

DEPARTMENT OF
CHEMICAL ENGINEERING
AND
MATERIALS SCIENCE

GRADUATE STUDENT BULLETIN

2011-2012

Information provided in this document can change without notice.

Refer to the online version for the most up-to-date information at:

www.cems.umn.edu/downloads/grad/GradBul.pdf

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I. THINGS YOU NEED TO KNOW AT THE START

WELCOME to the Department of Chemical Engineering and Materials Science (CEMS) at the University of Minnesota. We are delighted that you have joined the CEMS family, and we hope that you take advantage of the many opportunities here.

There is much to do between matriculation and the completion of your graduate studies. This bulletin provides information that should help you to maneuver through the rules and requirements of the University.

In this bulletin, we will refer to all of you as "graduate assistants", regardless of the specifics of your appointment or whether you are supported by an assistantship, a fellowship, or a traineeship. The information contained pertains to all of you.

A. STATEMENT OF GENERAL PURPOSE AND POLICIES

This bulletin contains essential information for all graduate students in the Department of Chemical Engineering and Materials Science. All students are responsible for understanding and following the information and policies contained in this document.

B. SOME NAMES AND RESPONSIBILITIES

Frank Bates is the Department Head	Amundson 391	625-0839
The Directors of Graduate Studies (DGS) are		
Yiannis Kaznessis for ChEn	Amundson 253	624-4197
Dan Frisbie for MatS	Amundson 493	625-0779
Julie Prince is Assistant to the DGSs	Amundson 289	625-0382
Ted Butler is in charge of accounting	Amundson 151T	625-4580
Mary Nissen is in charge of payroll	Amundson 151U	625-5386
Danny Williams is in charge of purchasing	Amundson 151R	625-2375
Raul Caretta is in charge of safety program	Amundson 151B	625-8066

Additional helpful phone numbers for the Department and the University can be found on page 28-30 of this bulletin.

C. THE START OF GRADUATE STUDY

Most graduate students find that the coursework of the first semester is demanding. You will not be alone if you feel a bit overwhelmed. The faculty will assume that you are familiar with material covered in your undergraduate ChE or MatS courses as well as mathematics, physics, and chemistry. The ChE courses include fluid mechanics, heat transfer, mass transfer, chemical kinetics, thermodynamics, reactor analysis, and design. The MatS courses include structure of materials, thermodynamics and kinetics, electronic properties of materials and mechanical properties of materials.

If you encounter problems, or are concerned that you are having problems, you should consult with the DGS in your program. It is important to remember that the DGSs are there to help. They will also monitor your academic progress and the progress you make during the first semester in choosing an advisor. Like students before you, you will also find that Julie Prince is an invaluable source of information.

D. STUDENT IDENTIFICATION "U CARD"

Student ID "U Cards" can be obtained at G22 Coffman Memorial Union from 8:00am-4:30pm weekdays or at the University Recreation Center from 11:00am-1:00pm and 4:00-6:00pm weekdays and on Saturdays from 11am-1pm. Additional information can be found at: www1.umn.edu/ucard/umtc/home.html

E. REGISTRATION

You are responsible for knowing the Registration Policies and Procedures set forth by the University of Minnesota each semester. Registration Policies and Procedures can be found each semester on OneStop at onestop.umn.edu/. Under Registration, click on the link to Printable Publications. In addition, you are also responsible for knowing the requirements of the Grading System found at: onestop.umn.edu/registration/guidelines/grade_basis.html and www.catalogs.umn.edu/grad/gen/grading.html.

All graduate assistants must register during fall and spring semesters throughout their terms of appointments. You will lose your benefits if you do not register. For fall 2011 you must register on by Monday, September 5 to avoid late registration fees, if your initial registration occurs after this date you will be assessed a \$50 late registration fee (\$100 limit per semester). If your initial registration occurs after Monday, September 20 you will be assessed a \$100 late registration fee. **Monday, September 5 is an official University of Minnesota Holiday;** you can register online but offices will be closed. We encourage you to have your initial registration done by **Friday, September 2** to avoid any problems.

The Graduate School policy requires that new graduate students meet with their advisors prior to their initial registration. For most students this will be done when you meet with Yiannis Kaznessis or Dan Frisbie during Departmental Orientation. Foreign Nationals who do not have a Social Security Number will register after completing the document check with the Office of International Student and Scholar Services (ISSS). The Social Security Administration Office requires you to present to them a letter from ISSS verifying your F-1 status as well as full-time enrollment at the time you apply for your Social Security Number. Julie Prince will provide you with this letter.

Typical course sequences can be found on page 14 and 15 of this bulletin. Before attempting to register, you should browse through and read the registration information at One Stop on the University home page.

IMPORTANT: Email yourself (or print) a copy of your "Enrollment Summary" before you log off of the registration system. This will be your only receipt and proof that you have registered on time should a problem occur. Make sure you complete the Hospitalization/Insurance information section if registering by computer (see Items K–L on page 4 of this bulletin for more information). Every student has a student account. To view your student account online, go to onestop.umn.edu/Student and click on "View my student account."

You can also register in person if you do so by Friday, September 2. Download the Registration and Cancel/Add Form at onestop.umn.edu/pdf/otr022_2010.pdf obtain permission numbers, if necessary, and bring the form to 333 Science Teaching & Student Services. Map: campusmaps.umn.edu/tc/map.php?building=2|299. Be sure you fill out the insurance information section (see section L of this bulletin for information on Insurance).

F. CHANGE OF REGISTRATION (CANCEL/ADD REQUIREMENTS)

All-University policies on Cancel/Adds apply to all students in all colleges. Complete information about changing your registration can be found at the One Stop Registration Website. If you decide before the semester begins not to attend, you must cancel before the first day of classes to avoid being charged for a percentage of the tuition, even if your RA appointment pays for a tuition waiver. However, no additional tuition is charged when any course addition is balanced by a course cancellation, i.e., a cancellation equals the number of credits being added, or a cancellation and course addition that keeps the total number of credits within the 14 credit tuition plateaus or bands.

On occasion, a course may be cancelled by the department offering the course. Contact the department immediately to see if other arrangements have been made. If no arrangements exist, it is then your responsibility to remove the course from your record by changing your registration. Cancellations are effective the day you officially cancel not on the date you stopped attending class. You will receive billing statements from Student Accounts Receivable for any credits over the maximum allowed with your assistantship (14 credits) and for fees or additional billing charge, if applicable. If you fail to pay by the due date on your billing statement, a hold will be placed on your records. The refund schedule can be found at the One Stop Registration Website.

G. COURSE APPROVAL/"CLASS PERMISSION NUMBERS"

Approval may be required if you want to register for some CHEN or MATS 5000 or 8000 level courses. See Laura Ericksen in Room 151 Amundson to obtain a permission number for 4000 or 5000 level CHEN or MATS courses. See Julie Prince in Rm. 289 for 8000 level CHEN or MATS 8000 courses. Permission numbers for courses outside the department must be obtained from the department that offers the course.

H. COURSE TIME CONFLICT APPROVAL

You may not register for courses that have less than 1 minute separation or overlapping times without approval of the instructors of both courses. If this happens you should fill out the Course Time Conflict Form found online at: policy.umn.edu/forms/otr/otr024.pdf

This form is designed to be filled out in your Web browser, printed, then submitted either in person, by mail or by fax. It cannot be submitted online.

I. REGISTRATION HOLDS

If you were admitted to the Graduate School with a "degree pending," you will need to provide a n official transcript or other suitable material prior to registration. This is done in Johnston 309. Other holds may include Health Clearance and Visa Clearance (document check for international students). You must clear all registration holds before registering. See Julie Prince if you have difficulties (e.g. transcripts that were sent but cannot be found).

J FEES

You are responsible for paying all fees by the due dates defined on the original fee statements. A list of fees and a schedule for payment of fees can be found at the One Stop Registration Website. Fees are billed through Student Accounts Receivable. Student services fees, late registration, and any non-refundable fees assessed are the responsibility of the student and are not covered under tuition benefits (this includes any fees associated with canceling a course).

K. INSURANCE

Insurance packets with enrollment forms will be handed out during the Department Orientation in late August. University regulations pertaining to the Graduate Assistant Medical Plan can be found at: www.shb.umn.edu/twincities/graduate-assistants.htm.

Graduate Assistant Insurance Office (GAIO)
N-323 Boynton Health Service
Phone 624-0627
Email gradins@bhs.umn.edu

L. STUDENT HOSPITALIZATION INSURANCE FORM

You will be asked to provide insurance coverage information each semester you register. If you are taking the Graduate Student Health Insurance plan or have your own insurance coverage (through your parents, spouse etc.) you will need to check the option "Already have other coverage... ". You will need to complete the name of the insurance company, the policy number and the phone number of the insurance company.

If you are enrolled in the Graduate Student Health Insurance plan here is the information you'll need:

- Name of Health Insurance Plan: **Graduate Assistant Health Plan**
- Health Plan telephone number: **612-624-0627**
- Member ID Number: **This is your student ID number**

If you are registering for 6 or more credits and fail to provide the required information when registering, you will automatically be charged for the Student Health Insurance plan – which is not covered by your assistantship.

Foreign Nationals are required to take University health insurance. If you don't enroll in the Graduate Student Health Insurance plan you will automatically be charged for the Student Health Insurance plan.

Note: you do not need to enroll during the summer to receive continued insurance coverage, provided you have held at least a 50% RA appointments during fall and spring semesters. If you have any questions, please contact the Graduate Assistant Insurance Office at 624-0627.

M. OFFICE SPACE

Room 185 will be your office during the fall semester. This room can only be accessed with a numeric code. Please ask Julie Prince or one of the computer staff in Rm. 185 for this code. Please do not share this code with **non-CEMS** students/staff, etc. Lockers in Rm. 185 are for first-year grad student - see Julie Prince for assignment of a locker. You may have to share the locker with another student. **This room is used by others so please keep it clean. You are responsible for cleaning up any mess you make and should keep your locker clean. Any food kept in your locker that doesn't need refrigeration should be kept in rodent proof containers.**

N. KEYS

Your U Card will serve as your key to Amundson Hall main entrance. However, before you can have access to the building or any keys you must complete the New Employee Research Safety Training Requirement. You will be charged \$5.00 deposit fee for each key issued. This fee is refundable when you return the keys. No refunds are available for lost keys and replacement keys will require a new deposit. **If you lose a key, you or your advisor will be responsible for rekeying, this could cost \$100 or more!** You must pass the required safety tests before any keys can be issued. There are certain restricted keys that will require additional safety training before they can be issued

O. MAIL AND NOTICES

Mailboxes are located outside Amundson 151. Please use your box number for business mail sent to the department address. Mailboxes should not be used for personal mail. Mailboxes are shared and they should be checked on a regular basis.

P. ACADEMIC CODE OF CONDUCT

Scholastic dishonesty is not tolerated in the Department. According to the University Student Conduct Code, scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using old exams or other test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. You may expect your teachers and advisors to define these terms and set clear scholastic honesty rules and expectations. Familiarize yourself with the University of Minnesota Academic Misconduct Policy, found at

www1.umn.edu/regents/policies/humanresources/Academic_Misconduct.pdf

Q. PROFESSIONAL CODE OF CONDUCT

You are expected to promote and safeguard the comfortable learning and professional environment of the Department, and to treat everyone with the respect and courtesy that you would like to receive from them. Threatening or harassing conduct and language are not tolerated. Report any such behavior to the head of the Department, the DGS, or faculty members, as you deem appropriate. Any student behaving unprofessionally is subject to appropriate disciplinary action, in accordance with the University Student Conduct Code. Familiarize yourself with this code, found at

www1.umn.edu/regents/policies/academic/Student_Conduct_Code.pdf .

R. HUMAN RESOURCES

The Department adheres to University of Minnesota Human Resources Policies and Procedures, including but not limited to benefits, compensation, medical leaves, and parental leaves. Contact Mary Nissen with any questions or concerns related to human resources policies and procedures.

II. FINANCIAL SUPPORT

A. 2011-2012 GRADUATE ASSISTANTSHIPS/FELLOWSHIPS

It is the Department's goal that all students receive approximately the same stipend. However, there may be small inequities for those having fellowships. The stipend for a typical first-year graduate student entering in fall 2012 is:

Annual = \$27,000.00

Hourly Rate = \$25.97

Pay Period Rate = \$1,038.80 (*gross, before taxes*)

Consult Mary Nissen (Amundson 151U) if you have questions.

