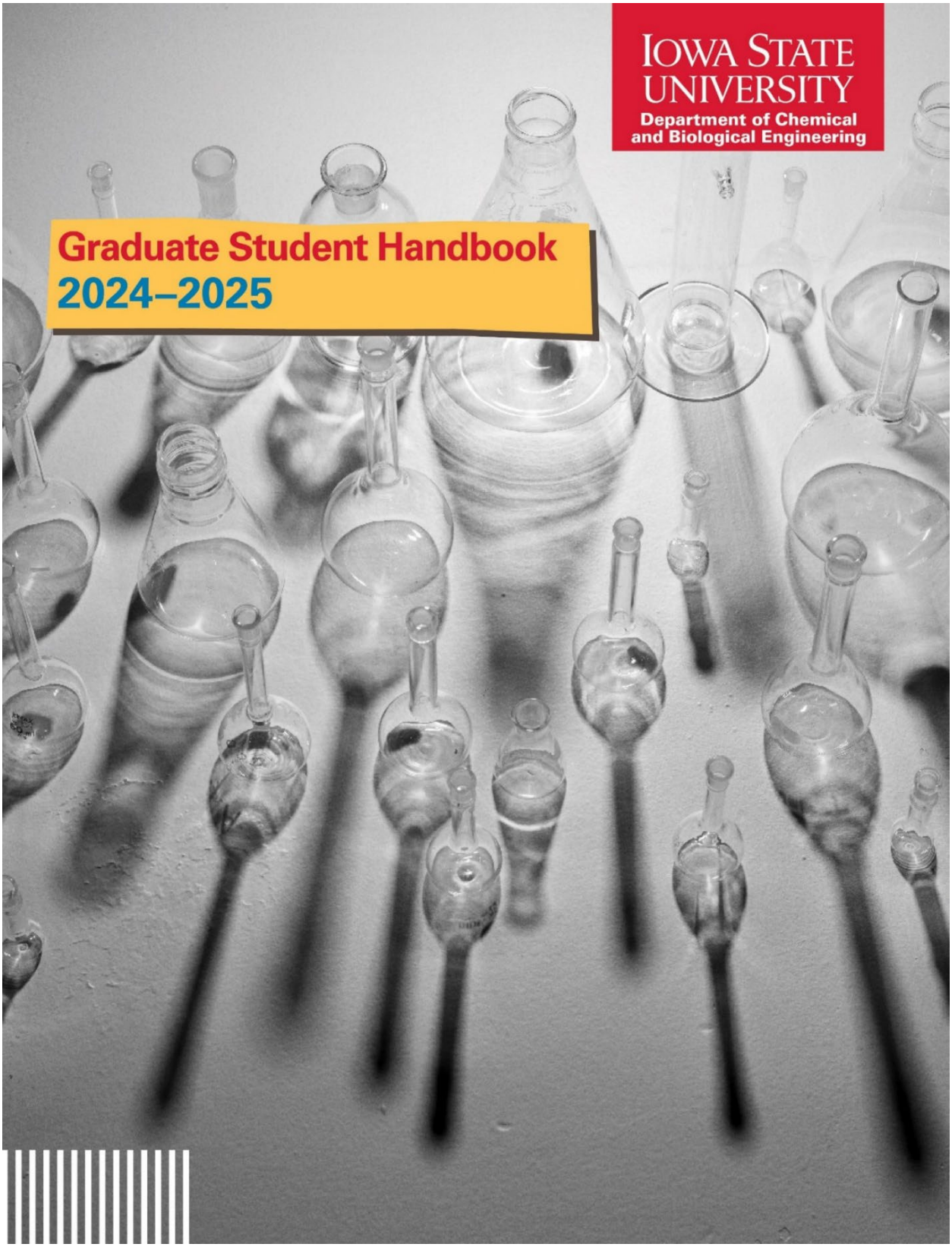


IOWA STATE UNIVERSITY
Department of Chemical and Biological Engineering

Graduate Student Handbook 2024–2025

Table of Contents

Diversity, Equity, & Inclusion Statement

Land Acknowledgement

Iowa State University is located on the ancestral lands and territory of the Baxoje (bah-kho-dzhe), or Ioway Nation. The United States obtained the land from the Meskwaki and Sauk nations in the Treaty of 1842. We wish to recognize our obligations to this land, the people who took care of it, and the 17,000 Native people who live in Iowa today.

CBE Statement on Diversity, Equity, & Inclusion

In thought and action, in policy and practice, and all aspects of our academic enterprise, we strongly value individuality and uniqueness. We are committed to continuously improving diversity, inclusion, access, and academic success. We aim to foster a community where everyone is empowered to be and is accepted as their full, authentic selves, regardless of race, color, age, ethnicity, religion, national origin, pregnancy, sexual orientation, gender identity, genetic information, sex, marital status, disability, or status as a U.S. veteran.

Learn more about diversity and inclusion in the Iowa State University College of Engineering.

Iowa State Principles of Community can be found here.

Graduate Students are supported under the Violence-Free University Policy.

1. Degree Requirements and Procedures

The Department of Chemical and Biological Engineering (CBE) offers three graduate degrees in Chemical Engineering (Ch E): Master of Engineering (M. Engr.), Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). The department also offers a graduate minor in Chemical Engineering.

After completing a graduate-level degree in chemical engineering in CBE, students will be able to:

- Demonstrate a comprehensive understanding of scholarly literature around the study.
- Form testable hypotheses and articulate research objectives that, when met, will lead to significant contributions to the field of study.
- Conduct quantitative research via appropriate acquisition, analysis, and data reporting.
- Interpret research results appropriately, integrating them into the existing knowledge in the discipline.
- Clearly and accurately communicate research findings orally and in writing.
- Conduct independent scholarship in ways that consistently demonstrate ethical practice and professionalism.

Below is an outline of the requirements and processes to obtain a graduate-level degree from CBE. Flowcharts for completing these degrees can be found in Appendix A and B.

1.1 Master of Engineering Degree (M. Engr.)

1.1.1. Degree Requirements

Coursework requirements for the M. Engr. degree is 30 credits of graduate or non-major graduate credit coursework. A minimum of 18 credits must be ChE graduate-level coursework and must include at least two courses chosen from Ch E 5450, 5540, 5830, and 5870. All students register for ChE 6010 Seminar each spring and fall semester. Up to six credits can be a creative component (ChE 5990). Applying any ChE 5990 credits toward the degree requirements necessitates forming an Academic Plan.

1.1.2. Creative Component or Coursework Only Options

Students pursuing the M. Engr. degree have the option to complete the degree as a coursework-only degree or to complete a creative component as a part of the degree. A creative component is independent work supervised by a faculty member. Students completing a creative component as a part of their M. Engr. degree should discuss their options for a creative component with the Director of Graduate Education (DOGE).

1.1.3. M. Engr. Committee and Academic Plan

Each M. Engr. student shall identify the faculty members to serve on an advisory committee in collaboration with their major professor. This committee guides and evaluates the student during the period of graduate study. Normally the student will ask individual faculty members to serve on the committee after consultation with the major professor.

For M. Engr. students completing a creative component, the faculty member supervising the ChE 5990 credits is the major professor. If a student is completing the coursework as the only

option for the M. Engr. degree, the DOGE for the department will serve as the students' advisor and approve their Academic Plan.

For M. Engr. students completing a creative component, the committee will consist of the major professor and two additional faculty members. At least one of the additional faculty members must be from the CBE department. If completing a graduate minor, one of the faculty members must be from the minor's department. Once the student has confirmed their committee, the student can go on Workday to complete their Academic Plan. No Academic Plan meeting is required for M. Engr. students.

M. Engr. students are required to submit their Academic Plan within four months of beginning the program. They must be approved by the final day of the semester before taking the Final Oral Examination or the semester before graduation (for coursework-only students).

1.2 Master of Science Degree (M.S.)

1.2.1 Degree Requirements

The coursework requirements for the M.S. degree are 30 credits of graduate or non-major graduate credit coursework. A minimum of 15 credits of this must be non-research coursework, including 12 credits of graduate-level ChE courses. This ChE coursework must include at least two courses chosen from ChE 5450, 5540, 5830, and 5870. All students register for ChE 6010 Seminar each spring and fall semester. In addition to the ChE courses, a minimum of three credits of coursework must be taken outside of the department, not including GR ST 5650.

1.2.2 Research Project and Major Professor Selection

Students pursuing the M.S. degree are assigned to a major professor through the admissions process based on their expressed research interests outlined in their admissions application. The major professor will oversee their research work during their time in the program.

1.2.3 M.S. Committee and Academic Plan

Each M.S. student, in collaboration with their major professor, shall identify the faculty members to serve on an advisory committee. This committee guides and evaluates the student during the period of graduate study. Normally the student will ask individual faculty members to serve on the committee after consultation with the major professor.

