

## I.E. 2001 OPERATIONS RESEARCH (Spring 2020)

- INSTRUCTOR:** Prof. Jayant Rajgopal  
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- HOME PAGE:** <http://www.pitt.edu/~jrclass/or/> - please check this page on a regular basis since it will be used extensively.
- LECTURES:** Room 1044 Benedum Hall, *Thursdays, 5:20 P.M. - 8:00 P.M.*  
We will take a 10-minute break from 6:35 to 6:45
- OFFICE HOURS:** 3:30-4:30 Tue., Wed.; walk-in's at other times are always welcome!
- TEXTBOOK:** *Introduction to Mathematical Programming* (4th ed.), by Wayne L. Winston and M. Venkataramanan, Duxbury Press - Thomson Learning, (2004).
- REFERENCES:** *Operations Research: An Introduction*, by Hamdy A. Taha, Prentice-Hall, New York.  
*Introduction to Operations Research*, by Frederick S. Hillier and Gerald J. Lieberman, McGraw Hill, New York.

### COURSE

#### OUTLINE:

This is an introductory course in deterministic operations research (OR). The objective is to introduce the student to the OR "process" and to the most useful/important topical areas. We will start with the general methodology of operations research and mathematical modeling. Following this we will cover linear programming (LP) and its applications; topics will include model building, the simplex method, postoptimality analysis, and the transportation, transshipment and assignment problems. After this we will address linear models with integer/0-1 variables, various network flow problems, and project planning with CPM/PERT. The amount of emphasis on each topic will depend on available time. Simple software for solving LP problems will also be introduced.

#### POLICIES:

- Students are expected to do a significant amount of reading on their own, and to keep up with the lectures.
- Two examinations will account for 80% of the final grade, while weekly homework assignments and class participation will account for the remaining 20%.
- There will be one full week allowed for all assignments. Assignments are due at the beginning of class and **late assignments will NOT be accepted.**
- I take academic integrity very seriously and any form of cheating or academic impropriety will result in a grade of **F** for the course – there will be **NO exceptions** to this rule.
- *The use of cell-phones, iPads/tablets, and laptops is not permitted in class – please turn these off and stow them before class begins.*