Appendices of the Teaching and Examination Regulations of the Master's degree programme in Industrial Engineering and Management

Content:

A. Teaching outcomes of the degree programme *Industrial Engineering and Management*:

1. The students are able to describe a complex or advanced technological process and product in a managerial context.
2. The students are able to diagnose the functionality and performance of such processes and products in a multi-disciplinary way.
3. The students are able to (re)design such processes and products.
4. Students have knowledge, understanding and skills for doing research i.e. applying industrial engineering methodologies in research.
5. Students have the knowledge, understanding and skills for life long learning, (can reflect on their own scientific behavior) including information retrieval and ICT-use.
6. Students think critically and are able to communicate scientifically about a chosen solution approach with engineers and managers.
7. Students have the knowledge and understanding of advanced technology, managerial sciences and mathematics to do research and to enter a PhD-program in Industrial Engineering or a related discipline.
8. Students have professional skills for managerial, societal and ethical behavior when applying technology.

B. Specializations of the degree programme

Within the master's programme ofIndustrial Engineering and Management three specializations:

- Discrete technology and Production Automation
- Information and Communication Technology
- Product and Process Technology
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C/E. Content of the degree programme, entry requirements and compulsary order of examinations

Module	**ECTS**	**Practical work**	**Examination form***	**Prerequisites**[1)]
Common programme	**65**			
Business Law	5	Yes	WE	
Simulation of business processes	5	Yes		
Strategic Management	5		WE	
System Engineering	5	Yes		Business System Design (ontwerpen v. bedrijfs-kundige systemen)
Applied capital budgeting & finance	5	Yes	WE	
Research Methodology	5	Yes		
Master's thesis preparation	5	Yes		Research Methodology, a minimal studyload of of 70 ECTS of the master's IEM programme
Master's thesis Research	30	Yes		Master's thesis preparation

DT-Specialization	**55**			
Operations Research 2	5		WE	
Mechatronics	5		WE	Principles of measurement systems
Principles of measurement systems	5		WE	Electronics
Flexible manufacturing automation	6	Yes	WE	
Robotics	5		WE	Mechatronics
Information Handling and System Design	5	Yes		
Product development	5	Yes	WE	
Optional Modules	19			
IT-Specialization	**55**			
Operations Research 2	5		WE	
Sustainable and Integrated Information Systems	5	Yes		Databases
Software architecture	5	Yes		
Business Intelligence	5	Yes	OE	
ICT management & consultancy	5	Yes		
Distributed systems	5	Yes		
Optional Modules	25			
PT-Specialization	**55**			
Information Handling and System Design	5	Yes		
Transport phenomena 2	5		WE	Transport phenomena 1
Process design	10	Yes		
Advanced product engineering	5	Yes		Product technology
Product development	5	Yes	WE	
Optional modules	25			

[1)]: entry requirements and compulsary order of examinations

D. Optional modules

Module	**ECTS**
Interfacial engineering	5
Project management	5
Field Course Business Development Ia	5
Advanced Purchasing & Supply Management	5
Advanced Product & Service Development	5
Management Acc. for Techn. Innovation	5
Services Marketing	5
Algorithms and datastructures	5
Advanced Web Technology	5
Specialization Course Finance	10
Field Course Small Business Management	10
ICT: Human & Organizational Issues	10
Inf. Systems for Operations & Supply Ch.	5

Small Business Economics	10
Resources and Sustainable Development	15
Polymer Products	5
Powder Technology	5
E-Venturing	5
Organizational Change and Business Development	5
Advanced HRM Ib	5
Organizing Innovation	5
Product Development, Product Management & Supply Chain Management	5
Process Innovation & Operational Excellence	5
Social System Analysis of Technical Innovation	5
Retail Marketing	5
Neural Networks	5
Software Patterns	5
Sustainability for Engineers	5
Multiple phase reactors 1	5
Global Operations & Supply Chains	5
Advanced Quality Management	5
Conflict Management & Industrial Relations	5
Management Consulting	5
Quantitative Logistics	10
Energy and Materials	10
Mobile Software	5
IEM-project	5
Business Development in Action	5
Specialization Course Applied Operations Research	10
Research Course Simulation Modelling & Use	5
Business Ethics & Corporate Social Responsibility	5
Usability engineering and analysis	5
Applied Finite Elements	6

F. Admission to the degree programme and different specializations

- Holders of a Bachelor's degree in Industrial Engineering and Management from the University of Groningen. Admission is profile specific.

- Holders of a Dutch or foreign Bachelor's or Master's degree with equivalent learning outcomes as the Bachelor's degree programme Industrial Engineering and Management of the University of Groningen.

G. Application deadlines for admission

Deadline of Application	**Non-EU students**	**EU students**
Nanoscience	February 1st 2009	February 1st 2009
Behavioural and Cognitive Neurosciences	February 1st 2009	June 1st 2009
Biomolecular Sciences (topprogramme)	February 1st 2009	April 15th 2009
Evolutionary Biology (topprogramme)	February 1st 2009	February 1st 2009
Remaining FMNS Masters	April 15th 2009	June 1st 2009