The Voiland School of Chemical Engineering and Bioengineering Graduate Student Handbook
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New Student Check-In

When you arrive in Pullman you should check in with the department in Wegner 105. In order to receive stipend checks, each student must have a social security number, a local (in-state) address, and an I-9 Employment Eligibility Verification completed within the WSU Workday system.

Getting Paid
New students who are on appointment -- that is those who have been offered a Research Assistantship (RA) or a Teaching Assistantship (TA) and those who will be paid on an hourly basis -- are considered employees of the university. Consequently it is necessary to have a social security number in order to fill out an I-9 form and a W-4 form.

Social Security Number
New international graduate students who do not have a social security number should apply for one immediately. If you don't have the chance to apply during orientation, the nearest Social Security Office is located in Lewiston Idaho. The Lewiston Office, located at 1617 19th Avenue, is open weekdays, phone: (208) 746-2995. When applying for your social security number, OBTAIN A COPY OF YOUR RECEIPT.

I-9 Form
New students who have never been employed at WSU before, must fill out an I-9 form within Workday and present the required identification at the Voiland School office. Check the list of acceptable documents in the back of this handbook (Appendix D). Federal Law requires us to personally view your documents.

W-4 Form
All newly employed graduate students must complete a W-4 form. A copy of the W-4 can be obtained through the Workday system. By state law, all students who are on appointment must live in the state of Washington. Non-resident graduate students on assistantship appointments are eligible for a non-resident waiver for the out-of-state portion of tuition during the first year they are on assistantship appointment at WSU. During that first year, students are responsible for taking all necessary steps to establish legal residency in the state of Washington. If residency is not established, non-resident U.S. Citizen or Permanent Resident graduate students will be responsible for non-resident tuition after their first academic year. International students are provided an out-of-state tuition waiver with their assistantship appointment throughout their academic career.

Addresses and Phone Numbers:
Each individual is responsible for keeping his/her contact information (mailing address, phone number, etc.) current with the university. Changes can be made via your MyWSU account.
Tuition/Fees & Training:

All Self-Funded students are responsible for paying all student fees and tuition.

Students whom are on an appointment are personally responsible for paying student and activity fees and residual tuition. These amounts vary from year to year. You may sign up for payroll deduction to have these fees and tuition automatically deducted from your paychecks. Go to your Workday account to complete a payroll deduction request. Instructions can be found at: https://payroll.wsu.edu/graduate-student-payroll-deduction/ Be aware that in order to have payroll deduction you must be on an Assistantship (RA or TA) and be enrolled in at least 10 credits. Graduate students on appointment will receive medical insurance as a fringe benefit. Those paid on a time slip appointment, do not receive this insurance. See: https://cougarhealth.wsu.edu/studentinsurance/insurance-coverage-assistance/ for information about purchasing medical insurance in the marketplace.

Pay Periods:
For those on appointment in the fall, the hire date is August 16th (January 1st for spring semester; May 16th for summer semester). You will be paid twice per month; you will receive the paycheck for the first half of the month (1st-15th of the month) on the 25th of the month; you will receive the paycheck for the second half of the month (16th-last day of month) on the 10th of the following month. Checks are mailed to your home address or you may make arrangements for direct deposit to your bank through Workday.

Training:
The WSU Graduate School requires all graduate students to complete the Responsible Conduct of Research/Conflict of Interest online training, which takes approximately 2 hours to complete. Students awarded an assistantship must take the trainings before their appointment paperwork can be processed. International Students awarded an assistantship will have a grace period of one semester to complete the training. This is a web-based training located at: http://www.myresearch.wsu.edu

- Graduate students appointed Fall Semester will need to complete their training by September 30th
- Graduate students appointed Spring Semester will need to complete their training by January 31st
- Graduate students appointed Summer Semester will need to complete their training by June 30th

International Teaching Assistants Exam:
All International students who have been appointed a Teaching Assistantship (TA) must take the ITA Exam, offered by the Intensive American Language Center (IALC) and earn a score of at least a “4”. Those whose score is less than “4” will not receive support as a TA. For more information on this exam see link: https://ip.wsu.edu/learn-english/teaching-assistant-evaluations/
Graduate Assistantships

Many students are offered financial support as either a Research Assistant (RA) or a Teaching Assistant (TA). Such financial support, regardless of the type of appointment, should be viewed as a job which requires work in addition to the coursework and research required to complete your degree. Moreover, the work performed on the appointment may or may not be congruent with the work needed to complete the research portion of the degree. Thus, in addition to the research activities needed to complete the degree being pursued, a student appointed on a half-time RA should perform no less than 20 hours per week service for the project supporting him/her. To receive funding, students must ensure that they are enrolled in at least 10 credits of WSU coursework.

A student appointed as an RA will typically receive 11 months of support per calendar year. The actual salary paid is determined by the major advisor based on availability of sponsored program funds using a salary step schedule established by the university. As noted above, an RA is expected to work on a sponsored research project and to also make normal progress on her/his research project. The sponsored research project that supports the student may or may not be congruent with the research project being completed as part of the degree program. Like faculty, RAs are typically paid for 11 months per calendar year, with one month of vacation, including semester and summer breaks. In all cases, students should obtain permission from their major advisor before scheduling vacations. Breaks in the academic calendar occasioned by the absence of students from the campus are not University holidays. Persons with ongoing responsibilities during these periods are expected to perform such duties without regard to the absence of the students.

TA appointments only apply during the 9-month period between August 16 and May 15. Consequently, these appointments are usually supplemented by two months summer support (as an RA, time slip, or TA for summer session classes). As in the case of RAs, 20 hours/week of service are expected for a half-time TA appointment.

PhD students will receive financial support while completing their degree at WSU. However, continuation of financial support depends upon research aptitude and productivity, maintenance of a satisfactory grade-point average, academic integrity, timely progress toward degree completion, and the availability of funds. PhD students making timely progress toward their degree should plan to complete their degree within 3-5 years.

Leave and Vacation Policy: During the term of their appointments, all graduate student service appointees are expected to be at work each normal workday, including periods when the university is not in session with the exception of the legal holidays designated by the Board of Regents. Graduate Students on appointment do not earn annual leave or sick leave.
Graduate Assistant Tuition Waivers

How the Process Works:

- After you have been offered a Graduate Assistantship by the School, we will submit your appointment details within the Workday system.

- The Graduate School will review/approve the appointment, funding and waiver data.

- The Graduate School notifies Student Accounts and Scholarship Services of the amount of tuition waiver to be applied.

- Then Payroll Services will review appointment funding source before awarding Qualified Tuition Reductions (QTR tuition waiver) to Student Accounts.

- Student Accounts will post the waivers on the student’s account to apply against tuition charges. Note that you must be enrolled in 10 to 18 credits and have tuition charges for the waiver to post. Waiver does NOT cover mandatory fees. **Student is held responsible for paying required mandatory fees.**

- Scholarship Services will account for your waiver as a placeholder on your financial aid account and assume the same projected amount for the second semester. Note there are some special waivers submitted by the Graduate School directly to Scholarship Services that are posted and disbursed directly to the student’s account.

Troubleshooting:

- This waiver in conjunction with any other tuition waivers you receive cannot exceed the cost of your tuition charges. If this occurs, your tuition waiver will be reversed.

- If this waiver is applied after your financial aid has disbursed and results in an over award, you will see a swap of funding. Waiver will replace loan funding that is reversed.

If you no longer are receiving a tuition waiver, the Graduate School will notify Student Accounts and Scholarship Services of this change.

