Welcome to
G53ASD
Automated Scheduling

Lecturer:
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Module Details

Module Code: G53ASD
Location and Time: Tuesday, 11:00, room B53
Tuesday, 12:00, room B53

Prerequisites (desirable but not essential):
Mathematics for Computer Scientists (G51MCS)
Mathematics for Computer Scientists (G51MC2)
Artificial Intelligence Methods (G5BAIM)

Assessment: One written 2 hour examination 😊
Aim
To provide a sound understanding of the fundamental techniques and algorithms for scheduling problems from a range of commercial and service sectors.

Objectives
☛ To give an understanding of the methods and techniques that are available for building scheduling systems.

☛ To introduce a number of scheduling applications from a variety of industrial and service sectors and show how software packages are designed to solve them.
What will be covered in this course?

1. Introduction
2. Introduction to Scheduling and Classification of Scheduling Problems
3. General Purpose Procedures Applied to Scheduling
   Dispatching Rules
   Simulated Annealing
   Tabu-Search
   Genetic Algorithm
4. Graph Colouring Heuristics
5. University Timetabling
6. Employee Timetabling
7. Single Machine Deterministic Models
   Completion Time Models
   Lateness Models
   Tardiness Models
   Sequence Dependent Setup Problems
8. Project Scheduling
9. Flow shop Scheduling
10. Job Shop Scheduling
11. Design of Scheduling Systems
12. Demonstration of LEKIN - software system for production scheduling
13. Fuzzy Scheduling
14. Case-Based Reasoning in Scheduling
Recommended Reading

1. *Operations Scheduling with Applications in Manufacturing and Services*,
   Michael Pinedo and Xiuli Chao,

2. *Scheduling, Theory, Algorithms, and Systems*,
   Michael Pinedo,
   **NEW**: Second Addition, 2002
Other Good Books

3. *Deterministic Scheduling Theory*
   Gary Parker,

4. *Scheduling Under Fuzziness*
   Roman Slowinski, and Maciej Hapke, (eds)

5. *Scheduling Algorithms*
   Peter Brucker,
Lecture Notes

Lecture Notes will be available online on the module web site:

http:\\www.cs.nott.ac.uk\~sxp

All announcements for the module will be made in lectures and put on the course web site