University of Kansas

School of Engineering

Department of Chemical and Petroleum Engineering

Graduate Handbook

Last Revised: July 1, 2026

Table of Contents

1. Department Directory....3
2. General Academic Policies & Procedures....4
   2.1 Admission....4
      2.1.1 Minimum requirements or pre-requisites....4
      2.1.2 Deadlines....5
      2.1.3 Application Materials and Procedures....5
      2.1.4 Admissions Contact Information....5
   2.2 Enrollment....5
      2.2.1 General Enrollment Information....5
      2.2.2 Permission Numbers....5
      2.2.3 Changes in Enrollment / Late Enrollment....6
   2.3 Academic Integrity & Misconduct....6
   2.4 Good Academic Standing....6
   2.5 Grading....7
      2.5.1 Minimum Grading Requirements for Core Courses....7
      2.5.2 Incomplete Grades....7
      2.5.3 Grading for Thesis & Dissertation Hours....7
   2.6 Annual Student Progress Review....8
   2.7 Professional Development....8
   2.8 Grievance Procedures....8
   2.9 Petitions....8
3. Advising, Mentoring, and Communication of Assignments & Roles....9
   3.1 Change of Faculty Advisor....10
   3.2 Regular & Timely Feedback from Thesis/Dissertation Advisors....10
4. Information for Graduate Assistants (3G:GTA/GRA/GA)....11
   4.1 General Information for All 3G Positions....11
   4.2 GTAs....12
   4.3 GTA MOA Requirements....12
   4.4 GRAs....12
5. Degree Requirements and Procedures....12
   5.1 Academic Catalog....12
   5.2 Chemical Engineering Master's Degree Requirements....13
      5.2.1 Chemical Engineering Master's Coursework Requirements....13
      5.2.2 Chemical Engineering Master's Culminating Effort Options....14
      5.2.3 Chemical Engineering Master's Outcome....14
      5.2.4 Chemical Engineering Master's Continuation to Ph.D.....15
   5.3 Petroleum Engineering Master's Degree Requirements....15
      5.3.1 Petroleum Engineering Master's Coursework Requirements....15
      5.3.2 Petroleum Engineering Master's Culminating Effort Options....16
      5.3.3 Petroleum Engineering Master's Outcome....17
      5.3.4 Petroleum Engineering Master's Continuation to Ph.D.....17
   5.4 Doctoral Degree Requirements....17
      5.4.1 Coursework and Doctoral Degree Requirements....18
      5.4.2 Research Skills & Responsible Scholarship....18
      5.4.3 Establishing a Committee....19
      5.4.4 Preliminary Examination of Research....19
      5.4.4 Comprehensive Examination....20
      5.4.5 Post Comprehensive Exam Hour Requirement....22
      5.4.6 The Dissertation and Defense....22
   5.6 Certificate Requirements....22

The Chemical and Petroleum Engineering department (CPE) at the University of Kansas has a strong tradition of academic excellence, innovative research, and a deep commitment to student success. As a graduate student in this department, you will join a collaborative community of faculty, researchers, and peers who are dedicated to advancing knowledge in areas ranging from energy and sustainability to materials and biotechnology. Our programs emphasize not only rigorous technical training and impactful research, but also the development of professional skills that prepare you for diverse career paths. Throughout your graduate experience, we will prioritize career preparation and personal growth opportunities to provide you with the tools needed to thrive as a leader, innovator, and lifelong learner in engineering.

The graduate handbook is intended to guide you guide through the process of obtaining a graduate degree and the expectations and policies of the program. The handbook is meant to compliment, not replace, the KU Academic Catalog, University Policy Library, and Office of Graduate & Postdoctoral Affairs (GPA). Specific information related to CPE department policies and expectations is stated in the handbook. KU and GPA policies are referenced rather than restated in full. We hope you find this handbook useful as you begin your exciting new graduate career at KU!

1. Department Directory

A complete list of department faculty can be found on the department website CPE Faculty. Students should review faculty profiles and research areas when selecting advisors. Below is the contact information for the Department Chair, Director of Graduate Studies for Chemical Engineering, Director of Graduate Studies for Petroleum Engineering, and the Graduate Program Coordinator.

Table 1: Contact Information for Select Department Faculty

Role	Name	Contact Information	Typical Reasons to Contact
Department Chair	Susan Williams, Ph.D	4132 G Learned Hall smwilliams@ku.edu 785-864-2919	Department leadership, escalated issues or faculty concerns
Director of Graduate Studies, Chemical Engineering	Stevin Gehrke, Ph.D	4149A Learned Hall shgehrke@ku.edu 785-864-4956	Recruiting, matching research advisors, pre-arrival issues, progress toward degree
Director of Graduate Studies, Petroleum Engineering	Amirmasoud Kalantari Dahaghi, Ph.D	270H Slawson Hall masoud@ku.edu 785-864-6728	Recruiting, matching research advisors, pre-arrival issues, progress toward degree
Graduate Program Coordinator	Eve Bonner, MS ED	4141B Learned Hall evejorge@ku.edu 785-864-2394	Questions related to admission, policies, student academic records, enrollment, progress to degree and milestone exams, graduate teaching assignments and desk, office, and mailbox assignments
CPE Main Office		cpeGrad@ku.edu 785-864-4965	General Inquiries, department operations

Students may also need to coordinate with the School of Engineering graduate staff or the Office of Graduate & Postdoctoral Affairs. Contacts in the School of Engineering are shown below.

Table 2: Contact Information for School of Engineering Resources

Role	Name	Contact Information	Typical Reasons to Contact
Associate Dean for Graduate Programs	Prof. Suzanne Shontz, Ph.D	1D Eaton Hall shontz@ku.edu 785-864-8816	
Graduate Student Program Manager	Sam Klecan	LEEP2 1415N samantha.klecan@ku.edu	Questions related to graduation, plan of study, workshops, orientation
Graduate Recruiting and Research	Sarah Cole	1G Eaton Hall	Questions related to recruiting, advising on finding funding, GEA organization

2. General Academic Policies & Procedures

2.1 Admission

The CPE department's graduate offerings include a research and coursework Master of Science Degrees (MS) in either Chemical Engineering or Petroleum Engineering and a Doctor of Philosophy (Ph.D.) in Chemical & Petroleum Engineering. The department also offers an online MS degree in Petroleum Engineering. Admission to the graduate programs depends on academic preparedness, the fit between the student's background and the degree program, and in degrees requiring research, the availability of faculty mentors. More information about admission to the department programs can be found in the KU Academic Catalog.

