



## **BSc in Industrial Engineering - International Business Engineering** **Industriell ekonomi - internationell affärsingenjör**

180 credits

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**Ladok Code:** KININ

**Version:** 3.4

**Level:** First cycle

**Approved by:** The Teaching Committee 2013-01-25

**Valid from:** Autumn 2011

**Valid for:**

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### **General Objectives**

First level education shall develop the students'

- ability to make independent and critical assessments,
- ability to independently perceive, formulate and solve problems, and
- preparedness to deal with change in working life.

In the educational field concerned, in addition to knowledge and skills, students shall develop an ability to

- seek and evaluate knowledge at a scholarly level,
- follow the development of knowledge, and
- exchange knowledge with other people, including people without specialist knowledge of the field

(The Higher Education Act, Chapter 1, Section 8)

### **Objectives**

A Degree of Bachelor is obtained after the student has completed course requirements of 180 higher education credits with a certain area of specialisation determined by each higher education institution itself, including at least 90 higher education credits with increasingly in-depth studies in the main field of study.

#### *Knowledge and understanding*

- demonstrate knowledge and understanding in their main field of study, including knowledge of the scientific basis of the field, knowledge of applicable methods in the field, in-depth knowledge of some part of the field and a general sense of current research issues.

#### *Skills and abilities*

For a Degree of Bachelor students must

- demonstrate an ability to seek, gather and critically interpret information that is relevant to a problem and to critically discuss phenomena, issues and situations
- demonstrate an ability to independently identify, formulate and solve problems and to perform tasks within specified time limits
- demonstrate an ability to present and discuss information, problems and solutions in dialogue with different groups, orally and in writing
- demonstrate the skills required to work independently in the field that the education concerns.

#### *Judgement and approach*

For a Degree of Bachelor students must

- demonstrate an ability to make assessments in their main field of study, taking into account relevant scientific, social and ethical aspects
- demonstrate insight into the role of knowledge in society and into peoples responsibility for how knowledge is used and

- demonstrate an ability to identify their need of further knowledge and to upgrade their capabilities.

#### *Independent project (degree project)*

For a Degree of Bachelor students must have completed an independent project (degree project) worth at least 15 higher education credits in their main field of study, within the framework of the course requirements.

#### *Other*

For a Degree of Bachelor with a certain area of specialisation more precise requirements are also to apply, as determined by each higher education institution itself within the framework of the requirements in this qualification description.

### **Programme Objectives**

After completing the programme the student shall:

- possess knowledge about the various functions and activities of a company which is important in order to be able to work effectively as an industrial engineer as well as an engineer within other organisations
- have knowledge of the various control systems of a company, such as quality, environmental and financial systems
- be well educated in the areas of project management and industrial engineering while being thoroughly aware of organization and leadership on a theoretical level
- have demonstrated the ability to perform engineering work in an international business environment
- be able to participate in and lead projects that include cost estimation and budgeting
- have acquired a holistic approach to business activities and industrial operations
- be able to use operations research theoretically to design man/information/machine systems and improve their efficiency
- have knowledge about how business is managed internationally and specifically how purchasing of products/services is carried out in Asia
- have knowledge about how processes and flow can be optimised.

The study programme is intended to provide the student with good opportunity to help small, medium and large businesses to evolve, mostly regarding productivity, quality and logistics.

### **Content**

The following courses are included in the programme:

The courses comprise 7,5 ECTS credits if nothing else is stated.

#### **Year 1**

- Introduction to Industrial Engineering
- Linear Algebra
- Quality Management System
- Calculus
- Industrial Business Economics I
- Engineering Statistics
- Applied Calculus
- Statistical Quality Control

#### **Year 2**

- Project Management
- Operations Research
- Change Management and Psychology
- International Production Engineering

For students taking courses at the AIT in Thailand in the spring semester:

- Design of Experiments
- Logistics - Tools and Methods (LOG 1)
- Corporate Social Responsibility
- Elective course

For students taking courses at the University of Borås in the spring semester:

- Logistics for World trade
- Logistics - Tools and Methods (LOG 1)

- Industrial Business Economics 2
- Elective course

### Year 3

- Industrial Business Economics 3
- Material and Production Management
- Logistics II
- Lean management
- Elective course
- Manufacturing Simulation *or* Industrial Business Economics 2 (Students who have taken the course Industrial Business Economics 2 in the study year 2 should take the course Manufacturing Simulation. The other students should take Industrial Business Economics 2.)
- Final Thesis Project, 15 ECTS

Minor changes of the order and the extent of some courses indicated above may occur.

### Admission Requirements

General entry requirements + Civics 1b / 1a1 +1a2, Mathematics 3b / 3c. Or: Civics A, English B, Mathematics C.

- General entry requirements.
- Verified knowledge corresponding to level C mathematics (functions, derivatives).
- Verified knowledge of English corresponding to the course *English B* in the Swedish Upper Secondary School.

For further information about English language proficiency, please view: [www.hb.se/wps/portal/engtest](http://www.hb.se/wps/portal/engtest)

### Degree

Degree of Bachelor of Science with a major in Industrial Engineering - specialisation International Business Engineering.

Degree certificates are issued upon application in Ladok for students. More information is available at [www.hb.se](http://www.hb.se).

### Student Influence and Evaluation

Student Influence and Evaluation: Every course in the programme is evaluated (see the University College's policy on course evaluation). The head of the programme is responsible for regularly and in a systematic fashion collecting the student's opinions on the education. The head of the programme, along with the prefect, is also responsible for evaluating the whole programme on a yearly basis. The evaluation is carried out in cooperation with the programme's teacher, the students and professional representatives. The evaluation is documented in writing and brought back to the students.

### Miscellaneous

Language of instruction: English.