Dear Chemical Engineering Graduate Students:

It is our great pleasure to welcome you to a new year at Stanford, and for those of you joining us for the first time in 2017-2018, we want to begin with some information for getting you started.

Two principal publications are the Stanford Bulletin and the Academic Calendar. Both are available online. The Bulletin is the university’s official catalog of courses, degrees, policies and University and degree requirements. Start at Stanford University’s home page, www.stanford.edu and in the search box enter ‘Explore Degrees’ and then click on the link ‘Stanford Bulletin 2017-2018’ for degree requirements, University requirements, and academic and non-academic policies and regulations as well as information of Stanford’s schools, departments, and interdisciplinary programs. If you enter the keywords ‘Explore Courses’ you will find course descriptions and class scheduling for the entire university. The key words ‘Academic Calendar’ and a click on ‘Academic Calendar 2016-2017’ will take you to the calendar with the University’s official start and end dates for the year as well as information and deadlines pertaining to registration and degree progress. Preliminary graduate study lists of at least 8 units must be filed in Axess no later than the first day of classes each quarter. Furthermore, students are expected to be aware of departmental policies, degree requirements and milestones, and deadlines. Degree progress and conferral involves students, faculty and staff, and, ultimately, the University Registrar. Students with questions should see departmental student services in the Shriram Center, room 129. Staff at the Student Services Center on the second floor of the Tresidder Union can assist with central office inquiries as well.

At Stanford University, the essential codes of conduct for students are the Fundamental Standard and the Honor Code. Both are published in the Stanford Bulletin. In addition, we print them here to highlight their central role at this university. As a condition of enrollment, you are expected to be familiar with them, and for their guidelines to be an integral component of your decision-making.

The Fundamental Standard, which is the University’s basic statement on behavioral expectations, was articulated in 1896 by Stanford’s first President, David Starr Jordan, as follows:

Students are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University.

The Honor Code is the University’s statement on academic integrity. It is essentially the application of the Fundamental Standard to academic matters. Provisions of the Honor Code date from 1921, when the honor system was established by the faculty on the Academic Council, at the request of the student body and with the approval of the University President. The Honor Code reads:

A. The Honor Code is an undertaking of the students, individually and collectively:

1. that they will not give or receive aid in examinations; that they will not give or receive unpermitted aid in class work, in the preparation of reports, or in any other work that is to be used by the instructor as the basis of grading.
2. that they will do their share and take an active part in seeing to it that others as well as themselves uphold the spirit and letter of the Honor Code.
B. The faculty, on its part, manifests its confidence in the honor of its students by refraining from proctoring examinations and from taking unusual and unreasonable precautions to prevent the forms of dishonesty mentioned above. The faculty will also avoid, as far as practicable, academic procedures that create temptations to violate the Honor Code.

C. While the faculty alone has the right and obligation to set academic requirements, the students and faculty will work together to establish optimal conditions for honorable academic work.

Further details can be found at http://judicalaffairs.stanford.edu.

This Chemical Engineering M.S. Graduate Student Handbook highlights some key university policies; however, it primarily is a compendium of department-specific policies, guidelines, and information. It discusses various University and departmental requirements, rules, procedures, and practices as they apply to chemical engineering graduate students. It is revised annually with both the first-year graduate student and the more advanced candidate in mind. We believe that these handbooks will be a useful series of publications that you should keep for reference as you work toward your degree. The information in these handbooks is to be considered supplementary to that in official university publications, which take precedence unless explicitly noted in this text or unless a particular set of circumstances is adjudicated by the faculty chair of the department or by a consensus of the department’s faculty or by an appropriate university official.

All chemical engineering graduate students should file a study list in Axess each quarter. This said, M.S. students often are not enrolled Summer Quarter; a Masters student planning not to enroll summer quarter should notify the departmental student services in advance of their departure at the end of spring quarter. International students should always discuss potential decisions for non-enrollment with both the department’s faculty advisors and student services as well as advisors at the Bechtel International Center before making final plans.

With reference to degrees progress, the phrase “units toward degree” refers to completed units for courses taken that are germane to an advanced degree in this discipline. These units are what will count toward satisfying our departmental course and unit degree requirements so long as the courses are taken for a letter grade, if offered. Units for courses in science or engineering that are not at a graduate level may count toward the department’s graduate degree requirements if approved by both the degree program chair/research advisor and the department chair. Additional courses, which are not fulfilling a course requirement for a degree in chemical engineering, may be taken with any available choice of grading basis.

