

Short Course

Network Models and Optimization: Multiobjective Genetic Algorithm Approach

Course Schedule: June 24-25, 2013

Instructor: Prof. Mitsuo Gen,
Fuzzy Logic Systems Institute, Japan

Address: Gazi University,
Faculty of Engineering, Conference Room (1st floor), Maltepe, Ankara

Dept. of Industrial Engineering

1. Course Goal:

Network models provide a useful way for modeling various operation management problems and are extensively used in many different types of systems: Manufacturing and Logistics areas. Genetic and Evolutionary Algorithms in AI (Artificial Intelligence) technique have recently received a considerable attention because of its potential of being a very effective design optimization technique for solving various *NP* hard optimization problems and complex Manufacturing and Logistics systems. This short course class introduces a thorough treatment of several Genetic Algorithms (GA) to solve the following various Scheduling/Routing optimization problems based on various network-based models. By the end of the short course, students/engineers will be understood how to apply the Genetic Algorithm technique to various scheduling problems in Industrial Engineering and Logistics Systems.

2. Course Schedule:

June 24 (Mon): 9:00-12:00

Multiobjective Genetic Algorithms; Basic Network Models

June 24 (Mon): 13:00-17:00

Logistics Network Models; Advanced Planning and Scheduling Models

June 25 (Tue): 9:00-12:00

Project Scheduling Models

June 25 (Tue): 13:00-15:00

Assembly Line Balancing Models



Short Bio:

Kogakuin University, Ph.D. in Engineering, Japan, 1975.
Kyoto University, Ph.D. in Informatics, Japan, 2006.
Prof.: Ashikaga Institute of Technology, 1975-2003.
Prof.: Graduate School, Waseda University, 2003-2007.
Visiting Prof.: Univ. of California at Berkeley, IE&OR Dept., 1999-2000 and
Texas A&M University, IE Dept., 2000 in USA.

Research Field:

Evolutionary Computation, Manufacturing Scheduling and Logistics Network.