Graduate assistants are usually appointed on a 12-month basis. You will have Teaching Assistantship (TA) responsibilities for one out of every three semesters and Research Assistantship (RA) responsibilities for the remainder. Renewal is subject to satisfactory degree progress under faculty supervision and limitations of department resources.

Your appointment in the department is a 50% appointment as either a RA or TA or a combination of both. **As a consequence, you may not receive pay for a job beyond your RA or TA appointment.** It is up to you and your advisor to ensure that this rule is not violated. See Mary Nissen, the DGS, or your advisor if you have any questions about this. This could also cause problems with the Department of Homeland Security for foreign nationals. Please check with the office of International Student and Scholar Services (ISSS) if you have any questions about this.

B. TEACHING ASSISTANTSHIPS, TAs

We believe that teaching is an important part of graduate education and hence the Department stipulates that all students participate in the teaching mission of the University. Accordingly, you will be required to perform TA duties at least one out of every three semesters. Duties include grading; record keeping; problem formulation; monitoring and grading of laboratory projects; organization and distribution of materials; and occasionally meeting a recitation section for an undergraduate course. On occasion, you may be asked to deliver a lecture.

Graduate assistants are required to indicate assignment preferences after discussion with their advisors using an online form. The final assignments are made based on student preferences and course needs. Chemical Engineering students are generally expected to serve at least once as TAs in the lab/integrative undergraduate courses, such as the Unit Operations Laboratory courses (ChEn 3401, 4401) Process Design (ChEn 4501), and Process Control (ChEn 4601). Materials Science students are generally expected to serve at least once as TAs in the undergraduate laboratory courses such as Introduction to Engineering Materials (MatS 2001), Materials Structure and Properties Laboratories (MatS 3801 and MatS 3851), Materials Processing (MatS 4301) and Materials Design and Performance (MatS 4221). Information about planning your TA assignments will be distributed by the Directors of Graduate Study.

The Department also provides graduate students with the opportunity to participate in the teaching of our undergraduate courses as recitation or lab instructors. This position carries a modest salary augmentation.

The Department recognizes outstanding TAs, and each year we solicit nominations/input from faculty and students. Names of TAs who have received special recognition are engraved on a plaque in Amundson 150.

International Students – It is a condition of graduate appointment in the department to act as a TA. It is University Policy that all non-native English speaking graduate students acting as TAs must have demonstrated an English Language Proficiency (ELP) rating of 1. To achieve this you must have passed the Spoken English Test for Teaching Assistants (SETTA) prior to the start of your first semester.

It is the responsibility of the DGS to ensure that all non-native English speaking graduate students have taken and passed the SETTA Test with an ELP of 1. For students who started in Fall 2011 you must take the SETTA test on a date prior the Department Orientation. If a student does not pass the SETTA test, the required ELP rating can be achieved by taking English language proficiency courses offered through the International Teaching Assistant Program (ITA) of the Center for Teaching and Learning Services (CTLs). Additional SETTA Test requirement information and information on the English language proficiency courses can be found on pages 16 and 17 of this bulletin. Taking the test early in your first semester will help establish whether English language proficiency courses are required.

C. RESEARCH ASSISTANTSHIPS, RAS

Stipends for RAs are paid from the advisor's research grants, and the duties of an RA are determined by mutual agreement with his/her advisor. In general, they coincide with degree research activities. When this is not the case, the RA is expected to spend no more time on his/her duties than does a TA appointed at the same percent time. Prompt, cooperative, and quality job performance is expected.

D. FELLOWSHIP OPPORTUNITIES

Several fellowship opportunities are available from the Graduate School or from private foundations. These opportunities are advertised throughout the year on the “Graduate Studies” bulletin board outside of room 151 Amundson. Additional information about these fellowships, and more, can be found at www.grad.umn.edu/fellowships. If you wish to be considered for a Doctoral Dissertation Fellowship, you must insure that all coursework is completed, that all grades have been reported, and that the necessary paperwork is filed on time.

Fellowship opportunities available for students who are in their first year of graduate studies include: The National Science Foundation (NSF) Graduate Fellowships <https://www.fastlane.nsf.gov/grfp/>, the National Defense Science Engineering Graduate Fellowships (NDSEG) www.asee.org/ndseg/, and the Homeland Security Fellowship www.orau.gov/dhsed/. All applicants for these fellowships must be citizens or permanent residents of the United States. We augment the fellowship stipends of students who hold a Graduate School Fellowship or fellowships from sources outside the University of Minnesota. The amount of the augmentation varies and should be discussed with the Director of Graduate Studies.

E. PAYCHECKS

Paydays are every other Wednesday. The first payment of the academic year will be **September 22**. Contact Mary Nissen to have checks deposited directly into your bank account. If you are not signed up for direct deposit you can pick-up your paycheck after 11:00 a.m. in Amundson 151U. If you are signed up for direct deposit you should print a copy of your pay statement online at hrss.umn.edu/ (from the Self Service Action list click on Pay Statement). You will need your Internet ID (X500) and password to logon to this application. If you need help with your ID or password, call (612) 301-4357. If you have questions about accessing your pay statement online, call the HRMS/Payroll Assistance Call Center at 625-2016 or for technical assistance email: ess@umn.edu.

F. VACATIONS

The University provides no formal vacation for fellows, TAs, or RAs. However, the Department policy is you will not be removed from payroll if, with the concurrence of your advisor, you take no more than two weeks of what could be construed as vacation leave per year. **Note: First-year students - if you are planning to take any time off you need to discuss this with your advisor or prospective advisor.**

If you do not take time off in one year, then the following year you will not be removed from payroll if, with the concurrence of the advisor, you take no more than four weeks of what could be construed as vacation leave.

III. REQUIREMENTS

Students are advised to check the Graduate School Bulletin for possible changes. Questions concerning the new tuition and enrollment system should be directed to OneStop at 624-1111.

A. MAJOR PROGRAMS AND DEGREE REQUIREMENTS

The Department confers the Doctor of Philosophy (Ph.D.), the Master of Science (M.S.), and the Professional Master of Engineering (M.Ch.E. or M.Mat.S.E.) degrees.

The Doctor of Philosophy. The Ph.D. is primarily a full-time research degree, and performance that leads to a research thesis is emphasized. Supporting coursework that considers the particular needs of the research program is planned in consultation with the advisor.

Chemical Engineering - You will be required to attend 10 full courses (3 or 4 credits each) during your first three semesters. Six of the ten courses should be Chemical Engineering courses (CHEN). Four of these six must be out of the list of core Chemical Engineering courses listed below (you will actually be advised to take all of them). Front-loading the schedule with required courses will afford you more flexibility in choosing courses in 2012, in consultation with your research advisor.

- 8101 Fluid Mechanics (Spring)
- 8201 Linear Analysis (Fall)
- 8301 Physical Rate Processes (Fall)
- 8401 Thermodynamics (Fall)
- 8402 Statistical Mechanics (Fall)
- 8501 Chemical Rate Processes (Spring)

At least 12 credits, of the 10 courses, must be taken outside of your major as supporting or minor credits.

Materials Science - You will be required to attend 10 full courses (3 or 4 credits each) during your first three semesters. Six of the ten should be in Materials Science and Engineering and must include the four core courses listed below. These four courses should be taken in your first year. This will afford you more flexibility in choosing courses in 2012, in consultation with your research advisor.

- 8001 Structure and Symmetry of Materials (Fall)
- 8002 Thermodynamics and Kinetics (Fall)
- 8003 Electronic Properties (Spring)
- 8004 Mechanical Properties (Spring)

At least 12 credits, of the 10 courses, must be taken outside of your major as supporting or minor credits

All Ph.D. students must also complete at least 24 Doctoral Thesis Credits. These are typically taken after passing the Preliminary Examination (4th semester).

All Ph.D. students entering in Fall 2011, should expect a TA assignment in Spring 2012 or Fall 2012.

Ph.D. students **must attend but not enroll for** the Department seminar for 6 semesters. Informal enrollment will be done within the Department. Attendance is taken, and only 4 absences are allowed per semester.

The emphasis during the first year of Ph.D. studies is on coursework, but background work for the thesis can be started. As shown in the sample program on page 13, concentrated research progress is expected during the summer after the first academic year.

By February of the second year you **must** submit a research proposal of materials to the graduate faculty in support of your application to formal Ph.D. candidacy. The proposal constitutes the formal written examination for the Ph.D. You will take an oral preliminary examination after the proposal is accepted by your committee. Satisfactory completion of the oral examination constitutes acceptance into Ph.D. candidacy. Students are encouraged to complete their oral preliminary examination before the end of the spring semester of their second year.

There is a final oral examination after you complete your thesis. At this time, you present and defend your Ph.D. research. Your interests and those of the Department are best served by adhering to the timetables for completion of degree requirements stated herein (Section III, H and I).

The Master of Science (M.S.) - Plan A. With the exception of the Professional Masters program, CEMS focuses on the Ph.D. and does not generally admit students for the Plan A Masters. Thus this degree option is generally reserved for graduate students who are admitted to the Ph.D. program but fall short of meeting the Ph.D. program requirements.

The Plan A Masters requires a minimum of 14 course credits in the major field and a minimum of 6 course credits in one or more related fields (minimum of 20 total course credits). Coursework can be concluded by the end of spring semester, and significant thesis research can be started during the spring semester. 10 thesis credits must be completed. You must write a thesis based on an independent research project and then defend the thesis during a final oral examination. Master of Science students must also attend the Department seminar for each semester enrolled. Master of Science programs are designed to be completed in approximately 2 years.

The Professional Master of Engineering (M.Ch.E. or M.Mat.S.E.). This degree is designed for employees of local industries who pursue their studies on a part-time basis. No financial support is available for the program. Potential applicants should contact the Graduate Studies Office for CEMS (Julie Prince) before applying for admission to the Graduate School.

Applicants should designate the Master of Engineering as their objective on the Graduate School application when applying. The Professional Masters degree is based on a minimum of 20 credits of coursework and a minimum of 10 credits through a work-related design project. (These 10 credits are master thesis credits xxxx 8777).

The work-related design project is to be an in- depth study of an engineering design project. It need not represent a publishable research project. It can contain elements that the M.S. thesis would not, including economic considerations, design consultation, social relevance, and the like. The amount

of work should be the same as an M.S. thesis. This degree also requires a final oral examination, (with a committee of 3 faculty members, one of which is the project advisor) focused on the design project.

B. SELECTION OF ADVISOR AND THESIS TOPIC (PH.D. AND MASTERS)

You are expected to select a thesis advisor during your first semester. The process begins during orientation when the faculty give presentations that define their areas of research. You then meet with each member of the CEMS faculty, exploring research opportunities to the extent appropriate. Return interviews are appropriate as you focus your interests. Be sure to get a signature on the faculty roster (available at orientation) when you finish an interview. The fully-signed roster with rank-ordered preferences for advisors **must** be returned to Julie Prince by **November 15, 2010**.

C. MINOR OR SUPPORTING PROGRAM

You must choose a minor or supporting program. If you choose a **minor program**, you must complete at least 12 credits in coursework in the minor field (6 for Masters); this is done in consultation with your advisor and the DGS of the department administering the minor. If you choose a **supporting program**, you must complete at least 12 credits (from one or more fields outside of your major); selection of courses is done in consultation with your advisor and the DGS. Most students choose the supporting program because of its greater flexibility.

D. GENERAL REGISTRATION REQUIREMENTS

1. All students must register every fall and spring by the deadline specified in the class schedule, to maintain active status and to avoid paying a late registration fee.
2. Master's degree students may register any semester for coursework, including "Special Topics" and similar courses, or for master's thesis credits (course 8777).
3. Ph.D. students can register any semester for coursework, including "Directed Research" and similar coursework. Ph.D. students can register for doctoral thesis credits (course 8888) the term after passing the preliminary oral examination.
4. A registration category called "pre-thesis credits" was created for Ph.D. students who register to satisfy requirements external to the Graduate School but who have not passed the preliminary oral examination. Examples of such requirements include registration to maintain loans, assistantships, and visa status. Ph.D. students who have not passed the preliminary oral examination can register for doctoral pre-thesis credits (8666). These credits resemble doctoral thesis credits (8888) in that they are not graded.

Attributes of 8666:

- Prerequisite: Doctoral student who has not passed prelim oral
- 1-6 cr; max 6 cr per fall, spring, or summer term
- Up to 2 repetitions, totaling up to 12 credits, allowed
- Graduate program consent for the third and fourth registrations, for up to an additional 12 cr (or 24 cr total).