If your department has submitted your appointment details to the Graduate School, please be patient at the beginning of the semester to allow for this process to be completed. If you don’t see your waiver posted after two weeks, contact your department.
Financial Aid

Financial Aid and Number of Credits Accumulated
The Financial Aid Office continues to implement the new federal financial aid requirements regarding SAP—Satisfactory Academic Progress (SAP)—in the MyWSU system. The SAP requirements, which involve the total number of credits accumulated and the grading of those credits, are noted below:

Total Number of Credits for the Master’s Degree
Graduate School policy states the following for Master’s degrees: “Most full-time students enrolled in master’s degree programs at WSU require 2-3 years for completion of their program.” Since some master’s programs require 3 years, the Financial Aid Office has set the SAP credit limit at 72 credits for a master’s degree. Once master’s degree students exceed 72 credits, if they are receiving financial aid they will receive a notice that they are not making adequate academic progress, and they will have to appeal to have their financial aid continue. You should ensure that you do not exceed these limits. If your program requirements exceed 72 credits, please contact the Financial Aid Office: https://financialaid.wsu.edu/home/ who will assess whether the additional credits can be accommodated.

Total Number of Credits for the Doctoral Degree
Graduate School policy states the following for Doctoral degrees: “Most full-time students enrolled in doctoral degree programs at WSU require 4-6 years for completion of their program.” The Financial Aid Office has set the reasonable timeframe at 180 credits, which should cover most of our doctoral students. Once doctoral students exceed 180 credits, if they are receiving financial aid they will receive a notice that they are not making adequate academic progress, and they will have to appeal to have their financial aid continue. Again, take steps to ensure you do not exceed this limit.

X” Grade
For financial aid purposes, the “X” grade, along with the “I” (incomplete) “W” (withdrawn) and U (unsatisfactory) grades, indicates that the student is not making satisfactory academic progress toward their degree. As such, the Graduate School recommends that the X grade is not used for students who are making satisfactory academic progress in their research credits. Graduate School policy states that faculty may use the X grade in extenuating circumstances to indicate continuing progress toward completion of program requirements. The “X” grade should be changed to an “S” grade when the faculty determines that the student has successfully met the requirements or to a “U” grade in the event that the student has not met the requirements within the required timeframe. It is important to note that use of the “X” grade indicates that no credit is earned and will negatively impact the graduate student’s eligibility for financial aid.

Students who are not making satisfactory academic progress for financial aid purposes will be notified by the Office of Financial Aid and Scholarships and will need to file an appeal with the Office of Financial Aid and Scholarships in order to continue receiving financial aid.
Establishing State Residency

Graduate students who are not Washington State residents and are eligible to establish residency must complete a number of requirements **soon after their arrival on campus**. Some international students are also eligible to establish state residency depending upon their type of visa status. Washington state residency requirements are presented during New Student Orientation and are also outlined below. New students must complete the items in the checklist quickly—including obtaining a Washington State driver’s license or State ID card, registering to vote, registering your vehicle, establishing housing and a bank account in the state.

Tuition is considerably less expensive for in-state Washington residents than for out-of-state students. Residency information, deadline dates, the Residency Questionnaire and a list of required supporting documentation necessary for establishing residency for tuition-paying purposes may be found at [http://residency.wsu.edu/](http://residency.wsu.edu/)

Decisions on residence status are based on documentary evidence submitted which become a part of a student’s file and are not returned.

Beginning one year prior to the semester during which the student plans to apply for in-state residence status, the student should establish ties in Washington State. The applicable items included in the checklist should be completed **within two weeks** of arrival in Pullman. After having lived in Washington for one year, the student should submit a residency application to the Graduate School.
Policy Clarification On 700, 702 and 800 Credits

Graduate School Policy states:

702 Credit:
“The 702 credit is a Master’s Special Problems, Directed Study, and/or Examination credit. Credits are variable and grading is satisfactory/unsatisfactory (S,U). Credit is awarded for a grade of S; no credit is awarded for a grade of U. The S/U grade does not carry any quality points and is not calculated in the grade point average (GPA). Faculty should set course requirements for each semester that a student is enrolled in 702 credits, and provide an S/U grade at the end of the semester based on the student’s performance in meeting those requirements. In the event of exam failure, a U grade may be recorded for that semester’s 702 credits. Two U grades for 702 credits will lead to dismissal from the program. …”

700/800-Level Research Credit:
“Each graduate program has associated 700- (Master’s) or 800- (Doctoral) level credits for research and advanced study. The 700-level credit is for students working on their master’s research, thesis and/or examination. The 800-level credit is for doctoral research, dissertation and/or examination. Credits are variable and grading is satisfactory/unsatisfactory (S,U). Credit is awarded for a grade of S; no credit is awarded for a grade of U. The S/U grade does not carry any quality points and is not calculated in the grade point average (GPA). Faculty should set requirements for each semester that a student is enrolled in research credits, and provide an S/U grade at the end of the semester based on the student’s performance in meeting those requirements. In the event of exam failure, a U grade may be recorded for that semester’s 700 or 800 credits. Two U grades for 700 or 800 credits will lead to dismissal from the program. …”

Policy Clarification:
Because 702,700 or 800 credits are associated with students’ work on research projects or special problems/directed study, a formal course syllabus is not required; however, students are still held accountable for meeting the expectations set by the faculty who are guiding their 702, 700 or 800 work, and for the standards of conduct and the academic integrity requirements to which all WSU students are held accountable. Students found responsible for academic integrity violations in their research or special problems/directed study work for 700, 702, or 800 credits may receive a U grade for unsatisfactory progress for that semester.
Enrollment in Research Credit

The Northwest Commission on Colleges and Universities, which accredits WSU, and the federal government has defined a credit hour as:

“an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

1. One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or

2. At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution, including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.”

The 700, 702, and 800 courses in engineering are instructor-led laboratory experiences in which the instructor will supervise multiple students much like a science laboratory in an undergraduate course. Graduate students will work on appoints which may, or may not, be subsets of their graduate thesis/project work. An undergraduate will typically take 16 credits per semester, but may take as much as 18 credits. Using the Federal Definition of a credit hour, this undergraduate course load would imply that a student should spend 48 – 54 hours per week to complete their coursework, including laboratory work. Graduate students who wish to be successful should work at least as much as an undergraduate. However, those students who receive financial assistance as a TA, or other work which does not advance their thesis research, may not be able to devote this much time to coursework/laboratory work.

Consequently, chemical engineering and engineering science students working with VSCEB faculty should use the following guidelines when determining the number of ChE 700, 702, or 800 credits to enroll in:

If a graduate student is supported via funds (TA or RA) for which the work is not a subset of the student’s thesis/project work, the student should register for 10 – 12 credits (total) per semester.

If the graduate student is self-supporting, supported by funds with no service requirement, or supported by funds (typically an RA or traineeship) for which the work is a subset of the student’s thesis/project, then the student should register for 16 – 18 credits per semester, in a fashion similar to that of undergraduates.

All students should monitor the total number of credits completed to ensure that completed coursework does not impact financial aid eligibility.
Graduate Advisor/Research Project Selection

If a direct offer is not made to a student to join a specific lab/mentor, then students in the Chemical Engineering program are employed as Teaching Assistants during their first semester at WSU. This gives you, the student, time to become acquainted with the program and to make an informed selection of graduate mentor and research project. Nevertheless, it is essential that you conscientiously work toward the selection of the mentor with whom you will complete the research portion of your graduate education and the specific project on which you will work. Thus, the following procedure is designed to help you complete steps that will enable you to make a well-informed project selection decision. For those students who are participating in a training program, such as the Protein Biotechnology Training Program sponsored by the NIH, the laboratory rotation requirements of the training program supersede those described below.