For the degree progress forms and departmental milestone timelines, check in with the student services office in Shriram 129. After a degree progress form and/or petition has been completed and approved by the student’s advisor, the student should take it to the student services specialist, who will review it and make recommendations and/or approve it before presenting it as appropriate for final action, by the Department Chair and/or by other university officers. See the student services specialist for other questions as well.

We welcome any comments or suggestions you may have about the information in this book. Please direct them to ChemE Student Services.

We are glad you are among us and wish you every success in your studies.

— The Faculty, Students, and Staff in the Department of Chemical Engineering
Notes:

If you have a degree progress or administrative issue, please check-in first with departmental student services. In addition the Student Services Center (SSC), which is on the second floor of Tresidder Union, at the eastern end of the building, has representatives who can assist with many central office concerns, such as those of the Office of the University Registrar, the ID Card Office, Student Financial Services, and Financial Aid and exist to assist you and/or work in coordination with the department.

For health issues go to Vaden Health Center or online 24/7: http://wellness.stanford.edu. Housing Assignment Services is located on Serra Street, in the modular buildings located to the east of Encina Hall. The Payroll Department has moved off campus, but a representative is at the Cashier’s Office, which is across from the SSC. Student Activities, ASSU, and Religious Life are housed in the Old Union, across White Plaza from the Bookstore and the U.S. Post Office. For an urgent Land & Facilities issue after hours, e.g. overflowing toilet, call 650-723-2281. To summon the police from a campus phone, dial 9-911.

RESOURCES FOR STUDENTS, WITHIN THE DEPARTMENT

COUNSELOR

Professor Gerry Fuller is the Departmental Counselor. In this capacity, he will provide advice and perspective, and will work with you to help develop solutions. We invite you to feel free to discuss problems or concerns with him on a completely confidential basis, unless it’s a mandated reportable issue. In that case, an external counselor, such as the University Ombuds or a specialist at CAPS, might be preferred.

GRADUATE STUDENT ACTION COMMITTEE

Who are we? We are a group of Chemical Engineering graduate students working to improve the Stanford Chemical Engineering graduate school experience. Our activities are funded through the Chemical Engineering Department and Stanford grants.

Activities:
• New student orientation panels
• Qualifying exam preparation
• Faculty luncheons for first year students
• Colloquia featuring student-selected faculty speakers from outside institutions
• Alumni career perspective sessions
• Career development sessions and workshops
• Academic milestone celebrations
• Summer barbeques
• Quarterly socials
• Intramural sports

The Action Committee is always looking for new members and opportunities abound for all levels of participation. All graduate students enrolled in Chemical Engineering courses are welcome to participate in our meetings and events. You can also become involved as a group representative or member of one of our many subcommittees.
Subcommittees:

- Social Coordinators
- Student-Led Colloquia – Biotechnology, Fluids/Soft Matter, & Catalysis
- Professional Development
- New Student Orientation & Barbeque
- First Year Mentoring
- Quals Party
- First Year Faculty Luncheons
- Convocation & Research Symposium Coordinators
- Intramural Sports

**STUDENT SERVICES for the Department of Chemical Engineering**

You are encouraged to talk with student services about issues, concerns, or questions you have about degree progress, financial support, and administrative procedures. They can initiate contact with other resources for academic, financial, and personal support, such as the University Ombuds — http://www.stanford.edu/dept/ombuds/index.html — Grad Life Officers, CAPS.

**SOME MORE RESOURCES FOR GRADUATE STUDENTS**

**GATEWAY FOR NEW GRADUATE STUDENTS**

The office of the Vice Provost for Graduate Education has created a one-page index to many key resources at https://vpge.stanford.edu/gradgateway

**STUDENT SERVICES CENTER – TRESIDDER UNION**

If departmental student services is unable to resolve an administrative issue, consider going to the Student Services Center (SSC) on the second floor of Tresidder Union, at the eastern end of the building. At the SSC there are representatives from many of the central offices, such as the Office of the University Registrar, the ID Card Office, Student Financial Services, and Financial Aid to assist you.