Doctoral pre-thesis credits **cannot** be used to meet Graduate School requirements. For example, they cannot be used to meet the 24 doctoral semester thesis credit requirement (8888) or any course credit requirement.

5. Students who hold an assistantship must register at full-time status each fall and spring semester. The tuition benefit granted to students holding an assistantship for AY 2011-2012 is capped at \$7,006.00 per semester which is equivalent to 6-14 credits. All tuition above this benefit eligibility will be your responsibility.
6. Ph.D. candidates who have taken at least 24 semester thesis credits need only register for 1 graded or thesis credit per semester. To defer student loans, Advanced Doctoral students must register for a specific one-credit course that certifies them as full-time students. This course is designated as CHEN or MATS 8444 for the Ph.D. A form must be completed by the student and approved by the advisor and DGS each fall and spring semester. The form is kept on file in the students graduate program file. This form is available from Julie Prince, Mary Nissen or from the Graduate School website under the forms for Doctoral students. The form is called "Full-Time Status with One Credit Registration Application".

MS candidates who have taken at least 10 semester thesis credits need only register for 1 graded or thesis credit per semester. To defer student loans, Advanced Masters students must register for a specific one-credit course that certifies them as full-time students. This course is designated as CHEN or MATS 8333. **You must apply for this benefit by filing the Advanced Masters Tracking Flag form with the Graduate School by the specific deadline in the semester prior to completing all your course and thesis credits, and each semester that you wish to hold the 8333 benefit.** After obtaining advisor and DGS approval, submit the form by the deadline specified, to the Graduate School for final approval. Students are notified by the Graduate School when approved and a copy of the approved form is kept on file in the students graduate program file. This form is available from Julie Prince, Mary Nissen or on the Graduate School website under the forms for Masters students. The form is called "Full-Time Status with One Credit Registration Application".

E. THESIS CREDIT REQUIREMENTS

1. Master's Plan A students: 10 semester thesis credits (8777).
2. Ph.D. students: 24 semester thesis credits (8888) eligible the term after passing the preliminary oral examination.
3. Reduced thesis credit tuition rate is available for Ph.D. students who have
 - passed the preliminary oral examination,
 - registered for a minimum of 24 Ph.D. semester thesis credits,
 - register only for doctoral thesis credits.

The reduced rate is not available until the semester *after* these conditions have been met. Students who qualify for the reduced tuition rate will be identified by the Registrar's office and will be sent revised fee statements at the end of each semester's registration period. Those who have paid tuition at the higher rate will be eligible for a refund. University accounts charged for the tuition of assistants and fellows will be credited as appropriate.

F. SAMPLE SCHEDULE FOR DISTRIBUTION OF CREDITS

Doctoral Students	2010-2011 YEAR 1		2011-2012 YEAR 2		2012-2013 YEAR 3		2013-2014 YEAR 4	
	Course Credits	Thesis Credits	Course Credits	Thesis Credits	Course Credits	Thesis Credits	Course Credits	Thesis Credits
	F	12	0	6	0	0	14	0
S	12	0	3	0	0	10	0	1*
Totals	—	—	—	—	—	—	—	—
	24	0	9	0	0	24	0	2

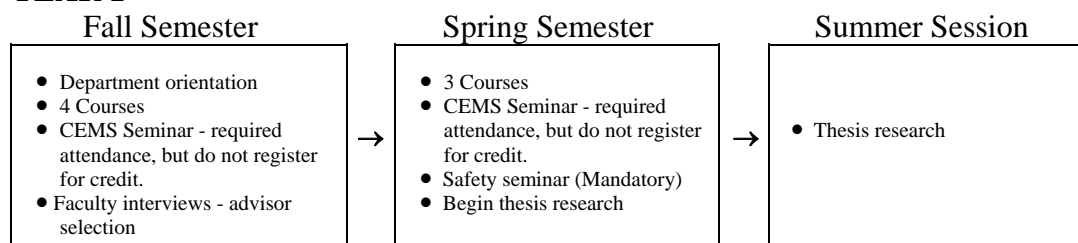
Masters and M.S. Students	2010-2011 YEAR 1	
	Course Credits	Thesis Credits
F	12	0
S	8	4
SS-I and/or II 0		6
Totals	—	—
	20	10

Types of Thesis Credits and Course Numbers:

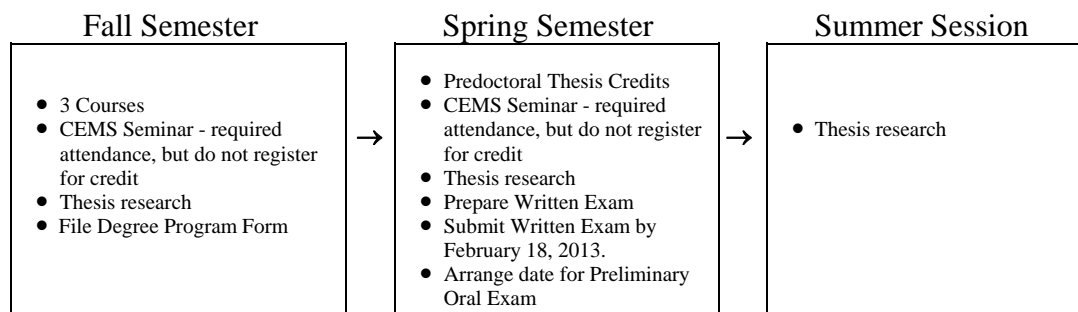
- CHEN 8666 or MATS 8666 - Doctoral Pre-Thesis Credits. Created for Ph.D. students who register to satisfy requirements external to the Graduate School but who have not passed the preliminary oral examination. (See Page 11 of this bulletin for additional information).
 - CHEN 8777 or MATS 8777 - Thesis Credits: Master's.
 - CHEN 8888 or MATS 8888 Thesis Credit: Doctoral.
- * Ph.D. candidates who have taken at least 24 semester thesis credits need only register for 1 graded or thesis credit per semester. Students who need to maintain full-time status for any reason (deferring loans or assistantship then apply for FTE benefit – CHEN 8444 or MATS 8444) see item #6 on page
- * **Grad 999** www.grad.umn.edu/current_students/registration/grad_999.html. A zero-credit, zero-fee (late registration fees apply), non-graded registration option - is an option for those Graduate School students who must register solely to meet the Graduate School's registration requirement. **This option should NOT be used by students who are still being supported by the Department as a Research Assistant.** It is intended to be used only by students who have left the University or are in the process of graduating. Students who fall into this category will need to register for GRAD 999, every fall and spring term until they have complete all degree requirements and graduate. Questions about your eligibility for Grad 999 should be directed to Julie Prince.

G. TYPICAL PROGRAM SEQUENCE FOR THE PH.D. IN CHE

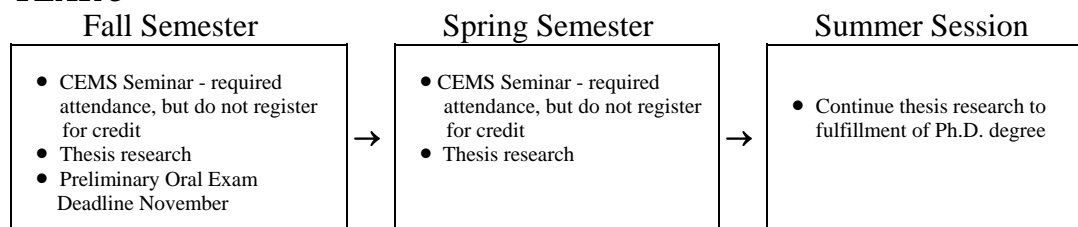
YEAR 1



YEAR 2



YEAR 3



Note: All chemical engineering students registered in the Ph.D., the M.S.Ch.E.–Plan A or the Professional Masters (M.Ch.E.–Design Project) degree programs must take at least 4 of the 6 core courses listed here. **ChEn 8101, 8201, 8301, 8401, 8402, 8501**

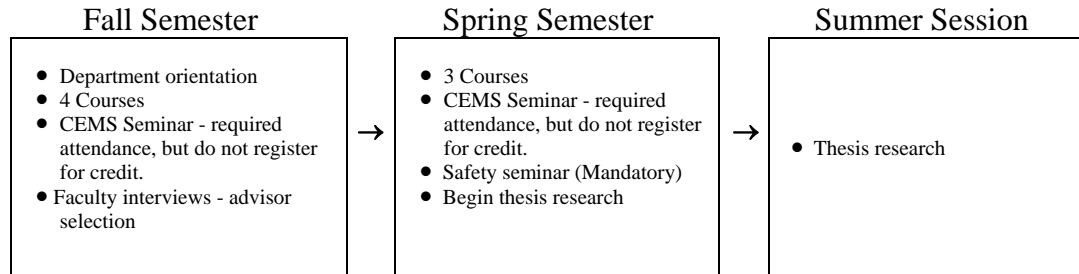
All chemical engineering students registered in the Ph.D. will be required to attend 10 courses during your first three semesters. Six of these ten courses should be Chemical Engineering ones (listed as ChEn) from the list of ChEn suitable elective. Four of these six courses must be out of the above list of core Chemical Engineering Courses (you will actually be advised to take all of them). You will receive a list of the suitable electives during Orientation or you can ask Julie Prince for a copy (updated every August).

For full-time students a recommended course schedule for this Fall 2011 then is the following: 8201 Linear Analysis, 8301 Physical Rate Processes, 8401 Thermodynamics, 8402 Statistical Mechanics. Front-loading the schedule with required courses will afford you more flexibility in choosing courses in 2012 in consultation with your research advisor.

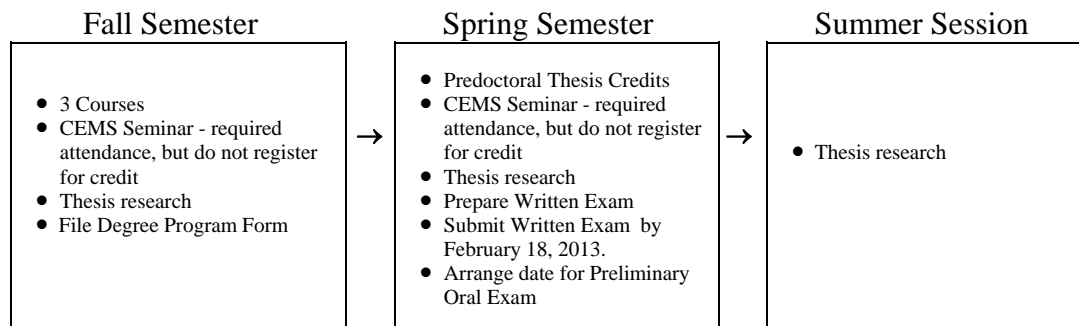
You should refer to the Major Program description for additional credit requirements. Attendance at seminar is not required for students registered in the Professional Masters program.

H. TYPICAL PROGRAM SEQUENCE FOR THE PH.D. IN MATS

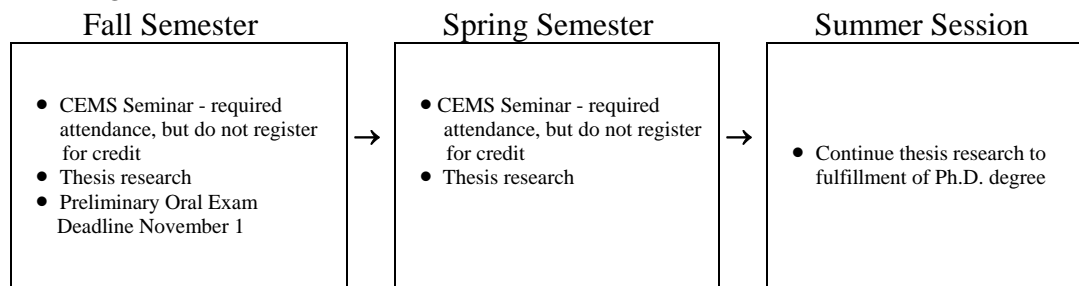
YEAR 1



YEAR 2



YEAR 3



Note: All materials science students registered in the Ph.D., the M.S.Mat.S.E.–Plan A, or the Professional Masters M.MatS.S.E.–Design Project degree programs are required to take the following courses listed here: **MatS 8001, 8002, 8003, and 8004**

You should refer to the Major Program description for additional credit requirements. Attendance at seminar is not required for students registered in the Professional Masters program.

