

San José State University
Chemical and Materials Engineering Department
ChE/MatE 281, MS Thesis/Project Preparation Seminar, Fall 2022

Course and Contact Information

Instructor(s):	Dr. Craig England
Office Location:	E223
Email:	craig.english@sjsu.edu
Office Hours:	Friday 1:30-2:30 PM
Class Days/Time:	Friday 3:00-5:45 PM
Classroom:	In-Person: E333
Prerequisites:	<p>The Prerequisite Checklist covering the information listed below must be completed prior to the first class.</p> <ul style="list-style-type: none">• The graduate student must be in good standing (cumulative GPA\geq3.0) and have classified status in the CME department. Students admitted with conditions must have submitted a Change of Classification in Master's Program form to a CME Graduate Advisor for approval.• The graduate student must have satisfied the Graduate Writing Assessment Requirement• The graduate student must have submitted their Petition for Advancement to Graduate Candidacy form to a CME Graduate Advisor for approval• The graduate student must have a thesis/project topic with a SJSU Research Advisor.

Course Description

This course is designed to assist Chemical and Materials Engineering graduate students with the development of a Master's project or thesis proposal, which they must successfully defend to pass the course.

Course Format

Course Website

Course materials such as syllabus, handouts, lecture notes, assignment instructions can be found on the Canvas learning management system course website. Students are responsible for making copies of course materials and reading all information posted by the course instructors on the Canvas course website. Information for students about using Canvas can be found at <https://www.sjsu.edu/ecampus/software-tools/teaching-tools/canvas/index.php>.

Course Goals

The primary goal of this course is to develop a Master's project or thesis research proposal based on the guidelines developed by the Chemical and Materials Engineering Department and the [College of Graduate Studies](#). The student must complete a written research proposal report which complies with the [SJSU 14 Formatting Rules](#). The final report must contain the following components.

- A Front Matter section that complies with the College of Graduate Studies template (
- An Introduction Chapter which discusses the motivation for the research, addresses the global significance of the research, summarizes the history of technology associated with the research, outlines the theoretical principles supporting this research, and describes what will be accomplished by this research.
- A Literature Review Chapter which summarizes similar or related research work that has been published.
- An Objectives/Hypothesis Chapter which provides a problem statement, a description of the objective(s) of the research, and possibly a hypothesis regarding the research.
- A Materials and Methods Chapter which describes the equipment, materials and supplies that will be needed to do the research, discusses the safety issues associated with the research, outlines the methodology that will be used to assess the completion of your research objectives, and includes a timeline for completion.

The students must give an oral defense presentation of their research proposal to their Reading Committee, during a class session. The Reading Committee must approve the research proposal for successful completion of the course.

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

1. Apply a fundamental knowledge of engineering and science to describe their research.
2. Demonstrate an understanding of the environmental, safety and economic impacts of their research on society.
3. Write a comprehensive literature review using appropriate electronic search strategies.
4. Properly reference the ideas and data developed by other people in their research proposal report.
5. Demonstrate a basic understanding of the use of statistics and design of experiments techniques to interpret data and create a research plan.

Required Texts/Readings

Textbook

None

Other Readings

Supplemental reading material will be posted on the Canvas course website.

Library Liaison

Anamika Megwalu, [CME Reference Librarian](#), anamika.megwalu@sjsu.edu

Course Requirements and Assignments

All written reports and materials submitted for this course must meet the following criteria and standards:

1. Be in grammatically correct English.
2. Comply with [SJSU's M.S. Thesis Guidelines](#)
3. Use the CME Thesis Guidelines which can be found on the Canvas website, for formatting Figures, Tables, and Equations.
4. Use the [IEEE Reference Guide](#).
5. No plagiarism.

All oral presentations submitted for this course must meet the following criteria and standards.

1. Use appropriate presentation software such as Microsoft PowerPoint or Adobe Acrobat
2. Have high quality presentation slides using color, backgrounds, animation, and/or other state of the art graphics compatible with an LCD Projector.
3. Complete the presentation to the Reading Committee during the scheduled time.

Proposal Component Assignments

In this course, there are several proposal component assignments. Each proposal component assignment will have an associated proposal component checklist. All items on each proposal component checklist must be completed and approved by the course instructor before being sent to the students SJSU thesis/project Research Advisor via DocuSign for content approval. The signed proposal checklist and associated documents must be received by the course instructor via DocuSign in order to receive credit for successful completion of the proposal component assignment. Failure to complete all the proposal component assignments will result in either a I or NC for the course.

Participation Assignments

Every course session will have a participation assignment. Each participation assignment lists the tasks that must be completed by the end of the class session. Any missing tasks will result in an I for the assignment and may result in an I for the course.

