HÖGSKOLAN I GÄVLE

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PROGRAMME SYLLABUS

FIRST CYCLE

STUDY PROGRAMME IN INDUSTRIAL MANAGEMENT AND LOGISTICS
Programme Code: TGINK
Established by the Board of Science and Technology 2007-11-27
Revised by the Board of Science and Technology 2008-10-28

## Programme Syllabus

# Study Programme in Industrial Management and Logistics, 180 HE credits

***(Industriell ekonomi, 180 hp)***

**This programme syllabus applies to students admitted to the autumn semester of 2010 or later.**

**STUDY PROGRAMME IN INDUSTRIAL MANAGEMENT AND LOGISTICS at Högskolan i Gävle**

## 1 General Arrangement

The Study Programme in Industrial Management and Logistics results in a bachelor's degree of 180 HE credits. The education provides a specialisation in management control and organisational development, mainly of industrial activities with emphasis on the fields of logistics, total quality management, industrial organisation and industrial environmental economics. The programme contains one year of basic courses, one year of broadening continuation courses and one year of advanced studies. During the advanced studies, there is the opportunity to choose a specialisation within the main field of study of industrial management. During the education, projects of different size occur and the education ends with a degree project. The projects are carried out in close cooperation with companies.

The programme is based on problem-based learning with project work as the most common working method. During projects, the students will take on the different roles of a project group and thereby learn to cooperate in a project and also between different project groups. Elements of group dynamics give the students understanding of how conflicts may arise and be handled in a project group. Planning, management and documentation of projects are included as a natural part of the different projects. The students are also given an orientation in different tools used for planning and control of projects. The students may use specific project rooms with Internet-connected computers throughout the programme.

## 2 Expected Learning Outcomes

### 2.1 Expected Learning Outcomes for First-cycle Programmes According to the Higher Education Act, Chapter 1, Section 8, and Qualification Descriptor According to the Higher Education Ordinance, Appendix 2

#### 2.1.1 Expected learning outcomes for first-cycle programmes according to the Higher Education Act, chapter 1, section 8

First-cycle studies should essentially expand upon the knowledge acquired by pupils on national or specially designed programmes in upper-secondary school or equivalent knowledge. However, the government may make exemptions concerning programmes in fine, applied and performing arts.

First-cycle studies should develop the students
– ability to make independent and critical assessments,
– ability to independently discern, formulate and solve problems, and
– readiness to address changes in the working life.

Within the field of the education and in addition to knowledge and skills, the students should develop the ability to
– search and evaluate knowledge on an academic level,
– follow the knowledge development, and
– exchange knowledge also with individuals without expertise in the area.

### 2.1.2 Qualification descriptor according to the Higher Education Ordinance, appendix 2

**Bachelor's Degree**

***Extent***
Bachelor's degree is achieved when the student has successfully completed required courses of 180 HE credits with certain specialisation decided by each higher education institution, including at least 90 HE credits of progressive specialisation in the main field of study of the programme.

***Expected Learning Outcomes***
*Knowledge and Understanding*
For a bachelor's degree, the student should
– demonstrate knowledge and understanding of the main field of study of the education, including knowledge of the disciplinary foundation of the field, knowledge of applicable methods in the area, specialisation in some part of the field and orientation in current research.

*Skills and Abilities*
For a bachelor's degree, the student should
– demonstrate the ability to search, collect, evaluate and critically interpret relevant information in a problem, and to discuss phenomena, issues and situations,
– demonstrate the ability to independently identify, formulate and solve problems and to carry out assignments within given periods of time,
– demonstrate the ability to account for and discuss information, problems and solutions in dialogue with different groups, orally and in writing, and
– demonstrate the skills required to work independently within the field of the education.

*Judgement and Approach*
For a bachelor's degree, the student should
– demonstrate the ability to make assessments with consideration to relevant scientific, social and ethical aspects, within the programme's main field of study
– demonstrate an understanding of the role of knowledge in society and of people's responsibility for how it is used, and
– demonstrate the ability to identify the own need of additional knowledge and to develop the own skills.