2.1.1 Minimum requirements or pre-requisites

To qualify for study in any of the graduate programs in the CPE department, a student generally must have earned an accredited bachelor's degree in chemical or petroleum engineering. However, a student with good preparation in related science fields, such as chemistry, physics, or geology, or other engineering disciplines may be qualified by taking the following prerequisite undergraduate courses:

Table 3: Pre-requisites Courses

For the Chemical Engineering Degree	**For the Petroleum Engineering Degree**
C&PE 511: Momentum Transfer	C&PE 511: Momentum Transfer
C&PE 512: Chemical Engineering Thermodynamics	C&PE 527: Reservoir Engineering II
C&PE 524: Kinetics and Reactor Design	C&PE 528: Well Logging
C&PE 525: Heat & Mass Transport	C&PE 618: Improved Oil Recovery

Up to 3 credit hours of the undergraduate prerequisite courses (numbering 500 – 699) may be counted toward the MS degree as elective hours.

Students admitted with a completed thesis-based MS degree in chemical engineering or petroleum engineering are automatically considered PhD students. If the MS was completed at KU, they will start as Ph.D. Aspirants. Students admitted to the Ph.D. program with only a BS degree will be considered as

on the MS/PhD path until the Preliminary Exam of Research is complete. To qualify to take the Preliminary Exam, the student must have a) completed three C&PE Core classes with a 3.0 GPA or higher without having earned more than one 'C' or lower grade, or b) met the same criteria for equivalent courses during their Master's degree program at another accredited university and maintained a KU cumulative GPA above 3.0. Students who start on the MS/Ph.D. path and successfully change to a Ph.D. Aspirant status without earning a Master's degree along the way are called "Direct Ph.D." students. Students joining the graduate program who do not meet the Direct Ph.D. criteria will need to complete the MS degree and have research advisor approval before moving to the PhD program.

2.1.2 Deadlines

Application deadlines and any possible priority deadlines for funding considerations are published by KU Graduate Admissions and CPE. Applicants who apply prior to the priority deadlines does not guarantee funding but may be considered for Graduate Teaching Assistantships (GTA) or Graduate Research Assistantships. International applicants may need additional time based on the need for English proficiency review, transcript review, immigration documentation, and visa appointments.

2.1.3 Application Materials and Procedures

Details related to the application materials required for the CPE department graduate degrees can be found in the KU Academic Catalog and KU Graduate Admissions.

2.1.4 Admissions Contact Information

Questions about admission to the CPE graduate programs should be directed to the CPE Graduate Program Coordinator, Eve Bonner cpeGrad@ku.edu.

2.2 Enrollment

2.2.1 General Enrollment Information

Timely enrollment is the responsibility of the student. For M.S. students, the majority of the hours required for the degree are satisfied with coursework. Ph.D. students with transition from coursework heavy semesters in the first two years to more research hours in the later years in the program. One of the most notable differences between graduate and undergraduate education is the lower credit hour enrollment each semester. Taking more than 12 credit hours per semester is not recommended, as courses at level 700 and above are significantly more challenging and demanding of your time than courses at level 600 and lower. Nine credit hours per semester is considered full-time enrollment for a graduate student. Students working as a GTA or GRA will be considered full-time with enrollment in 6 credit hours. Continuing students working as GRAs over the summer do not have to enroll in the summer term. Please note that certain external fellowships/scholarships may have additional enrollment requirements.

After completing the oral comprehensive examination and defense of the dissertation proposal, students are required to adhere to the University's Post-Comprehensive Enrollment Policy. GTA or GRA students in their final semester can request to have this enrollment requirement reduced even further with the successful filing of a Petition for Reduced Enrollment. Students should consult with the Graduate Program Coordinator for questions related to reduced enrollment. For international students, please consult advisors from International Support Services if interested in Reduced Course Load.

2.2.2 Permission Numbers

Some courses may require department or instructor permission prior to enrollment. Permission

numbers may be issued by the CPE Graduate Program Coordinator. If the course requires instructor permission, the student should communicate with the faculty member teaching the course to get approval. The student must provide an email from the instructor to the CPE Graduate Program Coordinator which includes permission for the student to enroll in the course.

2.2.3 Changes in Enrollment / Late Enrollment

Prior to adding, dropping, or withdrawing from a course, students should consult with the CPE Graduate Program Coordinator and review any deadlines published by the KU University Registrar. Enrollment changes may impact assistantship eligibility, progress to degree, full time status, or international student status. Late enrollment can also result in fees incurred by the student.

2.3 Academic Integrity & Misconduct

The CPE Department regards academic misconduct as a very serious matter. Students who violate conduct policies will be subject to severe penalties, up through and including dismissal from the School of Engineering. Students should refer to the University Senate Rules and Regulations policy and the Rules and Regulations of the School of Engineering for the definitions of, processes associated with, and repercussions of academic misconduct.

Academic misconduct by a student shall include, but not be limited to, disruption of classes; threatening an instructor or fellow student in an academic setting; giving or receiving unauthorized aid on examinations or in the preparation of notebooks, themes, reports or other assignments; knowingly misrepresenting the source of any academic work; unauthorized changing of grades; unauthorized use of University approvals or forging of signatures; falsification of research results; plagiarizing another's work; violation of regulations or ethical codes for the treatment of human and animal subjects; or otherwise acting dishonestly in research.

Because CPE programs often involve laboratories, professional software, data collection, and externally funded research, students should be aware of appropriate human-subject and data protocols, authorship and collaboration credit, and proper data management. If expectations are unclear, students should consult with their faculty advisor instead of making assumptions.

2.4 Good Academic Standing

To be considered in good standing in the graduate program, the CPE department requires graduate students to maintain a minimum GPA of 3.0, show satisfactory progress in coursework and research, and make timely progress toward meeting their degree requirements and milestones.

A student may be placed on probation based on the recommendation of the CPE department or the School of Engineering. Common reasons for probation include, but are not limited to, failure to maintain the required GPA, failure to establish an advisory committee in a timely fashion, failure to complete degree milestones within expected timeframes, receiving multiple or consecutive incomplete grades, failure to receive satisfactory progress marks in multiple semesters, or consensus by the student's advisory committee that the student is not making satisfactory progress toward a degree. Students recommended for academic probation will receive written notice outlining specific deficiencies, along with requirements and timelines that must be met to return to good standing. Failure to meet the terms of the probation may constitute grounds for dismissal from the graduate program. Placement on probation for a second time (consecutive or not) may also constitute sufficient grounds for dismissal.

Because many CPE students receive assistantships, good standing also impacts funding decisions. A student whose performance falls below expectations may lose priority for appointments or reappointments or may be ineligible for certain department or university opportunities.

2.5 Grading

2.5.1 Minimum Grading Requirements for Core Courses

KU Graduate & Postdoctoral Affairs' grading policy establishes a minimum grade of C or higher for a course to count towards graduate degree requirements. In CPE, students are expected to have a strong foundation in core coursework, and performance in core courses can impact entrance into the direct Ph.D. program and funding opportunities.