The committee will consist of the major professor and at least two additional faculty members for M.S. students. At least one of the additional faculty members must be from the CBE department. If completing a graduate minor, one of the faculty members must be from the minor's department. The committee must include at least one member from a different field of emphasis to ensure diversity of perspectives. Once the student has confirmed their committee, the student can go on Workday to complete their Academic Plan. No Academic Plan meeting is required for M.S. students.
M.S. students must submit their Academic Plan within four months of beginning the program. The form must be approved by the final day of the semester before taking the Final Oral Examination.

1.3 Doctor of Philosophy (Ph.D.)

1.3.1 Degree Requirements

Coursework requirements for the Ph.D. degree are 72 graduate credits of graduate or non-major graduate credit coursework. A minimum of 26 credits for this coursework must be non-research coursework, including 16 credits of ChE coursework. This ChE coursework must include ChE 5450, 5540, 5830, and 5870, ChE 6980A, and two terms of ChE 6980B. All students register for ChE 6010 Seminar each spring and fall semester. Additional graduate or non-major coursework credits include GR ST 5650 and elective courses. At least three credits of non-research coursework need to be 6000-level course(s) graded on an A-F scale. These elective courses will be determined together by the student and the Committee), depending upon the student's research area. They can be within ChE or outside. The Graduate College requires that the topics of independent study credits (ChE 5900/6920) apply to the degree be identified on the Academic Plan. Generally, independent study credits in doctoral studies are indicated only for work done clearly outside the scope of the thesis project under the direction of a member of the faculty who is not the student's major professor.

Many students will take more coursework than the minimum listed above to improve identifying deficiencies or to achieve special needs that relate to their research. The students' Academic Plan will determine these courses.

1.3.2 Research Project and Major Professor Selection

Students needing to be assigned a research project will listen to oral presentations by faculty with openings that are available to choose from during the department's orientation. The student should discuss projects of interest with the appropriate professors. Before the deadline, usually a month into the semester, the student will submit a list of preferred projects and major professors to the Director of Graduate Education (DOGE).

Within the limitations of faculty time and funding, students will be assigned a project and research professor on their preferred list. The major professor assigned will be the chair of the student's Committee.

1.3.3 PhD Qualifying Exam

During a student's first year in the program, they are conditionally on track to complete the Ph.D. program. Full admission of students to the Ph.D. program by the department faculty is based on achievement in graduate core courses (**B+** or greater in all four core classes, ChE 5450, 5540, 5830, and 5870) and developing skills needed to complete a doctorate degree. The potential to succeed as a PhD student is evaluated in the PhD Qualifying Exam (Qualifier). The Qualifier is completed a year after entering the program and consists of a written and oral portion (detailed below). If extenuating circumstances require a timeline change for this exam, students must consult with their major professor and present a plan to the DOGE before the exam. The exam evaluates a student's ability to 1) explain the context of their proposed work and ability to contribute to their field of study, 2) integrate fundamental concepts from chemical engineering and their discipline, 3) design experiments, generate data, and critically analyze their results, and 4) create a plan for their future research efforts.

The report and presentation should:

• Reflect the importance of the research problem in context with existing work reported in the literature

• Connect fundamental principles (from chemical engineering and other relevant science and engineering fields) to the proposed research objectives

• Be understandable by a general CBE audience

• Make it clear what the student has accomplished versus what was collaborative

• Propose a plan of work for the next three years based on their completed research so far, supported by prior art and fundamental knowledge.

Written Report

Students will submit a written report (maximum length 2500 words) detailing a clear motivation for their research and the work completed to date. The report should include the following sections: abstract, introduction (background and statement of purpose of the research project), methods, results (no more than six figures and tables), discussion (a future plan should be included), and references (references do not count toward the word limit). Students will submit their report to a committee of at least three faculty members from the department, including the student's major professor(s) and two other faculty members chosen by the DOGE. The report MUST be prepared without any input from the major professor and should be formatted as follows:

• Single-spaced, single column per page, and 1-inch margins on all sides

• Times New Roman 11 pt. font.

• Figures and tables placed in line with the main text, numbered in the same order in which they are referenced, and accompanied with a descriptive caption (figure captions and tables do not count toward the word limit).

The written report must be submitted to the committee **seven calendar days** before the oral presentation.

Oral Presentation

When the date is agreed upon by the Qualifier committee, students should schedule a room for the duration of 90 minutes for the examination (the Graduate Coordinator or front office staff can assist). Students should prepare for a 30-minute uninterrupted research presentation and a question-answer session. During the seminar, students should demonstrate a good understanding of their research problem and the overall impact of their research and report specific accomplishments in their research to date. Appendix C contains a research rubric describing the expectations for the oral and written components. This is closed to the public.

Coursework Performance

Students who do not earn a **B+** or better in a core course must complete work to address each unsatisfactory course performance. This will be customized for each student based on their needs. Examples of educational activities are developing new course content, retaking a graduate or undergraduate course, or serving as a teaching assistant for an undergraduate course. The education plan will be proposed by the graduate program committee after consultation with the respective core course instructor(s) to determine what route(s) would best address the respective gap(s) in knowledge and voted on at a faculty meeting.

Evaluation and Feedback

Once a student has completed the oral presentation, the members of the committee will share

the results of the exam with the faculty, usually at the next faculty meeting. The faculty will vote on the student's continued status in the program based on the results of the Qualifier, recommendations from the student's major professor and the Qualifier committee about the student's research progress and potential to succeed, and the student's coursework performance. The major professor(s) will summarize the committee's feedback and send it to the DOGE, which will be incorporated into a department letter that will deliver the outcome of the examination to the student

Based on faculty vote, a student's Qualifier may have one of the following outcomes:

- The student is admitted directly to the Ph.D. program.
- The student is conditionally approved to continue in the Ph.D. program, with the requirement of demonstrating satisfactory Ph. Ph.D.-level performance and completing an M.S. thesis and defense.
- The student is directed to pursue a terminal M.S. degree (no option of reapplying).

1.3.4 Ph.D. Committee and Academic Plan

Each Ph.D. student, in collaboration with their major professor, shall identify the faculty members to serve on an advisory committee. This committee guides and evaluates the student during the period of graduate study. Normally the student will ask individual faculty members to serve on the committee after consultation with the major professor.

For Ph.D. students, the committee will consist of at least five members of the graduate faculty. At least two members, not including the major professor(s), must be from the CBE department. If completing a graduate minor, one of the faculty members must be from the minor's department. The committee must include at least one member from a different field of emphasis to ensure diversity of perspectives. After the selected faculty members have agreed to serve on the committee, the student can meet with their committee members to develop a program of study (coursework that the student will need to complete as part of their graduate program). Once the student has met with their committee and the committee has agreed on the coursework, the student can go to Workday and complete their Academic Plan. The committee and Academic Plan include (1) identifying faculty members who will serve on the student's committee and (2) selecting all the coursework that will count toward the degree.

Ph.D. students are required to submit their Academic Plan within six months of completing their Qualifier, and the form must be approved by the final day of the semester prior to taking the Preliminary Oral Examination. If a M.S. degree is completed en route to the Ph.D., the student must submit their Ph.D. Academic Plan by the end of the semester following completion of their M.S. degree.

1.3.5 Preliminary Oral Examination

A student becomes a candidate for the Doctor of Philosophy degree after successfully completing a preliminary examination. The Preliminary Exam is intended to assess whether the student has:

- met doctoral-level standards for general knowledge in chemical and biological engineering, in supporting subject areas, and in the student's area of expertise.
- developed the capabilities or facilities needed to complete their research project.
- can demonstrate the ability to use such knowledge and to communicate it to others orally.

Students admitted before the fall 2020 term are required to take the Preliminary Exam two years after their Research Progress Exam. Considerable research progress is expected at this important milestone. Many students will have published at this point or will have manuscripts nearly ready for peer review.

Students admitted during the fall 2020 term and later are required to take the Preliminary Exam no later than six academic terms after successfully completing their Research Progress Exam or their master's degree (an academic year consists of Spring, Summer, and Fall terms). Failure to meet this expectation constitutes grounds for probationary status. Considerable research progress is expected at this important milestone. Many students will have published at this point or will have manuscripts nearly ready for peer review.

At least three weeks before the date of the preliminary examination, the student must submit a Request for Preliminary Examination to the Graduate Office through the online form at https://secure.grad-college.iastate.edu/exam/.

A written research report prepared by the student should be given to the committee **two weeks before the examination**. Consultation with the major professor is permissible and encouraged. The report should be organized into chapters that present the significance of the problem and the research objectives, a review of the present state of knowledge in the area, a description of the research plan, results to date, and plans for completing the project. Research results to date will typically span multiple chapters, with each chapter comprising a peer-reviewed journal article or a manuscript to be submitted as such. The document should provide citations in a manner appropriate for the field. Figures, tables, and other data must be properly attributed to collaborators or external sources. The format should follow that used for the final dissertation unless otherwise directed by the committee. Formatting guidelines for ISU theses are summarized at https://www.grad-college.iastate.edu/current/thesis/checklist/. It is particularly important that chapters in manuscripts that may be published or are in any publication stage follow the "Journal Paper Format" guidelines for attribution of co-authors. Immediately before the preliminary examination, the student will present a public seminar to the department and the committee describing the research results to date and future work.
After a Preliminary Examination is complete, the student and their committee will need to electronically sign the Preliminary Oral Examination Report to verify the Preliminary Exam's outcome. The form is provided to the major professor when the exam is scheduled.

