

# Course Information Sheet

## Computation in OR

### IE 495

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Course web page: <http://www.lehigh.edu/~tkr2/courses/ie495/>  
Course meeting time: TR 5:30-6:45 453 Mohler Lab

#### Approximate Syllabus:

1. Fundamentals of Computer Systems
  - Serial architecture
  - Parallel architecture
2. Models of Computation
  - RAM model
  - PRAM model
  - Asymptotic Analysis
  - Algorithmic Complexity theory
3. A Little Mathematics
  - Induction and Recursion
  - The Master Theorem
4. Introduction to Parallel Programming
  - Shared Memory Environments
  - Distributed Memory Environments
5. The Design of Efficient Algorithms
  - Sequential
  - Parallel
6. Basic Data Structures
7. Basic Algorithms
8. Introduction to Numerical Analysis
  - Problem Conditioning
  - Stability of Algorithms
  - Round-off Error Analysis
  - Solution of Linear Systems
9. Advanced Algorithms