I. THE SPOKEN ENGLISH TEST FOR TEACHING ASSISTANTS (SETTA), INTERNATIONAL TA'S

The department believes strongly that English language proficiency is critical to many aspects of your graduate student experience and your future professional career. The University of Minnesota has specific English language requirements that must be satisfied before a student can be a Teaching Assistant (TA). Consequently, the DGS has instituted a policy to ensure that any English deficiencies are corrected as early as possible. The course of action detailed below is **mandatory** for all Ph.D. students.

The University of Minnesota requires that all nonnative English speaking Teaching Assistants (TAs) must demonstrate proficiency in spoken English appropriate to the demands of their teaching assistantship. The University of Minnesota policy considers a nonnative speaker to be a person who grew up in a home where the primary language was not English. Note that this applies to US citizens, to students who have degrees from institutions in the US, and to students from countries where English is the medium of instruction.

If you are a nonnative English speaker, you will be required to take the SETTA Test before or during the first 2-weeks of the fall semester. The website concerning the SETTA test is: www1.umn.edu/ohr/teachlearn/graduate/itap/index.html. Scroll down to “**More on the English Policy and Proficiency Testing**”. The Center for Teaching and Learning Services will notify you and Julie Prince about the results of your SETTA Test. The chart below indicates the range of scores and their English Language Proficiency (ELP) rating.

Below is a chart showing what is required of you depending on your ELP rating. Note, CEMS will require that all incoming international students, whose first language is not English, take the SETTA upon arrival before the start of their first semester.

ELP Rating After Taking SETTA	Instructional Responsibilities Allowed	How to Achieve This ELP Rating
ELP Rating 1	Eligible for all instructional responsibilities. No coursework required.	27-30 on ibTOEFL speaking ELP 1 on SETTA Pass GRAD 5105 final exam
ELP Rating of 2 or 3* <i>*3 is being phased out</i>	Eligible for all instructional responsibilities. GRAD 5105 required if teaching (e.g., a class, lab, recitation, discussion, etc.) No coursework required if grading, tutoring, holding office hours, or proctoring.	23-26 on ibTOEFL speaking ELP 2 on SETTA Pass GRAD 5102 final exam
ELP Rating of 4	Eligible only to tutor, hold office hours, grade, proctor. Not eligible to teach. GRAD 5102 is required.	18-22 on ibTOEFL speaking ELP 4 on SETTA Pass Foundations final exam
ELP Rating of 5	Not eligible for any TA position. Foundations course is required.	<18 on ibTOEFL speaking ELP 5 on SETTA

Below are more detailed descriptions of the different English language communication courses offered through the International Teaching Assistant Program (ITA) of the Center for Teaching and Learning Services (CTLIS).

FOUNDATIONS for Language and Culture of Teaching in the United States.

Prospective teaching assistants who have an English Language Proficiency Rating of 5 should enroll in this free course in their first semester at the University. The goal of the course is to increase speaking, listening and cross-cultural communication skills in the context of tutoring undergraduate students. Upon passing the course, students are eligible to take GRAD 5102 and hold a TA position as a tutor or grader. The class meets 3 hours weekly.

GRAD 5102: PREPARATION for University Teaching for Nonnative English Speakers.

This two-credit course is designed for graduate students who wish to increase their understanding of the theory and practice of teaching in higher education in the United States. It is the first in a two-course sequence fulfilling the mandate of the Minnesota State Second Special Legislative Session of 1985 and University of Minnesota policy, English Proficiency for Nonnative English Speaking Teaching Assistants. The course emphasizes awareness of cross-cultural communication issues in the context of the instructional setting. Its goal is to provide students with a foundation in interactive teaching practice, familiarity with the diverse characteristics of undergraduate students, and strategies for effective classroom communication. In the simulated setting of the lab experience, students will also have the opportunity to put into practice the theories they are learning. (Prerequisite: English Language Proficiency Rating of 4 or successful completion of Foundations course.)

GRAD 5105: PRACTICUM in University Teaching for Nonnative English Speakers.

This 2 credit course is the second in a two-course sequence designed to fulfill the mandate of the Minnesota State Second Special Legislative Session of 1985 and University of Minnesota policy, English Proficiency for Nonnative English Speaking Teaching Assistants. As such, it addresses the pedagogical, practical, and language skills necessary for nonnative English speaking TAs to instruct students at the University of Minnesota. The focus of GRAD 5105 is the application of teaching and learning theories in an authentic classroom situation, and an examination of cross-cultural issues in higher education. It builds on the knowledge of teaching theory and language skill development which made up Preparation for University Teaching for Nonnative English Speaker. In GRAD 5105 students will discuss advanced issues in instruction, teach in a real university setting, reflect on their performance, and identify areas for further study and professional development. (Prerequisite: English Language Proficiency rating of 2 or 3)

LANGUAGE AND TEACHING CONSULTATIONS. Non-credit work for students who have achieved an ELP rating of "1" but who wish to continue their language and teaching development is offered based on staff availability. For more information, please click on this link:

www1.umn.edu/ohr/teachlearn/consultations/consultations/

J. MANDATORY SAFETY TRAINING

Everyone is required to do safety training. You will be suspended from the payroll if you do not complete the required safety training, when offered. Raul Caretta, our Research Safety Officer, will provide more information. Check our web page at www.cems.umn.edu/about/safety/index.php.

K. MANDATORY ETHICS SEMINARS

Everyone is required to attend the seminar on Professional Ethics offered in the first year of our graduate program.

L. TA TRAINING PROGRAM

The Center for Teaching and Learning Services offer campus wide workshops, courses and facilitated discussions about teaching and learning. Second year students are considered "new TAs" and we strongly encouraged you to attend the "New TA Orientation" or any of the other "Workshops offered in late August each year. These workshops are free!!

Click here for more information: www1.umn.edu/ohr/teachlearn/workshops/index.html

M. TRANSFERS

Students are admitted into the CEMS department with the expectation that they will graduate from the major (ChEn or MatS) to which they were admitted. Transfer between majors, or to another department, is not encouraged. Students who think they may wish to change majors should first contact their DGS; there may be significant negative financial consequences associated with major changes.

IV. QUALIFYING FOR AND OBTAINING GRADUATE DEGREES

A. DEGREE PROGRAMS

The M.S. Degree Program Form (DPF) must be submitted to the Graduate School after completion of 10 credits. For students enrolled full-time, this would be during the second semester of study.

For Ph.D. students entering Fall 2011 the DPF should be completed by the end of the 3rd semester (so December 2012). For Ph.D. students entering Spring 2012, the DPF should be completed by the end of the second week in May 2013. During the fall semester of your second year, Julie Prince will provide you with information for the DPF and instructions for your Research Proposal. All requirements stipulated on the degree program must be met before your degree can be cleared to take your final oral exam. You can make changes to your approved program by petition to the Graduate School.

Coursework taken for grade as S/N cannot be counted as major coursework on the Degree Program Form without advanced approval of your advisor and the DGS. It is CEMS Policy that a maximum of 6 credits can be taken S/N.

Maximum Incomplete Grade Policy: CEMS graduate students are allowed to have a maximum of 6 credits of incomplete grades at any given time. Grades for incomplete courses that are listed on your approved Degree Program Form should be submitted before you can take your Final Oral Examination. If necessary, and with permission from your advisor and the DGS, you can petition to remove and replace the incomplete course from Degree Program Form.

B. RESEARCH FACULTY

CEMS faculty can be considered for advisors, co-advisors, or as major field members on preliminary or final oral examination committees.

C. GRADUATE EDUCATION RESPONSIBILITY IN CEMS

The following is a list of Faculty with Graduate Education Responsibilities in Chemical Engineering and Materials Science. Anyone on this list can advise students in our program. Updates to this list can be found at: www.grad.umn.edu/Faculty_Rosters/faculty.html - under your program.

List of Faculty with Graduate Education Responsibilities:

Eray Aydil Roberto Ballarini (Civil) Victor Barocas (BME) Frank Bates Aditya Bhan Matteo Cococcioni Edward Cussler Prodromos Daoutidis Jeffrey Derby Traian Dumitrica (ME) Kevin Dorfman Lorraine Francis C. Daniel Frisbie William Gerberich Steven Girshick (ME) Wayne Gladfelter (Chem) Ben Hackel	J. Woods Hally (Phys) Marc Hillmyer (Chem) Russell Holmes Wei-Shou Hu Bharat Jalan Yiannis Kaznessis David Kohlstedt (Geo/Geophy) Efie Kokkoli Uwe Kortshagen (MechE) Satish Kumar Chris Leighton Timothy Lodge Christopher Macosko Alon McCormick K. Andre Mkhoyan David Morse David Odde (BME)	Hans Othmer (Math) Klearchos Papas (Surgery) Lanny Schmidt Claudia Schmidt-Dannert (Bio) Wei Shen (BME) David Shores Ronald Siegel (Pharmaceutics) J. Ilja Siepmann (Chem) William Smyrl Friedrich Srieon Beth Stadler (ECE) Robert Tranquillo Michael Tsapatsis Chun Wang (BME) Jianping Wang (ECE) Renata Wentzcovitch
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D. PH.D. CANDIDACY: THE WRITTEN EXAMINATION

The information in this section is subject to change at the discretion of the DGS. You will be given instructions in the fall prior to your prelim written and oral examinations.

If you are a Ph.D.-track student, you will prepare a written exam and pass a preliminary oral exam that is based in part on a research proposal. The research proposal is used to ascertain your potential for Ph.D.-caliber research. It serves as the Department's written examination.

The research proposal is expected to demonstrate your ability to conceive and describe a research project. It is not expected to show finished results. It **must** be approved by your advisor before it is submitted. The research proposal includes:

Beginning in 2010, the format of the written exam changed substantially in order to re-emphasize its essential purpose, which is to provide you with an opportunity to document your research progress to date and to propose a detailed plan for your future thesis research. In this sense, the new exam is very much like a research proposal to the National Science Foundation, National Institutes of Health, or similar granting agency. It is a compact, carefully worded document that provides suitable motivation for the proposal, a summary of accomplishments, and a detailed research plan, as well as some supporting documents. You will be evaluated on your scientific and technical comprehension, the quality of your research plan, your ability to communicate clearly and effectively, and your accomplishments to date. Each proposal must conform to the following guidelines:

Format of the Proposal (adapted from the NSF Grant Proposal Guide, 2009)

The proposal must be clear, readily legible, and conform to the following requirements:

- a. Use Times New Roman, 12 point character font.
A font size of 10 points or less may be used for mathematical formulas or equations, figure, table or diagram captions and when using a Symbol font to insert Greek letters or special characters. You are cautioned, however, that the text must still be readable. Figure captions can have a different font style, such as Arial, to help offset them from the main text.
- b. Margins, in all directions, must be at least an inch.
- c. Page limits and line spacing requirements apply. See below!
- d. The proposal must be spiral bound and covered.

Please note that failure to follow these formatting guidelines will be grounds for your committee to request a revision of your proposal.

Sections of the Proposal (adapted from the NSF Grant Proposal Guide, 2009 and the US Department of Energy proposal review criteria)

- a. Cover Page. The cover page should contain the title of your proposal, your name, your advisor's name, and the names of your committee members, including which ones who will serve as readers. The submission date should also be included.
- b. Project Summary. Prepare a one page, single-spaced summary of the proposed activity, entitled Project Summary. The Project Summary should not be an abstract of the proposal, but rather a self-contained description of your proposed research. The summary should be written in the third person and include a statement of objectives and methods to be employed. It must clearly address the scientific and/or technical merit of the project, for example, the influence that the results might have on the direction, progress and thinking in relevant scientific or engineering fields. It must also clearly address the appropriateness of the proposed methods, and the logic and feasibility of the research approach.

The Project Summary should be informative to other persons working in the same or related fields and, insofar as possible, understandable to a scientifically or technically literate lay reader. Proposals that do not separately address both scientific merit and appropriateness of methods within the one-page Project Summary will not receive a passing grade.