1.4 Degree Completion and Final Oral Examinations

1.4.1 Application for Program Completion

By the deadline posted for the semester of graduation, students should apply for program completion through Workday. Students can access this program completion application by logging in to their Workday and choosing program completion.

1.4.2 Coursework Only Final Check

M. Engr. students completing a coursework-only program must submit a Coursework Only Final Check by the deadline indicated for their program completion term.

1.4.3 Final Oral Examination

As a part of the final examination procedure, candidates for the M.S. or Ph.D. degree are required to give a public seminar to present and defend their research dissertation. The final examination for the M.S. and Ph.D. degrees consists of a one-hour general presentation in a public seminar, followed by an examination by the candidate's Committee. Ph.D. students must have a minimum of six months between their preliminary oral and final oral examinations.

M. Engr. students completing a creative component must also complete a final oral exam. The final examination for M. Engr. students should comprise a seminar of at least 20 minutes.

Students must submit an online Request for Final Oral Examination form to the Graduate College Office **at least three weeks before the examination at** https://secure.grad-college.iastate.edu/exam/. The Graduate College must approve any changes in the committee or coursework on the Academic Plan before the final examination occurs. Students must submit their thesis, dissertation, or special report to their committee **at least two weeks before the examination**. A committee member who does not receive the dissertation or thesis at least two weeks before the final oral examination may cancel the examination in accordance with Graduate College policy.

After a Final Oral Examination is complete, the student and their committee will need to electronically sign the Report of the Final Oral Examination to verify the outcome of the Final Exam. The form is provided to the major professor when the exam is scheduled.

1.4.4 Thesis, Dissertation, and Special Reports

Before graduation, students must prepare a thesis or dissertation (or a special report in the case of M. Engr. students completing a creative component). Formatting guidelines for ISU theses are summarized at https://www.grad-college.iastate.edu/current/thesis/checklist/. The student and major professor must determine whether the results are to be published and what the student's responsibilities are in the publication process. It is normally expected that the student will at least complete the draft of a research paper prior to departure.

A student's thesis, dissertation, or special report must be uploaded to a repository by the required Graduate College deadline. Students completing the Ph.D. and M.S. degree must submit their thesis or dissertation to ProQuest (http://www.etdadmin.com/cgi-bin/home). M.

Engr. students completing a creative component must submit their special report to the ISU Library (https://lib.dr.iastate.edu/cgi/ir_submit.cgi?context=creativecomponents).

1.4.5 Graduate Student Approval Form

After completing the Final Oral Exam and the exit survey, students must complete a Graduate Student Approval Form. Individuals from various offices electronically sign this form to indicate that the student has completed the degree requirements and has met all other obligations to be eligible for the degree.

1.5 Graduate Minor in Chemical Engineering

Graduate students in other departments who do not have ChE backgrounds can obtain a minor in ChE by completing 12 credits of 3000-, 4000- or 5000-level ChE courses. At least 9 of these credits must be in core Chemical Engineering courses and not elective courses. A CBE faculty member must serve on the student's Committee to help guide the selection of courses for the minor.

2. Departmental Policies and Procedures

2.1 Additional Coursework for Students without a Chemical Engineering B.S. Degree

Even though most graduate students in the program are chemical engineers, the department does admit highly qualified students from non-Ch E backgrounds. To prepare these students for graduate coursework in chemical engineering, the Department has developed **ChE 4120X – Core Concepts for Chemical Engineers**. This course is typically completed in the summer prior to a student's first fall term and must be successfully completed by students without an undergraduate chemical engineering degree before attempting any graduate ChE coursework. ChE 4120X cannot be applied to the Academic Plan.

Students who do not successfully complete ChE 4120X will need to take up to 5 undergraduate level courses in ChE and Math to enhance their preparation for taking graduate-level ChE coursework. The credit earned in these courses is not applied to the Academic Plan. For any courses not equivalently covered during their undergraduate preparation, students will need to earn a "B" or better in undergraduate courses as per the table below:

Course	Title	Prerequisite	ISU Course
Ch E 5450	Analytical and Numerical Methods	1 semester undergraduate differential equations course	Math 2670
Ch E 5540	Integrated Transport Phenomena	2 semesters of undergraduate transport phenomena (fluids, heat, mass transfer)	Ch E 3560, 3570, 3810
Ch E 5830	Advanced Thermodynamics	1 semester thermodynamics course	Ch E 3810
Ch E 5870	Advanced Chemical Reactor Design	1 semester reactor design course	Ch E 3820

At the beginning of their program, students must identify the courses they will be required to take on the **Non-Ch E Student Graduate Preparatory Coursework Worksheet**. Students must submit this worksheet to the Director of Graduate Education (DOGE). This worksheet should include transcripts documenting courses that fulfill the prerequisite requirements if taken from an institution other than Iowa State University.

2.2 Transfer Credits

If students wish to transfer graduate-level course credits from previous institutions, they must complete the CBE Graduate Transfer Credit Worksheet and submit it to the DOGE for approval.

In general, the following policies apply:

- Eligible courses include lectures or lab courses that are eligible for graduate credit at the other institution.
- Research credits, seminar credits, or research ethics credits are not eligible for transfer.
- The 6000-level course requirement may not be satisfied with transfer credits.
- The course must have been taught by a member of that institution's graduate faculty.
- The course must not have been applied to an undergraduate degree you earned at that institution. This must be clear on the transcript or attested to by a letter from the other institution.
- A grade of "B+" or better is required.
- The committee must approve the inclusion of all transferred electives in the Academic Plan. This means that although your elective credits may transfer, it is up to your committee to determine if they can be used to satisfy your degree requirements.

2.3 Orientation and New Graduate Student Checklist

All new graduate students in CBE must attend the department's orientation session and complete the steps and training listed on the New Graduate Student Checklist (see Appendix D). All new graduate students will be assigned a temporary office in Sweeney Hall. Upon arrival, students must schedule a check-in time with the Graduate Student Specialist. At this time, students will complete the appropriate forms to request keys for their assigned office, entrance to Sweeney Hall, and the graduate student lounge. International students must also attend the International Graduate Student Check-in and Orientation.

2.4 Appointments and Stipends

For students on graduate assistantship, the terms of appointment are described in the student's initial offer letter of admission. Each graduate student will be prompted to sign an Electronic Appointment Form in Workday for **each** academic semester of appointment unless otherwise specified. The graduate student's major professor(s) will advise them of the duties of the appointment and the accountability procedures. All appointments are reviewed annually, and the student will be advised of the nature of the next year's appointment before the end of the academic year.

2.5 Safety Training and Requirements

Laboratory safety training for new graduate students is held each fall and presented by the Environmental Health & Safety (EH&S) Department. This is mandatory training required under state and federal law for all new employees and for any employees who have not received prior Iowa State University training. This training is required for compliance with the OSHA

Laboratory Standard (29 CFR 1910.1450 "Occupational Exposure to Hazardous Chemicals in Laboratories"). If you receive a salary, wages, or a stipend for working in laboratories in CBE, you must attend this training. This includes faculty, staff, hourly wage employees, research assistants, teaching assistants, and postdoctoral students.

Topics include OSHA Laboratory Standard, Laboratory Safety Manual, Material Safety Data Sheets, Prior Approval Procedures, Laboratory Hazards, Chemical Hygiene, Personal Protection, Housekeeping, Containers and Labeling, Hazardous Waste Disposal and Electrical Safety. Depending on what your research is, additional training may be required later. Willful failure to comply with safety requirements is grounds for dismissal.

Additional safety training may be communicated and assigned to you as appropriate by the CBE Safety Committee.

2.6 Registration Requirements

2.6.1 Semester Registration

For full-time enrollment, students must register for 9-12 credits of coursework during the fall and spring terms. This registration must include Ch E 6010: Seminar, an R credit course. During the summer term, students should register for 1 credit of Ch E 6990 or 5990 unless otherwise instructed by their major professor.

2.6.2 Teaching Practicum and Curricula Teaching Requirement

All Ph. Ph.D.-seeking graduate students are required to participate in the teaching mission of the University by registering for two-part teaching experience. The first component, Ch E 6980A: Teaching Practicum, is a weekly discussion group covering the topics of class and laboratory instruction, grading, and teaching philosophy.

The second component is Ch E 6980B—Curricular Teaching Experience (CTE), in which the student participates in the instruction of Ch E course(s) under the mentorship of a CBE faculty member. Typical activities that the students will participate in as part of the CTE include:

- Actively participating in classroom lectures and/or laboratory instruction (including delivering a few faculty-supervised lectures)
- Helping the instructor design homework and/or exam problems
- Participating in the formulation of projects (if any)
- Holding problem-solving recitation sessions with students
- Grading homework, quizzes, and/or lab reports

At the end of the CTE, the students will submit a short report to the graduate committee summarizing their CTE activities, with input from the faculty instructor. All CBE doctoral students must complete at least two semesters of CTE. An additional term of CTE may be prescribed as an outcome of unsatisfactory core course performance as described in section 1.3.3. The scheduling of CTE terms will be determined in collaboration with the major professor and the associate department chair.