**GRADUATE LIFE OFFICE (GLO)**

GLO is a division with the Vice Provost of Student Affairs Office and a central resource for information and advice regarding all aspect of graduate student life outside the classroom. They administer residence programs for graduate students and work closely with students and student organizations to provide advice about event planning. http://studentaffairs.stanford.edu/glo/about/who

Furthermore, they help students who experience difficulties by helping to problem solve and connecting them with other resources on campus. Staff members are available 24/7 by calling 650-723-
8222 and at the prompt enter Pager ID 25085. At the second prompt, enter the number from which you are calling and staff will return your call.

**WELLNESS NETWORK AT STANFORD UNIVERSITY**

Online, go to [http://wellness.stanford.edu](http://wellness.stanford.edu). It’s an online connection to 182 resources which include immediate help + communities of support + health and wellness

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II. **Departmental — Primarily Non-Academic**

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**FIRST YEAR of GRADUATE STUDY**

For M.S. students, their individualized graduate program is devoted to lecture classes. During the first quarter each M.S. student will work with one or more faculty advisors on the ChemE Graduate Program Committee to develop his or her proposed program of courses (totaling at least 45 units) that, in addition to the core 15 units, has a balanced, thematic focus for the 30 elective units. As part of the core, all ChemE graduate students must take CHEMENG 699 (1 unit) “Colloquium” three times.

There are two graduate engineering tuition levels: (a) tuition for 8-9-10 units and (b) tuition for an enrollment between 11 and 18 units. Masters students may change their level of enrollment on a quarterly basis. A Masters student who is well prepared for advanced level work in chemical engineering could complete all degree requirements in three quarters, including the completion of at least 45 units, by taking an average of 15 units per quarter. However, more M.S. students take 10 units per quarter, and take approximately six quarters to complete their M.S. studies. Normally, the latter enroll only during the
academic year and have other plans for the intervening summer quarter. See the Stanford Bulletin 2017-2018 on-line for the complete details of university and departmental requirements:

**M.S. DEGREE REQUIREMENTS**

**UNIVERSITY DEGREE REQUIREMENTS — MASTER'S DEGREE**

Students pursuing a M.S. must fulfill the University’s unit-based residency requirement of completing a minimum of 45 units of Stanford course work and apply for degree within the three-year candidacy period. Honors Coop M.S. students have a longer, five-year, candidacy period. See the Stanford Bulletin.

**CHEMICAL ENGINEERING DEGREE REQUIREMENTS — M.S. STUDENTS**

In summary, the requirements for a Master of Science degree in chemical engineering are

- Propose a focused course of study within the degree requirements
- Submit a “Program Proposal for a Master’s Degree” form by the first week of November
- Four (4) Chemical Engineering core graduate lecture courses selected from the CHEMENG 300 series
- Three (3) units of CHEMENG 699 Colloquium
- An additional 30 units, selected from graduate-level science or engineering lecture courses (3 units or more) in any appropriate department. Of these 30 units, 18 must be graduate-level science and engineering lecture courses. The remaining 12 units can come from a combination of the following categories:
  - An additional 3-12 units of graduate-level science and engineering lecture courses.
  - No more than 6 units of non-science and engineering lecture courses; for example, MS&E classes and CHEMENG 296 fall into this category.
  - No more than 6 units of lab courses.
  - No more than 6 units combined of research units or seminar courses on science and engineering topics under the following conditions:
    - Up to 6 units of research
    - No more than 3 of these 6 units can be taken as seminar courses; examples include: 1 unit seminar and 5 units research; 2 units seminar and 4 units research; 3 units seminar and 3 units research.
- Credit toward the required minimum of 45 completed units for the M.S. degree is not given for Chemical Engineering special topics courses numbered in the 500 series.
- All courses taken for degree requirements must be taken for a letter grade, if offered
- Maintain a GPA of 3.0 or above
- Submit approved degree progress forms in a timely manner

Plus fulfilling any other applicable university and departmental requirements.

For a complete discussion of all requirements, consult the Stanford Bulletin 2016-2017 and discuss administrative degree progress components with the department’s student services manager and, as needed, the Registrar’s office representative at the Student Services Center, Tresidder Union.

