COURSE DESCRIPTION:
In this course we present a set of very general models and techniques that can be used to address a wide variety of real-world problems arising in the transportation and logistics areas, and beyond. Fundamental models and algorithms in optimization, stochastic modeling and parallel computing will be discussed and illustrated with applications. As a result, this course is ideal for students interested in the theory and/or practice of modern computational modeling.

COURSE APPROACH:
We will employ the same teaching style as in our other courses where the students are guided to produce journal papers. Several students have been able to co-author journal and conference papers in the past as a result of our unique approach. Final grades will be determined based on homework assignments and group projects (i.e., there will be no exams).

TENTATIVE COURSE TOPICS:
• Parallel programming in desktop/laptop computer environments
• Parallel shortest path algorithms
• (Parallel) linear programming algorithms
• Domain decomposition partitioned algorithms
• Markov decision processes
• Dynamic network models
• Evacuation modeling and optimization

PRE-REQUISITES:
• Graduate student status in any engineering discipline, Computer Science, or Applied Mathematics, or permission of the instructors.

For more information, please contact either Dr. Ng (mng@odu.edu), or Dr. Nguyen (dnguyen@odu.edu).