***Thesis (degree project)***
For a bachelor's degree, the student must have successfully completed an individual assignment (degree project) of at least 15 HE credits within the framework of the required courses and the programme's main field of study.

***Other***
For a bachelor's degree with a certain specialisation, the specific requirements decided by each higher education institution within the framework of the requirements in this exam description should also apply.

**2.2 Specific Expected Learning Outcomes for the Programme**
After the education, the student should have knowledge and skills in both the technical and economical fields, for activities mainly within fields outside the industry:

- Logistics
- Total quality management
- Industrial organisation
- Industrial environmental economics

The education should be of high standard and higher education qualification should be attractive also on the international market.

*Knowledge and Understanding*
For a bachelor's degree, the student should

- demonstrate knowledge within the fields of industrial environmental economics,
- industrial organisation, total quality management and logistics, and understand how the different fields within industrial management interact with each another
- demonstrate knowledge of statistics
- be able to utilise modern information technology
- be able to define and explain central concepts concerning project work and project management, and be able to account for different roles in a project group
- understand the relationship between planning, organisation and follow-up of a project
- interact with other members of a project group and actively contribute to the work of the group, and understand the different stages of the process in a project and how these interact over time

*Skills and Abilities*
For a bachelor's degree, the student should

- be able to present results orally and in writing
- demonstrate knowledge of business administration theory regarding investment and cost calculation, and financial business analysis
- demonstrate the ability to apply the economic and technical knowledge in connection with exercises, project work and degree projects, where environmental aspects should also be observed
- demonstrate the ability to methodologically identify and solve problems through extensive information collection, analysis, design of alternative solutions, evaluation and implementation, and
- be able to plan a project based on given specifications
- demonstrate the ability to make assessments of the suitability of different tools for control and quality assurance of projects
- in the capacity of project manager, delegate the responsibility to the other project members, and be able to discover and handle potential conflicts in a project group
- be aware of the importance of the different roles in a project group
- demonstrate the ability to assess the status of a project and its possibility of target achievement
- observe the dynamics of the group and act when problems arise

*Judgement and Approach*
For a bachelor's degree, the student should

- demonstrate the ability to formulate search questions and retrieve information from relevant sources
- demonstrate the ability to interpret and write references
- be able to account for the difference between academic material and other types of material
- be able to follow the knowledge development in the own subject area
- be familiar with the forms of academic communication and publication
- demonstrate the ability to review, analyse and evaluate both the search process and the search results
- demonstrate the ability to present criteria for evaluation of sources of information and application of these.

# 3 Description of the Programme

## 3.1 Main Field of Study Industrial Management and Programme-specific Courses

### 3.1.1 Main Field of Study Industrial Management

Within the programme, industrial economy constitutes the main field of study. During the initial semester of year one, the course Industrial Business Development is included, in which basic concepts in the main field of study are studied. The studies within the main field continue during semester two, with four basic courses which cover every field of industrial management. Year two includes advanced courses in industrial management and a major project course. In the courses Manufacturing Logistics and Business Logistics - Physical Distribution, a company's organisation for efficient management and control and examples of different companies' logistics solutions are studied. In the project course Concurrent Engineering, previously studied parts are applied as the project groups are assigned themes for the projects, which are taken from companies. The third year includes advanced studies in total quality management and simulation. Semester five includes a project course in Management Systems. The courses Innovation Management and Logistics and Supply Chain Management focus on business management and provide the knowledge needed for the final degree project.

The programme ends with a degree project. The degree project is carried out in concentrated form at the end of the education. Through the degree project, knowledge acquired during previous studies should be applied, broadened and advanced. Through the degree project, the student should show that the learning outcomes for first-cycle programmes stated in the Higher Education Act, the learning outcomes stated in the Higher Education Ordinance and the specific learning outcomes stated in this programme syllabus have been achieved.

### 3.1.2 Project Courses

Within the programme, two major project courses with clear progression are carried out. The initial semester of the first year includes the course Industrial Business Development which includes basic project methodology, different fields within the product development process and presentation and communication technique. Study visits are made at industrial companies. During the fourth semester, the project course Concurrent Engineering is carried out, to which the project themes are

retrieved from companies in the region, and the studies are carried out in close cooperation and often in a business environment. The chosen themes provide the basis for both independent work in the project groups and for presentations at seminars and in discussions.

