BCME 298 and BCME 299

Biomedical, Chemical and MatBiomemememememem to

candidacy. Corequisite: 281.

BCME 299: Master's thesis work in Chemical Engineering. Prerequisite: Admission to candidacy. Corequisite: 281.

See Schedule

See Schedule

See Schedule

See Schedule (usually Fridays at 3 pm)

Course Information

Upon completion of BCME 281, all BCME Master’s students must enroll in 2 units of BCME 298. Student’s doing a thesis must then enroll in an additional 3 units of BCME 299. All BCME Master’s students who have completed 281 must be registered for at least 1 unit of BCME 298 or 299 or UNVS 290

accomplishments for that month, including any difficulties, results, and unanswered questions, should be included.

Committee Members

As per BCME and University guidelines, the official Reading Committee must consist at the minimum of one BCME tenured or tenure-track faculty member, another SJSU faculty

/	
Student Name	
Student ID Number	
Thesis/Project Title	
SJSU Thesis/Project Advisor	
Reading Committee **1,** **.**	1. CME tenured or tenure track faculty member:
	2. SJSU faculty member:
	3. SJSU faculty member or industrial representative (senior):

Thesis/Project Defense Decision

Circle one of the following two results

List any conditions in the box on the right.

USE AN EXTRA PAGE IF NECESSARY

List any comments in the box on

1. The student delivered a professional written report. (Note: 1 = insufficient technical content and/or major formatting, and/or lack of adequate referencing, and/or major grammatical/spelling errors, 3 = acceptable technical content, formatting, referencing and grammar/spelling, 5 =

FINAL GRADUATION CHECKLIST

The following list of items need to be turned in to the graduate coordinator AFTER their oral and written final defense has been approved. The student should turn in all items EXCEPT the first item. All requested documents should be turned in to the Graduate

Results and Discussion

For your final Thesis/Project written and oral presentation, your committee will be looking for the following to be covered in your results and discussion section where applicable

1. Good presentation of your results (this is merely how you choose to present your results so that you can show the details that are important, curves, histograms, tables etc. If you are comparing two models, for instance, it is best to put them on the same graph so differences are obvious. The author, meaning you, must decide what the best presentation is, so this is one area on which you are evaluated; do you pick an effective style to present your results?

2. Discuss the trend of the results. This is merely saying whether there is a trend such as a linear curve, a maximum, a minimum etc. exhibited by the results.

3. A discussion as to what the results mean. This is the skill that distinguishes you from a technician and what your committee will be most interested in. This is where you should, in most cases, discuss your results in comparison to work that has been done by other researchers that has been reported in the literature (and why you may find you need to add some papers to your literature review if they weren't there originally) or that has been done by other SJSU students. You will discuss where your work is consistent with theory or other researchers. Where it is not consistent you will discuss your thoughts as to why it is not, usually in reference to theory although you could also postulate with regards to the trends that were exhibited and what they might mean.

This is the part that goes in a separate Discussion chapter if you choose to keep your discussion separate from your results (you can have a single Results and Discussion chapter, or a separate chapter for each).

You can include a Future Work Section in your discussion in which you describe other experiments you think would be worthwhile to do based on your results, and your expertise in the area.

4. Discussion of the goodness of your data. You need to show your data is meaningful. Comparison to a known baseline, repeated runs with low standard deviation, consistency with theory or with others who have run the exact same experiments, etc. are some of the ways you can show this. You need to include some discussion of error and the goodness of your data if you do experimental work.

5. You also need a Conclusions Chapter. This should only focus on what you actually showed in your experiments (what you can prove per se). There should not be any global conclusions about what would happen in regions other than those you ran your experiments. Also, there should be no postulation as to meaning; postulation is only for the discussion section. The Conclusions Chapter is only for those facts you can definitively show based on your experimental results.

Common Written Presentation Errors

The following are some errors that showed up in a number of written presentations and/or that Graduate Studies refused to accept some recent theses showing these errors:

1. Do not use bold characters on your Title Page or in the Table of Contents. (Graduate Studies)

2. Two spaces are required after any period or colon anywhere in your report.

3. Fives spaces is needed at the beginning of each paragraph. Graduate Studies takes this as indenting 0.5 inch. If you space over 5 times they consider that only 2.5 spaces (they are going by letters not empty spaces).

4. Graduate Studies requires a comma between nouns for three or more in a sentence; e.g. There are an apple, a banana, and an orange on the table.

5. The month and year that should appear on the title page is your graduation month such as May 2014, August 2014 or December 2014 (not your defense month if it is different).

