Math 315, Section 1 - Spring 2018 Syllabus

Professor:	Dr. Andy Felt		Office:	SCI B246
Office Hours:	M, F	1:00 – 1:50 p.m.		
	T, R	9:00 – 9:50 a.m.	Phone:	346-4207
	or by arrangement		email:	afelt@uwsp.edu

Class Meetings: T, R, F, 10:00–10:50, Science A225.

Text: *Introduction to Mathematical Programming*, 4th ed., Winston and Venkataramanan, *Intro. to Operations Research*, 9th ed., Hillier and Lieberman, and *AMPL*, 2nd ed., Fourer, Gay and Kernighan, available from UWSP Text Rental.

Course Web Page: http://www4.uwsp.edu/math/afelt/teaching/M315.html

Calculators and Computers: A calculator will not be necessary in this course, but you may find one useful once or twice.

Prerequisites: Math 222 and 310

Fundamental Skills to be Learned:

- Recognizing real life situations where mathematical models apply.
- Translating the real life situations into mathematical models.
- Solving the mathematical model.
- Interpreting the solution in the context of the real life situation.

Grading:

Category	Points	This percentage	⇒	at least this
Homework Assignments	100	92%	⇒	A,
2 Exams	200	90%	⇒	A–,
Final Exam (Comprehensive)	150	88%	⇒	B+,
Total	450	82%	⇒	B, etc.

Homework: Assignments should have the following format:

- Looseleaf paper only (no spiral schnibbles)
- Name, section, assignment, date on first page
- Stapled, each assignment separately

The grade for each assignment will include 20% based on accuracy and quality of written communication. Examples on this topic are given in Assignment 0. *No late homework is accepted for any reason.* Usually, there will be a class day between the day homework is assigned and the day it is due. Assignments are due at the beginning of class on the day they are due.

Help: Everybody needs help at some point. The key is to *get help right away* when you need it. Here are some ways to get help:

- ask a question in class;
- ask me during office hours;
- ask me in an email;

Disability Accommodations: Reasonable accommodations are available for students who have a documented disability. Please notify the instructor during the first week of class of any accommodations needed for the course. All accommodations must be approved through Disability Services, located at 609 Learning Resources Center or http://www.uwsp.edu/disability/.

General Course Policies:

- Exams must be ONLY your own work. You may work together on homeworks (unless otherwise specified), but the material you turn in must be *your own*. Please see http://www.uwsp.edu/dos/Documents/CommunityRights.pdf to read about your rights and responsibilities as a student, and Chapter 14 (at that page) to read about Wisconsin's academic misconduct code.

- Use of calculators or other technology will not be allowed on exams.

- Cell phones, computers, and other technology (such as smart watches) should be turned off and stowed away during class and exam times.

- The course handouts and lectures are the property of the instructor, and may not be copied or recorded (including audio recording or photography) without the instructor's permission.

- Everyone becomes ill sometimes. When you become ill, I expect you to make a reasonable effort to come to class. When illness or other emergencies require absence from class, I expect you to contact me immediately, preferably by email. I expect you to keep up with what is being taught by following in your book and doing the homework. Either have a friend bring your homework, or slide it under my office door. To account for illness and other emergencies, at least one homework score will be dropped.

Tentative Calendar

Week of	Approximate Coverage (Section numbers from Winston)
Jan 22	12.1, Review of differential calculus 12.2, Introductory concepts
Jan 29	12.3, Convex and concave functions
Feb 5	12.4, Solving one-variable NLPs 12.5, Golden Section search
Feb 12	12.6, Multivariable unconstrained NLPs
Feb 19	12.7, Steepest ascent
Feb 26	12.8, Lagrange multipliers 12.9, Kuhn-Tucker Conditions
Mar 5	12.10, QPs; Exam I
Mar 12	7.2, TPs
Mar 19	7.3, TP simplex method
Apr 2	7.5, Assignment problems 8.2, Shortest path problems
Apr 9	8.3, max flow problems
Apr 16	8.5, MCNFPs
Apr 23	8.6, min spanning tree problems
Apr 30	8.7, network simplex method
May 7	Exam II
Finals	Thursday, 17 May Final Exam 14:45–16:45