All M.S. programs must be reviewed and given final approval by the M.S. adviser and the Graduate Program Committee chair no later than the quarter prior to degree conferral, in order to permit
amendment of the final quarter’s study list if the faculty deem this necessary. Students with questions should contact student services. Minimum Grade Requirement: Any course used to satisfy the 45-unit minimum for the M.S. degree must be taken for a letter grade, if offered. An overall grade point average (GPA) of 3.0 must be maintained for these courses.

**CHEMICAL ENGINEERING ADVANCED DEGREE CORE COURSES**

- CHEMENG 300 – Applied Mathematics in the Chemical and Biological Sciences (3 units)
- CHEMENG 310 – Microhydrodynamics (3 units)
- CHEMENG 320 – Chemical Kinetics and Reaction Engineering (3 units)
- CHEMENG 340 – Molecular Thermodynamics (3 units)
- CHEMENG 345 – Fundamentals and Applications of Spectroscopy (3 units)
- CHEMENG 355 – Advanced Biochemical Engineering (3 units)

If a student thinks that a chemical engineering Core Course (listed above) would repeat material covered in a previously completed graduate-level course, he or she should discuss the content of previous work with the Graduate Program Chair, currently Professor Jens Norskov. A student may submit a petition to waive a required core course to ChemE student services, for evaluation by the Chemical Engineering Graduate Program Committee and/or Department Chair. Approval of this type of petition means that the student will be granted a waiver from a specific core course requirement; however, departmental approval will not translate into a decrease in the number of lecture course units required for a degree, but it will allow the student greater flexibility in course selection.

**COLLOQUIA**

CHEMENG 699 – Chemical Engineering Colloquium (1 unit) offered Aut, Win, & Spr. quarters.

*Each M.S. and Ph.D. Chemical Engineering graduate student is expected to participate in the departmental colloquia throughout the entire time he or she is pursuing his or her advanced degree.*

One of the purposes of the departmental colloquia is to provide opportunities for the ChemE community of students and faculty to come together on a regular basis and to learn about research activities in industry, at other universities, and in research groups within the department. Speakers include outside researchers, Stanford faculty, and advanced doctoral students. This weekly seminar provides exposure and excellent opportunities for strengthening professional networks. Regular attendance is expected of all graduate students, regardless of year of study. These seminars are held during the academic year, and all should reserve Monday at 4:00 p.m. for this purpose, i.e. both M.S. and Ph.D. students should include CHEMENG 699 (1 unit) in their study lists each quarter during Autumn, Winter, and Spring quarters. See ChemE Student Services in order to petition for a study list waiver. (See REGISTRATION)
SUGGESTED ELECTIVES

Beyond the required chemical engineering core lecture courses, the remaining lecture courses to fulfill the minimum 45 unit course requirement may be chosen, with advisor approval, from the graduate level science and engineering courses in any department and, by petition to the Chair of the Department of Chemical Engineering, from upper-division undergraduate courses in science and engineering.

M.S. students need to select 30 units of graduate electives in science and engineering that contribute to the thematic focus of their M.S. program proposal as well as planning for at least four (4) graduate core CHEMENG 300 level courses and three (3) quarters of CHEMENG 699 “Colloquium.”

The following is a partial list of courses and electives which students in the ChE department have found interesting and useful in the past. The list is divided into five thematic categories. This list is by no means exhaustive; a partial list of those being offered in 2016-2017 is published; see “Explore Degrees > Stanford Bulletin > School of Engineering > Chemical Engineering > Related Courses. Furthermore, students are encouraged to follow their own interests and goals in selecting their elective courses from the wide variety of graduate classes offered at Stanford. Look for courses designated by the departments as “graduate courses.” Normally, they are numbered at the 200 level or above. For course descriptions and quarter search in “Explore Courses” for 2016-2017 offerings: course descriptions, quarters, days, and times.

