

# FALL 2015 MATH-791-001 FIELD PROJECT IN INDUSTRIAL MATHEMATICS

**LOCATION:** 345 Jarvis Hall Science Wing (JHSW)  
**UNITS:** 3 units  
**RECOMMENDED MATERIALS:** Laptop computer  
**INSTRUCTOR:** Dr. Keith Wojciechowski  
**EMAIL:** wojciechowskik@uwstout.edu  
**TELEPHONE:** 715-232-2291  
**OFFICE HOURS:**

202D Jarvis Hall-Science Wing (my office) or Math TLC (203 / 214 Jarvis Hall-Science Wing)

	MON	TUE	WED	THU	FRI	
10:10 – 11:05 am	Office Hours		Office Hours	Office Hours		10:10 – 11:05 am
2:30 - 3:25 pm	Office Hours		Office Hours	Office Hours		2:30 - 3:25 pm

\*By appointment otherwise (usually at my office)\*

**IMPORTANT DATES:** 22 SEP Last day to add semester classes and choose “CR/NC”  
22 SEP Last day to drop without “W” mark  
10 NOV Last day to drop without “WU” mark

## COURSE DESCRIPTION

First course in a two-semester sequence. Problem identification, solution proposal through the development or exploitation of a mathematical model, and initial research. Projects will involve mathematical modeling, numerical algorithm development or selection, or data analysis applied to a topic proposed by their employer, a professor, company, agency, or organization.

## RESOURCES

Advisement Center: <http://www.uwstout.edu/advisement/index.cfm>  
Student Services: <http://www.uwstout.edu/student-services/index.cfm>  
D2L: [http://www.uwstout.edu/lit/lts/learn/student\\_resources.cfm](http://www.uwstout.edu/lit/lts/learn/student_resources.cfm)

## ACCESSIBILITY

If a student has a disability or suspects he or she has a disability, then he or she is encouraged to contact Disabilities Services (<http://www.uwstout.edu/disability/index.cfm>) so that we can make accommodations.

## POLICIES

### Technology:

- Laptop computer, tablet, or scientific calculator
- Cell phone usage is prohibited during class (even as a calculator)

**Academic Misconduct** (<http://www.uwstout.edu/services/dean/studentconduct/index.cfm>): Any student found guilty of academic misconduct, as defined in the link above, will receive a zero on the assessment and we will follow university procedures

## OBJECTIVES AND LEARNING OUTCOMES

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

1. Plan a holistic, mathematical, problem solving approach to an organizational specific problem.
2. Propose a viable problem-solving approach to a client.
3. Develop mathematical models that meet the quality of work expected for a Masters level project. Modeling examples may include, but are not limited to: equation-free models (neural networks), regression (statistical) models, and / or systems of differential equations. In some cases modeling may include a combination of these concepts as in the case of data-driven simulations.

## GRADING AND EVALUATION

Assessment	Maximum Possible Points	Percentage of Total Grade
Team Huddle Contributions (12)	100	25%
Status Reports (5)	100	25%
Final Proposal (1)	200	50%
Total	400	100.0%

### Status Reports:

- Due dates for status reports will be given throughout the semester
- Contain contributions from *each* member of the team
- Contain updates on the progress made toward a solution for the problem given by the client

### Final Proposal:

- A rough-draft is due the week of the Thanksgiving holiday
- Project plan that consists of problem definition, problem-solving approach, expected outcome, schedule (timeline of activities), and available resources
- A typed report will be submitted to the instructor and client
- 30 to 60 minute presentation will be made to the instructor and client
- Consists of problem-solving approach, supporting evidence, risk (where project could fail), and any preliminary results or prototype

### Final Grades:

Final grades will be based on the percentage of the 400 points students obtain according to the following chart:

≥93.5%	A	≥86.5%	B+	≥76.5%	C+
≥90.0%	A-	≥83.5%	B	≥73.5%	C
		≥80.0%	B-	≥70.0%	C-

Below 70% F

*The instructor reserves the right to assign a higher grade*

## SOFTWARE

Students may choose MATLAB, Scilab, SciPy (Python), Sage, R, etc.