



College of Engineering

Engineering Faculty Document No.:

51-17

December 9, 2025

TO: The Engineering Faculty

FROM: The Faculty of the Davidson School of Chemical Engineering

RE: New graduate course – Prof MS Capstone Project – CHE

The Faculty of the Davidson School of Chemical Engineering has approved the following new graduate course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

FROM (IF ALREADY OFFERED WITH TEMPORARY NUMBER):

Prof MS Capstone Project – CHE 59700
Fall, Spring, and Summer
6 total credits

TO:

Prof MS Capstone Project – CHE 50300
Fall, Spring, and Summer
6 total credits

Pre-Requisites: Enrollment in the Professional MS Program of the Charles D. Davidson School of Chemical Engineering or permission from the instructor.

RATIONALE: The Capstone course is one of the required courses in completing the Prof. MS in Chemical Engineering. Approximately 359 Prof. MS CHE students have enrolled in the course since Fall 2015, which includes 11 currently enrolled for the Fall 2025 semester.

This course provides a project-based learning experience as a capstone for the Professional M.S. Program in the Davidson School of Chemical Engineering. In particular, students spend the semester focusing on a given project associated with a pre-approved industrial mentoring team, or with either a CHE faculty member at Purdue University. The students participate as either a single student or part of a small team in order to accomplish the goals of the project. The objective of this capstone project is to provide a means by which the students can demonstrate their mastery of chemical engineering principles in an applied setting. This includes interacting in a professional manner, solving technical problems of significant interest to industry and academia, and communicating technical issues using oral and written techniques. Thus, this course provides a means by which to simulate interactions that are not atypical for chemical engineers as they start their professional careers.

DocuSigned by:

David Corti

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David S. Corti, Interim Head, Davidson School of Chemical Engineering

Link to Curriculumlog entry: <https://purdue.curriculumlog.com/proposal:34478/form>

Purdue University ChE 597: Professional M.S. Capstone Project, Fall 2025

- A. Instructor.** Professor William R. Clark
- B. Course Description and Objectives.** This course provides a project-based learning experience as a capstone for the Professional M.S. Program in the Davidson School of Chemical Engineering. In particular, students spend the semester focusing on a given project associated with either an academic laboratory at Purdue University or with a pre-approved industrial mentoring team. The students participate as either a single student or part of a small team in order to accomplish the goals of the project. The objective of this capstone project is to provide a means by which the students can demonstrate their mastery of chemical engineering principles in an applied setting. This includes interacting in a professional manner, solving technical problems of significant interest to industry and academia, and communicating technical issues using oral and written techniques. Thus, this course provides a means by which to simulate interactions that are not atypical for chemical engineers as they start their professional careers.
- C. Prerequisites.** Enrollment in the Professional M.S. Program of the Charles D. Davidson School of Chemical Engineering or permission from the instructor.
- D. Consulting with the Instructor.** I encourage you to discuss academic or personal questions with me during face-to-face meetings or via email. These discussions need not be limited to ChE 59700 content.
- E. Academic Dishonesty.** Academic dishonesty ***will not be tolerated*** in any form in this course. Specifically, Purdue prohibits “dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty.” [Section B-2-a, Code of Student Conduct] Furthermore, the University Senate has stipulated that “the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest.” [University Senate Document 72-18, December 15, 1972] All incidents of academic dishonesty will be reported to the Dean of Students. **Such incidents include: (i) possessing or accessing, in hardcopy or electronic form, the solution manual to the course text, or to the exams, (ii) claiming credit for work that is not your own original work, and (iii) enabling other students to create work that is not their original work. The punishment for the first offense is a grade of zero for the entire work (exam or homework), and the punishment for a second offense is an F mark for the class.**
- F. Conduct.** University policy states that it is the responsibility of all students to attend all class sessions (http://www.purdue.edu/studentregulations/regulations_procedures/classes.html). Each student is expected to come to class on time and not disrupt the class. Each student is also expected to follow Purdue’s codes of student conduct (http://www.purdue.edu/studentregulations/student_conduct/regulations.html) and behave in a professional manner. The rights of students in violation of the code of conduct are outlined. Each student is expected to exhibit consideration and respect towards the other students, the graders, the teaching assistants (TAs), and the faculty member. Each student is expected to exhibit a positive attitude. Your conduct will be a factor in awarding grades to students. Purdue University’s student conduct policy specifically addresses academic dishonesty.
- G. Academic Integrity.** Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breeches of this value by either emailing integrity@purdue.edu or by calling (765) 494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.
- H. Student-Initiated Purdue Honors Pledge.** As a Boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue.
- I. Attendance.** University policy states that it is the responsibility of all students to attend all class sessions (http://www.purdue.edu/studentregulations/regulations_procedures/classes.html). You are expected to attend all class periods. The University expects both students and their instructors to approach problems with class attendance in a manner that is reasonable.