Biochemistry and Bioengineering

CHEMENG 281 – Biochemistry I (3 units)
CHEMENG 274 – Environmental Microbiology
CHEMENG 283 – Biochemistry II (3 units)
CHEMENG 450 – Advances in Biotechnology (3 units)
CHEMENG 454 – Metabolic Engineering Method Applications (3 units)
CHEMENG 456 – Microbial Bioenergy Systems
CHEMENG 459 – Frontiers in Interdisciplinary Biosciences (1 unit)
CHEMENG 468 – Advanced Transport Topics in Complex Fluids and Biological Systems
BIOPHYS 228 – Computational Structural Biology (3 units) – same as SBIIO 228
BIOPHYS 241 – Biological Macromolecules (3-5 units) – same as BIOC 241 & SBIIO 241
BIOSCI 203 – Advanced Genetics (human) – less useful than 133
BIOC 133 – Genetics of Prokaryotes (3 units)
BIOE 331 – Protein Engineering (3 units)
BIO 217 – Neuronal Biophysics (4 units)
BIO 230 – Molecular and Cellular Immunology (4 or 5 units)
CBIO 241 – Molecular, Cellular, and Genetic Basis of Cancer (3 units)
MCP 256 – How Cells Work: Energetics, Compartments, and Coupling in Cell Biology (4 units)
MPHA 210 – Signal Transduction Pathways and Networks (4 units)
MPHA 240 – Drug Discovery (4 units)
MPHA 260 – Quantitative Chemical Biology (4 units)
SBIIO 228 – Computational Structural Biology (3 units)
SBIIO 241 – Biological Macromolecules (3-5 units)

Microelectronics

AA 218 – Introduction to Symmetry Analysis (3 units)
EE 212 – Integrated Circuit Fabrication Processes (3 units)
EE 216 – Principles and Models of semiconductor Devices (3 units)
EE 228 – Basic Physics for Solid State Electronics (3 units)
EE 311 – Advanced Integrated Circuit Fabrication Processes (3 units)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CME 200</td>
<td>Linear Algebra with Application to Engineering Computations</td>
<td>3</td>
</tr>
<tr>
<td>CME 204</td>
<td>Partial Differential Equations in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CME 206</td>
<td>Introduction to Numerical Methods for Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CME 212</td>
<td>Introduction to Large-Scale Computing in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CME 332</td>
<td>Computational Methods for Scientific Reasoning and Discovery</td>
<td>3</td>
</tr>
<tr>
<td>CME 340</td>
<td>Computational Methods in Data Mining</td>
<td></td>
</tr>
<tr>
<td>ME 338A</td>
<td>Continuum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 351A</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 457</td>
<td>Fluid Flow in Microdevices</td>
<td>3</td>
</tr>
<tr>
<td>ME 469A</td>
<td>Computational Methods in Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 338A</td>
<td>Continuum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 351A</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 457</td>
<td>Fluid Flow in Microdevices</td>
<td>3</td>
</tr>
<tr>
<td>ME 469A</td>
<td>Computational Methods in Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 469A</td>
<td>Computational Methods in Fluid Mechanics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Fluid Mechanics, Applied Mathematics, and Numerical Analysis**
- CHEMENG 462 – Dynamics of Complex Liquids (3 units)
- CHEMENG 468 – Advanced Transport Topics in Complex Fluids and Biological Systems (3 units)
- AA 218 – Introduction to Symmetry Analysis (3 units)
- CME 200 – Linear Algebra with Application to Engineering Computations (3 units)
- CME 204 – Partial Differential Equations in Engineering (3 units)
- CME 206 – Introduction to Numerical Methods for Engineering (3 units)
- CME 208 – Mathematical Programming and Combinatorial Optimization (3 units)
- CME 210 – Multiscale Methods in Engineering (3 units)
- CME 212 – Introduction to Large-Scale Computing in Engineering (3 units)
- CME 332 – Computational Methods for Scientific Reasoning and Discovery (3 units)
- CME 340 – Computational Methods in Data Mining
- ME 338A – Continuum Mechanics (3 units each)
- ME 351A – Fluid Mechanics (3 units)
- ME 457 – Fluid Flow in Microdevices (3 units)
- ME 469A – Computational Methods in Fluid Mechanics (3 units each)

