

## SE2800

### Production Planning and Scheduling

**Professor:** Chengbin Chu

**Language of instruction:** English\* – **Number of hours:** 36 – **ECTS:** 3

**Prerequisites:** None

**Period:** S8 Elective 12 March to June IN28IE5, SEP8IE5

#### Course Objectives

This course introduces different modeling tools (Petri nets, graphs, mathematical programming) and solving approaches (branch and bound, dynamic programming, heuristics and metaheuristics) for production planning and scheduling problems. The students will learn the methodology of constructing appropriate methods to solve a given problem.

#### On completion of the course, students should be able to

Analyze and solve a given planning and scheduling problem by proposing an appropriate method

#### Course Contents

- ◇ Introduction to production management and hierarchical management
- ◇ Introduction to computational complexity
- ◇ Basic scheduling models and project management models
- ◇ Cyclic scheduling
- ◇ Non cyclic scheduling (critical machine, parallel machines, flow shop, job shop)
- ◇ MRP and lot sizing
- ◇ Capacity planning

#### Course Organization

Lectures: 16.5 hr, Tutorials: 16.5 hr, Exam: 3 hr

#### Evaluation

- ◇ Realization of a mini-project on a case study (45%)
- ◇ 3 hours exam (55%).