



## Programme syllabus

Faculty of Technology

Industrial Management, 180 högskolepoäng

Industrial Management Programme, 180 credits

### Level

First Level

### Date of Ratification

Approved 2012-12-10

Revised 2014-10-09 by the Faculty Board within the Faculty of Technology

The programme syllabus is valid from autumn semester 2014

### Prerequisites

General entry requirements and Mathematics C or Mathematics 3b / 3c (Field-specific entry requirements 3/A3). General entry requirements coupled with Mathematics C

### Description of Programme

The program shall prepare students for a professional career within management in the fields of production, maintenance, quality and production logistics with a focus on human resources. This can lead to work in process plants, engineering, power plants or avionics and traffic systems.

### Objectives

#### *Knowledge and understanding*

To obtain the Bachelor's degree students must:

- demonstrate knowledge and understanding of the primary field, including knowledge of the fields scientific foundations, knowledge of appropriate field specific methods, and obtain a deeper understanding current research issues;

#### *Skills and abilities*

To obtain the Bachelor's degree students must:

- demonstrate the abilities to research, acquire, evaluate 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 as well as 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 of study.

#### *Judgment and approach*

To obtain the Bachelor's degree 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 people's responsibility for how knowledge is used;
- demonstrate an ability to identify their need of further knowledge and to upgrade their capabilities.

### ***Program-specific objectives***

#### *Knowledge and understanding*

After completion of the degree course the student shall have:

- demonstrated overall knowledge and understanding of the subject Total Quality Maintenance (terotechnology);
- demonstrated a deeper understanding with in production related organizations, human resources and information systems to continually continuously and cost effectively improve production.

#### *Skills and abilities*

After completion of the degree course the student shall:

- demonstrate the ability to use terotechnological theories and methods in everyday practice;
- demonstrate the ability to plan and complete independent projects within the field that demand readiness within technology, organization and economy;
- professionally, by way of written reports and oral presentations, demonstrate the ability to present of problems formulations, analyzes and eventual results.

#### *Judgment and approach*

After completion of the degree course students shall have:

- the ability to see the production process with regards to technology, organization and economy;
- the ability to map out, evaluate, analyze and improve the cost effectiveness of the production process;
- the ability to identify the need for further education and continually keep updated with regards to new methods and discoveries that are developed within the field of Terotechnology.

## **Content**

### *Program Overview*

The program focuses on the manufacturing process “within the walls of the company,” for both service and the manufacturing sectors. Through an understanding of how people function in a work place, alone and in groups, the students shall be able to create humane organizations, processes and work. To completely understand a company's production process, as well as take into account the needs of employees is the basis for good leadership.

The education consists of several predefined courses as well as several elective courses which together provide a knowledge base that correspond with the expected educational results. To ensure that the learning outcomes and educational accomplishments have been met it is important that a wide knowledge base within the subject of Terotechnology has been provided. This base can be divided up into courses that deal with one or several of following dimensions: quality, maintenance or production logistics. The program treats companies/organizations and their operations as a single system. This system is composed of technology, economy, persons and information. All of these aspects are seen as holding equal weight.

During the first year students read courses that primarily procure basic knowledge in mathematics and statistics, and introduce the student to the subject of Terotechnology. The first year also places emphasis on sociology and organization. The introductory course deals with a company from a holistic perspective. Different parts of the company are then studied individually in a number of courses during the first, second, and third years. In the third year the company is once again dealt with from a holistic perspective with the graduation work. Math and statistics courses are remediated during the first year to provide the necessary knowledge to understand the principal subject's content. Direct progression is found in certain courses, while indirect progression is found in others.

#### *Programme courses*

Below is a list which describes the organization of each year in terms of specific subject areas.

#### Year 1

Introduction to industrial operations (7.5 credits, G1N)

Technical Projects and Report Writing (7.5 credits, G1N)

Computational Methods for Technical Applications (15 credits, G1N)

Business Statistics I (7.5 credits, G1N)

Information Systems in Manufacturing Companies (7.5 credits, G1N)

Production Process Organisation (7.5 credits, G1N)

Working Life in Late Modernity (7.5 credits, G1N)

#### Year 2

Industrial Measurement and Failure Analysis (7.5 credits, G1N)

Engineering Economy (7.5 credits, G1N)

Maintenance Planning (7.5 credits, G1F)

Environmental Technology - Sustainable Development (7.5 credits, G1F)

Logistic course (7.5 credits, G1F)

Facilities Planning and Production Management (7.5 credits, G1F)

Management and Cooperation (7.5 credits, G1F)

Elective Course (basic or advanced level):

Elective courses comprising 7,5 credits are included in year 2. The elective course should be chosen in consultation with the programme responsible.

#### Year 3

Life Cycle Cost Analysis (7.5 credits, G2F)

Quality Management (7.5 credits, G1F)

Asset Health Management I (7.5 credits, G1F)

### Elective Course (basic or advanced level)

Elective courses comprising 7,5 credits are included in year 3. The elective course should be chosen in consultation with the programme responsible.

### Integrated Business Solutions (7.5 credits, G2F)

### Degree Project (22,5 credits, G2E)

#### *Work experience*

The program is completed in close contact with trade and industry. Every course within the subject Terotechnology contains practical cases where theory and practice is woven together and carried out at an industrial company. Guest lecturers from industry and field trips to relevant companies also occur during the program.

#### *Study abroad*

Students are encouraged to complete a portion of their studies abroad. Study abroad is appropriate during the final year of the degree course and when possible during the second half. Planning for study abroad is done in partnership between the universities international coordinator and program manager.

#### *Scope of program*

- Sustainable Development: the concept of sustainability, in design and operations, is intrinsic to various courses in the program. Furthermore the course also deals with the life cycle of differing systems.
- Gender: the subject of gender is dealt with primarily in courses concerning leadership, organization and human resources management.
- Diversity and Globalization: Diversity and Globalization are two aspects that are important to the study of manufacturing processes and are discussed especially in those related terotechnological courses. Culture plays an important role in the discussion of quality. Foreign guest lecturers and international students are given features of the program.

## Quality Development

The program is led by a program manager who has comprehensive responsibility for the program's realization and contact with its students.

Furthermore, the program has an established program council. The council is composed of teachers, students and representatives from industry. The council meets regularly to discuss the education's structure, content and its professional ties.

The program is evaluated on a continuous basis by way of course evaluations given at the end of the degree course, and through a special program evaluation. The results of these evaluations are discussed with students both at the beginning of each course and the program as a whole. A summary of these program evaluations are archived by the university. Two times during the term a meeting is held with all students in the program. These meetings are held at the beginning of the term and at midterm. The meeting scheduled at the beginning of the term addresses discusses the terms courses and any changes that have been made. The midterm meeting provides the opportunity to address problems that have sprung up during the term, and provides for the ability to rectify such. The midterm meeting is also an opportunity to discuss course choices for the coming term. Quality aspects of the degree course are further discussed by the program council.

## Degree Certificate

The student, after completion of studies in accordance with the requirements listed in the Higher Education Ordinance Decree and those of the local examination system at Linnaeus University, can apply for a degree. Those who have completed the degree course Bachelor of Science with an emphasis in Industrial Management will receive the following degree:

*Bachelor of Science with Specialization in Industrial Management*

Main field of study: Total Quality Maintenance

The diploma is bilingual (Swedish/English). This certificate is also accompanied by a Diploma Supplement (in English).

## Other Information

Field and study trips, as well as other obligatory activities can occur during the course of the program.