These activities help you understand the range of activities in the Voiland School and to have some knowledge of the resources available in the various laboratories on which you might draw as you pursue your graduate degree. Therefore, as soon as possible after you arrive at WSU, you should arrange to meet with each potential mentor. Depending on the faculty member’s preferences, you may be asked to either meet individually with the faculty member, or she/he may arrange a time to meet with new graduate students as a group. In this meeting, the faculty members will discuss their general research program and potential research projects. To ensure that all new students meet with each potential mentor, the "Laboratory Rotation Selection Form" must be initialed by each faculty member listed. After you have visited with all the potential mentors, the form should be turned into Samantha at the end of the second week of the semester. On this form, you should list, in rank order, five faculty members with whom you would like to complete a laboratory rotation during your first semester at WSU. Should you desire rotations with faculty both in Pullman and Richland, every effort will be made to devise strategies to allow you to spend time in laboratories and to interact with faculty on the appropriate campus.

Within two weeks after submission of all rotation selection forms, the potential mentors will meet and determine laboratory rotation assignments. During the laboratory rotation, you will spend three weeks working in each of the three faculty laboratories. During this time, you are to participate in laboratory group meetings, learn about general laboratory procedures, become acquainted with graduate students working with the faculty member, and generally become more informed about the faculty member’s research, style, and typical expectations. At the same time, the faculty member and his/her current graduate students will be assessing your work ethic, background knowledge, ability to communicate, personality, etc. to determine your fit within the group.

It is your responsibility to take the steps necessary to learn the time and location for group meetings, to interact with existing group members etc.

By the end of the first week of December, you should provide a ranked list of mentors and projects for the research portion of your graduate educational experience.
Graduate Advisor/Research Project Selection
(continued)

After all new students have submitted their list of preferences, the faculty will meet to assign each student a specific project. Every attempt will be made to assign you to your first, second, or third choice. Should this not be possible, the Voiland School Director and select faculty will confer directly with you before assigning you to work on a specific project. Note, however, that only in extreme exceptional circumstances will students be allowed to work on projects funded by the School. This is, virtually all students will be expected to work on projects funded by externally sponsored grants/contracts which will pay student salaries and provide needed equipment and supplies. Alternatively, for new faculty, institutional resources provided to help initiate the faculty member’s successful career (so-called startup funds) may be used to support a student and provide supplies.

To ensure smooth and steady progress toward the degree, it is very important that you begin research as soon as possible. In cases where students delay beginning their research, completion of the thesis often significantly delays graduation.

Please refer to Appendix B in back of Handbook, for commonly asked questions you should think about when selecting your research advisor/lab.
Establishing Your Graduate Committee

If a student does not join a lab directly, the Voiland School Director will serve as the student’s advisor until a permanent chair is obtained, by the end of the first semester. Ultimately, it is the student’s responsibility to obtain a permanent chair and committee members for his/her graduate program committee.

The Advisory Committee, including the permanent chair, is appointed when the program of study is filed. This step should be completed during the student’s second semester at WSU. The graduate committee of each student shall have a minimum of three individuals who are members of the Chemical Engineering Graduate Faculty. A majority of committee members must be tenured, tenure-track or career track members of the Voiland School faculty. All committee members must hold a degree of comparable level to the degree sought by the candidate.

The fourth and subsequent committee member(s) who holds the highest appropriate degree and whose special knowledge is particularly important to the proposed program, but is not a member of the Voiland School’s graduate faculty, may also serve on the committee. Such an individual might be a faculty member from another graduate program at WSU or from another university, or an individual from an appropriate government, business or industry organization, who is not designated as an official graduate faculty. Such an individual may be nominated and approved to serve on a graduate student committee on a case-by-case basis upon written request by the Director of the Voiland School to the Dean of the Graduate School. A current curriculum vita must be included with the written request.

Committees may have more than three members; however, members must meet Graduate School policy and program bylaw guidelines. It is imperative to avoid situations which may constitute, or may be construed as, a conflict of interest when forming a graduate student’s committee. The Graduate School has the final approval for all graduate student committees.

The initial selection, or subsequent changes, of a graduate student’s committee shall be determined jointly by the student and the student’s advisor in accordance with the policy and procedures outlined in the Chemical Engineering graduate handbook at the time the student first enrolls in the chemical engineering program for which they are seeking a degree.
Expectations of Faculty Advisors and Mentors

Successful graduate programs are those with dedicated faculty and systems for advising and mentoring graduate students who need sound advice throughout their graduate career. These students deserve guidance from faculty whose interests go beyond the advisor-director role to one of teacher and mentor. Departments and programs are responsible for encouraging and ensuring effective mentorship for graduate students during the course of their studies.

A mentor assists scholarly development, contributes to intellectual stimulation, and fosters professionally enriching relationships with graduate students. A faculty mentor is a peer-to-be, one who encourages and supports independent development; one who, through insightful guidance, trust, and mutual respect, nurtures a transition from graduate student to colleague. Students should expect that mentors will interact with them on a regular basis, providing the guidance, advice, and intellectual challenge necessary to help students complete their degree programs.

Graduate students should expect that advisors and mentors will do the following:

- interact in a professional and civil manner consistent with University policies governing nondiscrimination and sexual harassment
- create an ethos of collegiality in classroom, laboratory, or studio supervisory relations that stimulates and encourages students to learn creatively and independently
- develop clear understandings about specific research expectations and responsibilities, including timelines for completion of theses or dissertations
- provide verbal or written comments and evaluation of students’ work and progress toward degree in a timely manner
- discuss laboratory, studio, or departmental authorship policy with graduate students in advance of entering into collaborative projects; and acknowledge student contributions to research presented at conferences, in professional publications, or in applications for copyrights and patents.
Graduate School Transfer Credit Policy

Courses Taken as a Graduate Student at Other Accredited Institutions of Higher Learning (Transfer Credit). Graded graduate-level course work (with a grade of B or higher) taken toward a master’s degree at an accredited institution may be used toward a doctoral degree at WSU with the approval of the student’s committee and the program director.

However, graded graduate-level course work (with a grade of B or higher) taken toward a completed master’s degree at an accredited institution may NOT be used toward another master’s degree at WSU. All other graded graduate-level course work (with a grade of B or higher) taken as a graduate student, but not taken towards a completed graduate degree, may be used toward a master’s degree or a doctoral degree at WSU with the approval of the students committee and program director. In all transfer cases, the number of such credit hours is limited to no more than half of the total graded course credits required by the program that is listed on the Program of Study. None of this credit may be applied toward another advanced degree. Individual departments/programs may choose to limit transfer credits to an amount less than what is specified above.

Generally, the student should be admitted as a degree- or non-degree-seeking graduate student at the institution in which the course was taken. Any other enrollment status will be considered on a case-by-case basis as an exception to policy; however, coursework that has been used to meet the requirements of a baccalaureate or professional degree is not transferable.

A maximum of six graduate-level credits (with a grade of B or higher) taken at an accredited institution may be used toward a graduate certificate program requiring 30 or more credits with the approval of the program and the Dean of the Graduate School. Individual certificate programs requiring 30 or more credits may choose to limit transfer credits to an amount less than six.