J. Student Professionalism. The highest standards of professionalism and ethics are expected in CHE 59700. Each student is expected to come to class on time and not disrupt the class. Each student is also expected to follow Purdue's codes of student conduct <https://catalog.purdue.edu/content.php?catoid=18&navoid=24200> and behave in a professional manner. The rights of students in violation of the code of conduct are outlined. Each student is expected to exhibit consideration and respect towards the other students and the faculty member. Each student is expected to exhibit a positive attitude. Expectations for each student include (but are not limited to):

1. Attending all class sessions.
2. Coming to class on time and prepared by reading assigned material beforehand.
3. Refraining from disrupting class (e.g., turning off or silencing cell phones, refraining from cell phone or laptop use during class, and carrying on a loud conversation during class).
4. Maintaining the highest standards of academic honesty and integrity.
5. Being an active contributor to team assignments.
6. Being knowledgeable about the policies and information described in the syllabus.

K. Illness. If a student becomes sick (e.g., with flu-like symptoms), he/she should seek prompt medical attention, and then not come back to class until he/she has been symptom-free for more than 24 hours. Materials will be made available electronically to assist any students who are ill, and reasonable accommodations will be made on an individual basis to ensure that all students have the opportunity to learn. In the event of a severe outbreak of illness at Purdue that mandates class not meet, all attempts will be made to deliver the course online through Brightspace.

L. Bereavement Policy. Purdue recognizes that a time of bereavement is very difficult for a student. The University therefore provides rights to students facing the loss of a family member through the Grief Absence Policy for Students (GAPS): <http://www.purdue.edu/odos/services/griefabsencepolicyforstudents.php>. Students who find themselves in need of assistance in a time of bereavement should contact Professor Boudouris privately to discuss specific needs.

M. Nondiscrimination. Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. Purdue University prohibits discrimination against any member of the University community on the basis of race, religion, color, sex, age, national origin or ancestry, genetic information, marital status, parental status, sexual orientation, gender identity and expression, disability, or status as a veteran. The University will conduct its programs, services and activities consistent with applicable federal, state and local laws, regulations and orders and in conformance with the procedures and limitations as set forth in Executive Memorandum No. D-1, which provides specific contractual rights and remedies. Any student who believes they have been discriminated against may visit www.purdue.edu/report-hate to submit a complaint to the Office of Institutional Equity. Information may be reported anonymously.

N. Violent Behavior Policy. Purdue University is committed to providing a safe and secure campus environment for members of the University community. Purdue strives to create an educational environment for students and a work environment for employees that promote educational and career goals. Violent behavior impedes such goals. Therefore, violent behavior is prohibited in or on any University Facility or while participating in any University activity.

O. Individual Learning and Testing Needs. Any student who feels he/she may need an accommodation with any aspect of the course based on a personal circumstance should contact Professor Clark privately to discuss his/her specific needs. If you are a student with any form of individual learning needs, please speak with the faculty instructors whether or not you seek an accommodation so that we are aware of your circumstance and can deliver course content in a manner that is most compatible with your situation.

P. Emergency Preparedness. Purdue University is a very safe campus and there is a low probability that a serious incident will occur here at Purdue. However, it is important to emphasize the emergency procedures for evacuation and shelter-in-place incidents. Preparedness will be critical if an unexpected event is to occur. Emergency preparedness is your personal responsibility. Purdue University is actively preparing for natural disasters or human-caused incidents with the ultimate goal of maintaining a safe and secure campus. The following is a review of the emergency procedures at Purdue University.

1. For any emergency call 911.
2. There are nearly 300 Emergency Telephone Systems throughout campus that connect directly to the Purdue Police Department (PUPD). If you feel threatened or need help, push the button and you will be connected to the PUPD.
3. If there is a fire alarm, we will immediately evacuate the building and proceed to in front of the MSEE building. Do not use the elevator.
4. If there is a Shelter-in-Place requirement for a tornado warning, we will shelter in the lowest level of this building away from windows and doors. This location is between FRNY G140 and FRNY B124.
5. If there is a Shelter-in-Place requirement for a hazardous materials release, we will shelter in the classroom shutting any open doors and windows.
6. If there is a Shelter-in-Place requirement for a civil disturbance, we will shelter in a room that is securable preferably without windows. This location is FRNY 1051.

Q. Campus Emergencies. In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructors' control. *Here are ways to get information about changes in this course. You are expected to check your @purdue.edu email address frequently.*

R. Mental Health. Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765) 494-6995 and <http://www.purdue.edu/caps/> during and after hours, on weekends and holidays, or through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.

S. Use of Copyrighted Material. Among the materials that may be protected by copyright law are the lectures, notes, and other material presented in class or as part of the course. Always assume the materials presented by an instructor are protected by copyright unless the instructor has stated otherwise. Students enrolled in, and authorized visitors to, Purdue University courses are permitted to take notes, which they may use for individual/group study or for other non-commercial purposes reasonably arising from enrollment in the course or the University generally.

Notes taken in class are, however, generally considered to be “derivative works” of the instructor’s presentations and materials, and they are thus subject to the instructor’s copyright in such presentations and materials. No individual is permitted to sell or otherwise barter notes, either to other students or to any commercial concern, for a course without the express written permission of the course instructor. To obtain permission to sell or barter notes, the individual wishing to sell or barter the notes must be registered in the course or must be an approved visitor to the class. Course instructors may choose to grant or not grant such permission at their own discretion, and may require a review of the notes prior to their being sold or bartered. If they do grant such permission, they may revoke it at any time, if they so choose.

