

# Math 3231: Linear Programming Syllabus

A Term 2016 WPI

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**Office Hours:** See myWPI  
By Appointment

See myWPI

**Class Info:** MTRF, 10:00am – 10:50am, SL 105  
Many details of the course will be managed through the Canvas system in myWPI.

**Text:** *Linear and Nonlinear Optimization, Second Edition* by Griva, Nash, and Sofer.

**Overview:** The goal of this course is to introduce the student to the theory, algorithms, and applications of linear optimization.

Requiring only a background in multivariable calculus and linear algebra, we will explore a range of linear programming problems from various disciplines. The general theme is to minimize or maximize an objective function, such as cost or profit, subject to some set of linear constraints. We develop the theory by examining algebraic structures, geometric objects, and algorithmic issues related to solving such problems.

Topics will include: modeling, polyhedra, the simplex method, the revised simplex method, duality, sensitivity analysis, parametric analysis, applications, and if time permits, modern algorithms.

**Grading:** There will be regular homework assignments, applied projects, and two exams. The final grades will be computed using:

HW / Projects	50%
Midterm Exam	25%
Final Exam	25%

**Computing:** Some assignments will require computing resources. Microsoft Excel and MATLAB will be used.

<b>Exams:</b>	Tuesday	09/20/2016	Midterm Exam	In Class
	Thursday	10/13/2016	Final Exam	In Class

## Make-up Exam Policy:

Make-up exams will only be allowed in the event of a documented emergency. You are responsible for avoiding conflicts with the exams. Do not plan to leave campus for the term before the final exam.

**Late HW:** Late assignments without prior consent of the professor will not be accepted and will receive a grade of 0. Extensions will be granted only in the event of unforeseen emergencies or extenuating situations that you discuss with the professor in advance.

**Academic  
Honesty:**

WPI has an established academic honor code, described in *The WPI Student Judicial Policies and Procedures*. Each student is expected to familiarize him/herself with WPI's Academic Honesty policies, which can be found at <http://www.wpi.edu/offices/policies/honesty>.

All acts of fabrication, plagiarism, cheating, and facilitation will be prosecuted according to the university's policy. If you are ever unsure as to whether your intended actions are considered academically honest or not, please see Prof. Blais.

**Disability  
Services:**

If you need course adaptations or accommodations because of a disability, or if you have medical information to share with me, please make an appointment as soon as possible. If you have not already done so, students with disabilities, who believe that they may need accommodations in this class, are encouraged to contact the Office of Disability Services (ODS), as soon as possible to ensure that such accommodations are implemented in a timely fashion. The DSO is located in 137 Daniels Hall, its phone number is (508) 831-4908, and its email is [DisabilityServices@wpi.edu](mailto:DisabilityServices@wpi.edu).

This syllabus is subject to change at the instructor's discretion