Transfer credits are subject to the usual time restrictions for master’s or doctoral degrees and certificates, and approval by the academic unit and the Graduate School. Credits cannot be more than six years old for a master’s or certificate program and ten years old for a doctorate program at the time of graduation.

Transfer credit is requested formally by listing the courses on the Program of Study, obtaining committee member and chair approval, and submitting it to the Graduate School for review and approval; however, preliminary determination will be made earlier upon request to the Graduate School.

Students intending to request transfer credit for their Program of Study will need to submit to the Graduate School all official transcripts from colleges or universities showing such credit. A catalog description of the course must be available either in paper form or on the institution’s website. In some cases the Graduate School may require a course syllabus. The institution from which the credits are being transferred must be accredited by a recognized accreditation association. The Graduate School will review all credits to determine eligibility for transfer.
Graduate School Transfer Credit Policy

Online coursework will be considered for transfer credit if it meets the transfer requirements stated in this policy. As with all transfer credit, Program faculty should screen and approve all courses from other colleges and universities before they are submitted to the Graduate School for transfer consideration. Pre-approval for the transfer of online courses will not be given; however, the Program and student may check with the Graduate School to determine if the online course is transferrable before it is taken.

The Dean of the Graduate School is the final authority in determining what constitutes accredited courses or schools, and in determining exceptions to this policy. Exceptions to this policy may be made by the Dean of the Graduate School on a case-by-case basis upon recommendation of the department or program. Substantial justification should be included in the exception to policy request for coursework that exceeds the maximum time limits noted for a graduate degree.

Limitations to this policy include the following:

- Extension courses, continuing education courses, special problems, special topics, thesis, workshops, and correspondence courses will not receive graduate transfer credit.

- Doctoral research credit may be transferable only under special written agreements with other universities as approved by WSU and the Dean of the Graduate School. For necessary interpretations, inquiries should be sent to the Dean of the Graduate School.

- Graduate credit from a non-accredited institution will not be accepted for transfer credit.

- Transfer credits allowed on a doctoral degree under special written agreements with other universities is subject to departmental recommendation and approval by the Dean of the Graduate School.
The B.S./Grad Program

The BS/GRAD program provides the opportunity to accelerate towards a graduate degree in chemical engineering after being in the B.S. degree in ChE at WSU.

During the Senior Year

Six credits from ChE or technical electives can be reserved for graduate credit (three each semester), by using the Graduate School’s Request for Reservation of Graduate Credit form. These six credits are then waived by the department as requirements for the B.S. degree. ChE 499 can be taken to fulfill the remaining three credits of ChE electives and the research topic can be the subject of your graduate thesis. This is an opportunity to get started on the graduate research project during the senior year.

Students interested in the B.S. / GRAD program, must apply for admission via the Graduate School’s website. https://gradschool.wsu.edu/apply/
Conversion Program

Students with a BS in chemistry or other scientific field who desire to obtain an advanced degree in Chemical Engineering are encouraged to consider the conversion program. This program enables such students to obtain a chemical engineering advanced degree with a minimal amount of extra effort.

The Conversion program is designed to accommodate individuals possessing degrees in chemistry. However, the program can also accommodate students with degrees in other scientific/engineering disciplines on an individual basis. Students seeking advanced degrees should complete the equivalent of the following undergraduate courses.

Undergraduate Courses That Satisfy Deficiencies

- Math 315—Differential Equations
- Physics 201—Physics for Engineers I
- Physics 202—Physics for Engineers II
- Chem 331—Physical Chemistry
- Chem 345—Organic Chemistry I
- ChE 201—Chemical Process Principles & Calculations
- ChE 310—Intro to Transport Processes
- ChE 321—Kinetics and Reactor Design
- ChE 332—Fluid Mechanics & Heat Transfer
- ChE 334—Chemical Engineering Separations
M.S. Program Requirements

The M.S. programs are designed to be a mixture of advanced course work and an individual research project. For those students selecting the thesis option, a major advisor and research project should be selected during your first semester. Within the second semester of your graduate studies, you should select a thesis committee and submit a Program of Study. The primary purposes of the thesis committee is to provide advice about your research project, to examine the thesis, make constructive criticisms of its content and presentation, and to administer the final oral examination. The final oral examination is normally, but not necessarily, limited to a defense of the thesis. An important component of the final examination is the presentation of a formal seminar on your research results before faculty and graduate students. The specific requirements for each of the M.S. programs offered by the department are given on the following pages.
M.S. in Chemical Engineering

THESIS PROGRAM (21 graded credits / 30 total for degree completion)

ChE 510 (Transport Phenomena) - 3 credits
ChE 596 (Research Methods) – 3 credits
ChE 527 (Thermodynamics) – 3 credits
CHE 529 (Kinetics) - 3 credits
9 additional credits in supporting courses as approved by advisor.
CHE 598 Seminar (1 credit) every semester.
CHE 700 (research credit) every semester – credit amount will vary per semester
(at least 9 credits be completed to meet graduation requirements.)

Submit program of study within second semester of enrollment.

NON-THESIS PROGRAM (26 graded credits / 30 total for degree completion)

ChE 510 or the equivalent (Transport Phenomena) - 3 credits
ChE 596 (Research Methods and Communications) – 3 credits
ChE 527 (Thermodynamics) – 3 credits
CHE 529 (Kinetics) - 3 credits
6 credits of 500 level CHE courses
8 additional credits approved by your advisor
CHE 598 Seminar (1 credit) every semester
CHE 702 (research credit) every semester – credit amount will vary per semester
(at least 4 must be completed to meet graduation requirements.)

Submit program of study within second semester of enrollment.
Ph.D. in Engineering Science

Students pursuing a degree in the Ph.D. in Engineering Science who are mentored by Voiland School faculty, should complete a program of study form by the end of their second semester of enrollment. The Engineering Science program requires a minimum total of 72 credits to be listed on the program of study, to be eligible for degree completion. These credits are made up of a minimum of 15 credits of graded coursework beyond the bachelor’s degree, with the remaining credits for seminar and/or CHE 800 research credits. Students in Engineering Science, have the option of completing one of the following, to meet the program of study requirements:

- Complete 12 of the 15 graded coursework credits, using any course (s) with an engineering prefix OR,

- Complete 9 of the 15 graded coursework credits, using any course (s) with an engineering prefix, plus 3 credits of mathematics or statistics.

The specific program of study is subject to approval from the student’s Ph.D. committee, and it is possible that the committee could require the completion of more than the minimum number of coursework credits.

When devising the advisory committee for a student who is pursuing the Engineering Science degree, the committee must consist of a minimum of 4 members with majority being approved Engineering Science faculty. A list of current approved Engineering Science can be obtained by contacting the Voiland School Graduate Coordinator.
Ph.D. in Chemical Engineering

15 graded credits / 72 credits total needed to achieve PhD degree

CHE 510 (Transport Phenomena) – 3 credits
CHE 596 (Research Methods) – 3 credits
CHE 529 (Chemical Kinetics) – 3 credits
CHE 527 (Thermodynamics) - 3 credits
3 additional credits in supporting graduate courses (500 level)
CHE 598 (Seminar) – 1 credit every semester
CHE 800 (Research) – variable credit every semester

Submit program of study within the second semester of enrollment.

Admission to Candidacy

A student must satisfy the following two requirements in order to be admitted to candidacy:

Pass a written qualifier examination (if GPA is below 3.5) based on the graduate courses taken. This examination is taken during the summer after a student has been accepted into the Ph.D. program.