2.5.2 Incomplete Grades

The grade I (Incomplete) is used to indicate work of passing quality in a course, some part of which is, for good reason, unfinished. It is given only by advance arrangement between instructor and student. Students are advised to make removing any Incompletes from their record a priority. Incompletes need to resolved within one year of being assigned.

The CPE department discourages Incompletes grades because of the impact they may have on progress assessment, assistantship decisions, and graduation timing. The accumulation of multiple Incompletes or the failure to have an Incomplete removed within one year may result in a graduate student falling out of good academic standing and, when applicable, not being eligible for reappointment to a graduate assistantship or pre-approval for scheduling the Comprehensive Exam. A grade of I is usually not appropriate for enrollment in thesis, exam hours, or dissertation enrollment.

A student who believes that an incomplete may be necessary should communicate with the instructor as soon as possible, and before the end of the term, documenting the reasons, and obtain clear written guidelines of the remaining work and deadlines.

2.5.3 Grading for Thesis & Dissertation Hours

CPE uses an SP/LP/NP grading scale for courses related to research (CPE 803 and CPE 904).

- Satisfactory Progress (SP) - The student has met the goals of the semester as agreed upon with the advisor. The progress made in the semester supports timely completion of the thesis or dissertation.
- Limited Progress (LP) - The student completed less than what was agreed upon with the faculty advisor. The semester's progress may cause delays in the timely completion of the thesis or dissertation.
- No Progress (NP) - The student has shown no evidence of completed work or did not make progress toward the thesis or dissertation.

If a student receives two consecutive LP grades or accumulates a third LP grades, the academic standards committee may review the record and make recommendation to the faculty advisor about the student's standing. An NP grade may trigger an immediate review of academic standing. Students and faculty advisors should be meeting at the start of the semester to discuss expectations related to research hours to eliminate misunderstanding related to deliverables.

The department uses a Satisfactory (S), Unsatisfactory (U) grading scale related to department seminars. Similar to the SP/LP/NP scale, grades of S/U do not contribute to the student's GPA.

2.6 Annual Student Progress Review

Throughout the academic journey, students should meet and discuss regularly with their advisor about their degree progress which typically covers topics as research focus, scope, expected deliverables, elective course selections, and graduation timeline to plan degree path.

The advisor and student should review Ph.D. milestone progress once per semester, including summer, to support completion of the Ph.D. within four academic years. If the student is not making adequate progress toward a required milestone, the advisor should notify the student of the concern and discuss corrective steps. When appropriate, the student, advisor, and Directors of Graduate Studies may develop a written progress plan with revised deadlines. Students should refer to the Preliminary Exam and Comprehensive Examination sections of this manual for detailed milestone timelines, extension procedures, and consequences for missing required exam deadlines.

2.7 Professional Development

Students in CPE are expected to engaged in professional development activities to support their academic and professional goals. Activities are supported by the department, school, and university including engaging in professional networking, resume/CV development, career planning, software and technical skill development, and participation in relevant workshops, seminars, and conferences. Research-oriented students are also encouraged to pursue conference presentations, poster and paper submissions, research ethics training, and proposal-writing opportunities as appropriate to their degree path.

Students should prepare a resume or CV and seek feedback from the School of Engineering Career Center as well as attend career fairs on campus and at professional society meetings. For students pursuing academic or research careers, professional development may also include manuscript drafting, literature review mastery, mentoring undergraduate researchers, and grant proposal participation.

2.8 Grievance Procedures

Grievances arising within the CPE Department must be heard under the applicable grievance procedure of the School of Engineering and the University of Kansas. This grievance procedure applies to faculty members, unclassified professional staff, and students in academic or program-related matters within the department. This procedure does not apply to graduate students in matters related to their employment as Graduate Teaching Assistants. A separate grievance procedure outlined in the Memorandum of Agreement between the University of Kansas, the Kansas Board of Regents, and the Kansas Association of Public Employees is available for that purpose. Students are encouraged to raise concerns promptly and to consult the Director of Graduate Studies, Department Chair, or Graduate Program Coordinator if they are unsure which procedure applies.

2.9 Petitions

Petitions are used when a student seeks an exception to a university, school, or departmental rule. Students must petition to waive the rules and requirements stated in this handbook, and the petition usually includes written assessment(s) from the student's faculty advisor and, when relevant, from committee members. Depending on type of petition, additional approval from the CPE Academic

Standards Committee, School of Engineering, or Office of Graduate & Postdoctoral Affairs may be required.
Petitions based on medical justifications should include supporting documentation from a health care professional but should not require the student to provide unnecessary personal details including specifics of the condition for which the student is being treated. Any student seeking a petition at any level is strongly encouraged to consult with the Graduate Program Coordinator or Director of Graduate Studies to discuss the circumstances of the petition and obtain the appropriate forms. Students should not assume that submitting a petition guarantees approval.

3. Advising, Mentoring, and Communication of Assignments & Roles

Incoming graduate students in the CPE Department participate in an advisor–advisee (faculty-graduate student) matching process facilitated by the Directors of Graduate Studies and the Graduate Program Coordinator. This process is designed to help students identify a faculty research advisor whose research area, mentoring expectations, and available opportunities align with the student's academic and professional goals.

Each Fall semester, CPE faculty provide research presentations to introduce students to their research areas. Following these presentations, students are encouraged to contact faculty members with matching interests to discuss potential partnership, project, funding opportunities etc. Before the end of their first semester, students must submit their advisor preferences to Graduate Program Coordinator. The Directors of Graduate Studies and Graduate Program Coordinator will then facilitate the matching process, taking into consideration student preferences, faculty research interests, faculty availability, funding availability when applicable, and program needs. Students are expected to secure a confirmed faculty research advisor by the conclusion of their first semester in the program. Making an early advisor search is highly recommended.

The faculty research advisor helps guide and mentor the student in course selection, research planning, thesis or dissertation development, milestone preparation, professional development, and progress toward degree completion. For thesis-based M.S. students, the faculty research advisor normally serves as chair of the thesis committee. For Ph.D. students, the faculty research advisor normally serves as chair of the dissertation committee.

The Directors of Graduate Studies serve as the general supervising advisor for graduate students and provide oversight of advising, advisor matching, academic progress, milestone concerns, petitions, and advisor/advisee issues that cannot be resolved directly. The Graduate Program Coordinator provides administrative guidance on enrollment, forms, deadlines, progress-to-degree paperwork, graduation processes, department records, and logistics related to the advisor matching process.

Students are responsible for participating actively and professionally in the advisor matching process, meeting with potential advisors, communicating their research interests clearly, completing required advisor selection materials by the department deadline, meeting regularly with their faculty research advisor after matching, and following the approved Plan of Study.