2.7 Satisfactory Progress and Performance in Coursework and Research

Students receiving financial support through teaching or research assistantships, or industrial fellowships are expected to make satisfactory progress toward their degree. In addition to

completing coursework on a satisfactory timetable, students must also have satisfactory performance in their coursework and research.

2.7.1 Satisfactory Degree Progress

Although special considerations may apply in individual cases, students are expected to make acceptable progress following the timetables outlined below:
Timetable for students with a B.S. in Ch E (or successfully complete Ch E 4120X) and are admitted directly to the Ph.D. program:

Event	Time since entry
PhD Qualifying Exam	1 year
Academic Plan Meeting	no later than 1.5 years
Preliminary Exam	3 years
Final Oral Exam	4 - 5 years

Timetable for students with a non-Ch E B.S. (and do not successfully complete Ch E 4120X) and are admitted directly to the Ph.D. program:

Event	Time since entry
Completion of undergraduate Ch E coursework	1 year
PhD Qualifying Exam	2 years
Academic Plan Meeting	no later than 2.5 years
Preliminary Exam	4 years
Final Oral Exam	5 - 6 years

Students who first obtain a M.S. degree at Iowa State prior to beginning the Ph.D. program:

Event	Time since entry
PhD Qualifying Exam	Within one semester following M.S. degree
Ph.D. Academic Plan Meeting	Within one semester following M.S. degree
Preliminary Exam	Within 2 years of M.S. degree
Final Exam	2 - 2.5 years of M.S. degree

2.7.2 Satisfactory Coursework Progress and Performance

Graduate students are required to maintain a cumulative GPA of 3.00 to be in good academic standing. Students whose GPAs fall below 3.0 will be on probation the following semester. New students whose GPAs fall below 3.0 will be given a warning the following semester and placed on probation the semester after if their GPA is still below 3.0. Furthermore, if a student flagrantly neglects coursework or assistantship duties, thereby violating the terms of the assistantship contract, the department can suspend a student's assistantship for the following semester.

Students who are not showing satisfactory progress and failing to bring their GPA above 3.0 at the end of the semester that they are on probation will be terminated and may be dropped from the departmental graduate program. The student's major professor may petition the departmental committee to allow the student to continue working towards a degree. In this case, the student will no longer receive an assistantship unless the major professor decides to provide full or partial funding.

2.7.3 Satisfactory Research Progress and Performance

CBE department practice is oriented to ensure graduate student success. We invite feedback as to how we can continue to improve in this regard (email cbegradcommittee@iastate.edu). However, the path to success can have unsatisfactory progress; this section outlines the process for identifying and resolving such periods. The following policy is applied to both CBE students and the students from other programs with CBE listed as the home department. The purpose of having a clearly written policy is motivated by the lack of consistent signal paths in the past in situations where a student continuously makes unsatisfactory progress. It also describes an official procedure for a student on a probationary period to return to a satisfactory status so students can make sufficient efforts to achieve this goal.

1. At the end of the Fall semester, the major professor must perform an official annual review with each student. The “Graduate Student Annual Performance Review” form will be documented in the student’s academic folder. Faculty can initiate additional reviews during an academic year to document unsatisfactory progress. Students can request mediation with the chair and the DOGE at any time.

2. At the end of each semester (Spring, Summer, and Fall), each professor needs to submit students’ grades for 5990/6990. In the majority of cases, a student who has made satisfactory progress will get a grade of “A,” “B,” or “satisfactory.” The major professor can assign a “C” or “unsatisfactory” to the student who did not make satisfactory progress in research. If an unsatisfactory grade is to be assigned, the major professor must document a face-to-face meeting with the student using the “Graduate Student Annual Performance Review” form. The form must summarize the deficiencies leading to unsatisfactory status.

3. When ‘unsatisfactory progress’ is documented, the following term becomes a probationary term. The student needs to perform a written self-assessment within one week of the signature date on the “Graduate Student Annual Performance Review.” The major professor needs to inform the department chair and the DOGE about the student’s probationary term immediately after assigning a non-satisfactory grade to 5990/6990. A meeting involving the major professor, the student, and the chair/DOGE will be arranged to clarify the expectation for the student to return to satisfactory status, which will be included in the documentation.

4. Returning to satisfactory status is required for taking further steps in pursuit of the degree. The Graduate Student Specialist will verify the status and inform both the professor and the student before allowing the student to take the Academic Plan meeting, prelim, and final defense.

5. Students will continue to be paid during the probationary semester. No later than two weeks prior to the end of the probationary term, the major professor must submit a memo to the DOGE and Chair requesting to return the student to satisfactory status, extend the probationary period, terminate funding and/or stipend support), or initiate degree termination for the next semester. If the memo does not request a return to satisfactory status, a meeting will be scheduled involving the major professor, the student, and the Chair/DOGE.

Cases of academic or research misconduct would likely be addressed through the judicial system. These and other types of misconduct are detailed in Chapter 9 of the Graduate College Handbook, https://www.grad-college.iastate.edu/handbook/. They are in a different category than Unsatisfactory Progress, but cases of unsatisfactory grades are also addressed.

Termination of graduate study is addressed in this same section under “Dismissal,” where the procedure and student safeguards are addressed.

2.8 Absences from Campus and Travel Procedures

2.8.1 Absences from Campus

A student's major professor must approve absences (other than university holidays) in advance. Graduate students completing a CTE must inform the professor they are working with any absence. In order to approve an absence, students must complete the Personal Travel Notification form. This form will need to be signed by the graduate student traveling, their major professor, and their supervising instructor (if completing CTE). The form should be emailed to the Graduate Student Services Specialist at least two weeks prior to travel.

2.8.2 Travel Procedures

For students planning to attend a conference, some (if not all) of the following information will apply to you, so please read carefully.

Procedures for attending a conference are:

1. Check with your major professor regarding the conference you wish to attend. Obtain their approval before proceeding with the next step.

2. Complete a CBE Out-of-State Travel Authorization form, providing the account number to be used to order your airline ticket. After you sign the form, have your major professor sign and turn in the completed Out-of-State Travel Authorization form to the Event and Business Coordinator in 2114 Sweeney Hall.

3. There are two options for obtaining flights:
   a. Designated department travel coordinators (Elaine Smuck and Michelle Stotts) have P-cards with designated travel indicator status that must be used to reserve flights through ISU designated vendors. Individuals may search for flight options by going to https://www.concursolutions.com/ and establishing a personal profile. All airline options are available for comparison. Once selected, the preferred flight may be sent to the department travel coordinators.
   b. Travelers still have the option to search, book, and pay for their own travel and then be reimbursed after the trip. Travelers should also be aware that when purchasing tickets with a personal credit card, the traveler assumes all risk. If the trip is canceled, ISU will not reimburse the traveler for the ticket of a trip that was not taken, as the credit for the unused ticket goes back to the traveler's credit card. By contrast, trips arranged through our contracted travel agency and subsequently canceled can have credits applied to the future trips of any ISU traveler, which ensures the value of the ticket will not be lost. http://www.controller.iastate.edu/travelinformation/internettravelsites.htm

4. Remember to book your other travel needs such as hotel, rental car, shuttle, etc.

5. After travel has occurred, submit a Travel Reimbursement Form and associated receipts to the Event & Business Coordinator in 2114 Sweeney Hall. For a list of allowable travel expenses, see http://www.controller.iastate.edu/travelinformation/allowableexpenses.htm.

2.8.3 Professional Advancement Grant (PAG)

Professional Advancement Grant (PAG) policies and procedures can be found at https://www.gpss.iastate.edu/pag. PAGs are provided to current graduate students by lowering barriers to attending professional meetings and conferences by helping to defray costs.

Interested graduate students must complete the online form to request funding from the Graduate and Professional Student Senate to help support trip expenses. Any graduate student who is currently enrolled as a full-time student and is not classified under "continuous registration" may apply for a Travel PAG. Each student can receive one Travel PAG per fiscal year (July 1 through June 30). All graduate students are eligible for up to $250 per fiscal year from the Graduate and Professional Student Senate (GPSS).

Requests for Travel PAGS can sometimes exceed available funds. The application must be received in the Graduate College by 5:00 PM on the 15th of the month prior to the month of the conference/event. If you have any questions, please ask or view the PAG website at https://www.gpss.iastate.edu/pag.

PAG funds must be expended one month after the last day of the conference. Not acting within one month constitutes a forfeiture of funds and the funds will revert to use for new travel grant awardees. If a student is funded to attend a conference and does not attend, the student must notify the GPSS PAG Chair in writing to cancel their PAG by emailing gpsspag@iastate.edu. This must be done no later than 2 weeks after the conference.