**Materials Science**
- CHEMENG 260 – Polymer Science and Engineering (3 units)
- CHEMENG 442 – Structure and Reactivity of Solid Surfaces (3 units)
- CHEMENG 444 – Quantum Simulations of Molecules and Materials (3 units)
- CHEMENG 460 – Polymer Surfaces and Interfaces (3 units)
- CHEMENG 461 – Polymeric Materials in Medical Devices (3 units)
- CHEMENG 464 – Polymer Chemistry (3 units)
- CHEMENG 466 – Polymer Physics (3 units)
- MATSCI 210 – Organic Materials (3 units)
- MATSCI 251 – Microstructure and Mechanical Properties (3 units)
- MATSCI 316 – Nanoscale Science, Engineering, and Technology (3 units)
- MATSCI 320 – Nanocharacterization of Materials (3 units)
- MATSCI 323 – Thin Film and Interface Microanalysis (3 units)
- MATSCI 343 – Organic Semiconductors for Electronics and Photonics (3 units)
- MATSCI 380 – Molecular Biomaterials (3 units)

**General Interest**
- APPPHYS 207 – Laboratory Electronics (3 units)
- CHEM 221 – Advanced Organic Chemistry (3 units)
- CHEM 271 – Advanced Physical Chemistry (Quantum Mechanics) (3 units)
- CHEM 273 – Advanced Physical Chemistry (Angular Momentum, etc.) (3 units)
REGISTRATION

All students seeking a degree need to register in a timely manner each quarter, including the quarter of degree conferral. Matriculated students register by filing study lists on line, in Axess, for the total number of units that is equal to the level of tuition paid, awarded, or allowed. All students should verify that they have the correct number of total units each quarter. Timeliness and accuracy of study lists are the responsibility of the student. Missed deadlines and inaccurate study lists can result in very serious consequences.

Most M.S. students will have 10 unit study lists, and some M.S. students will have study lists of between 11 and 18 units. Any student with administrative questions or in doubt should talk with the Chemical Engineering student services promptly and in the first week of the quarter.

See STUDY LIST COMPOSITION AND PRIORITIES below.

AXESS

Axess is a portal that allows students, faculty, and staff to access portions of the online PeopleSoft Student Administration system. The following discussion is about Axess for Students; some other versions are Axess for Faculty and Axess for SA staff. [SA = Student Affairs] Through Axess, students can file their study lists, view and print an unofficial transcript, order an official transcript, apply for housing, update personal information, view their financial aid and university bill, apply to graduate, and more.

Once you and your advisor have determined your program, you register for courses by submitting a study list via Stanford's on-line registration system Axess. Axess may be reached at http://axess.stanford.edu.

Note: An "independent study" course is one with one catalog/course number and multiple instructors, each of who is independently responsible for the students they are mentoring (e.g. CHEMENG 600). Students must ensure that they sign up for the correct instructor because it is time consuming or impossible for the student to obtain approval from the Registrar to change instructors after the quarter’s study list deadline.

STUDY LIST COMPOSITION AND PRIORITIES

The minimum full-time, graduate, engineering tuition rate is for study lists of 8, 9, 10 units. Enrolling for 10 units is the norm for chemical engineering graduate students. Every student with a 50% assistantship should have a 10-unit study lists; they may not have more units. Students should discuss their proposed plans with ChemE student services if they are considering enrolling in fewer than 10 units. Graduate students with study lists with less than eight (8) units cannot be certified as full-time students. International students, with few exceptions, must maintain full-time status if they wish to continue a student status.

The regular full-time, graduate, engineering tuition rate is for study lists of 11-18 units. If you have questions, consult with the ChemE student services manager.
Here are the priorities for putting courses on a study list:

**Autumn Quarter – Masters:**
(Assume is first quarter)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Priority</th>
<th>Priority Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qtr. 1</td>
<td>(1)</td>
<td>list lecture courses</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td>list CHEMENG 699 – “Colloquium” if 10th unit available</td>
</tr>
<tr>
<td>Qtr. 2</td>
<td>Same as 1st quarter</td>
<td></td>
</tr>
</tbody>
</table>

**Spring M.S. students:**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Priority</th>
<th>Priority Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qtr. 3</td>
<td>(1)</td>
<td>list lecture courses (assuming no research units)</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td>list CHEMENG 699 — “Colloquium”</td>
</tr>
</tbody>
</table>

**Summer Quarter**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Priority</th>
<th>Priority Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qtr. 4</td>
<td>Same as 3rd quarter, except no CHEMENG 699 – not offered Summer Quarter</td>
<td></td>
</tr>
</tbody>
</table>

**With lecture courses**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qtr. 5+</td>
<td>Same as 3rd quarter.</td>
</tr>
</tbody>
</table>

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**CONFERRAL OF DEGREES**

Students pursuing a Master of Science degree have a three-year candidacy period in which to complete their degree requirements, except for M.S. students in the SCPD Honors Coop program. These part-time graduate students have a five-year candidacy period. A degree candidate should contact ChemE student services before the expiration of his/her candidacy if s/he anticipates a need to petition for an extension of candidacy.