Students who are unable to identify a faculty research advisor by the end of their first semester of enrollment must meet with the Directors of Graduate Studies to develop a temporary advising plan.

Students are normally expected to identify a faculty research advisor within one semester after the temporary advising plan is developed. If a student is unable to identify a faculty research advisor within that period, the Directors of Graduate Studies and the Academic Standards Committee will review the case and determine the appropriate steps. Possible outcomes may include an extension of time, a change to another degree path if available and appropriate, leave of absence, or dismissal from the thesis-based M.S. or Ph.D. research program.

3.1 Change of Faculty Advisor

Every graduate student in the CPE Department must have a faculty research advisor or an approved temporary advisor while enrolled in a thesis-based M.S. or Ph.D. research program. Students may request to change advisors when there is a change in research interest, funding situation, faculty availability, or when the advising relationship is no longer productive.

A student who wishes to change advisors should communicate the request to the Directors of Graduate Studies in writing. The Directors of Graduate Studies and Graduate Program Coordinator may help facilitate the process by discussing the student's situation, identifying possible advising options when available, and supporting communication with faculty. A change of advisor depends on identifying another eligible CPE graduate faculty member who is willing to serve as the student's faculty research advisor.

When a change of advisor is necessary for reasons beyond the student's control, such as a faculty member leaving KU or retiring, loss of financial support, or when the advising relationship is no longer productive, the Directors of Graduate Studies may appoint a temporary advisor while the student seeks a new faculty research advisor. The Directors of Graduate Studies and Graduate Program Coordinator may assist with the process, but the student must ultimately identify a faculty member who is willing and eligible to serve as the new advisor.

Students are normally expected to identify a new faculty research advisor within one semester after notifying the Directors of Graduate Studies about changing advisors. If a student is unable to identify a new advisor within that period, the Directors of Graduate Studies and the Academic Standards Committee will review the case and determine the appropriate steps. Possible outcomes may include an extension of time, a change to another degree path if available and appropriate, leave of absence, or dismissal from the graduate program.

Any CPE faculty member has the right to decline to serve as a student's advisor, discontinue serving as a student's advisor, or decline to serve on a student's committee. If a student is unable to identify a CPE graduate faculty member willing to serve as advisor, this may be grounds for dismissal from the program.

3.2 Regular & Timely Feedback from Thesis/Dissertation Advisors

The faculty thesis and dissertation advisor is expected to provide regular and timely feedback and assessment on the student's academic work, research progress, thesis or dissertation development, milestone readiness, and professional expectations. The CPE Department recognizes that the meaning of "regular and timely feedback" may vary based on the student's degree program, stage of study, research type, and milestone timeline. Examples of regular and timely feedback includes:

- periodic advisor-student meetings during active research periods;

- timely feedback on major written work, such as thesis chapters/dissertation chapters, proposals, manuscripts, or examination documents;
- at least one progress discussion documented in writing each academic year;
- clear communication about research expectations, authorship/publication expectations, funding expectations, laboratory or computational work expectations, and readiness for required milestones.

Students are responsible for submitting written work with enough time for meaningful review and revision to their advisor. Students communicate with their advisors about document submission dates, and should not expect the same-day review of major documents before exams, defenses, or graduation deadlines. If a student is not receiving regular and timely feedback, the student should first discuss the concern with the faculty research advisor when appropriate. If the issue remains unresolved, the student should contact the Directors of Graduate Studies.

To support consistency across the department, the Directors of Graduate Studies will facilitate discussion among the graduate faculty to establish shared expectations for regular and timely feedback that are appropriate for CPE students at different stages of their academic careers. The Directors of Graduate Studies may use Individual Development Plans, mentorship agreements, written progress plans, or similar tools to clarify expectations for individual students. These expectations should be communicated clearly to students and faculty.

4. Information for Graduate Assistants (3G:GTA/GRA/GA)

These are sometimes referred to as 3G appointments. These appointments are the most common way that graduate students are funded. Appointment percentages vary. A full appointment is 50% FTE. Any student with an appointment of over 40% will be considered an employee of the university and will qualify for in-state tuition rates. The appointments of 40%+ will also qualify for 100% tuition coverage via a third-party sponsorship; for GTAs, this means the university will waive the tuition and the first 3 credit hours of fees. For GRAs, this means that the grant/funding you are working under will cover 100% of your tuition and up to all of your campus fees (as determined by your research advisor). Students on a 3G appointment will still have some fees each semester, such as medical insurance and international student fees (if applicable).

Students must be enrolled correctly and maintain good academic standing to continue employment via a 3G appointment. There are many policies governing the 3G appointments, especially for the GTA appointments, including the Memorandum of Agreement (MO) with the GTA union. Students should understand that assistantships are not guaranteed and contingent upon funding availability, department and university standing, enrollment compliance, and satisfactory performance.

4.1 General Information for All 3G Positions

All School of Engineering students have access to the buildings in the engineering complex using their KU Student ID. Students can also use their ID cards to gain access to the CPE department computer lab, student lounge, and some research spaces. Each student will be assigned an office in a shared graduate office space, which will be their personal workspace (for study, writing, etc). GRAs and GTAs will also be provided a mailbox on the 4th floor of Learned Hall. The Graduate Program Coordinator will provide information about how to get access to keys to access your office or laboratory spaces as well as the

location of your mailbox. Larger packages that cannot fit in your mailbox will be delivered to the CPE main office in 4132 Learned Hall.

4.2 GTAs

Graduate Teaching Assistants support instructional activities in CPE such as grading, supporting lectures, leading discussion sections, supporting laboratories, holding review sessions, and providing independent or supervised instruction. GTAs are expected to hold office hours for the classes they support. GTAs will be provided access to a desktop computer and any necessary software or textbooks for the GTA assignment. GTA's should communicate with the faculty instructor about expectations, access to materials, and weekly duties. KU and the CPE department expect GTAs to behave professionally in the classroom, in all student communications, and in the handling of grades and course records.

4.3 GTA MOA Requirements

The GTA MOA sets binding expectations for GTA working conditions, workload, evaluation, and grievance rights. Departments are expected to communicate the parts of the MOA that affect graduate employees directly, including access to necessary resources and assignments of duties. Failure to comply with the MOA can create a grievance issue. Students should review the current MOA, especially if they hold a GTA appointment. Questions about interpretation should be directed through the appropriate departmental and university channels. This handbook does not supersede the MOA but explains departmental practices consistent with the MOA.

4.4 GRAs

Graduate Research Assistants in CPE typically work on research sponsored by federal grants, industry or department funded projects. Activities often require data collection and analysis, use of software or computational tools, and laboratory equipment. Specific expectations will be outlined by the faculty supervisor at the beginning of the project and discussed periodically throughout the project. Specific discussions related to expectations for successful completion of the degree should occur to avoid confusion about degree requirements or deliverables.