2.8.4 CBE Travel Grant

The Department of Chemical & Biological Engineering offers travel grants (contingent on available funding) to help defray expenses for professional meetings and conferences for Chemical & Biological Engineering students. The amount of support is limited to one award per fiscal year (July 1 – June 30). To apply for the grant, complete the form at https://www.cbe.iastate.edu/files/2020/02/CBE-Travel-Grants_02032020.pdf and forward the form to the Event & Business Coordinator in 2114 Sweeney Hall.

2.9 Facilities

2.9.1 Office and Building Hours

The CBE main office, 2114 Sweeney Hall, is open from 8 a.m. to 5 p.m. The telephone number is 515-294-7642. The fax number is 515-294-2689. Administrative offices on campus are also open during these hours. Summer and break business hours change to 7:30 a.m. to 4 p.m.

Sweeney Hall Building hours are:
Monday – Friday: 7:00 am – 6:00 pm
Saturday – Sunday: Closed

The northwest door of Sweeney Hall is equipped with a card reader to access Sweeney Hall outside of the above listed hours.

Biorenewables Research Laboratory hours during the fall and spring semesters are:
Monday – Friday: 7:00 am – 5:00 pm
Saturday – Sunday: Closed

Biorenewables Research Laboratory hours during the summer and semester breaks are:
Monday – Friday: 7:00 am – 4:00 pm
Saturday – Sunday: Closed

Advanced Teaching and Research Building hours are:
Monday – Friday: 7:00 am – 5:00 pm
Saturday – Sunday: Closed

All buildings are closed during University Holidays.

2.9.2 Office Assignments

Office and laboratory spaces are available for each graduate student. Students are assigned an office space by the department chair and the operations manager. Key request forms can be obtained from the main office at 2114 Sweeney Hall. The supervisor will need to complete and sign the form. The form will need to be returned to the main office for the key to be ordered. The following day, a key issue form can be taken to the General Services Building, where keys are issued with an I.D. Lost or stolen keys will be replaced for a $30 fee each, in addition to any fees associated with rekeying.

Each graduate student is responsible for maintaining a neat and safe environment in the assigned office and laboratory. Safety inspections occur frequently.

2.9.3 Office Supplies

Graduate students are responsible for their own office supplies. There are often old file folders available for student use from the main office if needed (see the Event & Business Coordinator in 2114 Sweeney).

2.9.4 Printing

Printers have been replaced with color copiers and are available in 0108, 1123, and 1150 Sweeney. Copiers can be used for printing, copying and for scanning email using your NetID or University ID card. Simply scan your ID card at the location indicated on the copier or enter your NetID and password to access copier features. Please make sure to LOGOUT when done. There are more detailed instructions HERE. Standard Papercut charges per page printed or copied apply. Printers are also available in the library, and this link provides information on how to print from different types of devices. A printer at 2123 Sweeney Hall is also available for student use. The copy machine in 2112 Sweeney Hall may be used for research-related material and material approved by your major professor.

2.9.5 Mail

Graduate students have mailboxes in 2112 Sweeney. Students should check their mailboxes regularly for department announcements. Campus mail can be mailed from that room also. Personal mail or packages should not be delivered to or sent from the department office.

2.9.6 Sweeney Graduate Student Lounge

The graduate student lounge is at 1021 Sweeney. It has a microwave, refrigerator, coffeemaker, table, and chairs. This room is available for graduate students for eating meals and for interaction among students. Each graduate student will have a key to the graduate student lounge. Graduate students are responsible for disposing of their own expired items in the refrigerator and for cleaning up messes in the lounge.

There are also undergraduate/graduate student collaboration rooms available in Sweeney 2123 and 3149 Sweeney.

2.9.7 Room Reservation Requests

Room requests for the conference rooms in Sweeney Hall (rooms 2041, 2126, 3041, and 3149) or requests to reserve any classroom space in Sweeney Hall or in the Biorenewables Research Complex must be made through Iowa State's Room Scheduling process.

2.9.8 Checkout Procedures

Each graduate student must arrange a checkout procedure with their research group when leaving the department. Students employed by other centers, institutes, or laboratories within the university must also comply with their outlined checkout procedures.

The departmental checkout procedure is outlined on the CBE Graduate Student Checkout Form (see Appendix E). The exit survey for all graduating CBE students must be completed before the Director of Graduate Education (DOGE) signs the Graduate Student Approval form. All items on the checkout form must be completed before students receive their thesis/dissertation copies.

3. Professional Development Opportunities on Campus

The Department and University provide various opportunities for graduate students to develop their academic, research, and professional skills. In addition to considering the opportunities and resources listed below, students are also encouraged to discuss with their major professor(s) opportunities for professional development on and off campus.

3.1 Chemical Engineering Graduate Student Organization

The Ch E Graduate Student Organization (CEGSO) was founded to promote interaction among the graduate students of the department. The organization not only works to achieve a pleasant work environment but also strives to promote awareness of more global concerns. CEGSO sponsors social events and lectures that address topics outside the field of Ch E and encourage open discussion.

Past CEGSO events have included activities such as picnics, potluck dinners, canoeing, and sports teams. CEGSO members show prospective graduate students around the campus and city during visits. Members also help incoming graduate students with problems such as getting to Ames from the airport and where to live. CEGSO membership is currently limited to Ch E graduate students, although members are encouraged to bring guests to the functions. CEGSO officer elections occur at the beginning of fall semesters.

The CEGSO web page includes student and group profiles, honors/awards, and updates on current happenings in the department concerning graduate students
https://www.facebook.com/groups/1654456971504721/

2024-2025 CEGSO Committee

President	Ryan Godin
Vice President	Shiva Karimidehkordi
Treasurer	Mehdi Mosayebi
Secretary	Md Mosaddek Hossen
Professional Development Chair	Soheyl Mirzababaei
Social Chair	Katherine Petersen
Faculty Advisor	Dr. Thomas Mansell

3.2 Ch E 6010: Seminar

Ch E 6010: Seminar, offered every fall and spring semester, is a required course for all graduate students in the department. The seminar is a once-a-week, 50-minute course during which guest presenters from academia and industry lecture about their expertise and research in the Ch E field. Ch E 6010 provides an opportunity for students to hear about current research and practices in the Ch E field and to network with colleagues and experts in Ch E. CEGSO also hosts a meet and greet with the guest presenters that enables students to ask questions on a broader range of topics (e.g., career planning advice, journal editorial duties/suggestions).

Participation and attendance at Ch E 6010 are required unless an exception is approved by the DOGE.

3.3 CBE Perfect Pitch Competition

Each spring semester, as a part of the Seminar course, graduate students participate in the Department's Perfect Pitch Competition. This competition involves having students answering the following questions about their research in a timed format:

- What is the need for your research?
- How does your approach uniquely solve the problem?
- What is the potential impact if your research is successful?

The competition provides the opportunity for students to hear about their peers' research and to practice articulating their own research problem and approach to an audience of both Ch E and non-Ch E professionals. The format of the competition alternates every other year, with either students who have completed their qualifier presenting in a 90-second time frame or students who have completed their preliminary exam presenting in a 3-minute time frame. Cash prizes are awarded to first, second, and third prize winners, as determined by a group of judges.

3.4 Outstanding Research and Teaching Awards

The Graduate College and the Department of Chemical and Biological Engineering sponsor two awards to graduate students for outstanding achievement in research and teaching. Nominations for these awards are accepted each semester.

3.4.1 Research Excellence Award

The Research Excellence Award is awarded to graduate students to recognize outstanding research accomplishments, as documented in resulting theses and dissertations. Recipients are also expected to be academically superior and able to not only do research but also develop a well-written product. The award is administered by the Graduate College.

Each Research Excellence Award recipient will receive a letter of commendation from the Iowa State University president, a certificate of achievement from the dean of the Graduate College, and an honor cord for commencement. Recipients will be recognized in the Iowa State University Commencement Program, and the award will be posted on their transcript.

3.4.2 Teaching Excellence Award

The Teaching Excellence Award is awarded to graduate students to recognize outstanding achievements in teaching. The program is administered by the Graduate College.

Each Teaching Excellence Award recipient will receive a letter of commendation from the Iowa State president, a certificate of achievement from the dean of the Graduate College, and an honor cord for commencement. Recipients will be recognized in the Iowa State University Commencement Program, and the award will be posted on their transcript.

3.5 Graduate Student Professional Development Resources

Although not an exhaustive list, the Graduate College provides the following opportunities and resources for all graduate students on campus. All graduate students are encouraged to utilize these resources, as needed.

Career Services https://www.grad-college.iastate.edu/career/
Provides individual consultations, workshops, and presentations for graduate students and postdoctoral scholars to support career exploration and searches. Graduate students can also work with the College of Engineering's Career Services office (http://www.engineering.iastate.edu/ecs/).

Center for Communication Excellence https://cce.grad-college.iastate.edu/
Provides feedback on written and oral communications to graduate students and postdoctoral scholars through programs in mentoring, peer review, thesis/dissertation consultations, and more.

Center for Excellence in Learning and Teaching (CELT) https://www.celt.iastate.edu/graduate-students-postdocs/
Provides resources for graduate students with current teaching responsibilities at the University. CELT also provides opportunities for professional development for students interested in a future career in teaching, including the Graduate Student Teaching Certificate and the Preparing Future Faculty program.