The project course Management Systems focusses on a company's complete work with coordination of quality and environmental issues from a management perspective. The project assignments are gathered from interacting companies.

## 3.2 Teaching and Examination

### 3.2.1 Teaching

The educational view is based on the fact that all learning is an active dynamic process that takes place in collaboration between teachers and students. All teaching and supervision should be based on the fact that the student takes responsibility for the own studies and for active knowledge acquisition. The learning implies that the theoretical and practical elements of the courses should be integrated as useful knowledge and skills in each individual. In that way, the student is given the opportunity of personal development, which is of great importance for the future profession and a lifelong learning. The student should also be prepared to address changes and acquire the ability to review the own knowledge in order to actively participate in development and evaluation of the profession. Different teaching and working methods should teach the student to actively seek knowledge, critical thinking and reflection, practice expressing oneself in speech and writing and using scientific literature.

In the programme, the ability to work in project form is practised, where students will function in different roles. Through examination of the projects, the level of knowledge is assessed, both in the group and individually. The scheduled teaching is given in the form of lectures, teaching sessions, laboratory sessions, project work and seminars. Part of the teaching is carried out as group work. Attendance is compulsory at certain teaching parts. Apart from the scheduled teaching, self-studies occur. The teaching is mainly given in Swedish but lectures in English and English course literature may occur.

The progression within the education occurs through a progressive specialisation in the chosen area, through both in-depth subject studies and development of the academic approach, where the final degree project is the ultimate proof of the education.

### 3.2.2 Examination

Examination is carried out within the framework of the courses included in the programme. The forms of examination are chosen in such a way that they give the student the opportunity to demonstrate the different forms of knowledge expressed in the learning outcomes. It means that several different examination formats will occur in the education, for example written and oral tests, oral and written presentations of laboratory sessions, written assignments and project assignments.

## 3.3 Placement

Placement at workplaces which give an insight in and preparation for the future

profession is recommended. The placement mainly intends to provide an insight into the working conditions of the future professional engineer. Placement certificate with clear information about the specifics of the work and duration is submitted to the faculty programme director for approval. Apart from the placement, different forms of cooperation with companies in the region occur in parts of the teaching.

These parts may be carried out on campus and at the company. The higher education institution does not provide placements.

### 3.4 Student Influence

There is a programme council, which consists of representatives from the working life, teachers and students. The council is advisory, and the faculty programme director is the chairman. There are student representatives in the board of governors, the faculty boards and the department boards. Gefle Student Union appoints student representatives.

### 3.5 Internationalisation

In the area of industrial economy, there are possibilities for international student exchange. Högskolan i Gävle currently has exchanges with the University of Glamorgan in Wales's and Fachhochschule Offenburg in Germany within the framework of Erasmus/Socrates, Guizhou University, Guiyang in China within the framework of Linnaeus Palme and the University of Wollongong in Australia. It is possible to take courses and carry out degree projects abroad.

In the same way that students from HiG study abroad, Högskolan i Gävle may receive exchange students from the higher education institutions above.
As a part of the internationalisation process, we receive teachers from other countries for teaching in Industrial Management.

Parts of certain courses are given in English. In year 3, certain courses are given completely in English if there are exchange students in the student groups. Both English and Swedish course literature are used in the programme.

Appropriate semesters to study abroad in the programme are semesters 5 and 6. Assessment and credit transfer of courses studied abroad is made by the responsible for internationalisation at the Faculty of Engineering and Sustainable Development at Högskolan i Gävle.

Regarding research in the department, today there is an established cooperation between the University of Wollongong and Guizhou University, Guiyang in China.

### 3.6 Technology and Society

An important starting point for the education is that the student must be possible to see on new technology from a social perspective. The student needs knowledge of and skills in managing products, processes and working environments with consideration to the conditions and needs of people, and to the goals of society concerning social relations, resource management, environment and economics. After the education, the student should be able to consider human-science and

environmental requirements in problem-solving and product development, and have the qualifications to promote environmental friendly technology. Working methods teaching these abilities are therefore important elements of the education.