5. Degree Requirements and Procedures

5.1 Academic Catalog

The KU Academic Catalog is the official source for requirements and regulations for every academic program. However, the Catalog is for informational purposes only and does not constitute a contract. Degree requirements listed in the Catalog have been approved by established University Governance procedures. Degree and program requirements and course descriptions are subject to change. This handbook serves as a supplement to provide further details on the requirements, policies, and procedures described in the Catalog.

The CPE department currently offers the following degrees/certificates:

- M.S. Chemical Engineering
- M.S. Petroleum Engineering
- Ph.D. Chemical and Petroleum Engineering
    - Chemical Engineering focused

    - Petroleum Engineering focused
- Graduate Certificate in Applied Machine Learning for Chemists and Engineers
- Graduate Certificate in Petroleum Management

5.2 Chemical Engineering Master's Degree Requirements
The M.S. degree has three culminating effort options (thesis, project, or coursework only). Students should select the degree option that best aligns with their career goals and academic background. Within the M.S. degree program, Option A (thesis) is research focused, Option B (project) may or may not require research, and Option C (coursework) does not require research.

5.2.1 Chemical Engineering Master's Coursework Requirements
The CPE M.S. degree program requires 30 credit hours. The exact mix of coursework (core, elective) and thesis or projects requirements varies by degree and culminating effort option. Only students who are admitted directly into the non-thesis option at the time of initial admission are qualified to start and remain on this track. Please work with your faculty advisor(s) to determine course selection and the path to meeting graduate requirements. All graduate students are expected to develop a Plan of Study and update it regularly to ensure alignment with degree requirements and advising decisions.

M.S. in Chemical Engineering
The M.S. degree program in Chemical Engineering requires the completion of 12 hours of core courses (Only on rare occasions are exceptions for the CPE coursework allowed):

- C&PE 701 Methods of Chemical and Petroleum Calculations
- C&PE 721 Chemical Engineering Thermodynamics
- C&PE 722 Kinetics and Catalysis
- C&PE 731 Convective Heat and Momentum Transfer

In addition to the core courses, students must complete additional requirements based on the M.S. Degree Option. The additional requirements are listed below.

Option A: Thesis

- 9 hours of electives courses. At least two electives are from C&PE. Outside electives must be approved by the department. Only one course may be at the 500-600 level.
- 3 hours of C&PE 800 Seminar – Responsible Scholarship requirement
- 6 hours of C&PE 803 Research

Option B – Project

- 12 hours of electives courses. At least two electives are from C&PE. Outside electives must be approved by the department. Only one course may be at the 500-600 level.
- 3 hours of C&PE 800 Seminar
- 3 hours of C&PE 825 Graduate Problems in C&PE

Only students who are admitted directly into the non-thesis option at the time of initial admission are qualified to start and remain on this track.

Option C – Coursework

- 18 hours of electives course. At least two electives are from C&PE. Outside electives must be approved by the department. Only one course may be at the 500-600 level.

5.2.2 Chemical Engineering Master's Culminating Effort Options
All M.S. degree options require 30 credit hours. Option A requires 6 hours of thesis credit and a final oral examination including defense of the thesis. Option B requires enrollment in a 3-hour project course C&PE 825. Option C requires only coursework and does not require a thesis or special project.

M.S. students completing Option A or Option B are normally expected to complete the degree within two academic years. To support this timeline, the student and advisor should discuss the thesis topic, research scope, expected deliverables, and graduation timeline no later than the first semester after being matched. The advisor and student should review progress toward thesis or project completion once per semester. If the student is not on track to complete the thesis or project within the expected two-year timeline, the advisor and student should discuss the concern early and may develop a written completion plan in consultation with the Directors of Graduate Studies.

The thesis must represent original scholarship. Students should work with their advisor on the scope and format of the thesis. The timing of draft submission and advisory/committee review should be defined with clear expectations. For more information about writing a thesis, ask other students, check in with the Writing Center, and/or attend a thesis/dissertation writing workshop through Graduate & Postdoctoral Affairs. Attending other students' final defenses can also help in the process and upcoming defenses can be found on the KU Events Calendar. The Office of Graduate & Postdoctoral Affairs houses the official requirements for theses and dissertations and students should make sure to use the most update to date formatting and submission requirements.

The thesis defense should be scheduled after the faculty advisor provides approval. Ideally, the thesis defense date should be set at two to four weeks ahead of the target graduation deadline to allow for adequate time for document revision. Per University policy, all final oral defenses must be open to the public and announced in the KU Events Calendar. Students should work closely with the Graduate Program Coordinator on the timeline and paperwork related to the dissertation defense and requirements for graduation. It is important to remember that the *Final Oral Exam/Defense for Doctorate* form must be submitted at least three weeks prior to the intended examination date, with the following items: abstract of thesis and photo. The Plan of Study must be up to date prior to the defense.

Non-thesis M.S. students, including online and in-person students, should make steady progress toward degree completion according to their approved Plan of Study and applicable University, School, and CPE department requirements. Because these students may not have a thesis or dissertation advisor, regular and timely feedback should be provided through the assigned faculty advisor/mentor, Directors of Graduate Studies, and/or Graduate Program Coordinator, depending on the student's degree path. If a non-thesis M.S. student is not making satisfactory progress toward degree completion, the student should meet with the Directors of Graduate Studies or the Graduate Program Coordinator to review the Plan of Study and develop a revised completion plan when needed.

5.2.3 Chemical Engineering Master's Outcome
For thesis or project options, the committee determines the outcome of the defense. Students should

expect clear communication about pass, conditional pass, required revisions, or unsatisfactory performance, along with any deadlines for revisions. In the case of unsatisfactory performance, the committee will determine the conditions for re-examination in accordance with university and department policies.

For the coursework only option, degree completion is based on successful completion of the courses in the approved plan of study and all degree requirements.

5.2.4 Chemical Engineering Master's Continuation to Ph.D.
Students who wish to continue from the CPE M.S. degree to a CPE Ph.D program should discuss the interest with the faculty advisor, Director of Graduate Studies, and Graduate Program Coordinator as early as possible. Based on performance in the core courses students may be eligible to enter the direct Ph.D. pathway, bypassing the M.S. degree. Continuation into the Ph.D. program or acceptance in the direct Ph.D pathway requires strong academic performance and faculty advisor support. Completion of the M.S. degree does not guarantee acceptance into the Ph.D. program.

5.3 Petroleum Engineering Master's Degree Requirements
The CPE department offers an M.S. degrees in Petroleum Engineering. The M.S. degree has four culminating effort options (thesis, project, coursework only, online coursework only). Students should select the degree option that best aligns with their career goals, academic background, and intended mode of study.