Graduate and Professional Student Senate (GPSS) https://www.gpss.iastate.edu/
An elected group of graduate and professional students that serve as a liaison between students and the University to promote ideas and programs that support graduate and professional student welfare. The department has a GPSS representative.

3.6 External Employment Guidelines

There are many benefits to internships and other external employment opportunities during your graduate studies. However, they must be carefully planned to not overly delay your graduation or jeopardize the contract or grant from which your funding is derived. Involve your major professor early and often before seeking out and committing to an external opportunity so that its timing can be optimized. Last-minute requests are typically not accommodated. Typically, it is best to arrange these experiences closer to graduation such that your research is well underway, you have some writing to work on while away, and your relationship to the external party has greater chances of evolving into employment upon graduation. These experiences come in three different ways:

1. Full-time, off-campus position where payment comes directly from external parties to students (most common). An example of this is a full-time internship at a company for the summer. In this case ChE 6970 (Research Internship) can be used to maintain student status OR there can be a deferral of enrollment. Note: full deferral can affect health insurance status; contact ISU Graduate College or Human Resources for the latest guidance and determine if employer coverage is sufficient. In both cases, the student is not put on a research assistantship. If ChE 6970 is pursued, it is up to the student to negotiate with the external company coverage of any tuition or fees incurred. In most cases, the student is well compensated in this position, and paying for a credit of ChE 6970 is nominal.

2. Full-time, off-campus position where payment is routed through ISU. An example is the NSF INTERN program, where you work at a company on some defined portion of your thesis. In this case, register for a full load of 6990 credits and maintain a 1/2 LOI appointment. This allows tuition and stipend to be routed through the university. Typically, the funding agency will automatically cover the tuition, or it is offset by a research grant. This category is considered off-campus sponsored research.

3. Part-time, off-campus position (payment directly to the student) where the student still wishes to pursue on-campus research concurrently. These types of split positions are highly discouraged as they ultimately end up short-changing either the employer or the research efforts on campus. If pursued, plan carefully with your major professor to define what level of part-time work will be possible. In most cases, this will result in a smaller appointment (e.g., ¼ time status with partial tuition coverage). The work plan and support level should be agreed upon between the student and major professor prior to start of the external assignment. These part-time opportunities should be finite (typically one semester) and have some clear benefit to the education plan of the student.

Non-educational, external employment opportunities (paid consulting, coaching, etc.) should be minimized as they detract from the focus necessary to excel in your graduate studies. There are no ISU-imposed limits on hours worked externally for graduate students. However, such positions should be discussed with your major professor prior to committing and are required to be immediately disclosed in your employment COI form. Also, there may be restrictions based on your funding source (e.g., Fellowships with limitations on external work hours). Students are reminded that satisfactory academic and research progress must be maintained according to the relevant timelines and procedures discussed elsewhere in this handbook.

4. Purchasing Policies and Procedures

Graduate students can purchase supplies needed for their research laboratories in CyBuy or use an issued purchasing credit card (P-card) or purchase order requisition.

4.1 CyBuy

When purchasing supplies, students should first check the CyBuy website for item availability. CyBuy was designed to allow for purchasing supplies from university-contracted vendors, Chemistry Stores, and Central Stores. CyBuy can be accessed in Workday. Instructions on purchasing supplies through CyBuy can be found in the ISU Service Portal. The appropriate Job Aid is titled “Workday Procurement Creating an Order from a CyBuy Supplier.”

4.2 Purchasing Credit Card (P-card)

A P-card is a VISA credit card available to faculty and staff for purchasing low-dollar (purchases under $4,900) and tax-free supplies. Students who are interested in obtaining a P-card for purchasing should speak with their major professor. Cardholders must complete the Iowa State University p-card application in Workday and attend an orientation session to obtain a p-card. Cardholders may enroll in Procurement Card Orientation sessions through Workday Learning (Purchasing Card (P-Card) Orientation). P-card applications may be submitted by the applicant through the Create Request task in Workday (see https://www.procurement.iastate.edu/card-services/procurement-card/how).

- Navigate the task by searching Create Request from the Workday Landing Page.
- Search ‘card’ in the Request Type box, press enter, and select Card Application – Procurement Card (p-card).

Students assigned a P-card are responsible for their card until they leave the department. Only the person who was issued the P-card should use the P-card to purchase supplies.

Purchases should be tax-exempt. When purchasing an item, tell the vendor that you are from Iowa State University and will be making a Visa purchase. EMPHASIZE THAT THE UNIVERSITY IS SALES TAX EXEMPT! If the supplier requests the University's sales tax-exempt number, please provide the appropriate number: Sales Tax: 1-85000775M. If the supplier requests a University sales tax exempt certificate, request a form at https://www.procurement.iastate.edu/resources/salestax/tax-exempt-form.

After obtaining a P-card and purchasing, the cardholder must verify the purchase in Workday. Once a purchase has been made, the purchaser will receive an email from a Procurement and Expense Specialist. To verify the purchase, students should reply to this email and include the following information in the email:

- Business purpose for the purchase (identify who, what, where, when, and why)
- Receipts (attached to the email)
- Appropriate Worktag for the purchase
- Appropriate Spend Category for the purchase

The Procurement and Expense Specialist will then work to verify the purchase based on the information included above. All purchases should be verified by the 30-day deadline. If purchases are not verified, the cost of the item purchased will be charged to the purchaser's Ubill. Questions regarding the appropriate Worktag and Spend Category for purchases should be directed to the major professor.

Cardholders must keep the original receipt for one year after the purchase date.

For more information on the Purchasing Card guidelines, please see https://www.procurement.iastate.edu/sites/default/files/Documents/pcard_ch_guide2020-09%20with%20graphics.pdf

4.3 Purchase Order Requisitions

A purchase requisition is used to request equipment, supplies or services for purchases of over $4,900 or when a company will not accept a credit card as a form of payment. Graduate students will need to obtain a quote from the company to upload them into Workday. Students will also need to provide a short justification as to why the purchase is being made and the worktag that will be charged for the purchase. This request will then be routed for approval. These are standard questions any department should ask when buying new equipment:

1. Will it fit through a standard door?
2. Does it require building a service connection that is not readily available? (heat, air, water, etc.)
3. Does it require special equipment to be moved?
4. Is the right power available?
5. Is it replacing in-kind equipment?

5. Departmental Directory

Faculty

Name	Title	Address	Phone	E-mail
Rizia Bardhan	Professor	5005 ATRB	4-5138	rbardhan@iastate.edu
Ratul Chowdhury	Assistant Professor	5009 ATRB	4-2835	ratul@iastate.edu
Eric Cochran	Professor	3133 Sweeney	4-0625	ecochran@iastate.edu
Rodney Fox	Distinguished Professor	3035 Sweeney	4-9104	rofox@iastate.edu
Kurt Hebert	Professor	3155 Sweeney	4-6763	krhebert@iastate.edu
Andrew Hillier	Professor	2114 Sweeney	4-3678	hillier@iastate.edu
Laura Jarboe	Professor	4134 BRL	4-2319	ljarboe@iastate.edu
Molly Kozminsky	Assistant Professor	5003 ATRB	4-2759	mollykoz@iastate.edu
Monica Lamm	Associate Professor	2157 Sweeney	4-6533	mhlamm@iastate.edu
Wenzhen Li	Professor	2140 BRL	4-4582	wzli@iastate.edu
Surya Mallapragada	Distinguished Professor	5023 ATRB 2810 Beardshear	4-7407 4-2857	suryakm@iastate.edu
Thomas Mansell	Associate Professor	4136 BRL	4-7177	mansell@iastate.edu
Balaji Narasimhan	Distinguished Professor	5001 ATRB	4-8019	nbalaji@iastate.edu
Matthew Panthani	Associate Professor	2037 Sweeney	4-1736	panthani@iastate.edu
Tanya Prozorov	Adjunct Assistant Professor	332 Wilhelm	4-3376	tprozoro@iastate.edu
Nigel Reuel	Associate Professor/Associate Chair	3162B Sweeney	4-4592	reuel@iastate.edu
Luke Roling	Assistant Professor/Recruiting DOGE	3053 Sweeney	4-4959	roling@iastate.edu
Ian Schneider	Associate Professor	2035 Sweeney	4-0450	ians@iastate.edu
Brent Shanks	Distinguished Professor	1140L BRL	4-1895	bshanks@iastate.edu
Jacqueline Shanks	Professor	3031 Sweeney	4-4828	jshanks@iastate.edu
Zengyi Shao	Professor/Academic DOGE	4140 BRL	4-1132	zyshao@iastate.edu
Jean-Philippe Tessonnier	Professor	2138 BRL	4-4595	tesso@iastate.edu
Dennis Vigil	Professor/Department Chair	2114 Sweeney	4-6438	vigil@iastate.edu
Jing Wang	Assistant Professor	4138 BRL	4-5927	jwang1@iastate.edu
Qun Wang	Research Asst. Professor	1014 Sweeney	4-4218	qunwang@iastate.edu
Yue Wu	Professor	2033 Sweeney	4-0702	yuewu@iastate.edu

