

MATH 470 - Advanced Mathematical Model Building

MW 2:30 PM – 3:45 PM

MH 044

Instructor: Laura Smith, Ph.D.
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Office Hours: MW 12:00 PM – 1:00 PM
MW 6:00 PM – 6:30 PM
(or by appointment)

Course Description:

Math 470 is a capstone course for students with strong mathematical preparation. Students will work in teams on a project from an industrial firm. Student success will depend on realistic industry evaluations such as teamwork, communication, individual initiative, and final products.

Grading Scheme:

15%	Homework / Class Participation / Team Meetings
15%	Team Evaluations / Personal Evaluations / Timesheets
15%	Biweekly Presentations
15%	Biweekly Reports
15%	Final Presentation
15%	Final Written Report
10%	Final Exam

Tentative Grading Scale:

A+	97% - 100%	A	93% - 96.9%	A-	90% - 92.9%
B+	87% - 89.9%	B	83% - 86.9%	B-	80% - 82.9%
C+	77% - 79.9%	C	70% - 76.9%		
D+	67% - 69.9%	D	60% - 66.9%	D-	55% - 59.9%
F	Below 55%				

Industry Contact:

There will be a contact in industry for the project. I must approve all emails to this contact. Any meetings with the industry contact should be held with the utmost respect. Thus, teams should dress professionally for any in person or video conferencing meetings.

Homework:

Homework will be assigned and will be due at 2:30 PM on the assigned due date. Homework assignments will be penalized for poor presentation and inadequate explanations.

Team Meetings / Attendance / Class Participation:

Team meetings will be frequently held in class. During each meeting, the group must summarize its progress and future directions. There may be additional team meetings set up with the industrial contact outside of class. Attendance at team meetings for the full duration is mandatory, both in class and those scheduled with the industrial contact. Tardiness and leaving early will be penalized.

Team and Personal Evaluations:

After every biweekly report is submitted, each team member will evaluate the other members of the group. This report will include the contributions of each individual.

Timesheets:

Each student will keep track of the time spent on the project. The actual time spent on each of the following areas will be recorded and submitted biweekly:

- Team meetings outside of class
- Literature search
- Programming
- Report writing
- Presentation preparation
- Other

Biweekly Presentations:

There will be team presentations every two weeks. There will be a discussion after each presentation. Note that professional attire is not required for these presentations unless the industry sponsor is present or on a video call.

Biweekly Reports:

There will be an up to date report submitted every two weeks. This report must contain the current state of the project, complete with references. It must also include a completed future work section with details of the direction of research.

Final Presentation:

There will be a 20-25 minute final video presentation on the last day of class. Each team member will participate in the presentation equally and dress professionally. It will take place on

Wednesday, May 7, 2015, 2:30 PM

Final Written Report:

The final written report will be submitted to the industry sponsor. It will be due

Wednesday, May 13, 2015, 2:30 PM

Final Exam:

There will be a comprehensive final examination. This exam will include questions on the details of your project, as well as the projects of the other teams. The comprehensive final exam will be:

Wednesday, May 13, 2015, 2:30 PM - 4:20 PM

Class Policies:

- **Cell phone use is prohibited** (no emailing, texting, web surfing, playing games, etc.).
- Failure to attend class on days with an exam, presentation, or in-class assignment will result in a zero grade.
- No late work will be accepted. There are no make-up exams or presentations.
- Only emails sent from CSU Fullerton accounts will be addressed.
- All emails must be professionally written (e.g. no texting-language).

Academic Integrity:

Students who violate university standards of academic integrity are subject to disciplinary sanctions, including failure in the course and suspension from the university. Since dishonesty in any form harms the individual, other students, and the university, policies on academic integrity are strictly enforced. Examples of academic dishonesty include, but are not limited to: (1) copying from another student's homework, quiz, or exam; (2) allowing another student to copy your work; (3) copying homework solutions from the text solutions manual; and (4) copying from journal articles, books, or online resources. You should familiarize yourself with the academic integrity guidelines found in the current student handbook.

Withdrawal Deadlines:

Feb 2 - Last day to withdraw from course without a "W"

Feb 27 - Math department's deadline to withdraw without a serious and compelling reason

Apr 17 - University's deadline to withdraw with a serious and compelling reason

Tentative Course Schedule (subject to change)

Week	Day	Date	Class	Due
1	Mon.	January 19	No Class	
	Wed.	January 21	Course Intro, Project Selection	Info Sheet / Problem
2	Mon.	January 26	Relevant Programming Tutorial	HW 1 - Summaries
	Wed.	January 28	Relevant Mathematics Introduction	
3	Mon.	February 2	Group Assignments Team Meeting	Weeks 1-2 Timesheet HW 2 – Programming/Math
	Wed.	February 4	Extensive Literature Search	
4	Mon.	February 9	Team Meeting	HW 3 - Summaries
	Wed.	February 11	Presentation 1 Discussion / Team Meeting	Report Draft 1
5	Mon.	February 16	No Class	
	Wed.	February 18	Team Meeting	Weeks 3-4 Timesheet Team Evaluation 1
6	Mon.	February 23	Team Meeting	
	Wed.	February 25	Presentation 2 Discussion / Team Meeting	Report Draft 2
7	Mon.	March 2	Team Meeting	Week 5-6 Timesheet Team Evaluation 2
	Wed.	March 4	Team Meeting	
8	Mon.	March 9	Team Meeting	
	Wed.	March 11	Presentation 3 Discussion / Team Meeting	Report Draft 3
9	Mon.	March 16	Editing / Team Meeting	Weeks 7-8 Timesheet Team Evaluation 3
	Wed.	March 17	Team Meeting	
10	Mon.	March 23	Team Meeting	
	Wed.	March 25	Presentation 4 Discussion / Team Meeting	Report Draft 4
Spring Break: March 30, 2015 – April 5, 2015				

Week	Day	Date	Class	Due
11	Mon.	April 6	Team Meeting	Weeks 9-10 Timesheet Team Evaluation 4
	Wed.	April 8	Team Meeting	
12	Mon.	April 13	Team Meeting	
	Wed.	April 15	Presentation 5 Discussion / Team Meeting	Report Draft 5
13	Mon.	April 20	Editing / Team Meeting	Weeks 11-12 Timesheet Team Evaluation 5
	Wed.	April 22	Team Meeting	
14	Mon.	April 27	Team Meeting	
	Wed.	April 29	Presentation 6 Discussion / Team Meeting	Report Draft 6
15	Mon.	May 4	Team Meeting	Weeks 13-14 Timesheet Team Evaluation 6
	Wed.	May 6	Final Presentations (Video Recorded)	Presentation Slides
Finals	Wed.	May 13	Comprehensive Final Exam: 2:30 PM – 4:20 PM, Wednesday, May 13, 2015	Final Report Week 15 Timesheet Team Evaluation 7