- c. Project Description. The Project Description (PD) is a 30 page (max), double-spaced proposal that describes your thesis project. It should include background and motivation, preliminary results, and proposed research. The PD should also provide an assessment of risk with your proposed research as well as contingency plans in case a particular research avenue proves inexpedient in some manner. Some examples of Project Descriptions will be provided, but the precise organization of the document is up to you, in consultation with your advisor. A typical NSF PD has perhaps 4 pages of background and no more than 10 pages on preliminary results. The balance (~16 pages) focuses on proposed research. The title of the proposal should be written at the top of the first page. The words "Project Description" do not need to appear.
- d. References. Reference information is required. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. Proposers must be especially careful to follow accepted scholarly practices in providing citations for source materials, including websites, relied upon when preparing any section of the proposal. There is no page limitation for the references, but this section must include bibliographic citations only and must not be used to provide parenthetical information outside of the 30-page Project Description. Figures used in the Project Description should be explicitly referenced in the caption if they are taken from another publication or website. References should be single-spaced, but a blank line between each individual reference is preferred.
- e. Supporting Information. In consultation with your advisor, you may decide to include certain Supporting Information as an appendix to your Project Description. Supporting Information may be a more detailed discussion of a particular theoretical problem or experimental technique. It may also be a draft of a paper for publication. This Supporting Information is coordinated with your advisor and has no page limit. It should be double-spaced and conform to the formatting guidelines of the Project Description, detailed above. Please note that the inclusion of Supporting Information is not required, and is unlikely to receive careful review from your faculty committee. They will focus instead on the required sections of the proposal.
- f. Biosketch. A Biosketch of not more than 1 page, single-spaced should be provided. The biosketch should be written in a narrative format and it should include a summary of previous education, including institutions attended, and research experiences.
- g. A copy of your approved Degree Program Form.
- h. A photocopy of your transcript from the University of Minnesota. If you are transferring courses to Minnesota include a copy of that transcript as well.

DEADLINES - The proposal must be submitted by **Monday, February 18th, 2013, for students who entered Fall 2011**. If a student fails to submit a proposal by the required deadline, his/her stipend will be stopped on February 18th and will not resume until the proposal is submitted.

To secure your advisor's approval before submission to all three readers, you should have the completed proposal in his/her hands considerably sooner than the required submission date. After you have this approval, please submit three copies (4 if you have a co-advisor) to **Julie Prince**. She will insert a Rating Sheet and will distribute the proposals to your readers.

The proposals will be read by all faculty readers by Friday, March 15th, 2013. If a rewrite is required, it must be completed by Monday, April 1st, 2013. If a student fails to submit a rewritten proposal by the required deadline, his/her stipend will be stopped on **April 1st**, and will not resume until the rewrite is submitted.

You will be evaluated and given feedback on your scientific and technical comprehension, the quality of your research plan, your ability to communicate clearly and effectively, and your accomplishments to date. To pass the written exam you must receive a "pass" from each reader of your proposal. You must pass the written exam before you can schedule the preliminary oral exam.

The timetable described here should allow you to schedule your oral examination before summer. It can be difficult to schedule orals during the summer, and in addition, you cannot register for required thesis credits until you have passed the preliminary oral examination.

E. PH.D. CANDIDACY: PRELIMINARY ORAL EXAMINATION

Arrangements for the preliminary oral examination are made after the research proposal is approved. The preliminary oral exam should take place during spring semester of the second year, immediately after approval of the research proposal. The exam must be scheduled in the Graduate School at least 1 week prior to the exam date.

Committee members can be any faculty with Graduate Education Responsibilities in Chemical Engineering and Materials Science. The faculty roster can be found at: www.grad.umn.edu/faculty_rosters/faculty.html. Any faculty listed on the roster under Chemical Engineering or Materials Science (Twin Cities) can count as a major or a supporting committee member, **but at least two members of your committee MUST be faculty from the Chemical Engineering and Materials Science Department.** CEMS requires one additional committee member than required by the Graduate School.

We require 3 readers (2 in addition to your advisors if co-advised). The readers will include your advisor(s), your random member (who will be from CEMS), and one other member of your committee.

The oral starts with a presentation of the proposed research (approx. 20 minutes) followed by discussions of the proposed research. The examination is then opened to general questions pertaining to the major and minor fields. Successful completion signifies acceptance into candidacy. Unsuccessful completion may lead to a retake or a recommendation to convert to the M.S. program. The latter requires that you file Change-of-Status and revised DPF with the Graduate School.

You are not required (and the faculty do not expect you) to provide food and/or drink at your oral exam. We recommend that you do not.

After the written exam has been approved by your advisor(s) and readers, Julie Prince will give you the "Preliminary Written Examination Report for Doctoral Degree" signed by your advisor(s) and DGS. Your oral examination can be scheduled with the Graduate School when you submit this form to the Graduate School Student Service and Progress Office, Room 316 Johnston Hall. The

Graduate School requests that you schedule your prelim oral exam at least one week before you plan to take your oral examination. You may want to informally schedule the date, time, and room for your exam before these are completed, but you may not take the examination without appropriate approval from the Graduate School.

A typical oral exam begins with the student presenting a ~20 minute prepared talk. The purpose of this presentation is to introduce the topic of the proposed research, discuss results obtained to date, and outline future research. It is customary for the faculty not to interrupt during the talk. However, they may ask brief questions simply to clarify an issue that they did not understand. After the presentation, the faculty then ask the student more probing questions about anything related to the presentation. Typically, the student's presentation and the subsequent questioning period last about one hour. At this point, the committee asks the student to step out of the room briefly. This gives the student a short break and allows the faculty to organize themselves for the second part of the exam. When the student returns, the faculty will then ask the student more general questions about his/her major and minor subjects. The faculty try to make the questions fair and the coverage balanced. However, very difficult (or perhaps unanswerable) questions may be the best means to achieve the other major objective of the oral, which is to test your ability to think. In the major, all topics recognized as fundamental are "fair game". For example, for Chemical Engineering students, if you have not recently taken fluid mechanics, transport, heat and mass transfer, reactor analysis, and thermodynamics, then you should certainly be prepared to demonstrate a familiarity with them. For Materials Science & Engineering students, the corresponding areas are solid state physics, structure of materials, mechanical properties, electrical properties, and thermodynamics. You should be aware that most students, who are successful in the second part of the exam, prepare ahead of time by reviewing their coursework. It is not advisable to go into the exam "cold" and "hope for the best". Please note that the committee also has a copy of the student's transcript in front of them and it is very common for faculty to ask questions related to the student's coursework - especially if a committee member was the instructor for one of these courses! The whole exam, including both parts, typically lasts between 2 and 2.5 hours.

The faculty really want each student to succeed and are trying to help him/her through the exam. Nevertheless, the student needs to demonstrate his/her ability to present, explain, and think to pass the exam. Here is some general advice: (1) Study before the exam. (2) Practice your presentation in front of senior students from other research groups and have them ask you questions. They often ask "off the wall" questions (just like your committee will) and this will give you experience in handling this situation. (3) Prepare and deliver your presentation carefully. Anything you discuss is "fair game" for questions. If you do not understand something, you should not be talking about it! (4) During the exam, make sure you listen carefully to the questions. Do not answer questions before you understand them. Ask for clarification, if you are not sure. (5) Answer questions succinctly. If the faculty want more details, let them ask additional questions. Students often get into trouble because they discuss everything they know about a topic. However, this gives the faculty an opportunity to ask more probing questions about something that was just discussed. (6) During the general questions in the second part of the exam, stay calm and listen to the questions. Don't panic. The faculty may ask you a difficult question, but it is very common for them to guide you. Your job is to think clearly and demonstrate that you know how to handle the problem

F. SATISFACTORY DEGREE PROGRESS

The Graduate School Constitution requires that your progress be evaluated annually. In the spring of each year your advisor will receive a copy of your Annual Review Form. After completion of your review, the form should be signed by you, your advisor, and the DGS. The original will be kept on file with the Department. The review will include the following:

- Progress in research
- Degree requirements and milestones
- TA assignments

Satisfactory progress for M.S. students is judged by completion of coursework by the end of the second semester, initiation of research in the second semester, submission of a thesis, and successful defense of the thesis. This can be done in one calendar year.

Satisfactory progress for Ph.D. students is judged by completion of most coursework during the first two academic years, submission of the research proposal in February of your second year, and completion of the preliminary oral examination by November 1 of the third year. Thereafter, your thesis advisor, who will inform you and the DGS if there are deficiencies, determines satisfactory progress.

You can be removed from payroll within an appointment period if

- You do not submit the research proposal by the deadline
- You fail to attend required safety meetings, or
- You fail to make satisfactory academic progress.

There may be probationary reappointments for up to one year at the discretion of your advisor. In these cases, you are entitled to a written explanation as to cause and the avenues for appeal. Graduate assistants will be continued on salary during appeals.

If, for reasons of conscience, you choose not to accept work on a specific project or to accept salary from a specific funding source, then you may choose to seek another project or a different advisor, free of prejudice.

An overall GPA of 2.80 is required for the M.S. and Professional Masters programs in CEMS. For the Ph.D., the Department requires a 3.0 overall GPA. A one-semester warning will be issued if your GPA falls below the required 3.0 minimum. If the deficiency remains, a hold will be placed on enrollment and special arrangements must be made with the Graduate School. Consult the Graduate School Bulletin for more information.

G. FINAL ORAL EXAMINATION

MS and Ph.D. candidates must stand for a final oral examination in defense of the thesis. In preparation, you must submit the necessary forms and assemble your examining committee. You are responsible for obtaining grades for courses that have incompletes, such as seminars or special topics. If your actual degree program differs from the program that you filed with the Graduate School, you can petition to make the appropriate changes or additions. A list of the required forms and a timetable for submitting the necessary forms is located on page 33 of this bulletin.

Copies of your M.S. or Ph.D. thesis should be given to

- your advisor(s) - bound copy unless otherwise requested
- the Department - bound copy
- the Graduate School - 1 unbound copy that must contain the signature page

M.S. Degree - The thesis is read by an examining committee that consists of at least two representatives from the major field and one from the minor/supporting program. The final oral covers any work fundamental to the major and minor/supporting fields. The final oral is attended only by you and your examining committee (3 faculty; 4 if coadvised).

Ph.D. Degree - The final examining committee consists of at least four members, three from your major field and one from the minor/supporting program. If you have a co-advisor(s), all advisors count as one, so you will need a total of 5 committee members. You are to indicate who will serve as chair. He/she cannot be your advisor or co-advisor. The chair need not be a thesis reviewer and need not be from the major field. You also choose the thesis reviewers. At minimum, reviewers include the advisor(s), one additional major field examiner, and one examiner from the minor/supporting program (3 total). Consult the Graduate School Bulletin for details.

Committee members can be any faculty with Graduate Education Responsibilities in Chemical Engineering or Materials Science (Twin Cities). The faculty roster can be found at: www.grad.umn.edu/faculty_rosters/faculty.html. Any faculty listed on your major's roster can count as a major or a supporting committee member, **but at least one members of your committee MUST be faculty from the Chemical Engineering and Materials Science Department.**

Note: You must enroll the title of your thesis with the Graduate School (Thesis Proposal Form). Once this form is approved you can request the grad packet, which includes the thesis reviewers report form, and other forms necessary to graduate. Instructions for the preparation of the thesis, including format and binding specifications and advisor's signature requirements, are available on the Graduate School website.

You must schedule your final oral examination in the Graduate School after the thesis has been judged ready for defense. Note that scheduling should be done at least one week prior to the exam date.

The final oral examination is made up of two parts. The first is a public seminar. The second allows your committee to examine the thesis and your training in more detail. It is open to the public. Please give copies of public invitations to Julie Prince.

H. SIGNING OUT AFTER COMPLETING THE DEGREE

The semester before your last semester to get started on your termination paperwork. See Mary Nissen in Room 151 for the paperwork. This will include a Check-out/Termination form. You are responsible for obtaining signatures before you leave for the following:

- disposal of (or transfer of) all chemicals, with approval of your group's safety officer;
- closing your computer accounts;
- returning keys; and
- giving your forwarding address to Mary Nissen and Julie Prince

V. USEFUL GENERAL INFORMATION

A. BOOKSTORE

The campus bookstore is located in Coffman Memorial Union – Mpls Campus, and at the St. Paul Student Center. Textbooks, computers, computer supplies, and general school supplies are also available from the bookstore. For additional information visit: www.bookstore.umn.edu/.

B. BUDGET “EFS” NUMBERS

Most advisors will give you an EFS number when you begin work on a research project. This will allow you to charge project-related supplies and expenses. Please use the complete number each time -- and print clearly. Also note that your advisor(s) will expect you to use these EFS numbers responsibly. Your advisor(s) must raise funds to support these and will not appreciate unnecessary expenses.

C. CAREER SERVICES

IT Career Services provides a variety of services to graduate students and post-docs seeking career or job search information. The office is host to on-campus interviews with employers from a variety of employment sectors. The office posts job opportunities on line, and assists job seekers with all aspects of the job search process. Scheduled workshops or individual appointments are available to provide information and assistance in writing resumes/CVs, job search correspondence, building interviewing skills, and developing an individual job search strategy.