Teaching Professors/Professors of Practice

Name	Title	Address	Phone	E-mail
Brittany Hallmark-Haack	Asst. Teaching Professor	3063 Sweeney	4-5825	hallmark@iastate.edu
Jennifer Heinen	Teaching Professor/DUGE	3033 Sweeney	4-1891	jmheinen@iastate.edu
John Kaiser	Professor of Practice	2117 Sweeney	4-8575	jkaiser@iastate.edu

Courtesy Appointments

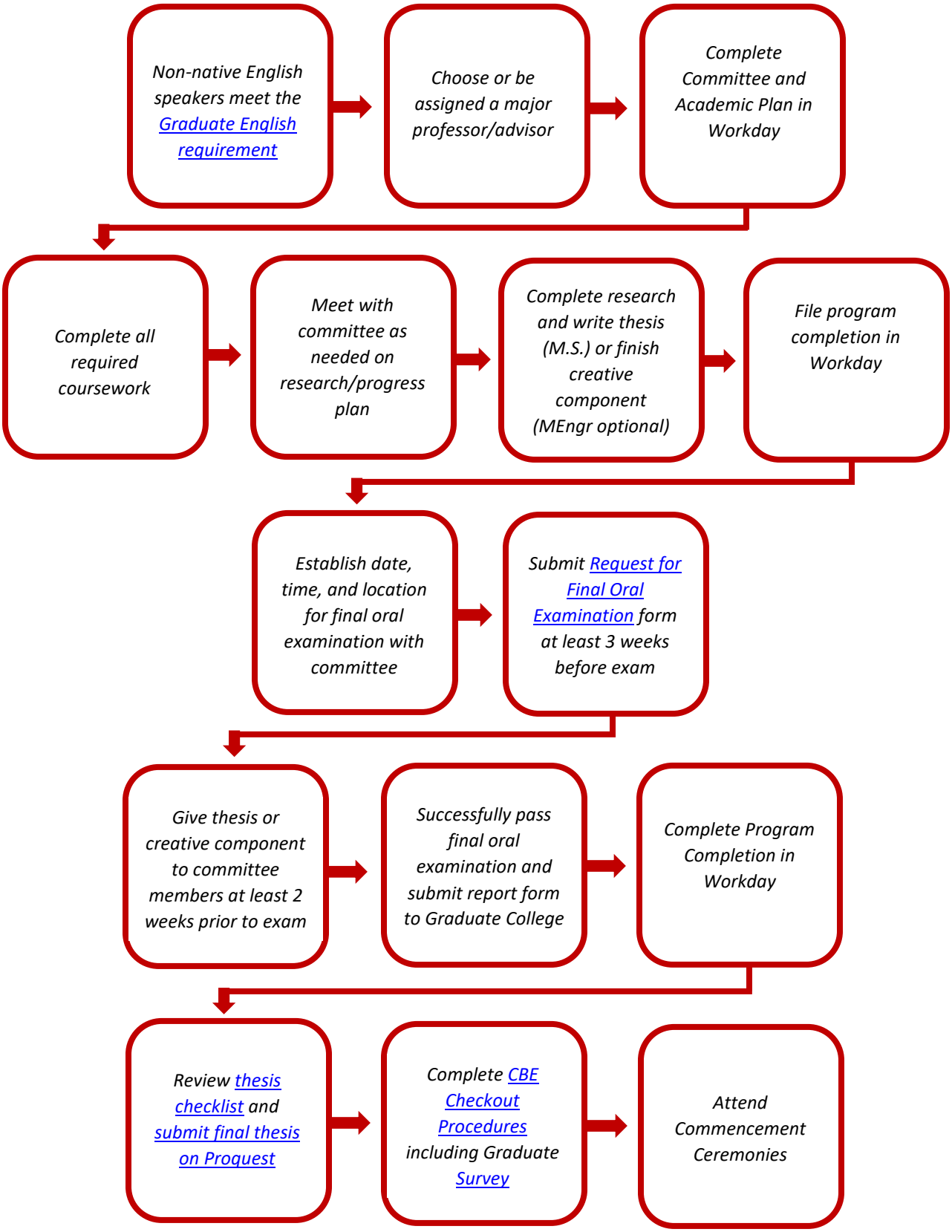
Name	Title	Address		
Robbyn Anand	Associate Professor	2101C Hach Hall	4-8944	rkanand@iastate.edu
Xianglan Bai	Associate Professor	2070 Black Engr	4-6886	bxl9801@iastate.edu
Robert Brown	Distinguished Professor	1140E BRL	4-7934	rcbrown@iastate.edu
Chris Cornelius	Professor	2240 Hoover	4-1937	cjcornel@iastate.edu
Ted Heindel	University Professor	2018 Black Engr	4-0057	theindel@iastate.edu
Duane Johnson	Professor	311 TASF	4-9649	ddj@iastate.edu
Patrick Johnson	Professor	2220BG Hoover	4-0195	paj3@iastate.edu
Michael Olson	Professor	3025 Black Engr	4-0073	mgolsen@iastate.edu
Alberto Passalacqua	Associate Professor	302 Lab of Mechanics	4-5047	albertop@iastate.edu

Staff

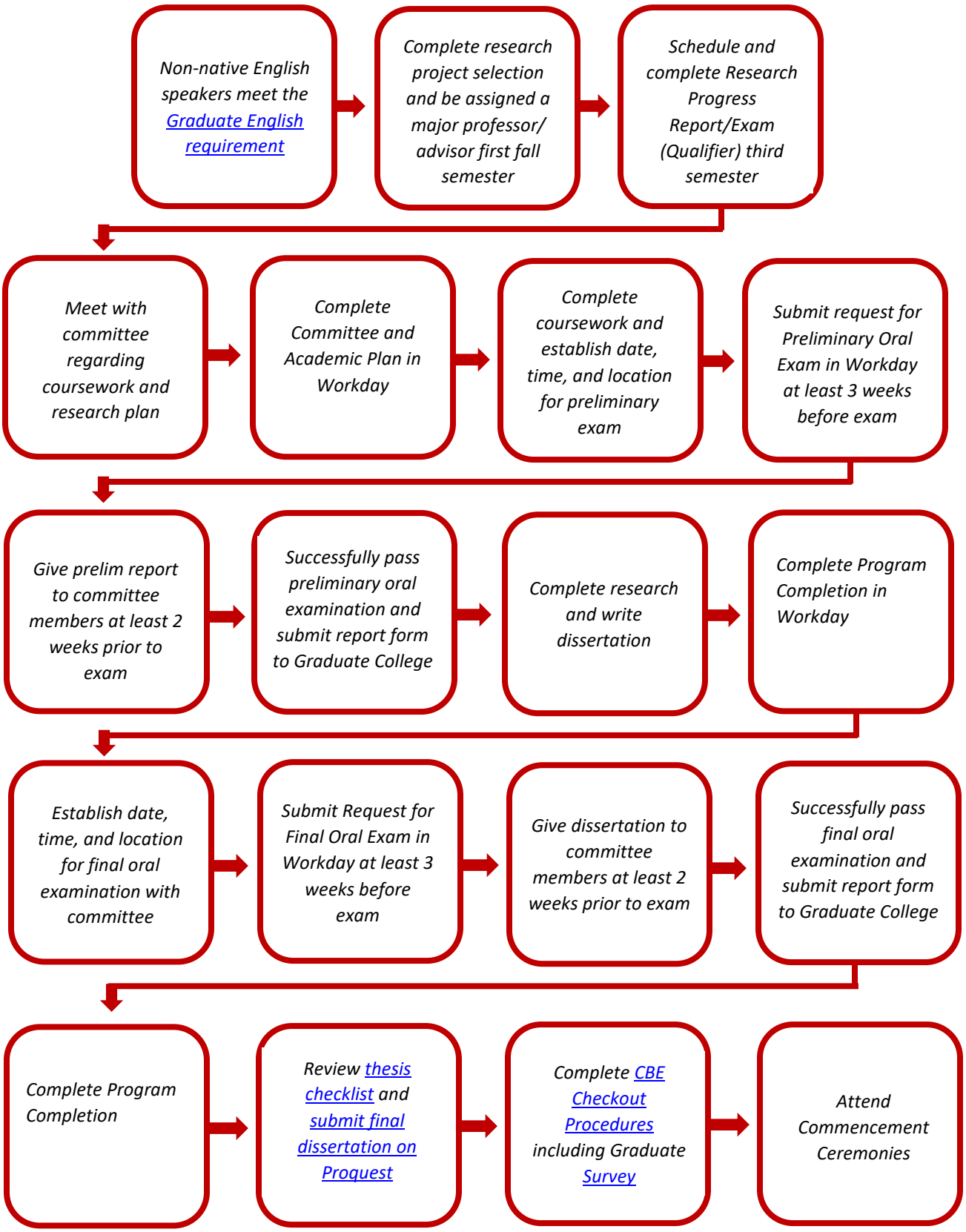
Name	Title	Address		
Ryan Arndorfer	Laboratory Supervisor	2052 Sweeney	4-1660	rja@iastate.edu
Jan Borchers	BME Laboratory Supervisor	2119 Sweeney	4-1478	Jborch67@iastate.edu
Matthew Brown	Student Services Specialist	2162 Sweeney	4-9124	mrb@iastate.edu
Dee Hehr	Academic Advisor	2162B Sweeney	4-2127	drhehr@iastate.edu
Colin Hilk	Laboratory Supervisor	2054 Sweeney	4-4134	cyhilk@iastate.edu
Sarah Larkin	Graduate Student Specialist	2114 Sweeney	4-7870	salarkin@iastate.edu
Colin Richey	Systems Analyst	1144 Sweeney	4-4919	crichey@iastate.edu
Elaine Smuck	Event and Business Coordinator	2114 Sweeney	4-7642	esmuck@iastate.edu
Michelle Stotts	Operations Manager	2114 Sweeney	4-9297	mlstott@iastate.edu
Jessie Vosseller	BME Academic Advisor	2162D Sweeney	4-3725	jessiev@iastate.edu
Allison Wortman	Academic Advisor	2162C Sweeney	4-3960	awortman@iastate.edu

Appendix A

Procedures for Earning a master's degree (M. Engr. or M.S.)