Within the M.S. degree program, Option A (thesis) is research focused, Option B (project) may or may not require research, and Option C and D (coursework) do not require research.

5.3.1 Petroleum Engineering Master's Coursework Requirements
The CPE M.S. degree program requires 30 credit hours. The exact mix of coursework (core, elective) and thesis or projects requirements varies by degree and culminating effort option. Before the end of the second semester, each student in the MS programs, with the help of their advisor, should create and submit a Plan of Study to the School of Engineering. The Plan of Study is a tool that is used to keep you on track throughout the degree program. When you create your plan, you will decide your estimated term of graduation, and it will help you track your class choices. Depending on a student's academic background and proposed Plan of Study, additional undergraduate prerequisite courses may be required.

M.S. in Petroleum Engineering
The M.S. degree program in Petroleum Engineering requires the completion of 15 hours of core courses (Only on rare occasions are exceptions for the CPE coursework allowed):

- C&PE 701 Methods of Chemical and Petroleum Calculations
- C&PE 771 Advanced Reservoir Engineering
- C&PE 790 Introduction to Flow in Porous Media
- C&PE 795 Enhanced Petroleum Recovery
- C&PE 798 Phase Equilibrium

In addition to the core courses, students must complete additional requirements based on the M.S. Degree Option. The additional requirements are listed below.

Option A: Thesis

- 6 hours of electives courses. At least two electives are from C&PE. Outside electives must be approved by the department. Only one course may be at the 500-600 level.
- 3 hours of C&PE 800 Seminar – Responsible Scholarship requirement
- 6 hours of C&PE 803 Research

Option B – Project

- 6 hours of electives courses. At least two electives are from C&PE. Outside electives must be approved by the department. Only one course may be at the 500-600 level.
- 3 hours of C&PE 800 Seminar
- 6 hours of C&PE 825 Graduate Problems in C&PE

Option C and D – Coursework

- 15 hours of electives course. At least two electives are from C&PE. Outside electives must be approved by the department. Only one course may be at the 500-600 level. Option D is remote and courses ae taken exclusively online.

Only students who are admitted directly into the non-thesis option at the time of initial admission are qualified to start and remain on this track. Please work with your faculty advisor(s) to determine course selection and the path to meeting graduate requirements.

5.3.2 Petroleum Engineering Master's Culminating Effort Options

CPE M.S. degrees have three options. Option A requires 30 credit hours including 6 hours of thesis credit and a final oral examination including defense of the thesis. Option B requires 30 credit hours including a 6-hour project class and the submission of a written report on the special project. Option C and D require 30 credit hours of coursework and do not require a thesis or special project.

M.S. students completing Option A or Option B are normally expected to complete the degree within two academic years. To support this timeline, the student and advisor should discuss the thesis topic, research scope, expected deliverables, and graduation timeline no later than the first semester after being matched. The advisor and student should review progress toward thesis or project completion once per semester. If the student is not on track to complete the thesis or project within the expected two-year timeline, the advisor and student should discuss the concern early and may develop a written completion plan in consultation with the Directors of Graduate Studies.

The thesis must represent original scholarship. Students should work with their advisor on the scope and format of the thesis. The timing of draft submission and advisory/committee review should be defined with clear expectations. For more information about writing a thesis, ask other students, check in with the Writing Center, and/or attend a thesis/dissertation writing workshop through Graduate & Postdoctoral Affairs. Attending other students' final defenses can also help in the process and upcoming defenses can be found on the KU Events Calendar. The Office of Graduate & Postdoctoral Affairs houses the official requirements for theses and dissertations and students should make sure to use the most update to date formatting and submission requirements.

The thesis defense should be scheduled after the faculty advisor provides approval. Ideally, the dissertation defense should be scheduled 2-4 weeks before the target graduation deadline to allow for adequate time for document revision. Per University policy, all final oral defenses must be open to the public and announced in the KU Events Calendar. Students should work closely with the Graduate Program Coordinator on the timeline and paperwork related to the dissertation defense and requirements for graduation. It is important to remember that the *Final Oral Exam/Defense for Doctorate* form (see attachment) must be submitted at least three weeks prior to the intended examination date, with the following items: abstract of thesis and photo. The Plan of Study must be up to date prior to the defense.

Non-thesis M.S. students, including online and in-person students, should make steady progress toward degree completion according to their approved Plan of Study and applicable University, School, and CPE department requirements. Because these students may not have a thesis or dissertation advisor, regular and timely feedback should be provided through the assigned faculty advisor/mentor, Directors of Graduate Studies, and/or Graduate Program Coordinator, depending on the student's degree path. Online M.S. students are expected to maintain regular communication through KU email and scheduled virtual meetings when needed, or other approved KU communication channels. Online students are responsible for checking messages regularly, responding to advising requests, and seeking clarification early if course sequencing, degree requirements, or graduation deadlines are unclear.
If a non-thesis M.S. student is not making satisfactory progress toward degree completion, the student should meet with the Directors of Graduate Studies or the Graduate Program Coordinator to review the Plan of Study and develop a revised completion plan when needed.

5.3.3 Petroleum Engineering Master's Outcome
For thesis or project options, the committee determines the outcome of the defense. Students should expect clear communication about pass, conditional pass, required revisions, or unsatisfactory performance, along with any deadlines for revisions. In the case of unsatisfactory performance, the committee will determine the conditions for rex-examination in accordance with university and department policies.

For the coursework only options, degree completion is based on successful completion of the courses in the approved plan of study and all degree requirements.

5.3.4 Petroleum Engineering Master's Continuation to Ph.D.
Students who wish to continue from the CPE M.S. degree to a CPE Ph.D program should discuss the interest with the faculty advisor, Director of Graduate Studies, and Graduate Program Coordinator as early as possible. Based on performance in the core courses students may be eligible to enter the direct Ph.D. pathway, bypassing the M.S. degree. Continuation into the Ph.D. program or acceptance in the direct Ph.D pathway requires strong academic performance and faculty advisor support. Completion of the M.S. degree does not guarantee acceptance into the Ph.D. program.

5.4 Doctoral Degree Requirements
Doctoral study in CPE culminates in the dissertation and presentation of original research. Doctoral students must satisfy the University's general requirements for the Ph.D and have a ***Plan of Study*** approved by the faculty advisor, Director of Graduate Studies, and the dissertation committee. The Plan of Study is a tool that is used to help keep students on track throughout their degree program. It should be created early and updated whenever there is a change in the coursework or research direction.