It is the student’s responsibility to notify both Chemical Engineering Student Services and the University Registrar in a timely manner that he or she wishes to have a degree conferred. If there is the reasonable likelihood that you will complete your degree requirements by the end of a particular quarter, you should go ahead and apply in Axess to graduate that quarter before the deadline. There is no penalty for withdrawing an application to graduate in the last weeks or days of the quarter.

**For the department:** Schedule an appointment with ChemE student services in the quarter prior to the quarter at the end of which the degree is to be conferred, in order to verify that all departmental requirements could be met. In other words, see the student services specialist in your penultimate quarter, to review and update as necessary all degree progress milestones and forms. Any revised degree programs and degree progress forms will need the appropriate faculty and staff approvals.

**To notify the Registrar:** In Axess, submit an Application to Graduate for Advanced Degrees. See the University’s academic calendar for application deadlines. Then, after the application deadline, the Registrar will forward to the department the quarter’s Recommendation for Conferral of Degree lists with everyone who has applied for a degree. If the student has satisfied all departmental degree requirements, the faculty recommends degree conferral. If the student has not completed all degree requirements by the end of the quarter for which application was made, conferral is denied, and the student’s application is not carried over to any subsequent quarter. The student must re-apply in Axess when ready.
CERTIFICATION OF COMPLETION OF DEGREE REQUIREMENTS

If you need to prove that you have completed all your degree requirements (in your last quarter and before the official degree conferral date at the beginning of the following quarter), contact the Registrar’s Office, e.g., if proof of completion is necessary in order to start a job.

After your degree is officially conferred, typically one to two weeks into the following quarter, this fact and the date will be on your Stanford transcript. There is no cost associated with requesting Stanford transcripts because you paid a one-time, life-long document fee when you first enrolled. Alums can order transcripts through Axess for the first five years after the last quarter of attendance. Thereafter, a transcript request form is available at http://registrar.stanford.edu. Click on “Alumni.”

Degree verification has been outsourced to the National Student Clearinghouse and is available at http://www.degreeverify.org. Any party (employer, insurance company, etc.) may request confirmation of degree conferral.

REGISTRATION STATUS

Some M.S. students register at the 11-18-unit tuition rate. Most are registered at the 8-9-10 unit tuition rate. Registration is quarter by quarter, and a M.S. student can change his or her level of enrollment from quarter to quarter. M.S. students generally do not enroll for Summer quarter, as few lecture course are offered in that quarter. In addition, M.S. students in their final quarter may petition to register for less than a full-time load and pay a lower tuition; see Student Services. International students are well advised to talk with the International Center in advance.

All students must be enrolled in the quarter (including Summer Quarter) in which they are having a degree conferred, regardless of the applicability of “non-enrollment policies during Summer Quarter” at other points of degree progress.
FORMS AND PETITIONS

Degree progress toward an advanced degree is documented using various forms to collect information and approval signatures. These forms are available from departmental student services or on the Publications and Forms page of the University Registrar’s website and the Chemical Engineering homepage > Information for > Current Graduate Students [cheme.stanford.edu/information-for/current-grads]. Students may preview degree progress forms online and are requested to use the department’s colored paper for forms. See student services, either for pre-printed forms or for colored paper if you wish to print your form after data entry. After students have completed the pertinent portions of forms and obtained their advisors’ approvals, all forms are to be returned Chemical Engineering Student Services. Student services (a) collects all forms to review them, prior to forwarding them for the chair’s approval, entering them online, or forwarding forms as indicated to the appropriate department, or other offices and (b) retains copies and originals as appropriate for the department’s student records of degree progress. All required milestone forms must be up-to-date and in the student’s departmental file before degree conferral. See Note 2 below.