The IT Career Services is located in Lind 50, 624-4090. The office maintains an extensive employer information library, and a career and employment resource center. For more information, please refer to the website at <http://ccse.umn.edu/index.php> for access to specialized information for graduate and professional school students, annual career fairs/events and other career related resources.

The CEMS Department maintains a folder containing letters and postings from Universities and companies. Most are for academic positions. This folder is located in Amundson 151. Check with one of the office staff if you wish to check it out for 1-2 hours.

D. CEMS-COUNCIL OF GRADUATE STUDENTS

The (CEMS-CGS) was formed to improve communication between faculty and graduate students. In the past, the CEMS-CGS has held career forums to educate students on different career options, worked with the Directors of Graduate Study to improve teaching assistant assignments, helped address student concerns regarding the availability of computer facilities, and developed a primer for second-year graduate students preparing for their oral exams. In the coming year, the CEMS-CGS will continue to focus on these issues as well as develop an interactive online forum for all CEMS students. The CEMS-CGS also encourages CEMS students to serve in the University-wide student government, such as the Council of Graduate Students (COGS), the Graduate and Professional Student Assembly (GAPSA), the Student Senate, and various University committees.

All CEMS graduate students are encouraged to participate in the CEMS-CGS and are eligible for full membership. Officer and class-year representative elections are held in late January. The Current CEMS-CGS will notify you of any elections.

E. CHANGE-OF-ADDRESS

First, inform Mary Nissen in CEMS Accounting if you have changes in your home or office addresses, phone numbers or preferred email. Second, update at OneStop, under Student Record Tools, click on “Personal Information” and use the pulldown MENU to select the area you want to update. Third, update your information on the CEMS directory – logon to CEMS with your x500 and password.

F. COMMONS ROOM

The Commons Room (Amundson 150) is shared by CEMS faculty, staff, and graduate students. The Commons Room is for relaxing, reading, eating, and socializing. You will find coffee, a refrigerator, microwaves, and a sink for your convenience. A small journal and book library is available for students use. Please use it and please keep the collection better organized than you found it.

There are a few common-sense guidelines in the Commons Room:

- Provide your own utensils and cups.
- If the coffee runs out, please make more. Ask someone from the main office for guidance.
- **Please clean up after yourself.** This includes papers, chairs, and washing off tables. This is a private room so it is not cleaned by the University.
- Please help keep both the microwaves, refrigerator and the counter-top and sink areas clean.
- The refrigerator will be cleaned weekly. Food, including containers, left after 4:30 on Friday will be thrown out.

G. COMPUTERS

All graduate students and all undergraduate students in the College of Science and Engineering (CSE) pay a CSE “College Fee.” Portions of this fee are used to pay for computing equipment and software in Collegiate computer labs, including the CEMS Undergraduate Computing Lab in 132 Amundson and the CEMS Graduate Student Computing Lab in 185 Amundson.

Students in CSE may utilize additional computer labs maintained by CSE Labs. To obtain an CSE Labs account or to find computer lab locations outside CEMS, visit the CSE Labs website, <http://cselabs.umn.edu/>.

The Minnesota Supercomputing Institute (MSI) is located in Walter Library and provides advanced computing capabilities. It is open to any University of Minnesota researcher; graduate students must obtain approval from their advisor before using resources at MSI. You may find out more about MSI by visiting their homepage, www.msi.umn.edu/.

First-year graduate students are encouraged to use the CEMS Graduate Student Computing Lab in 185 Amundson Hall, where eleven desktop computers are available. Graduate students may also use computers in the CEMS Undergraduate Student Computer Lab in 132 Amundson, where competition for computers might be more intense.

There are two printers located in 185 Amundson: Escher, an HP LaserJet 8150 black and white laserjet printer; and Frida, a Xerox color wax printer. The cost for printing to Escher is five cents per page; the cost for Frida is 25 cents per page. First-year graduate students have been granted \$20 to cover printing for the fall semester. As necessary, please deposit money to your printing account in the CEMS Main Office in 151 Amundson.

One Windows computer is attached to a scanner with a document feeder. In addition, there is a digital sender, which has the capability of scanning to e-mail or scanning to a network folder. Each of the Windows computers has Photoshop and the Standard version of Adobe Acrobat. All of the computers have writable DVD drives.

Your home directory will be automatically mapped as H:\ when you login to the CEMS Windows domain.

The storage space for your account is approximately 2GB. This is for everything stored in your Home (H:\) drive (including a Windows roaming profile, the Desktop, My Documents, etc.). Files stored on your Home Drive are backed up automatically and we recommend storing vital data to your Home (H:\) so it can be restored if necessary.

With your University UofM Google Apps account comes approximately 2GB of storage space as part of Google Docs. Google Docs is a powerful service for working collaboratively and for sharing large files within the University and those with non-University Google accounts. You can find out more about Google Apps here: <http://www.oit.umn.edu/google/>.

Another useful University service is NetFiles, which allows you to store up to 5GB of data and share files with persons inside and outside the University. This is an improving service used for working collaboratively and sharing large files. You may read more about NetFiles at the main NetFiles webpage, www.umn.edu/netfiles/

The computers in 185 Amundson are primarily intended for instructional use. You may use the computers for research or personal purposes if they are idle, but you should relinquish a computer if someone needs it for instructional or research activities.

For answers to many questions about general information technology services at the University, start browsing from www.oit.umn.edu/help/. For information specific to computing in CEMS, visit the CEMS IT Support wiki at wiki.umn.edu/view/CEMSITSupport. To request technical assistance or to request Internet access for your personal computer, visit the CEMS Intranet at <http://www.cems.umn.edu/apps/>.

H. COPYING

A large copy machine is located in Amundson 151F. This large copier is for staff only during the hours 7:45-9:00 a.m. and 3:00-4:30 p.m. A smaller color copier is located in 185 Amundson and is available at any time if you have an EFS number. Consult the staff in the main office if you need assistance in operating either copier. Only the small copier is to be used for book or journal copying. Walter Library has copy cards for purchase that can be used for library copiers.

I. ACCOUNTS

The University is in the middle of a transition from University of Minnesota “Central” email accounts to Google Apps for Education accounts. For those new to the University, a Google Mail email account will be provided for you as part of the larger suite of UofM Google Apps for Education, which includes Google Mail, Google Docs, and Google Calendar.

To learn more about Google Apps for the University of Minnesota, visit www.umn.edu/google/. In addition, the University's Office of Information Technology (OIT) will provide another account, which is often referred to as an “x.500 ID” or “Internet ID” or “Internet Account.” This account will be used for authenticating to departmental and University resources and may still include email access for some at the University.

The “Internet ID” can be used to access a considerable amount of information, it is important to select a secure password and to follow best practices for safer computing. For information regarding selecting a secure password as well as other security-related information, visit the University’s Safe Computing website, safecomputing.umn.edu.

For more information regarding University accounts, check OIT's account website by going to www.oit.umn.edu/accounts/.

For answers to many questions about general information technology services at the University, start browsing from www.oit.umn.edu/help/. For information specific to computing in CEMS, visit the CEMS IT Support wiki at wiki.umn.edu/view/CEMSITSupport. To request technical assistance or to request Internet access for your personal computer, visit the CEMS Intranet at <http://www.cems.umn.edu/apps/>.

J. FAX MACHINE

Our FAX number is (612) 626-7246. Faxes sent to you should include your name and mailbox number. An EFS number is required to send a fax long-distance. For help, ask one of the staff in Amundson 151.

K. GRIEVANCES

Graduate students may submit a grievance to the head of the Department, the DGS, or faculty members, as he/she deems appropriate. If a graduate student wishes arbitration of a grievance, the elected Departmental Grievance Committee will hear the case and recommend action.

L. HELPFUL PHONE NUMBERS - DEPARTMENT

Finance Manager for CEMS	Ted Butler.....	151T	626-5974
Assistant to Finance Manager	Rachel Surber	151Q.....	625-4071
Assistant to Finance Manager.....	Ann Tran.....	151Q.....	624-5295
Payroll and HR Manager	Mary Nissen	151U.....	625-5386
Purchasing Manager	Danny Williams.....	151R.....	625-2375
Assistant to HR Manager and Travel & Reimbursements	Jody Peper	112.....	625-4048
Graduate Studies, Asst to DGS.....	Julie Prince	289.....	625-0382
Machine Shop	Bill Gruhlke.....	361.....	625-2825
Access for Building and Office Keys	Teresa Bredahl.....	151.....	625-0154
Mail Room/Copying Help.....	Sue Wermager	151	625-0054
Undergraduate Studies, Asst to DUGS.....	Laura Ericksen.....	151.....	626-5762
ADMIRE Office: Abu Dhabi Minnesota Institute for Research Excellence	Connie Galt.....	289.....	625-9102

Assistants to:

Aydil	Connie Galt.....	289.....	625-9102
Bates.....	Marsha Riebe.....	393.....	625-4356
Bhan	C.J. Stone	443.....	624-5763
Caretta.....	Teresa Bredahl.....	151.....	625-0154
Cococcioni	C.J. Stone	443.....	624-5763
Cussler	Phil Jensen.....	151D.....	625-9075
Daoutidis.....	Phil Jensen.....	151D.....	625-9075
Derby.....	Connie Galt.....	289.....	625-9102
Dorfman	C.J. Stone	443.....	624-5763
Francis.....	Phil Jensen.....	151D.....	625-9075
Frisbie	C.J. Stone	443.....	624-5763
Gerberich	Phil Jensen.....	151D.....	625-9075
Hackel	Kaitlyn Pladson	443.....	624-5763
Holmes	C.J. Stone	443.....	624-5763
Hu.....	Kaitlyn Pladson	257	626-7630
Jalan	Teresa Bredahl.....	151.....	626-2957
Kaznessis	C.J. Stone	443.....	624-5763
Kokkoli	C.J. Stone	443.....	624-5763
Kumar	Phil Jensen.....	151D.....	625-9075
Leighton	Teresa Bredahl.....	151.....	625-0154
Lodge	Carol Makkyla.....	324 Smith.....	624-9033
Macosko.....	Susan Vikers.....	170.....	625-9075
McCormick	Phil Jensen.....	151D.....	625-9075
Mkhoyan	Teresa Bredahl.....	151.....	625-0154
Morse	Phil Jensen.....	170.....	625-9075
Schmidt	Phil Jensen.....	170.....	625-9075
Schott	Teresa Bredahl.....	151.....	625-0154
Shores.....	Phil Jensen.....	151D.....	625-9075
Smyrl.....	Phil Jensen.....	151D.....	625-9075
Srienc	Kaitlyn Pladson	443	624-5763
Tranquillo.....	Kris Govro.....	7-105 BSBE	626-3332
Tsapatsis.....	C.J. Stone	443.....	624-5763
Wentzcovitch	C.J. Stone	443.....	624-5763
Zasadzinski	Teresa Bredahl.....	151.....	626-2957
Zhang	Kaitlyn Pladson	263.....	626-0635

M. HELPFUL PHONE NUMBERS - SERVICES

CEMS IT Office, Rm. 185 Amundson	626-0712
University Information (if calling from on-campus phone)	0
University Information (from off-campus phone)	625-0000

Some services frequently used by students in CEMS are given below.

Computer, Internet and E-Mail Help Line (ADCS) Technology Helpline.....	626-4276
Chemistry Stockroom, Smith S-17	625-3329
Chemistry and Chemical Engineering Librarian, Walter Library	624-9399
Council of Graduate Students (COGS), 405 Johnston Hall.....	626-1612
Environmental Health & Safety.....	626-6002
Media Resources (equipment and projection)	625-3001

Facilities Management IT Zone:

Customer Service & Building Maintenance	624-2900
Janitorial - Supervisor (call after 3:00 p.m.).....	624-9380
Emergency Repair – After hours, weekends, holidays	625-0011
Glass Technology Services (glassblowers) 49 Smith Hall	625-9573
Graduate Student Insurance Office, N-323 Boynton Health Services.....	624-0627
Graduate Assistants HR Office (Student Help Benefits Office).....	625-6936
Graduate & Prof. Student Assembly (GAPSA), Coffman, Suite 234	625-2982
Mechanical Engineering Shop (tool & crib)	
163 Mechanical Engineering	625- 2062
Grad Student Shop, 180 Mechanical Engineering.....	625-7855
University Bindery (printing services), 2818 Como Avenue	626-0507

N. COMPUETR INFORMATION SOURCES

CEMS IT Support Wiki

This encrypted website provides web-based tools designed to enhance the administrative, teaching, and research missions of the CEMS department. It is restricted to members of the CEMS community using University of Minnesota x500 authentication in conjunction with a CEMS IT Office database. Data transfer within the site is secured using SSL encryption.

