APPLIES TO ACADEMIC YEAR 2014/2015

GRA 6754 Operations 2

Programme
Master of Science in Business, Specialization Course

Responsible for the course
Stein Erik Grønland

Department
Department of Strategy and Logistics

Term
According to study plan

ECTS Credits
6

Language of instruction
English

Introduction

In this course, the students will learn key models and strategies for operations management and how to apply these.

Learning outcome

Acquired knowledge:
Understand the interaction between batching and inventory.
Understand how various strategies can be used to better coordinate supply chains.
Understand how service time variability can impact a process.
Understand the basic trade offs in supply network design and supply chain planning.
Understand how the use of LP and MIP models can reduce suboptimisation in such systems.

Acquired skills:
Be able to estimate the impact of setups on capacity and calculate a theoretically optimal batch size in presence of setup times.
Be able to measure variability of a process and analyse an arrival prosess.
Be able to predict average waiting times for simple cases.
Be able to estimate throughput loss for a queue with one single resource.
Be able to estimate the effects of using risk pooling strategies.
Be able to construct and the most basic LP and MIP based models for supply network design and supply chain planning using a standard solver.
Be able to perform capacity analyses using models for supply network design and supply chain planning.

Prerequisites
GRA 6753 Operations 1

Compulsory reading
Books:
Cachon, Gérard, Christian Terwiesch. 2012. Matching supply with demand : an introduction to operations

management. 3rd ed. McGraw-Hill
Chopra, Sunil, Peter Meindl. 2013. Supply chain management : strategy, planning, and operation. 5th ed. Pearson

Other:
During the course there may be hand-outs and other material on additional topics relevant for the course and the examination.

Recommended reading
Books:
Shapiro, Jeremy F. 2007. Modeling the supply chain. 2nd ed. Thomson

Course outline

Variability and its Impact on Process Performance

The Impact of Variability on Process Performance

Waiting lines

Risk Pooling Strategies

Revenue Management with Capacity Controls

Supply Chain Coordination

Linear Programming

Mixed Integer Programming

Supply Network Design

Supply Chain Planning

Computer-based tools
Microsoft Excel, It's learning

Learning process and workload

A course of 6 ECTS credits corresponds to a workload of 160-180 hours.
There will be optional evalutions of test assignements.

Please note that while attendance is not compulsory in all courses, it is the student's own responsibility to obtain any information provided in class that is not included on the course homepage/It's learning or text book.

Examination
A 5 hour written exam (individual) accounting for 100% of the final grade.

Specific information regarding student evaluation beyond the information given in the course description will be provided in class.

Examination code(s)
GRA 67541 written exam accounts for 100% of the final grade in GRA 6754.

Examination support materials
All support materials allowed.
Examination support materials at written examiniations are explained under examination information in the student portal @bi. Please note use of calculator and dictionary in the section on support materials.

Re-sit examination
It is only possible to retake an examination when the course is next taught.
The assessment in some courses is based on more than one exam code.
Where this is the case, you may retake only the assessed components of one of these exam codes.

Where this is not the case, all of the assessed components of the course must be retaken.
All retaken examinations will incur an additional fee.

Additional information

Honor Code
Academic honesty and trust are important to all of us as individuals, and represent values that are encouraged and promoted by the honor code system. This is a most significant university tradition. Students are responsible for familiarizing themselves with the ideals of the honor code system, to which the faculty are also deeply committed.

Any violation of the honor code will be dealt with in accordance with BI's procedures for cheating. These issues are a serious matter to everyone associated with the programs at BI and are at the heart of the honor code and academic integrity. If you have any questions about your responsibilities under the honor code, please ask.