The most frequently used forms are:

- **Degree Progress forms**
  - Program Proposal for a Master’s Degree ¹

  ¹ Due first quarter

- **Change of Status forms**
  - Graduate Program Authorization Petition
  - Application for Extension of Candidacy or Master’s Program
  - Leave of Absence Petition—All Matriculated Students
  - Chemical Engineering Laboratory Health & Safety Check-out

- **Employment Forms and Tax Information**
  - I-9 — Employment Eligibility Verification
  - SU-32 — Employee’s Tax Data
  - W-4 — Employee’s Withholding Allowance Certificate
  - Tax Information: Graduate and Postdoctoral Students

Note 1: If you have any questions regarding the use of these forms or any of the less frequently used degree progress forms, the Chemical Engineering Student Services Specialist.

Note 2: This department does not use the Academic Program Revision form. Instead, students are asked to complete a fresh form: a Program Proposal for a Master’s Degree form. This procedure ensures a clear summary of the student’s most up-to-date program on a single form.

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LEAVE OF ABSENCE

Per University policy, all students are expected to be enrolled continuously, full time, each quarter during each academic year, or to have an approved leave of absence, until all pending degrees are conferred. This policy applies to both undergraduate and graduate students. Before requesting and taking a leave of absence, all students should consult with faculty advisors and student services staff as appropriate and,
additionally, all international students should review their potential request with staff at the Bechtel
International Center. Students in the Master’s Program planning not to enroll summer quarter should notify
the department’s student services in advance.

Any requests granted for a leave of absence after the beginning of the quarter will result in a bill for pro-
rated tuition for the number of days beyond the start date for the quarter. This bill must be paid before the
student can resume studies. Any time taken for a leave of absence does not extend the candidacy time line
for an advanced degree. Faculty, at their discretion, may approve an extension of candidacy. See the
Stanford Bulletin for further information.

LABORATORY SAFETY

— Notify the faculty Safety Chiefs and your local student Safety Chief promptly
— of any incident…or concern —

A list of all Safety Chiefs is posted by each lab.

The Department of Chemical Engineering is committed to providing all of the necessary information,
support, and facilities to make your research environment a safe and productive one. Concern for personal
safety is foremost, and most policies are directed towards preventing conditions that may be health-
threatening. Also of concern are the safety of laboratory facilities and the consequences of unsafe
activities. It is each individual's responsibility to create a safe working environment, but as aids to
help ensure safe practices, the department has several safety policies.

First, there is a Faculty Safety Chief responsible for overseeing all aspects of health and safety in the
throughout the chemical engineering department. For 2016-2017 this is Professor Tom Jaramillo.

Second, there are Faculty Safety Chiefs, who are responsible for health and safety in the chemical
engineering laboratories. Check the safety box with each lab. Notify them immediately of any incidents:

Third, there is a “Student Safety Chief” in each research group. It is his/her responsibility to coordinate the
safety-related activities within the group. If you plan to do any research in a ChemE laboratory, you are
required to know who the safety chiefs are and how to contact him or her in an emergency. If you have
routine questions or comments, discuss them with your group’s Student Safety Chief.

Fourth, if you are not associated with a research group, contact the department’s Faculty Safety Chief:
Professor Thomas Jaramillo – Shriram room 305; tel: 650-498-6879; email: jaramillo@stanford.edu

Fifth, the department holds periodic safety-training meetings. Completion of appropriate training is
mandatory for all graduate students, postdocs, faculty, and staff who work in the department. If you are
unable to attend one of these meetings, it is your responsibility to complete any required on-line training
program. Contact student services in Shriram 129 for details

Sixth, we have periodic safety tours/inspections when the Safety Chiefs from all research groups gather
together and go through all laboratories associated with Chemical Engineering faculty.

Seventh, there is a required Health and Safety Checkout Procedure form for all departing
postdoctoral fellows, graduate students, and undergraduates, who have worked in a chemical
engineering lab. Completed and approved forms must be returned to the student services manager before departure from campus and/or degree conferral.

Eighth, the Stanford University Fire Marshall and other representatives of regulatory agencies conduct periodic inspections of all laboratories, offices, and public spaces in the department. Everyone is expected to cooperate with and facilitate these visits and any corrective action indicated in their reports.

vca—10/04/17