Once you login to the site from the CEMS Home – www.cems.umn.edu, you will be brought to the CEMS Intranet. Make a selection from the left hand menu or click this link to see a brief description of each application.

Computer Services – University

- **Office of Information Technology** - www.oit.umn.edu/
We oversee information technology (IT) at the University by providing guidance to central and collegiate units and managing the system-wide IT enterprise
This is a site to look at before and after you arrive on campus by clicking the link to Students.
 - Initiate your Internet ID
 - Activate your accounts for campus resources
 - Purchase certified computer bundles
 - Get your computer ready for the University network
 - Download and install antivirus software
 - Purchase discounted hardware and software
 - Learn about your internet account and passwords
 - Set-up your University email account
 - Manage your account

- **Digital Technology Center** - www.dtc.umn.edu/
The Digital Technology Center (DTC) is a hub of innovation and excellence at the University of Minnesota in the digital technologies serving the industrial, educational, and public needs of the state of Minnesota and the nation. The DTC integrates research, education, and outreach in digital design, computer graphics and visualization, telecommunications, intelligent data storage and retrieval systems, multimedia, datamining, scientific computation, and other digital technologies. The DTC's first-rate laboratory facilities offer researchers the tools to make progress in these areas. The DTC houses the Laboratory for Computational Science and

Engineering for computational science and engineering and visualization, and the Usability Laboratory for evaluations of computational solutions. Additional, specialized laboratories assist with research projects.

- **Minnesota Supercomputing Institute** - www.msi.umn.edu/
The Supercomputing Institute for Advanced Computational Research is an interdisciplinary research program spanning all colleges of the University of Minnesota. The Institute provides supercomputing resources and user support to faculty and their research groups. It is a linchpin program in the University's broad-based digital technology effort, provides a focal point for collaborative research on supercomputing within the University and the State, and provides an interdisciplinary focus for undergraduate and graduate education related to supercomputing and scientific computing. The Institute's hardware and software resources and technical support are available to researchers at the University of Minnesota and other post-secondary educational institutions in the State of Minnesota.
- **College of Science and Engineering Classrooms and Labs** - cselabs.umn.edu/
The College of Science and Engineering provides several public computer labs that are reserved for CSE students and students in other colleges who have paid the CSE technology fee. Students must open a CSE labs account in order to use these labs. This site provides information regarding CSE lab account creation, access, and use, as well as information regarding the current activity of the CSE Instructional Computing Committee.
- **University Technology Training Center** - uttc.umn.edu
The University Technology Training Center (UTTC) is the premiere source of information technology training at the University of Minnesota - Twin Cities campus. Staffed by people who actually use the software they train on, UTTC offers training on a variety of applications used by University students, staff, and faculty. Our mission is to provide the University community with:
 - Up-to-date technology training, instructor-led and online, on-demand
 - Efficient, economical learning through short, non-credit courses
 - Knowledgeable, qualified instructors in a supportive learning environment

UTTC is a part of the Office of Information Technology (OIT).

O. OTHER USEFUL INFORMATION SOURCES

Graduate Student Information Other Miscellaneous Information

- Boynton Health Services – Graduate Assistant Health Plan – www.shb.umn.edu/twincities/graduate-assistants.htm
- Center for Teaching and Learning – www1.umn.edu/ohr/teachlearn/
- The Spoken English Test for Teaching Assistants (SETTA) - www1.umn.edu/ohr/teachlearn/graduate/itap/learnaboutthesetta/index.html
- Council of Graduate Students (COGS) - www.cogs.umn.edu
- Disability Service - ds.umn.edu/
- Student Unions & Activities - sua.umn.edu/
- Graduate and Professional Student Assembly (GAPSA) - www.gapsaumn.org/
- Graduate Assistants Human Resources: Employment Services - www.umn.edu/ohr/gae
- Graduate School - www.grad.umn.edu

- Graduate School Fellowship Office – www.grad.umn.edu/fellowships
- Graduate School Forms Doctoral - www.grad.umn.edu/current_students/doctoral/index.html
- Graduate School Forms Masters - www.grad.umn.edu/current_students/masters/index.html
- Graduate School Student Services - www.grad.umn.edu/Transition/contact.html
- International Student and Scholar Services (ISSS) - www.iss.umn.edu
- Office for Equity and Diversity - www.academic.umn.edu/equity/
- OneStop Student Services (Class Schedule, Register, etc.) - onestop.umn.edu
- Student Conflict Resolution Office - www.sos.umn.edu/
- University Department Directory - www1.umn.edu/systemwide/directories/
- Womens Center - www1.umn.edu/women/

Minnesota, Minneapolis, and St. Paul

- State of Minnesota - www.state.mn.us
- City of Minneapolis - www.ci.minneapolis.mn.us/
- City of St. Paul - www.stpaul.gov/

Policies and Codes of Ethics

- Graduate School Code of Ethics - www.grad.umn.edu/Ethics/index.html
- Equity, Diversity, Equal Opportunity, and Affirmative Action - www1.umn.edu/regents/policies/administrative/Equity_Diversity_EO_AA.html
- Student Conduct Code - www1.umn.edu/regents/policies/academic/Student_Conduct_Code.html
- Student Education Records - www1.umn.edu/regents/policies/administrative/Student_Education_Records.pdf

P. LIBRARY

Walter Library is located on the Mall of the East Bank Campus. The Science and Engineering Library, located in Walter, houses all books and journals related to the science and engineering departments. You will need a student identification card to borrow books. The Digital Technology Center located at Walter Library houses several University programs such as the Minnesota Supercomputing Institute for Digital Simulation and Advanced Computation for supercomputing research, advanced networking and telecommunications laboratory, and Laboratory for Computational Science and Engineering, as well as work space for collaborations among digital technology experts from around the University and from industry.

Bookstores and Libraries, Directories

- University Bookstores - www.bookstores.umn.edu
- University Department Directory - www1.umn.edu/systemwide/syssear.html
- University Library - www.lib.umn.edu/
Workshop, Tutorials and Guides - <http://www.lib.umn.edu/services/workshops/registration>
- Minneapolis Public Library - www.mplib.org
- St. Paul Public Library - www.stpaul.lib.mn.us/

Q. PARKING AND TRANSPORTATION

Parking and Transportation Services works with local public transit providers to provide the best possible service to meet the transportation needs of the University community. The University also provides FREE shuttle service between campuses! Visit Parking Services at www1.umn.edu/pts/ For information on parking, busing, the rail, bicycle, maps, events.

Lottery for 24-Hour Contract Parking - These contracts are sold through a lottery system each semester. Sign-up for Fall is typically in mid-July, sign-up for spring – check their website. Locations may vary each quarter, but include spaces on the East Bank, West Bank, and St. Paul campuses. Information on this can be found at www1.umn.edu/pts/studentcontracts.html.

Free Night and Sunday Parking - Enter after 8 p.m. and exit before 8 a.m., Monday-Saturday. Parking is free all day on Sunday (must enter and exit on Sunday). **Exception:** During special events, patrons will be charged special event rates until 30 minutes past the start of the event. www1.umn.edu/pts/park/parkingrates.html - Scroll down to Discounted Parking for a list of participating ramps.

Free Campus Shuttle - You can get wherever you need to go at the University on the campus shuttle system. For example, the St. Paul Campus is only a 15-minute ride using the Campus Connector. All campus shuttles are free and use a color-coded bus stop mapping system. Visit www1.umn.edu/pts/bus/shuttle.html for additional information, including maps and schedules.

Metropass The Metro Transit provides most of the regular route bus service in the Twin Cities and has excellent bus service. The Twin Cities Campus Busing Guide is available from Parking and Transportation Services and Metro Transit. To learn more about the buses available to your area, call the Transit Information Center at 612-373-3333 or visit one of the campus kiosks at: Phillips-Wangensteen Building, Williamson Hall Bookstore, Parking and Transportation Services, West Bank Skyway Store, and the St. Paul Student Center. Additional information can also be found at www1.umn.edu/pts/bus/metropass.html.

U-Pass/unlimited bus rides - The U-Pass is the ultimate transit pass that provides unlimited rides 24 hours a day. It's valid on all regular metro-area bus routes, as well as express, local, limited-stop, or Downtown Zone routes. Metro Transit is the primary bus line running in the Twin Cities area, providing service to just about any destination you desire. U-Pass may not, however, be used on some special event services. To order the U-Pass go to www1.umn.edu/pts/upass.htm.

Department Parking Pass Program – A limited number of parking passes are available to students who want to park after 4:30 pm M-F or weekends. There is a \$5 charge to belong to the "Parking Program" for the entire academic year. Passes are issued on a first come, first served basis. They cannot be checked out before 2:00 p.m., and they **must** be returned by 12:00 p.m. on the following afternoon. There is a \$5 fine if the pass is not returned during the week (M-Th), \$10 if returned on Friday **before** the lottery at 2:00, **and** \$15.00 if kept over the weekend. See Teresa Bredahl in Rm. 151 Amundson to sign up for this program.

R. PHONES ON CAMPUS

Calling to another campus phone - Dial the last 5 digits of the phone number to call or fax anywhere on campus

Calling to an off-campus phone (local calls) - Dial 8 for an outside line. You will need to dial the area code followed by the phone number, if you are calling from a different area code. Local calls from/to the following area codes are “Not” considered long distance. If you dial from an area code listed below to an area code that is not listed below, you will be charged long-distance rates.

- Greater Minneapolis is 612 area code
- Southern suburb of Minneapolis is 952
- Northern suburb of Minneapolis is 763
- St. Paul is 651

Long Distance - Rules and instructions for dialing long distance can be found in the front pages of the UM Phone Book. Personal long-distance calls **cannot** be charged to the U of M.

S. SECURITY

We are occasionally subjected to thieves who roam the halls looking for easy pickings. Do not leave your office unattended and unlocked. You are encouraged to ask politely for the identity and purpose of any stranger you encounter in the building after regular office or evening class hours.

The Security Monitor Program offers a free walking/biking escort service to and from campus locations and nearby adjacent neighborhoods. To request an escort from a trained student security monitor, please call 624-WALK shortly before your desired departure time and walk safe. Visit www1.umn.edu/police/escort.html for additional information.

T. SUPPLIES

Supplies for research from outside vendors, the University Stores, or from the University Bookstores can be ordered through Danny Williams online at www.cems.umn.edu/; after you login go to Purchasing.

If you want to purchase chemicals or supplies from the Chemistry Stockroom in Smith Hall you will need to see Ann Tran to initiate a chemistry stockroom card on your EFS number. You need advisor permission before you can obtain this card or before you can make purchases from outside vendors or University Bookstores.

U. TIMETABLE OF GRADUATE REQUIREMENTS

There are several forms you will need to complete during your studies, most of which can be downloaded from www.grad.umn.edu (under Current Students) or can be picked up in 316 Johnston Hall.

