Supervisory Committee have been made.
departmental Graduate Academic Advisor	A staff member in the department who advises all graduate students in the department on general program requirements; usually not the student's thesis advisor.
graduate-level course	A course that is numbered 6000 or above.
graduation release	Approval by the Thesis Editor that the thesis or dissertation meets all university requirements, a.k.a. thesis release.

<i>Term</i>	<i>Definition</i>
independent study	The course MET E 7920 <i>Independent Study</i> , consisting of time spent on research preparation, bibliographic work, acquiring new mathematical or computer skills, or developing new instrumentation.
International Student Fee	A fee charged, on top of tuition, to international students.
International Students and Scholars Service (ISS)	University department that ensures that the University of Utah complies with immigration regulations pertaining to international students and scholars; experts in the immigration regulations pertaining to non-immigrant F and J visa holders.
ISS	An acronym for International Students and Scholars Service.
leave of absence	A student may apply to not enroll in a particular semester, without dropping out of the graduate program.
Ph.D. Qualifying Examination	An examination, usually oral, covering undergraduate-level subjects in Metallurgical Engineering, which a student must pass, usually in the first year of study, in order to be accepted as a candidate for the Ph.D. degree.
Request for Supervisory Committee	A form setting up the student's Supervisory Committee.
SAC	An acronym for Student Advisory Committee.
seminar	The course MET E 7800 <i>Graduate Seminar</i> .
Student Advisory Committee (SAC)	Student group in the department, responsible for acting as liaison between students and the department; advising on faculty hiring, retention, tenure, and promotion; and organizing student events.
supervisory committee	Consults with the student in planning her/his degree program and thesis or dissertation research and approves the student's Program of Study; research proposal; thesis, dissertation, or final research report; and Final Oral Examination.
supervisory committee chair	The faculty member who directs the thesis or dissertation work (the thesis advisor) and usually serves as the Committee Chair of the Supervisory Committee.
Supervisory Committee Approval	A form signed by the student's Supervisory Committee at or after the Final Oral Examination, saying the thesis is satisfactory.
Thesis Editor	A person in the Thesis Office of the Graduate School who edits theses and dissertations for grammar, spelling, and formatting.
Thesis Office	A division of the Graduate School which supervises approval of theses and dissertations.

<i>Term</i>	<i>Definition</i>
Tuition Benefit Program	Research assistants, teaching assistants, and graduate fellows supported through the university at or above a minimum level have the resident tuition portion of tuition paid by the Graduate School, while the nonresident portion is waived. The TBP does not cover differential tuition, the International Student Fee, or other nonmandatory fees.
undergraduate-level course	A course numbered 1000 through 5999 and intended for undergraduate students.
Vacation semester	One semester each year in which an international students does not register, without losing visa status. International students are required to take a vacation semester each summer