Pass the preliminary (oral presentation) exam. We expect this exam to be taken before the end of a students 2nd year of graduate enrollment at WSU.
Ph.D. in Chemical Engineering

Admission and Qualification
The Voiland School does not administer a qualifying examination for admission into our doctoral program. A student holding a 4 year bachelor’s degree or the equivalent in chemical engineering or a related field is considered qualified for admission. A student who is currently in our M.S. program and who wishes to continue on into the Ph.D. degree, should make his/her intentions known to the School’s Graduate Coordinator (Samantha Bailey). The grad coordinator will help you complete the necessary paperwork to add the Ph.D. to your current academic record. Once the paperwork has been processed by the Graduate School Office and an official acceptance has been awarded, the coursework and examination requirements for the Ph.D. degree will then come into effect.

Course Requirements
The Chemical Engineering faculty, recognizing that the Ph.D. degree is a research degree, holds to the minimum course requirements set by the WSU Graduate School. That is, 15 credits of graded coursework beyond the B.S. degree in Chemical Engineering and a minimum of 20 credits in ChE 800 (research credit). Students must complete ChE 510, 596, 529, and 527 and one other supporting course approved by the graduate committee. The specific program of study is subject to approval of the student's Ph.D. committee and it is possible that the committee could require more than this minimum. Also, see policy concerning electron microscopy course (page 21). PhD students should submit a Program of Study by the end of their second semester of enrollment. This form can be found at: http://gradschool.wsu.edu/facultystaff-resources/18-2/.

Request To Use Transfer Credits
Students who have completed any of the courses listed on the program of study at other institutions may use up to 6 credits of such courses to be applied to the program of study. Students that plan on receiving credit for courses taken elsewhere must indicate this at the beginning of their residency to the Graduate Coordinator (No later than two weeks prior to the first day of the first semester). The student will bring all available materials to support their request for credit (for example transcript, syllabus, information on textbook used, description of the program where the course was taken, name and e-mail of the instructor) to a meeting with the instructor who was most recently teaching the respective course listed in the program of study, or his/her designee, for an oral review (a designee must be a Faculty member of VSCEB). This meeting will be scheduled by the Graduate Coordinator within two weeks following the student’s request for credit. The instructor or designee will interview the student regarding his/her knowledge and review any materials and information. The instructor/designee may administer a written and/or oral exam at their discretion. (Please refer to the official Transfer Credit policy on pages 15-16)
Ph.D. in Chemical Engineering

PROPOSAL WRITING EXPERIENCE REQUIREMENTS

Whether continuing in academia or moving to industry, PhD graduates will be expected to write formal research and funding proposals. The faculty has identified a need to provide additional training to PhD candidates in this area. After the student has successfully completed the preliminary exam, the committee chair will identify and communicate to the student one or more opportunities to write either an independent proposal or to collaborate on a proposal. The committee chair can solely determine the required scope and format of the proposal, or the committee chair can further request comments and suggestions from the full committee. Additionally, if the proposal is independently written by the PhD candidate and proposes future work that the student has envisioned as a result of his/her doctoral education experience the it would be appropriate to add the proposal as the last chapter of the dissertation.

WRITTEN QUALIFIER EXAM

A written qualifier examination is required for students who have not earned at least a 3.5 GPA in all courses listed on the program of study that were completed at WSU or credited from graduate courses taken elsewhere, except ChE 596. The qualifier exam will be given once a year (summer semester). The examination will consist of an open book exam, four hours in length. Candidates will answer four of the five questions from the general areas of: 1) Transport Phenomena, 2) Kinetics and Reactor Engineering, 3) Thermodynamics, 4) a topic selected by the student’s research advisory committee and 5) the student’s area of research. Students must earn a 75% to pass the exam. Those who do not pass the exam may submit an appeal to the Voiland School faculty asking to repeat the exam. The appeal must include an explanation of why the student did not pass the exam, the correct responses to all questions posed on the exam, and a description of how the student will prepare for a second exam. If approved, a second exam will be given no less than 4 months and no more than 6 months after the first exam. Students who do not successfully pass the exam will be dismissed from the PhD program.
Ph.D. in Chemical Engineering

PRELIMINARY EXAM

Students who have passed the qualifier examination or have earned a 3.5 GPA or higher as defined above and who have completed all coursework outlined on the program of study will be allowed to take the preliminary examination. We expect that all students will complete the preliminary exam before the end of their second year of graduate studies at WSU.

To prepare for the exam, the student is expected to write a proposal that describes her/his planned research in sufficient detail that the work could be understood and implemented by others. This proposal should include a literature review, a hypothesis to be tested or research questions to be answered, a description of the specific aims or objectives, specific measurable outcomes, description of the methods to be used, and expected results and impacts. The proposal may build upon and update documents prepared by the student’s major professor which were used to obtain funding for the research, but should be updated and be more specific to the work to be conducted by the student than are the documents prepared by the major professor. In this way, the student will be able to clarify, take responsibility for, and learn to communicate his/her research program.

The proposal must be written in NSF or NIH format. It is the student’s responsibility to follow recent guidelines. The proposal must exhibit significant differences and advances in knowledge from any funded project proposal under which he/she may be working. The date of the exam will be determined by the dissertation committee members. Typically, this will be no more than 3 months after the student has completed coursework required for the PhD degree, thus receiving a waiver of the written qualifier exam, or the successful completion of the written qualifier exam. The student will then defend this proposal in an oral exam. Variation from this policy will require a written appeal from the faculty advisor and will only be considered in extenuating circumstances.

Students shall pass the exam if the number of affirmative ballots is equal to or greater than the minimum listed in the table below. If the number of ballots exceeds the numbers listed in the table then a minimum of 75% of the ballots must be affirmative for the student pass.

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Ph.D. in Chemical Engineering

PRELIMINARY EXAM CONTINUED:
Should the student fail the prelim exam, a second and final attempt may be granted with the approval/recommendation of the student’s advisory committee. A second and final attempt at the prelim exam may be scheduled at least 3 months after the first exam, but no longer than 2 academic semesters. When scheduling a second exam, the scheduling form must be submitted to the Graduate School at least 15 business days in advance of the exam day. A member of the Graduate Mentor Academy will be appointed by the Graduate School and must be present at re-examination. The entire committee must be present and vote. A student who has failed two examinations will be dismissed from the Graduate School. Should there be procedural irregularities or extenuating circumstances during the first or second examination, the student has the right to appeal to the Graduate School in the event of examination failure.

What will be evaluated during the preliminary exam?

- The mechanics of technical writing
- The impact of the project summary
- The extent to which the student demonstrates an understanding of the current literature and uses this literature to formulate the hypothesis, aims, and the methods.
- The extent to which the student clearly articulates the hypothesis and/or research
- The rigor and appropriateness of the experimental plan
- The extent to which the experimental plan will test the articulated hypothesis or will answer the research questions
- The student’s ability to describe his/her research in the context of the larger search questions and societal needs
- The committee will consider the student’s performance on the entire exam when determining whether the student has passed the preliminary examination
Ph.D. in Chemical Engineering

DISSERTATION AND FINAL DEFENSE REQUIREMENTS

All doctoral programs require that a candidate prepare a dissertation. The dissertation is a scholarly, original study that represents a significant contribution to the knowledge of the chosen discipline. The student must enroll for research (800-level) credits while preparing and defending the dissertation. Approval for use of human subjects, animals, or biohazardous materials in research is required before research is initiated. If the student plans to utilize human subjects, animals or biohazardous materials for research, the student must contact the Office of Research Assurances.