5.4.1 Coursework and Doctoral Degree Requirements

Students are expected to complete the full Graduate Core courses. If a student joins the Ph.D. program after completing an MS degree, then course waiver petitions can be requested on an as-needed basis. Course and elective waiver petitions are evaluated and approved by the Academic Standards Committee. Each petition must include a syllabus for each equivalent course in addition to a copy of the M.S. degree transcript (can be taken from the original application by request to the Graduate Program Coordinator). If approved, the student will receive a waiver for the corresponding core course(s), but this is not a credit transfer. No outside credit hours can be counted toward the total credit hour requirements for the PhD. Instead, the student will take alternative courses or research hours as decided by the student and their research advisor, or receive a course load reduction. The total course load for the Ph.D. can be reduced to as few as 45 credit hours for students who join the program with a completed thesis-based MS degree in either chemical or petroleum engineering.

<u>Coursework Requirements for Chemical Engineering Focused Ph.D. Degree</u>

- C&PE 701 Methods of Chemical and Petroleum Calculations
- C&PE 721 Chemical Engineering Thermodynamics
- C&PE 722 Kinetics and Catalysis
- C&PE 731 Convective Heat and Momentum Transfer
- 12 hours of electives courses. Only one course may be at the 500-600 level
- 30 -34 hours of research (CPE 803, 825, 902, 904)
- C&PE 800 Seminar every semester – Responsible Scholarship requirement

Credit hours for the Ph.D. degree normally consist of 12 credit hours of courses beyond the Graduate Core and 30-34 credit hours of research work, totaling at least 60 credit hours.

<u>Coursework Requirements for Petroleum Engineering Focused Ph.D. Degree</u>

- C&PE 701 Methods of Chemical and Petroleum Calculations
- C&PE 771 Advanced Reservoir Engineering
- C&PE 790 Introduction to Flow in Porous Media
- C&PE 795 Enhanced Petroleum Recovery
- C&PE 798 Phase Equilibrium
- 12 hours of electives courses. Only one course may be at the 500-600 level
- 30 -34 hours of research (CPE 803, 825, 902, 904)
- C&PE 800 Seminar every semester – Responsible Scholarship requirement

Credit hours for the Ph.D. degree normally consist of 12 credit hours of courses beyond the Graduate Core and 30-34 credit hours of research work, totaling at least 60 credit hours.

5.4.2 Research Skills & Responsible Scholarship

Before the student can take complete the comprehensive examination, the student must satisfy the research skills & responsibility scholarship requirements. The research skill is defined as being distinct from, but supportive of the dissertation research. Students should discuss the research skill completion with their faculty advisor. In CPE, students satisfy the responsible scholarship requirement with enrollment In CPE 800. Students are required to enroll in the CPE Graduate Seminar (CPE 800) every

semester in residence for 1 credit. Topics such as research ethics, safety training, authorship determination, etc. are discussed in the Graduate Seminar course. Students who are required to attend another seminar to satisfy a fellowship or research program requirement may enroll in both seminars. Any schedule conflicts should be discussed with both seminar coordinators. (Exception: in a student's final semester, if all research hours and post-comp hours have been achieved, a student may request not to enroll in the seminar with the permission of that semester's seminar faculty member or the Directors of Graduate Studies.)

5.4.3 Establishing a Committee

An advisory committee of five faculty members with a dissertation privilege will be formed for each student once the student has been designated as a Ph.D. aspirant. The committee works with the aspirant to develop an appropriate overall path toward graduation and monitors the student's research progress throughout the remainder of the Ph.D. program. Selection of the committee members should be done in consultation with the faculty advisor who will serve as the committee chair and in accordance with the KU committee composition policies. One member of the committee must be the Graduate Studies Representative. This individual cannot be from the CPE department and should NOT have a vested interest in the student's research (aka. No Conflict of Interest).

5.4.4 Preliminary Examination of Research

(Exception: students who earned a thesis-based master's degree in chemical engineering from another accredited institution are exempt from this exam.)

This exam is an important milestone for graduate students who do not have a prior research master's degree on their way to becoming a Doctoral Candidate in the CPE department. Other departments call this the Qualifier or Qualifying exam. The CPE Preliminary Exam is given to determine the student's aptitudes for 1) Independent, original critical thinking; 2) Planning and organizing a research project; 3) Use of previous work and background literature to demonstrate a) Understanding of the planned research within the scope of the larger project and b) Ability to conduct that research; 4) Application of fundamental theory (e.g. equations) to the proposed work; 5) Effective communication of technical work.

Students taking this exam will have a) completed three CPE Core classes with a 3.0 GPA or higher without having earned more than one 'C' or lower grade, or b) met the same criteria for equivalent courses during their Master's degree program at another accredited university and maintained a KU cumulative GPA above 3.0.

The two main components of this exam are the Written Report and the Oral Presentation. The topic for the exam will be a proposal for the research the student plans to perform for their final dissertation. The written portion should utilize standard formatting: 12pt font, 3-5 pages, single-line spacing, 1-inch margins, a title, and name and date on the top-left corner. Once the written portion has been submitted to the research advisor, it will be time to schedule the oral presentation. Students will work with their advisor, the Directors of Graduate Studies, and the Graduate Program Coordinator to schedule the presentation to ensure all department procedures and policies are correctly followed. The Oral presentation should take between 15 and 20 minutes. This exam, in general, is an excellent opportunity to make sure your full committee is arranged and for them to give you initial feedback as your dissertation writing begins in earnest.

Possible Outcomes for the Preliminary Exam

PASS, PASS with Restriction [PWR] (specific deficiency -- one aptitude score is below 2.0); FAIL (two or more scores below 2.0). Successful completion of the Preliminary Exam of Research admits the student into the Ph.D. program and earns the student a Ph.D. Aspirant's status. The PWR status must be corrected by actions set and documented by the examining committee within the same academic semester. Remedial action taken for PWR status will be documented on the second page of the Prelim Evaluation Form and signed/dated by the research advisor. If the deficiency is not corrected and documented, a grade of FAIL is assigned. FAIL status requires the student to retake the prelim within four months of the initial exam. This examination can be repeated once. A second failure automatically transfers the student to the MS degree program.

Timeline and Consequences for Missing the Preliminary Exam Deadline

Ph.D. students must normally complete the Preliminary Exam no later than the end of the first calendar year of enrollment in the Ph.D. program. If a student cannot complete the Preliminary Exam by the deadline, the student must submit a written request for an extension to the Directors of Graduate Studies before the deadline. The request should include the reason for the delay, the advisor's input, and a proposed revised exam date. Extensions may be considered for documented exceptional circumstances, such as an approved leave of absence, medical or family emergency, visa or immigration delay, advisor/lab disruption, or other serious circumstances beyond the student's control.

If the extension is approved, the student must complete the exam by the revised deadline. If the extension is not approved, or if the student does not complete the exam by the revised deadline, the student may be placed on a written progress plan or academic probation. Continued failure to complete the Preliminary Exam may result in loss of good standing, loss of departmental funding eligibility, transition to an appropriate master's degree path if available and approved, or recommendation for dismissal from the Ph.D. program.

