Hanze

Programme

Qualification awarded
Bachelor of Science

Length of the programme
48 months

ECTS credits
240

Level of qualification
Bachelor

Mode
Full-time

Language
Dutch, with parts in English

School
Institute of Engineering

Locations
Groningen

Industrial Engineering and Management

Profile of the programme

The degree programme of Industrial Engineering and Management trains students to become generalists who are able to apply a helicopter view and bridge the gap between management, creative and support processes. Upon graduating, students must be able to strengthen the position of the Industrial Engineer by making both horizontal and vertical connections in a multi- and interdisciplinary environment.
Furthermore, students must be able to carry out sound research in an unknown, complex, multidisciplinary environment and use the results to generate suitable recommendations as well as an implementation and management plan.

The major Management and Consultancy is primarily aimed at the field of Industrial Engineering and Management. It prepares the engineer to be able to do research and analyse organisational and production processes, signal and list bottlenecks, develop and implement proposals for improvement. Human resources, commercial and financial matters, and information management are included in this programme.
This major also incorporates Hanze University of Applied Sciences Groningen's focus areas Health, Energy and HTSM (Smart Factories).

Learning outcomes

Graduates of Industrial Engineering and Management demonstrate the following behavioural traits:

1. Analyse (3)

a) Mapping the context of an assignment by using relevant theories, methods and/or techniques from Industrial Engineering and Management;
b) modelling an existing product, process or service;
c) specifying the potential impact on business management, social and subject-specific aspects;
d) making a problem analysis and a diagnosis;
e) formulating and elaborating a clear research question and goal.

2. Design (3)

a) Showing that they can devise and select a concept solution based on the pre-defined requirements as well as compliant with the design criteria;
b) creating detailed designs based on the chosen concept solution;
c) verifying the design on the basis of the design criteria;
d) using relevant theories, methods and/or techniques from Industrial Engineering and Management;
e) producing the documentation for the product, service or process.

3. Realise (3)

a) Making a force field analysis;
b) selecting a change strategy;
c) designing a change process;
d) designing a change organisation;
e) creating a schedule;
f) using relevant theories, methods and/or techniques from Industrial Engineering and Management;
g) documenting the implementation process.

4. Control (2)

a) Substantiating the way to manage a new situation by mapping the required people, techniques and methods as well as the costs and benefits;
b) drawing up relevant key performance indicators;
c) developing a process to measure key performance indicators;
d) drawing up a management plan that enables corrective and/or preventive action;
e) using relevant theories, methods and/or techniques from Industrial Engineering and Management.

5. Manage (2)
a) Setting up a project or sub-project: quantifying time and money, weighing up and quantifying risks, drawing up project documentation and organising resources (people and equipment);
b) monitoring and adjusting activities in terms of time, money, quality, information and organisation;
c) communicating in a task- and process-focused way;
d) supervising stakeholders, as well as being able to encourage, collaborate with and delegate tasks to

them where required;
e) communicating and working with others in a multicultural, international and/or multidisciplinary environment and meeting the requirements that working in an organisation demands;
f) using relevant theories, methods and/or techniques from Industrial Engineering and Management.

6. Advise (2)

a) Putting themselves in the position of the internal or external customer;
b) clarifying the client's requirements;
c) showing that they can justify the advice provided and convince the customer that it is justified;
d) showing that they can maintain good relationships with customers;
e) using relevant theories, methods and/or techniques from Industrial Engineering and Management.

7. Research (3)
a) Exploring the issues and making a diagnosis;
b) formulating a research plan based on the exploration and diagnosis;
c) operationalising the research and selecting research methods;
d) gathering, interpreting and analysing research data;
e) formulating conclusions and recommendations that correspond to the research question and goal, in accordance with the analysis of the research outcomes.

8. Professionalise (3)

a) Estimating and acquiring the substantive expertise required;
b) in the case of professional and ethical dilemmas, weighing up the factors involved and making a decision, taking into account accepted standards and values;
c) giving and receiving constructive feedback in terms of both behaviour and content;
d) reflecting on own actions, thinking and results;
e) using different types of communication and media to communicate effectively in Dutch and English;
f) reporting results in accordance with the industry standard.

Programme

Industrial Engineering and Management	**credits**
Year 1	60
The field of activity of the Technical Business Engineer	*30*
TBVP22LB - Purchasing Process	*5*
TBVP24PT - Prototype	*5*
TBVP24KO - Customer Quote	*5*
TBVP24PL - Production Line	*10*
TBVP25PI1 - Professional Identity 1	*5*
The role of the Technical Business Engineer	*30*
TBVP24BA - Business Analysis	*10*
TBVP24OA - Organisation Advice I	*5*
TBVP24VP - Change Management	*5*
TBVP24OP - Company	*5*
TBVP24PI2 - Professional Identity 2	*5*
Year 2	60
The External Environment	*30*
TBVB24TV - Technical Innovation	*10*
TBVB24OAN - Environmental Analysis	*10*
TBVB24OA2 - Organisation Advice II	*5*
TBVB24PI3 - Professional Identity 3	*5*
Management Information	*30*
TBVB24BA - Businessanalysis in the IT	*10*
TBVB24DV - Data-driven Improvement	*15*
TBVB24PI4 - Professional Identity 4	*5*
Year 3	30
one of following courses	
Continuous Improvement	*30*
TBVB25A3CV - Internship Continuous Improvement	*30*
Internship Abroad	*30*
TBVB25A3IA - Research Internship Abroad	*30*
Profiling	30
electives	
year 4	60
General Management	*15*
TBVB25ALM - General Management	*10*
TBVB25PI7 - Professional Identity 7	*5*

- Electives *15*

  selection of following courses

  - TBVB25ASM - Optional Module Asset Management *5*
  - TBVB25EN - Optional Module Energy *5*
  - TBVB25MLAI - Optional Module Machine Learning & AI *5*
  - TBVB25SAMA - Optional Module Sales Management *5*
  - TBVB25SCL - Optional Module Supply Chain and Logistics *5*
  - TBVB25VK - Free Choice Module *5*
- Graduation *30*

  selection of following courses

  - TBVB25AFP - Graduation Project *30*
  - TBVB25AFPBU - Graduation Project Abroad *30*

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