The doctoral advisory committee is responsible for ensuring that the student has followed an appropriate format and that the content is acceptable. The advisory committee members must read and return drafts of dissertations to the student within a reasonable period of time. The Faculty Senate Graduate Studies Committee recommends that advisory committee members hold drafts for no longer than 30 calendar days.

Washington State University participates in the ProQuest Dissertation Publishing program and submits all dissertations to this organization for publication upon acceptance. No material in the dissertation may be restricted in any way; the dissertation must be made available through the Washington State Libraries and ProQuest for inspection by any interested parties. If copyrighted material is included in the dissertation, written permission must be obtained from the copyright owner to reproduce the material in the dissertation. Such written permission must be submitted to the Graduate School at the time of final acceptance.

A candidate for a doctoral degree must pass a final oral examination. This examination will be primarily a discussion and defense of the dissertation. However, the examination may cover the general fields of knowledge pertinent to the degree.

When Scheduling The Final Exam The Student Must:

- Have completed all graded coursework required by the program or listed on the approved Program of Study

- Be registered for a minimum of two hours of 800-level credits;

- Have passed the preliminary exam at least four months prior to scheduling the final exam. **Note:** students are expected to complete and defend their dissertation within three years of passing their preliminary exam and advancement to candidacy.

- Have a minimum cumulative GPA of 3.0 and a minimum 3.0 GPA on the Program of Study
Ph.D. in Chemical Engineering

- Student must complete the Application for Degree in myWSU. The graduation fee must be paid before the final exam is scheduled.

- Submit a Final Exam Scheduling form to the Graduate School at least 10 working days before set exam date

- Submit a draft of dissertation to the ProQuest site, at least 10 working days before set exam date

The candidate’s advisory committee is responsible for:

- Approving all aspects of the final dissertation before the student schedules the final exam. The student will only have five business days after the final exam to make any requested changes to the dissertation.

- Verifying that the student will complete all program requirements by the end of the semester in which the final exam is taken.

EXAMINATION PROCESS:
Presentations of dissertation results are public events. All faculty and students, regardless of discipline, are encouraged to attend. Audience members may be allowed to ask questions, but such questioning should not unduly influence the examination outcome.

It is acceptable to conclude the public presentation and conduct a separate examination portion with only members of the advisory committee and program graduate faculty in attendance and asking examination questions.

The examination portion of the oral exam should not exceed two-and-one-half hours.

If any advisory committee members, or graduate faculty intending to ballot, must leave the room or the online session during the examination or balloting discussion, the examination or discussion must be recessed until the faculty member returns.
EXAMINATION OUTCOME:
Student shall pass if the number of affirmative ballots is equal to or greater than the minimum listed in the table below. If the number of ballots exceeds the numbers listed in the table, then a minimum of 75% of the ballots must be affirmative for the student to pass.

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Should the student fail the final exam, a second and final attempt may be granted with the approval/recommendation of the student’s advisory committee. A second and final attempt at the final exam may be scheduled at least 3 months after the first exam, but no longer than 2 academic semesters. When scheduling a second exam, the scheduling form must be submitted to the Graduate School at least 15 business days in advance of the exam day. A member of the Graduate Mentor Academy will be appointed by the Graduate School and must be present at re-examination. The entire committee must be present and vote. A student who has failed two examinations will be dismissed from the Graduate School. Should there be procedural irregularities or extenuating circumstances during the first or second examination, the student has the right to appeal to the Graduate School in the event of examination failure.

FINAL SUBMISSION:
After successful completion of the final exam, students have 5 working days to complete the following.

- Submit final completed dissertation to ProQuest site
- Submit certificate of Earned Doctorates Survey to Graduate School (gradschool@wsu.edu)
- Submit Hold Harmless form to Graduate School (gradschool@wsu.edu)
- Submit Title, Signature and Abstract pages via a Service Request within MyWSU account.
Semester Review of Graduate Students

In accordance with university policy, all students on appointment, whether they are RAs, TAs, Fellows or Scholars, must be reviewed on at least an annual basis. The Voiland School conducts a review of graduate students every semester (excluding summer). In addition to satisfying university regulations, it is good policy to have a formal feedback mechanism so that each graduate student can gauge the faculty's perception of the progress that is being made on achieving degree objectives.

Students who have successfully passed their final exam, DO NOT need to complete a semester review for their last semester.
Departmental Policies

Use of the Copier
Your major professor may require that you make copies of journal articles, or for research purposes. VSCEB copier is located in Wegner Hall Room 105. The VSCEB copier may not be used for making personal copies.

Thesis Preparation Expenses
There are expenses associated with the preparation, duplication, and binding of your thesis. Unless these expenses are covered by a funded research grant (check with your major professor), you are expected to cover these costs. The department also requires that one copy of the thesis be bound and provided to the departmental office using the following specifications:

1. Bound in red sturdite
2. Full title of thesis, name and year on front
3. Name, degree (M.S. or Ph.D) and year on spine

Seminar Attendance
Enrollment in the graduate seminar course, ChE 598, is required for all graduate students. Students are responsible for informing the department (prior to the seminar) if they cannot attend seminar for some legitimate reason. Unexcused absences from more than one seminar per semester will result in a failing grade for the course.

Allowable Credit for Electron Microscopy Course - E Mic 586
Students who require the use of the electron microscope in their thesis work often take E Mic 586. While students may enroll for as many credits as is necessary, only one credit of E Mic 586 can be applied to a student's graduate program.

Enrollment Policies
All students must be enrolled full-time, which the university considers as 10-18 credits. See page 8 to determine the number of credits in which you should enroll in. First-year students will normally take 3-4 lecture courses each semester (typically nine or twelve credits). All students should enroll for ChE 598 (Research Seminar) for one credit. Students should enroll for as many credits of ChE 700 (Master's Research) or ChE 800 (Doctoral Research) as necessary to reach the total recommended. Students not on appointment as teaching, research, or staff assistants, and enrolling solely for the purpose of completing theses or special problems and taking final examinations, must register for a minimum of two semester hours of 700, 702, or 800 credit at Washington State University during that semester or summer session.

Graduate Course Offerings
Normally the department does not offer graduate courses in the summer. To facilitate the courses, they will be taught using videoconference technologies and delivered to Pullman and the Tri-Cities campuses. Appendix D lists a description of all the departmental graduate level courses.
**Miscellaneous Information**

**Housing**
Students interested in on-campus housing should contact WSU Housing Services at (509) 335-8625. Washington State law requires that graduate students who are university employees (RAs, TAs, etc.) must live in the state of Washington.

**Parking**
Parking permits are REQUIRED for you to park on campus. Students needing campus parking permits should contact Transportation Services which is located on the corner of Cougar Way and D Street. (509) 335-7275

**Mail**
Student mailboxes are located in Wegner 334. Official mail, messages, and notices for students will be deposited there. **PLEASE CHECK YOUR MAIL FREQUENTLY.** Personal mail and all publications should be addressed to your residence.

**Ordering Equipment/Supplies**
Nothing should be ordered unless approved by your advising professor. Students may obtain pricing information from vendors, but **ONLY office personnel may process orders.** You will receive an email message when your order arrives. All orders are delivered to the main office, except for very large pieces of equipment and gas cylinders. When ordering large pieces of equipment and gas cylinders, an alternate delivery location should be provided. A packing slip will be attached to the outside of the box when you receive the order, you must sign the packing slip to verify you picked up the package.