## 4 Courses in the Programme

The students have guaranteed admission to the courses in the programme. Course applications to the following semester should be submitted. Changes in the order of the courses may be done in consultation with in the programme-active students. Changes in the courses included in the programme are determined by the faculty board. Change of period when the course is given is determined on department level. Alternative course selections may be made in consultation with the faculty programme director, provided that the aims for the programme are fulfilled.

F= First Cycle

**Year 1**

| Period | Course Name | HE credits | Level | Main Field of Study |
|---|---|---|---|---|
| 1:1 | Introduction to Project Methodology in Industrial Management | 7.5 | F | Industrial Management |
| 1:2 | Data Analysis and Statistics I | 7.5 | F | Statistics |
| 1:1 | Financial Accounting | 7.5 | F | Business Administration |
| 1:2 | Management Accounting and Analysis | 7.5 | F | Business Administration |
| 1:3 | Fundamentals of Logistics | 7.5 | F | Industrial Management |
| 1:3 | Industrial Organisation | 7.5 | F | Industrial Management |
| 1:4 | Work Science and Environmental Technology | 7.5 | F | Industrial Management |
| 1:4 | Total Quality Management | 7.5 | F | Industrial Management |

**Year 2**

| Period | Course Name | HE credits | Level | Main Field of Study |
|---|---|---|---|---|
| 2:1 | Manufacturing Logistics | 7.5 | F | Industrial Management |
| 2:1 | Industrial Environmental Management | 7.5 | F | Industrial Management |
| 2:2 | Business Logistics – Physical Distribution | 7.5 | F | Industrial Management |
| 2:2 | Marketing 1 | 7.5 | F | Business Administration |
| 2:3-4 | Concurrent Engineering | 15 | F | Industrial Management |
| 2:3 | Scientific Methodology | 7.5 | F | Industrial Management |
| 2:4 | Management and Control of Quality | 7.5 | F | Industrial Management |

**Year 3**

| Period | Course Name | HE credits | Level | Main Field of Study |
|---|---|---|---|---|
| 3:1-2 | Project Course: Management Systems | 15 | F | Industrial Management |
| 3:1 | Industrial Environmental | | | |

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|---|---|---|---|---|
| | Economics and Law | 7.5 | F | Industrial Management |
| 3:2 | Simulation Techniques in Logistics | 7.5 | F | Industrial Management |
| 3:3 | Innovation Management | 7.5 | F | Industrial Management |
| 3:3 | Logistics and Supply Chain Management | 7.5 | F | Industrial Management |
| 3:4 | Degree Project | 15 | F | Industrial Management |

## 5 Entry Requirements

General entry requirements and specific entry requirements 4, i.e. the following specific entry requirements

| Subject | Course |
|---|---|
| English | En B |
| Mathematics | MaC |
| Social Studies | Sh A |

The grade for each of the above subjects must be at least Pass.

## 6 Grades

Grades are given for courses included in the programme, according to the current course syllabus.

## 7 Examination Regulations

### 7.1 Title of Qualification

Degree of Bachelor of Science in Industrial Management and Logistics.
*Filosofie kandidatexamen.*

### 7.2 Qualification Criteria

To receive a degree certificate for bachelor's degree 180 HE credits, the student must have successfully completed courses of 180 HE credits. The higher education qualification should include a progressive specialisation of at least 90 HE credits in the main field of Industrial Management, in which a degree project of 15 HE credits should be included.

### 7.3 Degree Certificates

Students who fulfil the requirements for higher education qualification should receive degree certificates on request. For each degree certificate, a diploma supplement describing the education and its place in the education system should be included (The Higher Education Ordinance chapter 6, section 15). The appendix is called Diploma Supplement. Diploma Supplement should facilitate recognition and credit transfer of a Swedish higher education qualification in employment and continued studies abroad, but also in Sweden.

## 8 Further Instructions

Students admitted to the early years of the Study Programme in Industrial Management and Logistics, follow the programme syllabus for that year.

For students admitted to the later part of the programme, and for students who have had approved leave from studies, a specific study plan is established by the faculty programme director in consultation with study advisers.