Successful completion of the Preliminary Exam of Research admits the student into the Ph.D. program and earns the student a Ph.D. Aspirant's status.

5.4.5 Comprehensive Examination

The Ph.D. aspirant will take the comprehensive examination after completion of all coursework. Before this exam can be taken, there are additional university-level requirements that students need to meet. These are:

- **Residency Requirements:** Must have accumulated 18 hours from enrollment. Please check the Policy Library for Graduate Studies on Engagement and Enrollment in Doctoral Programs.
- **Research Skills**: This requirement is satisfied by a letter from the student's advisor clearly explaining how the student has met the research skills.
- **Responsible Scholarship:** All students must complete at least 3 hours of C&PE 800 before scheduling the comprehensive exam.

The purpose of this examination is to assess students' ability to conduct independent research related to their dissertation topic. The exam itself consists of two parts: a written report/proposal and an oral examination based on, but not limited to, the research proposal.

The written report/proposal should have the following content:

- Current progress (40%): Students describe their current dissertation project and the progress they have made thus far. This section should include a background, motivation, and research aims that have been completed/are in progress.

- Proposed research (40%): Students build on their current results to propose a new direction or independent research that will be performed as part of their final dissertation. The research objectives described should be those that will be completed as part of the student's dissertation research.
- Future direction (20%): Students describe logical extensions of the current research described in the dissertation. This section can be considered as part of the future directions chapter of the final dissertation.

The written document must conform to the following requirements: (adapted from the NSF PAPPG guidelines)

1. Page length: 15 pages
2. Margins, in all directions, must be at least an inch.
3. Paper size must be no larger than standard letter paper size (8½ by 11 or 11 by 8½)
4. No more than six lines of text within a vertical space of one inch
5. Use one of the following fonts: Arial (not Arial Narrow), Courier New, or Palatino Linotype at a font size of 10 points or larger Times New Roman at a font size of 11 points or larger; or Computer Modern family of fonts at a font size of 11 points or larger. A font size of less than 10 points may be used for mathematical formulas or equations, figures, tables, or diagram captions, and when using a Symbol font to insert Greek letters or special characters. Other fonts not specified above, such as Cambria Math, may be used for mathematical formulas, equations, or when inserting Greek letters or special characters.

Possible Outcomes for the Comprehensive Exam

A student must pass both parts of the examination. Failure of either part constitutes an unsatisfactory on the entire examination. An aspirant who receives a grade of Unsatisfactory may repeat the examination upon the recommendation of the examining committee, but under no circumstances may it be taken more than twice. The examination may not be repeated until at least 90 days have elapsed since the unsuccessful attempt. To prepare the aspirant for the comprehensive examination, the advisory committee may require enrollment in C&PE 902 **(**Preparation for the Ph.D. Comprehensive Examination**)** during the first year of the Ph.D. program. On receipt of a grade of Honors or Satisfactory on the comprehensive examination, the aspirant is admitted to candidacy for the degree of Doctor of Philosophy. For more about the School of Engineering comprehensive exam requirements and full university policy wording.

Timeline and Consequences for Missing the Comprehensive Examination Deadline

Ph.D. students are normally expected to complete the Comprehensive Examination no later than the end of Year 3 in the Ph.D. program, unless an extension is approved in writing by the Directors of Graduate Studies and/or Academic Standards Committee. Students must also complete all University, School, and departmental requirements that must be satisfied before the Comprehensive Examination, including coursework, residency, research skills, responsible scholarship, and required research hours. If a student cannot complete the Comprehensive Examination by the expected deadline, the student must submit a written request for extension to the Directors of Graduate Studies before the deadline. The request should include the reason for the delay, the advisor's input, a proposed revised exam date, and a plan for completing any remaining requirements.

If the extension is approved, the student must complete the Comprehensive Examination by the revised deadline. If the extension is not approved, or if the student does not complete the exam by the revised deadline, the student may be placed on a written progress plan or academic probation. Continued failure to complete the Comprehensive Examination may result in loss of good standing, loss of

departmental funding eligibility, transition to an appropriate master's degree path if available and approved, or recommendation for dismissal from the Ph.D. program.

Successful completion of the Comprehensive Exam earns the student Doctoral Candidate Status.

5.4.6 Post Comprehensive Exam Hour Requirement
After completing the oral comprehensive examination and defense of the dissertation proposal, students are required to adhere to the University's Post-Comprehensive Enrollment Policy. Students should work with the Graduate Program Coordinator to confirm requirements prior to enrollment to avoid issues related to tuition, continuous enrollment, or progress toward degree.

5.4.7 The Dissertation and Defense
The dissertation must represent original scholarship. Students should work with their advisor on the scope and format of the dissertation. The timing of draft submission and advisory/committee review should be defined with clear expectations. For more information about writing a dissertation, ask other students, check in with the Writing Center, and/or attend a thesis/dissertation writing workshop through Graduate & Postdoctoral Affairs. Attending other students' final defenses can also help in the process and upcoming defenses can be found on the KU Events Calendar. The Office of Graduate & Postdoctoral Affairs houses the official requirements for theses and dissertations and students should make sure to use the most update to date formatting and submission requirements.

The dissertation defense should be scheduled after the faculty advisor provides approval. Ideally, the dissertation defense should be scheduled 2-4 weeks before the target graduation deadline to allow for adequate time for document revision. Per University policy, all final oral defenses must be open to the public and announced in the KU Events Calendar. Students should work closely with the Graduate Program Coordinator on the timeline and paperwork related to the dissertation defense and requirements for graduation. It is important to remember that the *Final Oral Exam/Defense for Doctorate* form (see attachment) must be submitted at least three weeks prior to the intended examination date, with the following items: abstract of dissertation and photo. The Plan of Study must be up to date prior to the defense.

Ph.D. students are normally expected to complete required milestones and degree requirements within four academic years, according to the approved departmental milestone plan. To support this timeline, the advisor and student should regularly discuss progress toward the Plan of Study, Ph.D. research, committee formation, Preliminary Research Exam, Comprehensive Examination, dissertation writing, and final defense.

5.5 Graduation
The Office of Graduate and Postdoctoral Affairs has published graduation deadlines that are important for students to follow. All final edits to the thesis or dissertation must be uploaded to the digital repository ProQuest. The School of Engineering has several checklists and information available to help students prepare for graduation, detailed information about applying for graduation, and information about the graduation ceremony itself. For Ph.D. graduates, the University holds a Doctoral Hooding Ceremony on graduation weekend.

5.6 Certificate Requirements
The CPE department has two graduate certificates: Graduate Certificate in Applied Machine Learning for

Chemists and Engineers and Graduate Certificate in Petroleum Management. Students interested in the certificates should review the KU Academic Catalog for the current degree requirements and application procedures.