T. Instructor Contact Information.

Professor William R. Clark – Email: clarkw@purdue.edu, Telephone: (317) 691-1438

U. Course Meeting Schedule.

If you have a reasonable issue (e.g., religious observance) that conflicts with the meeting time, please tell Professor Clark as soon as possible so that plans may be made for you to meet with Professor Clark or the speaker for that day at an alternate time.

Unexcused absence from greater than two (2) course meeting periods will result in a grade of an “F” for the entire course.

The following is a summary of the topics for the meeting days and course deadlines for the semester.

Sep. 12 – All students are assigned projects and sponsor mentors

Sep. 22 – Project charters due

Sep. 25 – Progress report #1 due

Oct. 16 – Progress report #2 due

Nov. 13 – Progress report #3 due

Dec. 5 – Final reports are due in Brightspace by 5:00pm

Dec. 8 – Oral reports (venue pending)

Dec. 20 – Semester concludes

- V. Sponsored Student Class Project Notice.** This course permits you, the student, to participate in a class project that has been sponsored by a private entity. The University encourages and supports your participation in this practical learning experience, but your participation in the course does not require you to participate in a sponsored class project. Prior to your participation in a sponsored class project, we would like you to carefully consider that your participation requires you to meet these conditions: First, under Purdue University’s Intellectual Property policy, you will not retain any Project Intellectual Property rights because the University has already agreed to assign all Project Intellectual Property rights to the sponsor. Second, your intellectual property rights with respect to the project will be assigned to Purdue University. Third, you may be subject to confidentiality requirements accompanied by personal liability should you fail to comply. Fourth, if for any reason you are not willing to be subject to these conditions, you may opt out of the sponsored-class project before the project begins. The course instructor will provide an alternative project for you that does not require you to give up intellectual property rights.
- W. E-mail.** Occasionally, important class announcements will be disseminated through the class e-mail list. It is your responsibility to regularly check your e-mail every day and to read the e-mails regarding ChE 59700 to receive important class information. If you e-mail Professor Clark with questions or a request to make an appointment, please allow 24 hours for a response during the week, or a response by Monday at 5p if the e-mail is sent on the weekend.
- X. Website for Course Information (<https://purdue.brightspace.com>).** This course will use the Brightspace site. The website is limited to enrolled students and will have the syllabus, handouts, homework assignments, and other important class information associated with it. To login, use your university name and password. Please check the website regularly for assignments as paper copies will not be distributed in class. Generally, homework is due on Wednesdays, and homework will be posted a week before it is due.
- Y. Assessment of Course Outcomes.** A weighted average grade will be calculated as follows.

Team Meetings & Project Charter: 20%

Semester Manuscript: 40%

Semester Oral Report: 40%

The grading scale will be as follows.

A: 100 – 85% of the weighted points

- B: 84.9 – 75% of the weighted points
- C: 74.9 – 65% of the weighted points
- D: 64.9 – 55% of the weighted points
- F: Less than 55% of the weighted points

Team Meetings & Project Charter

The project update meetings provide students the opportunity to strengthen their teamwork, project management and communications skills. Each meeting provides a designated time to for both students and the instructor to check-in on project progress, changes, and problems that the project and teams may be encountering. Student teams will be separated into two groups (A and B) who meet with Dr. Clark in alternating weeks - each team will meet at a standing, designated time, every other week. More information about the groups and meeting schedules will be sent out via Brightspace.

As part of the team meeting process, each team will be responsible for preparing an agenda for each meeting so as to guide the discussion of the meeting. **Agendas will be due to Prof. Clark via email by 9:00 am on the day of your meeting.** A detailed outline of agenda requirements will be uploaded to Brightspace.

Additionally, teams will be responsible for drafting a project charter, outlining the project's scope, development, and objectives, and defining the roles and responsibilities of each team member. More information about the project charter assignment will be uploaded to Brightspace.

Semester Manuscript

Each team will submit a semester report by 5p on Friday, December 5, 2025 regarding their work on the respective projects to Brightspace. **LATE SUBMISSIONS WILL NOT BE GRADED, AND THE SUBMITTING TEAM WILL RECEIVE A 0 OF 100 ON THE ENTIRE MANUSCRIPT ASSIGNMENT.**

Semester Oral Report

Each team will be required to present an oral report regarding their findings on December 8. The exact presentation order for the teams will be drawn at random and announced during the week prior to the presentations. While the exact presentation format is at the discretion of the teams, it is anticipated that most teams will present their work using a media platform akin to that of PowerPoint. The presentation time slots will be scheduled for 1 hour in duration. Teams should plan to present for **A MAXIMUM OF 25 MINUTES**. During this time, the audience will only be allowed to ask questions of clarification in order to follow the oral report. A total of **10 MINUTES WILL BE RESERVED FOR QUESTIONS FROM THE AUDIENCE**. Teams will be allowed into the room 5 minutes prior to the scheduled start of their presentation (e.g., if a team is to present at 10a, they will not be allowed into the room until 9:55a).