UNIVERSITY OF BORÅS

Manufacturing Simulation
Produktionssimulering
7.5 credits

Ladok Code: 41I33P
Version: 2.0
Established by: Education Committee 2014-10-06
Valid from: Spring 2015

Education Cycle: First cycle
Main Field of Study (Progressive Specialisation): Industrial Economics (G1N)
Disciplinary Domain: Technology
Prerequisites: Meets the requirements for admission to the degree of Bachelor of Science in Engineering (or equivalent).
Subject Area: Industrial Engineering and Management
Grading Scale: U, 3, 4 or 5

Content
• Basic flow simulation

• Random numbers

• Modelling methodology

• Modelling of complex systems

• Different kinds of statistical distributions

• Basic queue theory

• Single server systems

• Parallel server systems

• Attributes

• Batch/bulk arrival

• Modelling of AGV and conveyor belts

• Statistical analysis of the results from simulations

Learning Outcomes
After completing this course, students must be able:

1 Knowledge and understanding

1.1 Use the simulation program Automod to create and simulate technical flow systems,

2. Skills and abilities

2.1 Model technical flow systems at an appropriate level of abstraction,

2.2 Explain the selected programming solution,

2.3 Collect the data needed to be able to build a simulation model for a real system,

3. Judgement and approach

3.1 Analyse simulation runs with respect to the question the model is intended to answer.

Forms of Teaching

Teaching consists of lectures and exercises.

The language of instruction is Swedish. However, instruction in English may occur.

Forms of Examination

The course will be examined through the following examination elements:

Group Assignment
Learning outcomes:
Credits: 1.5
Gradingscale: Fail (U) or Pass (G)

Programming Exam
Learning outcomes:
Credits: 2
Gradingscale: Fail (U) or Pass (G)

Individual Written Assignment
Learning outcomes:
Credits: 4
Gradingscale: U, 3, 4 or 5

The examination Individual written assignment decides the final course grade which will be posted when all course elements have been approved.

Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

Literature and Other Teaching Materials

Getting Started with Automod, Jerry Banks, 2004

Beginning Automod (manual)

Student's version of Automod.

Student Influence and Evaluation

The head of department and teacher responsible for the course are responsible for ensuring that students are invited systematically and regularly to put forward their views on the course. The results of the evaluations will be reported back to the students and will form the basis for the future structure of the course.

Miscellaneous