Appendix B
Procedures for Earning a Ph.D. Degree



Appendix C
Qualifying Exam Rubric

[Reminders to be announced by the major professor at the beginning of the qualifier]:
The CBE Qualifying Exam consists of a 30-minute presentation followed by examination by the committee. The student should be permitted to complete their presentation *uninterrupted* except for clarifications.

Putting research into context _____/5
Are the state of the art, approach, and innovation well described? Is the foundation of the proposed research plan clear (as shown through literature review, prior work by others in your research group, and existing theory or knowledge within your field)? Are the risks of the research plan clear, and are there appropriate plans for mitigating this risk? Is there a statement of purpose or clear description of impact?

Gathering and analyzing data _____/5
Is there demonstrated progress toward independence in the area of experimental, theoretical, or computational research (e.g., mastery of a new technique; collection, appropriate analysis of experimental/computational data; understanding of hazards and controls associated with project, etc.)? Are the data presented in a logical manner in figures/tables that are appropriately scaled, labeled, and normalized? Are the next steps logical? Is the scope/timeframe of the proposed research reasonable?

Connecting fundamentals to research _____/5
Are chemical engineering approaches to the problem well explained? Is it clear how thermodynamics, transport phenomena, chemical kinetics, etc. are relevant to the problem? Is the work presented understandable to a general chemical engineering audience?

Oral Communication _____/5
Is the presentation well organized and well structured? Is the timing for each of the sections appropriate? Is the presenter confident, clear, and concise? Does the presenter answer questions well? Are responses well considered, even when the answer is not totally clear?

Written Communication _____/5
Does the student's written report contain all required sections? Is the report clear, and do the written conclusions drawn follow logically from presented literature review/data? Is the report free from spelling and grammatical errors?

Overall comments (more room on back of page):

Initial Overall Evaluation (circle)

Poor Fair Good Very Good Excellent

Appendix D

Welcome CBE Graduate Students!

Please use the following checklist to help prepare for your transition to Iowa State University as a graduate student in the Department of Chemical & Biological Engineering. If you have any questions, please get in touch with chemengr@iastate.edu.

Before Arriving in Ames:

☐ **Register your Net ID and sign in to your ISU Outlook email account**

To create your Net ID, go to the university's ASW webpage and click on the "Need to register for a Net-ID?" link to register. Once you create a Net ID, you can log in to your Outlook email account. If you have previously been a student or BioMaP participant at ISU, you do not need to create a new Net ID. **Once you have created your Net ID, please email this to chemengr@iastate.edu.**

☐ **Send any final undergraduate or graduate transcripts to the ISU Office of Admissions**

☐ **Complete online onboarding through Workday**

Follow the steps indicated on your onboarding page in Workday, including signing up for university payroll, I-9 form, student and scholar health insurance, direct deposit, and other employee actions, including fire safety and fire extinguisher training, as well as the emergency response video.

☐ **Register for Fall 2024 courses**

You should register for the following courses: Ch E 5450, Ch E 5540, Ch E 5830, Ch E 5870, Ch E 6010, Ch E 6980A, and GR ST 5650. If you have taken graduate-level Ch E courses previously, we will look to adjust your registration by the outcome of the next checkbox item.

☐ **For any graduate-level coursework you would like to have evaluated to transfer to ISU, complete a" Graduate Student Transfer Credit Worksheet."**

The form can be found in the Graduate Student Forms column on CBE's Forms webpage. Send all Graduate Student Transfer Credit Worksheets to chemengr@iastate.edu. Please note the instructions and eligibility requirements at the top of the worksheet.

☐ ***(International students only)*** **Sign up for your ISSO Immigration Processing session and other Orientation activities**

To register for the ISSO Immigration Processing session and other orientation activities, please follow the step-by-step instructions on ISSO's website.

☐ ***(International students only)*** **Register for the English Placement Test (EPT) and Oral English Certification Test (OECT)**

Please see the EPT information page and the OECT information page for information regarding test content, registration, and potential exemptions. Note that registration for these tests may not open until 2 weeks prior to the test date.

After Arriving in Ames:

Email chemengr@iastate.edu when you arrive in Ames to schedule a check-in time.

☐ ***(International students only)*** **Attend the required ISSO Immigration Processing session and take the EPT and OECT**

☐ **Check in at 2114 Sweeney to complete a key request, record your cell phone number and get your photo taken for the CBE Directory**

☐ **Sign your Letter of Intent (LOI)**

Before the beginning of the fall term, you will be prompted to sign a LOI for your graduate research assistantship position electronically.

☐ **Attend EH&S Laboratory Safety Orientation and complete online safety training**

The instructor-led Laboratory Safety Orientation will be completed in person in August, the week before courses. Registration for this training is on Workday Learning. Register as soon as possible, as seats may fill quickly.

☐ **Register for required Laboratory Safety courses**

Register for the required courses through Workday Learning. Please complete the following training: Laboratory Safety Orientation, Laboratory Safety: Chemical Storage, Laboratory Safety: Core Concepts, Laboratory Safety: Compressed Gas Cylinders, Laboratory Safety: Fume Hoods, Laboratory Safety: Spill Procedures, Personal Protective Equipment, Fire Safety and Fire Extinguisher Training, and Worker Right-to-Know OSHA Hazard Communication Standard Training. Please see "CBE Required Safety Training for Lab Workers" to access these courses.

☐ **Get your ISU ID card in 0530 Beardshear Hall**

☐ **Attend required and optional orientation events**

Graduate College Graduate Student Orientation/ISSO's International Graduate Orientation

☐ **Enroll in health insurance**

Workday will prompt you to choose your health insurance coverage as part of your onboarding process. International Students are automatically enrolled in health insurance and have the option to add dental coverage. Domestic Students are not automatically enrolled but can sign up during open enrollment each year (July 1 – September 30). After open enrollment, students must experience a "qualifying event" and submit an enrollment form.

You can add dependents using the enrollment form. International Students also need to provide their dependent's I-94 travel documents. Your insurance cards will be automatically sent to the address you have in Workday after you enroll. Your coverage begins with the date you choose in Workday.

Appendix E

CBE Graduate Student Checkout Form

- ☐ Return any University Library materials you have checked out
- ☐ If you are supported by Ames Lab (or have been in the past), connect with their Human Resources Office at 105 TASF
- ☐ Arrange a checkout procedure with your major professor and research group. All personal items must be removed from your office space, and your desk key should be placed in the lock. If anything is left behind, it will be disposed of.
- ☐ Ensure that your lab space is clean and that all waste chemicals are appropriately disposed of.
- ☐ Return your university keys (office and lab) to the Event and Business Coordinator in 2114 Sweeney or Facilities Planning and Management (108 General Services Building).
- ☐ If you have a departmental computer, contact the CBE Systems Support Specialist (cbetech@iastate.edu) to return the computer.
- ☐ If you have a P-card, return your P-card to 2114 Sweeney. Be sure that all outstanding CyBuy or P-card paperwork is submitted.
- ☐ Review CyBox folders and Google Sheets to make other “owners” of files
- ☐ Send the department your thesis/dissertation for binding after it has been approved by the Graduate College. Send a PDF copy of your thesis/dissertation to chemengr@iastate.edu. The department will cover the cost of binding two copies. Any additional copies you would like can be printed through ISU printing at your cost.
- ☐ Complete the short, 6-question CBE Graduation Exit Questionnaire through Qualtrics to share with the department your plans (a QR code is located on the following page): https://iastate.qualtrics.com/jfe/form/SV_a5Umyc4Yn30q789
- ☐ Inform Engineering Career Services (ecs@iastate.edu) of your employment.

By signing this form, I verify that all the above items have been completed by the graduating student.

Major Professor: _____ Date: _____

Graduating Student: _____ Date: _____

CBE Graduation Exit Questionnaire - QR Code