**Laboratory Safety**
The importance of laboratory safety cannot be overemphasized. Unannounced inspections of departmental labs and shops are conducted periodically and mandatory general meetings dealing with safety problems are held every few months or more often as needed. Students who are uncertain about the hazards of the chemicals, biologics, materials, or equipment they are working with should consult a member of the School Safety Committee. Graduate students are also responsible for maintaining a neat and orderly laboratory. Supervisors/advisors are responsible for providing personal protective equipment, training, and instruction about the hazards which may be encountered in one’s work. Everyone has a right to know what they are working with and the ability to do so safely. Everyone has the authority to shut down an unsafe laboratory or experiment until the defect can be addressed. Everyone has the responsibility to report hazards, incidents, and near-misses to the School Safety Committee so that we can eliminate preventable accidents and their detrimental impact on personnel as well as School efficiency. For questions on lab safety, please contact our Safety Officer (Billy Schmuck), located in Wegner Hall Room 147.
Miscellaneous Information

Checkout Procedures
Students completing their degrees must report to Samantha Bailey to complete checkout procedures such as submitting a copy of the thesis, returning keys, and equipment, etc.

Job Opportunities
Join our list serve to receive job postings/advertisements related to engineering fields:

CHEBE_PHD_OPPORT@lists.wsu.edu
# Faculty

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<tr>
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<th>Office</th>
<th>Phone</th>
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<th>Title</th>
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<td>Ahring, Birgitte</td>
<td>BSEL</td>
<td>2-7682</td>
<td></td>
<td><a href="mailto:bka@wsu.edu">bka@wsu.edu</a></td>
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<tr>
<td>Beyenal, Haluk</td>
<td>Wegner 305</td>
<td>5-6607</td>
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<td><a href="mailto:beyenal@wsu.edu">beyenal@wsu.edu</a></td>
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<td>Dong, Wenji</td>
<td>Wegner 340G</td>
<td>5-5798</td>
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<td>Ha, Su</td>
<td>Wegner 215</td>
<td>5-3786</td>
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<td>Wegner 340E</td>
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<td>5-3151</td>
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<td>Administrative Assistant</td>
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<tr>
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<td>Administrative Manager</td>
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<tr>
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<td>5-1041</td>
<td><a href="mailto:mgreaney@wsu.edu">mgreaney@wsu.edu</a></td>
<td>Undergraduate Coordinator</td>
<td></td>
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<tr>
<td>Konen, Kate</td>
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<td>5-8039</td>
<td><a href="mailto:kate.konen@wsu.edu">kate.konen@wsu.edu</a></td>
<td>IT Specialist 3</td>
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<tr>
<td>Leavitt, Nicole</td>
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<td>5-3205</td>
<td><a href="mailto:Nicole.leavitt@wsu.edu">Nicole.leavitt@wsu.edu</a></td>
<td>Fiscal Analyst 1</td>
<td></td>
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<tr>
<td>Schmuck, Billy</td>
<td>Wegner 147</td>
<td>5-4776</td>
<td><a href="mailto:bschmuck@wsu.edu">bschmuck@wsu.edu</a></td>
<td>Lab Safety Officer</td>
<td></td>
</tr>
<tr>
<td>Smith, Tucson</td>
<td>Wegner 105</td>
<td>5-3811</td>
<td><a href="mailto:smitht@wsu.edu">smitht@wsu.edu</a></td>
<td>Fiscal Analyst 3</td>
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</tbody>
</table>
Commonly Used Resources

Counseling Services
WSU Counseling Services offers individual counseling for regularly enrolled WSU students and student couples free of cost. There are also group sessions offered which allow students the opportunity to interact with others who face similar problems and in the process, to receive group support and to develop more satisfying relationships. Some of the groups regularly offered by Counseling Services include an international Chat Group, a Dissertation Support Group, Test Anxiety Workshops and Group, and a Stress Management Group. Information shared with a counselor remains confidential according to Washington law and the ethical code of the American Psychological Association. You can make an appointment at Counseling Services, Washington Building Room 302 or by calling 335-4511. Counseling is available each weekday. Emergency consultations in the evenings or on weekends can be arranged.

Cougar Health Services
Cougar Health offers a broad range of professional services to WSU students. Their clinicians are both care providers and teachers. Not only do they regard each patient encounter as an opportunity to affect your health, attitudes, and behaviors, but they are also involved in the education of paramedical students in a variety of areas. Their Wellness Resource Center offers in-house and outreach programs. The peer-to-peer model is used to address concerns regarding alcohol and drug overuse, sexuality issues, nutrition, and fitness. The close working relationship between Cougar Health Services and Counseling Services permits timely, integrative, and comprehensive treatment when you experience difficulties that require both medical and psychological intervention. Though these two agencies are administered separately, they define themselves as a uniform health care team for the purposes of consultation, referral, and information sharing. Cougar Health Services is located in the Washington Building, phone 335-3575.

Housing
The departments of Housing, Dining, & Residence Life are here to make your university living experience a safe and memorable one. We have a wide variety of housing options to meet our residents’ needs. To make a housing reservation please call 509-335-4577, https://housing.wsu.edu/

Global Services
The Office of Global Services has a number of resources for international students. Their foreign student advisors are available to help with questions and problems that may be encountered while adjusting to life at WSU. International Programs publishes a handbook containing information specific to foreign students and scholars not included in the general university handbooks. They also provide a number of services that are useful for international students such as those listed below. Their office is located in Bryan Hall room 206 and the phone number is 509-335-2541.

International Students and Scholars Section of the Global Services Office
The primary function of the International Student and Scholar section is to provide relevant support services to foreign students and scholars in achieving their educational objectives; groups in promoting intercultural understanding; and departments in hiring foreign faculty and staff. To assist WSU's foreign students, scholars, and their accompanying family members in accomplishing their purposes for being at the university, this program provides service in matters other than academic advising. In general, the faculty members furnish of Labor and of State; in understanding U.S. mores and culture; and in obtaining information and support from appropriate sources within and outside the university. To promote intercultural understanding, the International Students and Scholars office works with university and local community groups in arranging opportunities for interaction between Americans and foreign students and scholars. Their office is located in Bryan Hall room 206 and the phone number is 509-335-4508.
Commonly Used Resources

**Intensive American Language Center (IALC)**
The IALC prepares students to communicate in English in order to study in American colleges and universities. The six-level program offers a full-time intensive language study, in which students study the four language skills—speaking, listening, reading, and writing—within a variety of content areas. Another focus of the IALC is to provide students with information about the American people and life in the United States. Located in Kruegel Hall, Room 13. Phone: 509-335-6675

**Student Legal Services**
Student Legal Services is provided by the ASWSU to make legal advice and information available to WSU students either free of charge or at a reduced cost. Student Legal Services will occasionally sponsor seminars and workshops on judicial processes, provide brochures, books, and journals containing information about legal rights and responsibilities and they may obtain discounts for you with local attorneys. For more information, Call Student Legal Services at 509-335-9539, CUB 305

**Brelsford Visitor Center, Your Gateway to Washington State University**
The Visitor Center is a place to interact with exhibits that illustrate the university’s unique history and the many contributions WSU faculty, students, and alumni have made to Washington, the United States, and the world. The friendly staff will help visitors find information to make their visits convenient and productive. At the Visitor Center you can:

- Receive directions to campus locations
- Pick up a campus map
- Purchase a parking permit
- Meet colleagues or hosts
- Leave information for someone else
- Obtain event information
- Visit friends
- Relax before starting your busy day on campus
APPENDIX A

LABORATORY ROTATION SELECTION FORM

This form should be used in submitting your laboratory rotation choices. As you interview each faculty member, obtain his/her initials in the appropriate column. *All faculty must be interviewed.*

STUDENT NAME: ______________________________________________________________________________

<table>
<thead>
<tr>
<th>FACULTY NAME</th>
<th>OFFICE #</th>
<th>EMAIL:</th>
<th>INITIALS</th>
</tr>
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<tr>
<td>Ahring, Birgitte</td>
<td>Tri-Cities/BSEL</td>
<td><a href="mailto:bka@wsu.edu">bka@wsu.edu</a></td>
<td></td>
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<tr>
<td>Beyenal, Haluk</td>
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<td></td>
</tr>
<tr>
<td>Dong, Wenji</td>
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<td><a href="mailto:wenjidakong@wsu.edu">wenjidakong@wsu.edu</a></td>
<td></td>
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<tr>
<td>Ha, Su</td>
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<td></td>
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<tr>
<td>Kostyukova, Alla</td>
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<tr>
<td>Lin, David</td>
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<tr>
<td>Lin, Hongfei</td>
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<td>McEwen, Jean-Sabin</td>
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<td>Pfromm, Peter</td>
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<td><a href="mailto:peter.pfromm@wsu.edu">peter.pfromm@wsu.edu</a></td>
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<td>Saunders, Steve</td>
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<td>Scalise, Dominic</td>
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<td><a href="mailto:dominic.scalise@wsu.edu">dominic.scalise@wsu.edu</a></td>
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<td>Van Wie, Bernie</td>
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<td>Vasavada, Anita</td>
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<td><a href="mailto:vasavada@wsu.edu">vasavada@wsu.edu</a></td>
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<td>Wang, Yong</td>
<td>Wegner 153</td>
<td><a href="mailto:wang42@wsu.edu">wang42@wsu.edu</a></td>
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<td>Wu, Di</td>
<td>Wegner 107</td>
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<td>Zhang, Xiao</td>
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<td><a href="mailto:x.zhang@wsu.edu">x.zhang@wsu.edu</a></td>
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LAB ROTATION CHOICES: Fill in project name and faculty member in ranking order: 1 = first choice……5 = last choice

<table>
<thead>
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<th>FACULTY NAME</th>
<th>PROJECT NAME</th>
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When a graduate student or postdoctoral fellow is deciding whether to join a research group, gathering information about the group and its leaders is valuable in helping that individual arrive at a good decision. Sometimes this information can be acquired from written materials, from conversations with current or previous students or postdoctoral fellows in the group, or by asking the senior researcher directly. This may help to determine whether you are really interested in the research that the group is or will be pursuing. Among the useful questions that could be asked are the following:

- Who oversees the work of beginning researchers?
- Will a research adviser also serve as a mentor? If so, what is that person’s mentoring style?
- What role does a trainee have in choosing and developing a project?
- How long do graduate students or postdoctoral fellows typically take to finish their training?
- What are the sources of funding for project, and is the funding likely to be disrupted?
- Do beginning researchers participate in writing journal articles, and how are they recognized as authors?
- How much competition is there among group members and between the group and other groups?
- Are there potential dangers from chemical, biological, or radioactive agents? If so, what training is offered in these areas?
- What are the policies regarding ownership of intellectual property developed by the group?
- Are graduate students and postdoctoral fellows discouraged from continuing their projects when they leave?
- Are graduate students and postdoctoral fellows encouraged and funded to attend professional meetings and make presentations?
- Are there opportunities for other kinds of professional development, such as giving lectures, supervising others, or applying for funds?
# APPENDIX C

## Graduate Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ChE 510</td>
<td>Transport Processes (3 credits) Transport of mass energy and momentum; steady states as applied to chemical processing; macroscopic and microscopic analyses.</td>
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<tr>
<td>ChE 527</td>
<td>Advanced Chemical Engineering Thermodynamics (3 credits) Equilibria in physical and chemical systems generalized prediction of thermodynamic properties, non ideal systems.</td>
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<tr>
<td>ChE 529</td>
<td>Chemical Engineering Kinetics (3 credits) Interpretation of kinetic data and design of non ideal chemical reactors; fundamentals of heterogeneous catalyst preparation, characterization, and theory.</td>
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<tr>
<td>ChE 549</td>
<td>Biochemical Conversion Lab (2 credits) Analytical techniques in biomass characterization; bioproduct/biofuel production from renewable biomass including biochemical processes.</td>
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<tr>
<td>ChE 560</td>
<td>Biochemical Engineering (3 credits) Chemical engineering applied to biological systems; fermentation processes, biochemical reactor design, downstream processing, transport phenomena in biological systems, biochemical technology.</td>
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<tr>
<td>ChE 574</td>
<td>Protein Biotechnology (3 credits) Biotechnology related to the isolation, modification, and large scale commercial production, patenting and marketing of useful recombinant proteins and products. Cross listed with MBIOS 574, recommended preparation MBIOS 513</td>
<td></td>
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<tr>
<td>ChE 581</td>
<td>Advanced Topics in Chemical Engineering V (1-3 credits) May be repeated for credit; cumulative maximum 9 hours. Filtration, reaction engineering, two-phase flow, non-Newtonian fluids, interfacial phenomena, fluidization, novel separations, biomedical engineering.</td>
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<tr>
<td>ChE 585</td>
<td>Interfacial Phenomena (3 credits) Chemical and physical nature of the interface including the molecular basis for interfacial forces and resulting macroscopic phenomena.</td>
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<tr>
<td>ChE 596</td>
<td>Research Methods &amp; Communications (3 credits) Course seeks to establish sound practices for graduate research and presentation of results. Techniques used for performing thorough literature searches and establishing and testing research hypotheses.</td>
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<tr>
<td>ChE 598</td>
<td>Research Seminar (1 credits) May be repeated for credits. Seminar presentations on current topics in chemical engineering research. S, F grading.</td>
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<td>ChE 700</td>
<td>Master’s Research, Thesis, and/or Examination V (1-18 credits) May be repeated for credit. S or U grading.</td>
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<td>ChE 702</td>
<td>Master’s Research, NON-Thesis, and/or Examination V (1-18 credits) May be repeated for credit. S or U grading.</td>
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<tr>
<td>ChE 800</td>
<td>Doctoral Research, Dissertation, and/or Examination V (1-18 credits) May be repeated for credit. S or U grading.</td>
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</table>
APPENDIX D

Student Learning Outcomes

To enable students to develop as successful professionals for highly competitive positions in industry, government, and academia

- To achieve mastery of the knowledge in their fields and the ability to apply associated technologies to novel and emerging problems
- To present research to local, regional, national, and international audiences through publications in professional journals and/or conference papers given in a range of venues, from graduate seminars to professional meetings
- To participate in appropriate professional organizations.
- To broaden their professional foundations through activities such as: teaching, internships, fellowships, laboratory rotations and grant applications

To prepare students to be effective researchers in the field of chemical engineering

To enhance the national visibility of the doctoral programs in chemical engineering and bioengineering

- To attract, retain and graduate high-quality students
- To enhance doctoral education by offering advanced courses, providing support such as fellowships, research funds, and travel to conferences
- To attract, retain, and advance research-active faculty
- To provide regional, national, and international opportunities for collaboration