6. In case of long headings (more than one line) for figures, tables or Table of Contents sections, these should be single-spaced. Double-space between one heading and the next in your Table of Contents. The same is true for the references. They are single-spaced within a reference but double-spaced from one reference citation to the next.

7. When referring to Chapter, Section, Appendix, etc. in the text, these should always begin with capital letter (same as Figure 3 or Table 4).

For example: As mentioned in Chapter Three.

As shown in Appendix A.

9. Your Objectives/Hypothesis Chapter must have a few paragraphs in order to be considered a chapter.

Final Thesis/Project Oral Presentation

The oral thesis/project defense presentation should follow the 281 proposal defense guidelines in terms of using PowerPoint adequately and having a 30 minute time limit. Review those guidelines and remember the time limit!!

Your oral presentation should cover:

Title Page including Committee Members

Outline

Introduction

Literature Review

Hypothesis/Objectives

Materials and Methods

Results and Discussion

Conclusions (including future work if applicable)

Acknowledgements

All of this in 30 minutes so you should have no more than about 35 slides!!!! Review the 281 oral presentation guidelines in the 281 Greensheet.

Your introduction can be the basic definitions of importance when you will discuss your results and the significance of your study, why was it important to do this study, what the potential benefit is. You literature review can be the few key papers you will compare your results to, and perhaps the summary of the literature, at least what is pertinent to your results. Your objective(s)/hypothesis(s) should be shown, as well as the key parts of your methods sections such as your overall flowchart and experimental matrix. This should take no more than 12 minutes of your time.

Here, the main emphasis and time significance should be given to your results and discussion. You do not h

For troubleshooting equipment, procedures etc. you can box those in red.

Since many of these things happen infrequently, so are rarely mentioned in the notebook, it is very helpful to color-code when you go back to look for them, for instance when the equipment problem happens again but a year later and you can't remember how you fixed it, or you're writing a paper and you need to get the chemical information for some reagent.

I box the topic by color in the Table of Contents, red for troubleshooting, green for equipment etc. info, no box for typical runs, but you need to keep up your Table of Contents in order to do that effectively. Otherwise at least box part of the page in some color or tab the pages using color-coded tabs.

If you don't have some method of finding this information, it can be like looking for a needle in a haystack, especially if you have multiple notebooks. MM"

http://otl.stanford.edu/inventors/resources/labnotebooks.html

Notebook entries should follow these procedures (if there is no chance they will be used in legal proceedings you should follow as many as feasible. These are written assuming the notebooks might be part of legal proceedings at some time. MM):

1. Make entries in permanent medium.

2. Use consecutive pages (don't skip pages or if you do draw a line diagonally across them so it is obvious they were meant to be blank MM).

3. Date entries.

4. Identify subject matter.

5. Include sketches, diagrams, etc.

6. Explain sketches, etc.

7. Photos, drawing, etc., should be identified and permanently attached.

8. Avoid erasures (draw a single line through an erroneous entry so what was originally written is still legible MM).

9. Don't change entries; make new a entry.

10. Pages should be signed and dated after inked entries by the person or persons performing the activity and by at least one corroborating witness. Number 10 was modified to reflect wording shown at
http://www.otc.umd.edu/Gateway/Winter99/qanda.html

Also see http://research.umbc.edu/~lkelly/LabNB.htm

Your laboratory notebook is the only record of how you actually carried out the experiment. "It is a bad habit to get into if you write down what you think you will do, instead of what you really did do as you did it. For instance, you need to let your furnace heat up to the working temperature, but one set of samples comes back with oxide growth less than expected. You didn't write down whether the furnace had reached the working temperature or not. It is easy to make mistakes and forget to do a certain step. You will

any blank you used for calibration or taring purposes,

pressure and temperature.

Your memory is not a permanent and accurate repository of these types of information. The fact that you record ALL your observations could mean the difference between success (and being able to publish results) and having to repeat all your experiments again to verify results. MM

Put down all ALL of the quantitative information you need to analyze your results.

For instance, keep track of all intermediate calculations. Don't just put a final calculation without showing all the numerical values of intermediate steps. For instance, you might have wanted 1N NaOH solution but on looking back, because you put all the weights/volumes in, you, or someone else, finds out you actually made 2N NaOH. MM

If you think your notebook might be used in legal proceedings (patents etc.), the following web pages may be of interest:

http://www.otc.umd.edu/Gateway/Winter99/qanda.html

http://www.darbylaw.com/note.html