

MA 3231: Linear Programming

A term 2013

Professor: Suzanne L. Weekes

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Lectures: MTRF 10:00 – 10:50 Salisbury Labs 105

Office Hours: Stratton Hall 202D

Mondays 11:00 – 12:00
Tuesdays 9:00 – 10:00
Thursdays 11:00 – 12:00
and by appointment

Text: *Linear Programming: Foundations and Extensions. Third Edition*, by Robert J. Vanderbei

Web Page: Information about the course will be maintained on the course web page
<http://www.wpi.edu/~sweekes/MA3231>

Course 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 linear algebra, we will explore a range of linear programming problems from various disciplines. The general theme is to minimize cost or maximize 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, modern algorithms, applications.

A solid knowledge of Linear Algebra (MA2071) is required.

Grading:

Homework	40%
Exam 1	20%
Exam 2	20%
Exam 3	20%

Homework: Homework assignments will be posted on the course website. Each homework assignment is due at the beginning of lecture on the due date.

Late assignments without prior consent of the professor will not be accepted and will receive a grade of 0. Feel free to turn in homework early, if you know that you will not be able to attend a class session. Extensions will be granted only in the event of unforeseen emergencies or in extenuating situations that you discuss with the professor well in advance.

Your work should be very legible and done neatly. If the work is not presentable, and is illegible, you will not receive credit for it. Please staple the sheets of your assignment together. Do not use paper torn out of spiral bound notebooks.

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Exams:

Exams are tentatively scheduled for Monday 16th Sept, Thursday 3rd Oct, and Thursday 17th October. It is emphasized that the first two dates are tentative. Students are expected to attend every lecture and, hence, be able to take the exams on the dates on which they are eventually scheduled.

Make-up exams are essentially not given and will only be considered in the event of a documented emergency.

Absence from Class:

If you need to miss class for some reason, e.g. attending conference, participating in a competition, or religious observance, please discuss this with me at the beginning of the term.

Academic Integrity:

Please read the Student Guide to Academic Integrity at WPI <http://www.wpi.edu/offices/policies/honesty.html> and all its pages. For example, the link “What Constitutes Academic Dishonesty?” gives some examples of academic dishonesty; i.e. acts that interfere with the process of evaluation by misrepresentation of the relation between the work being evaluated (or the resulting evaluation) and the student's actual state of knowledge.

Each student must familiarize himself/herself with WPI's Academic Honesty Policy. All suspected cases of dishonesty will be fully investigated.

Ask Prof. Weekes if you are in any way unsure whether your proposed actions/collaborations will be considered academically honest or not.

Students with Disabilities:

If you need course adaptations or accommodations because of a disability, or if you have medical information to share with me that may impact your performance or participation in this course, please make an appointment with me as soon as possible.

If you have approved accommodations, please go to the Exam Proctoring Center (EPC) in Morgan Hall to pick up Letters of Accommodation.

If you have not already done so, students with disabilities who need to utilize 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. This office can be contacted via email: DisabilityServices@wpi.edu, via phone: (508) 831-4908, or in person: 137 Daniels Hall.