Ph.D. Students Who Entered in Fall 2011

Before or during the first 2-weeks of the fall semester of your first year.	Attend the SETTA - Spoken English Test for Teaching Assistants <i>All nonnative English speaking students or students who grew up in a home where the primary language was not English. This applies to US citizens and to those who have degrees from institutions in the United States or countries where English is the medium of instruction.</i>
November 14, 2011	Turn in completed Roster Sheet, to Julie Prince
Start of 4 th Semester (so January 2013)	Random Draw and Turn in Degree Program Form to Julie Prince
February 18, 2013	Turn in first draft of Written Exam/Research Proposal to Julie Prince
April 1, 2013	Turn in Revised Written Exam/Research Proposal, if required to Julie Prince
April – May 2013	File Written Exam Report Form (Julie Prince will give this to you after you pass the written exam).
April – May 2013	Schedule your Prelim Oral Exam with committee and schedule online with the Graduate School. You are encouraged to schedule this exam before the end of the spring semester 2013.
April – May 2013	Present your Preliminary Oral Exam for schedule date.
Within one working day of completion of the exam	File Preliminary Oral Exam form.
By End of Third Year (so Summer 2014)	File Thesis Proposal form
After Approval of Thesis Proposal form	Request Graduation Packet. This packet will contain Thesis Reviewer's Report and Application for Degree Form (among others).
First working day of the intended month of Graduation	File Application for Degree (included in the Graduation Packet)
One week prior to the final oral defense	Submit Final Oral Examination Form to the Graduate School (electronically)
Prior to your final oral exam date	Submit Thesis Reviewer's Report form. You should give readers at least 2-weeks and check with them in advance, in case they will be out-of-town, to avoid problems.
One working day following completion of the final oral defense	Submit Final Oral Examination Report Form (this will be sent to the Chair of your examining committee after you schedule exam with the Graduate School).
Last working day of the intended month of graduation	Submit the thesis abstract and one copy of the thesis, all signed by your advisor(s), plus the Microfilm Agreement Form and the Survey of Earned Doctorates PhD students can now submit their dissertation and abstracts electronically. See the Degree Completion Procedures at www.grad.umn.edu/current_students/

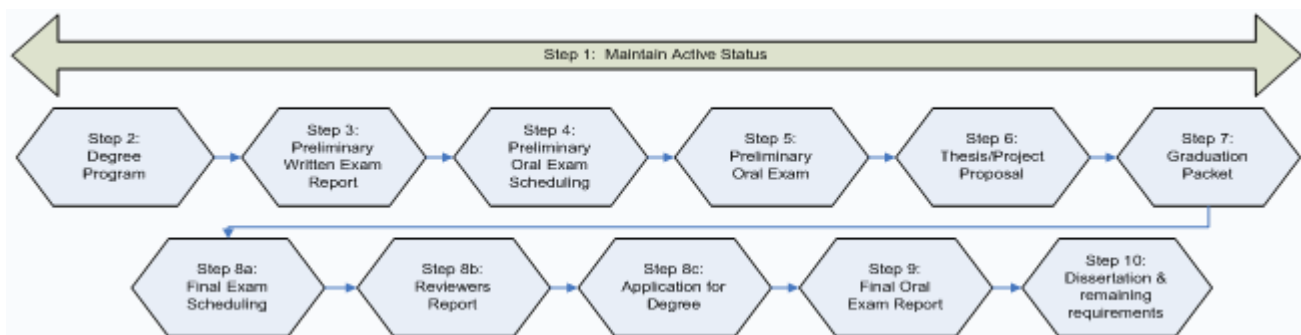
more information.

V. GRADUATE SCHOOL – DOCTORAL DEGREE-COMPLETION REQUIREMENTS

You can view this page with links to forms at:

http://www.grad.umn.edu/current_students/doctoral/phdeddchecklist.html

The following *Graduate School requirements* are to be completed in the following order. To help you keep track of your degree completion requirements, check off each step when completed, and retain this check list for your reference. For additional information about Graduate School requirements, refer to the current *Graduate School Catalog*. ****Be sure to contact your graduate program office concerning additional, program-specific requirements.****



Step 1: Maintain active student status by registering in the Graduate School every fall and spring term (including the term in which you complete all requirements and clear for your degree.)

Step 2: File your Degree Program form with the Graduate School (316 Johnston)

- The *Degree Program* form is available in 316 Johnston, and online.
- Check with your graduate office regarding program-specific deadlines for submission of the *Degree Program* form.
- The Graduate School must receive your *Degree Program* form at least one term prior to the term during which you intend to take your preliminary oral examination.
- Your *Degree Program* must be approved by the Graduate School for you to be authorized to take your preliminary oral examination.

Step 3: File your Preliminary Written Examination Report, signed by your adviser(s) and Director of Graduate Studies (DGS), with the Graduate School (316 Johnston)

- The *Preliminary Written Examination Report* is available in 316 Johnston, or online.
- The signed *Preliminary Written Examination* form must be on file with the Graduate School for you to be authorized to take your preliminary oral examination.

Step 4: Notify the Graduate School of your preliminary oral examination date

- Preliminary oral examination scheduling with the Graduate School is available online and must be completed at least one week in advance of your examination.
- The preliminary oral examination scheduling information page lists the requirements that must be met in order for the Graduate School to authorize your examination.
- Graduate School staff will send you an e-mail notification of your exam's authorization status.

Step 5: Return the Preliminary Oral Examination Report form, signed by your committee members, to the Graduate School (316 Johnston) within one business day following your examination.

- Eligibility for thesis credit registration (xxxx-8888) is dependent upon the Graduate School's receipt of the examination form verifying that you passed the examination (including pass with reservations).
- You can begin to register for thesis credits the term *after* passing the preliminary oral examination (including pass with reservations).

Step 6: File your Thesis/Project Proposal form with the Graduate School (316 Johnston)

- The *Thesis/Project Proposal* form is available in 316 Johnston or online.
- Per Graduate School guidelines, the *Thesis/Project Proposal* form should be submitted the term after passing the preliminary oral examination.
- The *Thesis/Project Proposal* form must be approved by the Graduate School in order for you to obtain the Graduation Packet (see #7).

Step 7: Obtain your Graduation Packet from the Graduate School (316 Johnston)

- About one semester before your final oral examination, obtain the Graduation Packet in 316 Johnston, or request online.

Step 8: Complete the following per your Graduation Packet instructions

Step 8a: Final oral examination scheduling with the Graduate School is available online and must be completed at least one week in advance of your examination.

- The final oral examination scheduling information page lists the requirements that must be met for the Graduate School to authorize your examination.
- Graduate School staff will send you an e-mail notification of your exam's authorization status to your U of M email address.

Step 8b Submission of the *Reviewers' Report* form to the Graduate School (316 Johnston), signed by your reviewers, is among the requirements that must be met prior to release of the *Final Examination Report* form and the Graduate School's authorization for you to take your final examination.

Step 8c The *Graduate Application for Degree* form must be submitted to the Office of the Registrar by the first business day of the month you intend to graduate.

Step 9: Submit the Final Oral Examination Report form, signed by your committee, to the Graduate School (316 Johnston)

- The signed *Final Oral Examination Report* form must be submitted by the last business day of the month you intend to graduate.

Step 10: Submit your completed dissertation/project and ensure that all remaining degree requirements are met by the last working day of the month you intend to graduate (see *Graduation Instructions* sheet, included in your graduation packet, for further details on these forms). Be sure to submit the following:

Step 10a Your dissertation/project, submitted online*

Step 10b The publishing fee, paid online with dissertation/project submission

Step 10c One signature page signed by your adviser, available online, submitted to 316 Johnston

Step 10d One copy of the title page of your dissertation/project, submitted to 316 Johnston

Step 10e Deposit Agreement for the Digital Conservancy* (*only* if electing to participate in the UDC-not required), available online, submitted to 316 Johnston

Step 10f The University of Minnesota Survey of Earned Doctorates (UMNSED), completed online.

*Students who wish to delay the release of the dissertation to ProQuest and the University Digital Conservancy may request a temporary hold using the Thesis or Dissertation Hold Request form found at, http://www.grad.umn.edu/current_students/forms/g20.pdf.

If you have questions regarding your Ph.D./Ed.D. degree progress and/or degree clearance, please contact:

Graduate Student Services and Progress - http://www.grad.umn.edu/current_students/

Degree Program Forms, Renae Faunce - gscmte@umn.edu - 612-625-5833

Preliminary Examinations, Stacia Masdsen - gradssp@umn.edu - 612-625-0168

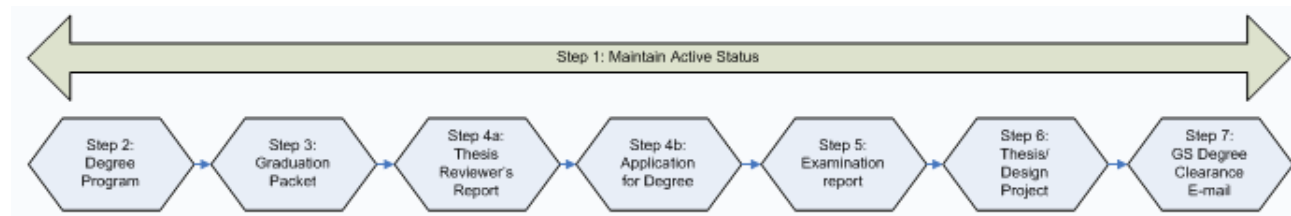
Degree Progress & Final Examinations, Stacia Madsen - gsdoc@umn.edu - 612-625-0168

W. GRADUATE SCHOOL – MASTER’S DEGREE-COMPLETION REQUIREMENTS

Master's Plan A (with thesis) or Professional Master's of Engineering (design project option)

You can view this page with links to forms at: http://www.grad.umn.edu/current_students/masters/plana.html

The following *Graduate School requirements* must be met in the following order. To help you keep track of your degree completion requirements, check off each step when completed, and retain this check list for your reference. For additional information about Graduate School requirements, refer to the current *Graduate School Catalog*. ****Be sure to contact your graduate program office concerning additional, program-specific requirements.****



Step 1: Maintain active student status by registering in the Graduate School every fall and spring term (including the term in which you complete all requirements and clear for your degree.)

Step 2: File your Degree Program form with the Graduate School (316 Johnston)

- The *Degree Program* form is available in 316 Johnston, and online.
- Check with your graduate office regarding program-specific deadlines for submission of the *Degree Program* form.
- The Graduate School must receive your *Degree Program* form at least one term prior to your anticipated term of degree clearance.
- Your *Degree Program* must be approved by the Graduate School before you can obtain your Graduation Packet and defend.

Step 3: Obtain your Graduation Packet from the Graduate School (316 Johnston)

- About one semester before your final oral examination, obtain the Graduation Packet in 316 Johnston, or request online.

Step 4: Submit the forms in the Graduation Packet per instructions

Step 4a: The *Reviewers Report* form must be signed and submitted to the Graduate School (316 Johnston) in order for you to obtain the *Examination Report* form.

Step 4b: The *Graduate Application for Degree* form must be submitted to the Office of the Registrar by the first business day of the month you intend to graduate.

Step 5: Submit the Examination Report form, signed by your committee to the Graduate School (316 Johnston)

- The signed *Examination Report* form must be submitted by the lastbusiness day of the month you intend to graduate.

Step 6: Submit your thesis* to the Graduate School.

Step 6a: A signature page with your adviser(s) signatures.

Step 6b: One additional copy of the title page must be submitted.

- All thesis materials must be submitted to the Graduate School by the lastbusiness day of the month you intend to graduate.

*Students who wish to delay the release of the thesis to ProQuest and the University Digital Conservancy may request a temporary hold using the Thesis or Dissertation Hold Request form found at, http://www.grad.umn.edu/current_students/forms/g20.pdf.

Step 7: Follow instructions provided to you by the Graduate School regarding your degree clearance

- During the 2nd or 3rd week of the month you apply to graduate, as indicated on the *Graduate Application for Degree* form (see Step 4b), you will receive an email communication from the Graduate School to your U of M email address. The email will either
 - alert you to remaining degree requirements that must be completed in order for your degree to be awarded; or
 - will confirm that you have completed all degree requirements, and inform you of the date upon which your degree will be awarded.

If you have questions regarding your master’s degree progress and/or degree clearance, please contact:
Graduate Student Services and Progress - http://www.grad.umn.edu/current_students/

Degree Program Forms, Renae Faunce - gscmte@umn.edu - 612-625-5833
Master's Degree Progress, Amber Knapp - gsmast@umn.edu - 612-625-4019

X. GRADUATE STUDENT SERVICES AND PROGRESS OFFICE STAFF

(August 2011)

Graduate Student Services and Progress Office

316 Johnston Hall
101 Pleasant Ave S.E.,
Minneapolis, MN 55455
Phone: 612.625.3490
Fax: 612.625.6855

Hours of operation:
Monday-Friday
8:00am-4:30pm

Amber Knapp, Coordinator, Master's Degree Services

Phone: 612.625.4019
E-mail: gsmast@umn.edu

- *Master's and Certificate degree progress and clearance*
- *Master's thesis formatting and submission questions*
- *Master's advanced status (FTE) registration applications*

Stacia Madsen, Coordinator, Doctoral Degree Services

Phone: 612.625.0168
E-mail: gsdoc@umn.edu

- *Doctoral degree progress and clearance*
- *Doctoral final oral exam scheduling*
- *Dissertation formatting and submission questions*
- *Registration exception requests*
- *>75% graduate assistantship appointment requests*
- ***Preliminary oral exam scheduling and clearance: gradssp@umn.edu***

Renae Faunce, Coordinator, Graduate Student Services

Phone: 612.625.5833
E-mail: gscmte@umn.edu

- *Committee substitution requests*
- *Degree Program and Thesis Proposal approvals*
- *Graduate School time extension petitions*

Karen Starry, Director

Phone: 612.625.2815
E-mail: starry@umn.edu