

Instructor: Karthik Chandrasekaran

Contact: karthe@illinois.edu

Lecture Timings and Location: Tue & Thu, 9:30–10:50am in 1304, Siebel Center

- Electronic gadgets (laptops, tablets and phones) are **NOT** permitted during lectures.
- Contact the instructor if you need special permission to use electronic gadgets.

Instructor Office Hours and Location: Mon, 5–6pm in 301 Transportation Building

Teaching Assistant: Setareh Taki (staki2@illinois.edu)

Office Hours and Location: Wed, 5-6pm in 4 Transportation Building

Course Homepage: <http://karthik.ise.illinois.edu/courses/ie511/ie511-sp-19.html>

Textbooks that you may wish to consult:

Nemhauser and Wolsey, Integer and Combinatorial Optimization

Wolsey, Integer Programming

Schrijver, Theory of Linear and Integer Programming

Course Description:

The course will provide a comprehensive treatment of integer optimization including theory, algorithms and applications at the introductory graduate level. Some specific topics to be covered are: Modeling & Formulations, Polyhedral Theory, Complexity, Optimization & Separation, Relaxations, Dynamic Programming, Branch & Bound, Cutting Planes, and Lagrangian Duality.

Mathematical maturity at the level of a beginning graduate student will be assumed. Familiarity with reading and writing mathematical proofs and basic knowledge in Linear Algebra are required. Prior coursework in Linear Programming, Linear Algebra and Graph Theory will be helpful.

Student Learning Objectives:

Develop a thorough understanding of the theory and algorithms for Integer Programming. Practice and improve rigorous mathematical proof writing skills.

Grading:

Homeworks 59%

Class Participation 1%

Exams 20% each

Homework and Exam policies:

- Homeworks will be posted in the Univ of Illinois' *Compass* website. Solutions will be due before the beginning of the lecture. Strict due dates will be enforced.
- Typesetting homework solutions (in 11pt or larger font) is recommended. Figures and math formulae may be drawn by hand in black ink.
- Collaboration and other solution sources on problems assigned for homeworks, midterm or final are **NOT** permitted.
- Mathematical rigor, correctness, and clarity of exposition will be factors in grading. You are encouraged to proofread the solutions before submission.
- Grading clarifications (in homeworks and exams) should be resolved within a week from the date of return of the graded submissions. No clarifications will be entertained after a week.
- Solutions for homework and exam problems will **NOT** be distributed. If you would like to know the solution, meet the instructor during office hours after the submission due date.
- Plagiarism will be dealt with severely. No credit for the homework or the exam.
- You are welcome to discuss the course material with your colleagues.

Guidelines:

- Raise questions and clarify doubts during lectures. No question is s-t-o-o-p-i-d!
- You are encouraged to answer the questions raised during the lectures. No answer is a-b-s-u-r-d!
- A few exercise problems will be assigned during the lectures. You do not have to submit solutions to these problems. Solving them will help you keep up with the course material.

Academic Integrity: Please review the University of Illinois, Urbana-Champaign's academic integrity policy at http://studentcode.illinois.edu/article1_part4_1-401.html.

Inclusivity at University of Illinois at Urbana-Champaign

Message from campus leaders:

"A core value of this institution is one of respect for diversity of ideas and identities. We value the vast range of perspectives of individuals of all backgrounds."

– James Anderson, Dean of the College of Education

"We have prioritized diversity at the center of our college’s mission ... We have attracted students who are eager to learn from others’ experiences, beliefs, and cultural backgrounds."

– Feng Sheng Hu, Dean of the College of Liberal Arts and Sciences

Working well with diverse individuals is critical to your success:

In our diverse society, being able to effectively interact and work in teams with people from many different backgrounds is critical to your success. Like leadership or critical thinking, learning how to work well with people from diverse backgrounds is a skill anyone can learn with practice. Fighting Illini who build this skill in college are not only doing the right thing, they are also more successful in the job market and excel more quickly in their careers.

What your peers think:

A recent survey found that 89% of UIUC students agreed with this statement: “I embrace diversity and make sure that people from all backgrounds feel part of the UIUC community.” While overt acts of discrimination occur at UIUC, recent research suggests these acts are committed by a small minority of individuals who differ radically from other students in terms of their attitudes and personalities.

What you can do:

Being inclusive is easy. By doing some simple things, you can improve our campus climate.

Do these things...	...but not these things
Have a conversation with a student who has a different background from you. Ask them about their experiences.	Assume you know about an individual’s abilities and interests just because they belong to a certain social group.
Attend several activities, talks, or other diversity events per semester. Find an events list at https://oiir.illinois.edu/events	Tell someone they conform to a positive stereotype about a group they belong to. Instead, give them a personal compliment!
Display the same level of warmth and enthusiasm when interacting with students from all social groups.	Tell someone their name is odd because you find hard to pronounce. Instead, learn how to say their name correctly.
Ask individuals from different social groups what terms or phrases they find offensive.	Tell someone they are different from “typical” members of a social group they belong to.
Choose students from different social groups for class projects and study groups.	Remain silent when you see others engage in discrimination. Speak up!

Questions about this page? Send an email!
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