Procedural Assignments

In this course, students must provide the course instructor specific information to facilitate the smooth operation of the course. The procedural assignments are used to collect information. Failure to complete the procedural assignments may result in an I or NC for the course.

“Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.”

Final Examination or Evaluation

The final evaluation of the student's research proposal will be completed by the students Reading Committee, which should be selected in consultation with your SJSU thesis/project Research Advisor, on a date to be determined prior to the Final Examination date for the course. Membership in the Reading Committee is outlined below:

- For **thesis** students (Plan A), [University guidelines require that the official Reading Committee must consist at the minimum of three members](#) :
 1. Your SJSU thesis advisor, who must be a **tenured or tenure-track** faculty member preferably in the CME department (required)

2. Another SJSU **tenured or tenure track** faculty member. This must be a CME **tenured or tenure track** faculty member if your thesis advisor comes from another SJSU department.
 3. Another SJSU faculty member(not required to be tenured or tenure track) or a representative of another organization associated with the student’s research. If the research is being done at an organization that employees the student, then at least one member of that organization must be a member of the Reading Committee.
- For **project** students (Plan B), CME department guidelines require that the official Reading Committee must consist at the minimum of **two** members:
 1. Your SJSU project advisor, who can be any faculty member from any SJSU department.
 2. Another SJSU faculty member(not required to be tenured or tenure track) or a representative of another organization associated with the student’s research. If the research is being done at an organization that employees the student, then at least one member of that organization must be a member of the Reading Committee.

All Reading Committee members must attend the Research Proposal Defense Under no circumstances can the Research Proposal Defense proceed if any of the members of the Reading Committee are not present. The Reading Committee can be modified in order to comply with this requirement.

“Faculty members are required to have a culminating activity for their courses, which can include a final examination, a final research paper or project, a final creative work or performance, a final portfolio of work, or other appropriate assignment.”

Grading Information

Students receive a grade of CR/I/NC for this course. In order receive CR, students must successfully complete all the proposal component and procedural assignments, 80 % of the class participation assignments and successfully defend their Master’s research proposal. Students receiving a grade of NC will be required to retake the course. Students receiving a grade of I may be required to attend one or more class sessions during the subsequent semester to complete the course.

In-Person Classroom Protocol

- Cell phones, pagers, and other similar electronic devices should remain off during class hours.
- Computers may be used in class except when other students are doing oral presentations.

University Policies

Per [University Policy S16-9](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on [Syllabus Information web page](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>). Make sure to visit this page to review and be aware of these university policies and resources.

Graduate Engineering Student Success Center

The Graduate Engineering Student Success Center (<https://engineering.sjsu.edu/gess>) provides a variety of services to graduate students in the College of Engineering in the following areas:

- Registration
- Enrollment
- Leave of Absence
- Graduate Admissions
- Academic Standing
- Steps to Graduation
- Career Advising and Development
- Graduate Events

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Tentative Course Schedule(Subject to change for latest information see Canvas course website)

Week	Date	Topics/Assignments,	Deadlines
1	8/19	Course Overview Report Formatting Required Front Matter Section	Prerequisites Checklist Proposal Component Assignment 1
2	8/26	Fundamental Research Article Research Topic Presentation	Fundamental Research Article Plagiarism Quiz
3	9/2	CME Seminar Objective/Hypothesis Chapter	Reading Committee Proposal Component Assignment 2
4	9/9	Introduction Chapter/Slides	Proposal Component Assignment 3
5	9/16	Introduction Presentations	Introduction Presentations
6	9/23	Literature Review Chapter/Slides	Proposal Component Assignment 4
7	9/30	Safety	Safety Section Peer Review Proposal Defense Scheduling
8	10/7	CME Seminar Data Analysis/DOE	Proposal Component Assignment 5
9	10/14	Literature Review Presentations	Literature Review Presentation (Group 1) Draft Report/Slides to Reading Committee (Group 1)
10	10/21	Literature Review Presentations	Literature Review Presentation (Group 2) Draft Report/Slides to Reading Committee (Group 2)
11	10/28	Research Proposal Presentations	Research Proposal Presentation (Group 1)
12	11/4	CME Seminar Research Proposal Presentations	Research Proposal Presentation (Group 2) Draft Report/Slides to Reading Committee (Group 3)
13	11/11	Veterans Day (no class)	
14	11/18	Research Proposal Presentations	Research Proposal Presentation (Group 3) Draft Report/Slides to Reading Committee (Group 4)
15	11/25	Holiday (no class)	
16	12/2	CME Seminar Research Proposal Presentations	Research Proposal Presentations (Group 4)