

Requirements for the Bachelor of Science Degree in Industrial Engineering with Concentrations in either Production or Process Engineering/Environmental Studies
Complete List of Course Areas, Courses and Examinations

Sem			Course Areas	ECTS Credits	Courses	Courses		Sem. Hours	Evaluation
						Status	Type		
IE 1	IE	IE-1.111	Mathematics	6	Mathematics	Required	Lecture	3	Examination
IE 1	IE				Mathematics	Required	Tutorial	2	
IE 1	IE	IE-1.112	Physics	3	Physics	Required	Lecture	2	Exam Substitute
IE 1	IE				Physics	Required	Tutorial	1	
IE 1	IE	IE-1.113	Computer Science	3	Computer Science	Required	Lecture	2	Examination
IE 1	IE				Computer Science	Required	Practicum	1	
IE 1	IE	IE-1.114	Electrical Engineering	3	Electrical Engineering	Required	Lecture	2	Examination
IE 1	IE				Electrical Engineering	Required	Tutorial	1	
IE 1	IE	IE-1.115	Introduction to Automation Engineering	3	Introduction to Automation Engineering	Required	Seminar	2	Examination
IE 1	IE				Introduction to Automation Engineering (Special Topics)	Required	Seminar	1	
IE 1	IE	IE-1.116	Intro to Business Admin. and Economics	6	Introduction to Business Admin. and Economics	Required	Lecture	4	Examination
IE 1	IE				Introduction to Business Admin. and Economics	Required	Tutorial	2	
IE 1	IE	IE-1.117	Scholarship, Academic Writing, Presentations	3	Scholarship, Academic Writing, Presentations	Required	Seminar	2	Exam Substitute
IE 1	IE	IE-1.118	Design Engineering I	3	Design Engineering I	Required	Tutorial	2	Exam Substitute
IE 2	IE	IE-1.121	Applied Mathematics	6	Applied Mathematics	Required	Seminar	2	Examination *
IE 2	IE				Applied Mathematics	Required	Tutorial	1	
IE 2	IE				Operations Research	Required	Lecture	1	Examination *
IE 2	IE				Operations Research	Required	Tutorial	1	
IE 2	IE	IE-1.112	Physics	3	Physics	Required	Seminar	2	Exam Substitute
IE 2	IE				Physics	Required	Practicum	1	
IE 2	IE	IE-1.321	Statics and Materials Strength	6	Statics and Materials Strength	Required	Lecture	2	Examination
IE 2	IE				Statics and Materials Strength	Required	Tutorial	3	
IE 2	IE	IE-1.114	Electrical Engineering	3	Electrical Engineering	Required	Tutorial	1	Examination
IE 2	IE	IE-1.122	Business Administration	6	Production and Investment	Required	Lecture	2	Exam Substitute
IE 2	IE				Production and Investment	Required	Tutorial	1	
IE 2	IE				Marketing	Required	Seminar	2	
IE 2	IE				Marketing	Required	Tutorial	1	
IE 2	IE	IE-1.123	Accounting	3	Financial Accounting	Required	Lecture	2	Exam Substitute
IE 2	IE				Financial Accounting	Required	Tutorial	1	
IE 2	IE	IE-1.124	Business Law	3	Business Law I	Required	Seminar	3	
IE 3	IE	IE-1.131	Statistics	3	Statistics	Required	Lecture	2	Examination
IE 3	IE				Statistics	Required	Practicum	1	
IE 3	IE	IE-1.331	Business Data Processing	3	Business Data Processing	Required	Lecture	1	Examination
IE 3	IE				Business Data Processing	Required	Tutorial	1	
IE 3	IE	IE-1.332	Electronics	3	Electronics	Required	Lecture	2	Examination
IE 3	IE				Electronics	Required	Tutorial	1	
IE 3	IE	IE-1.333	Machine Dynamics	3	Machine Dynamics	Required	Lecture	2	Exam Substitute
IE 3	IE				Machine Dynamics	Required	Tutorial	1	
IE 3	IE	IE-1.334	Intro to Materials and Manufacturing Engineering	6	Materials Engineering	Required	Lecture	2	Examination
IE 3	IE				Materials Engineering	Required	Practicum	1	
IE 3	IE				Introduction to Manufacturing Engineering	Required	Seminar	2	Exam Substitute
IE 3	IE				Introduction to Manufacturing Engineering	Required	Practicum	1	

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IE 3	IE	IE-1.123	Accounting	3	Managerial Accounting	Required	Seminar	2	Exam Substitute
IE 3	IE				Managerial Accounting	Required	Practicum	1	
IE 3	IE	IE-1.132	Personnel and Project Management	6	Personnel Management	Required	Seminar	1	Exam Substitute
IE 3	IE				Personnel Management	Required	Tutorial	2	
IE 3	IE				Introduction to Project Management	Required	Lecture	2	Exam Substitute
IE 3	IE				Introduction to Project Management	Required	Practicum	1	
IE 3	IE	IE-1.124	Business Law	3	Business Law II	Required	Seminar	2	Examination
IE 4	IE	IE-1.341	Automatic Control Technology	3	Automatic Control Technology	Required	Lecture	2	Examination
IE 4	IE				Automatic Control Technology	Required	Practicum	1	
IE 4	IE	IE-1.342	Employment Law	3	Employment Law	Required	Seminar	3	Examination
IE 4	IE	IE-1.141	Production Logistics	6	Inventory Management	Required	Lecture	1	Examination
IE 4	IE				Inventory Management	Required	Tutorial	1	
IE 4	IE				Production Planning and Operations Control	Required	Seminar	2	
IE 4	IE				Production Planning and Operations Control	Required	Practicum	1	
Concentrations									
IE 4	Prod.	IE-1.441	Design Engineering	6	Machine Components	Required Prod.	Seminar	2	Examination
IE 4	Prod.				Machine Components	Required Prod.	Practicum	1	Exam Substitute
IE 4	Prod.				Design Engineering II	Required Prod.	Seminar	2	
IE 4	Prod.				Design Engineering II	Required Prod.	Tutorial	1	
IE 4	Prod.	IE-1.442	Manufacturing	6	Manufacturing Engineering	Required Prod.	Seminar	1	Examination
IE 4	Prod.				Manufacturing Engineering	Required Prod.	Practicum	1	
IE 4	Prod.				Assembly Engineering	Required Prod.	Seminar	1	
IE 4	Prod.				Assembly Engineering	Required Prod.	Practicum	1	
IE 4	Prod.	IE-1.443	Machine Tools and Robotics	6	Machine Tools	Required Prod.	Seminar	2	Examination
IE 4	Prod.				Machine Tools	Required Prod.	Practicum	1	Exam Substitute
IE 4	Prod.				Robotics	Required Prod.	Seminar	2	
IE 4	Prod.				Robotics	Required Prod.	Practicum	1	
IE 4	PEES	IE-1.541	Introduction to Processing Engineering	3	Introduction to Mechanical Process Engineering	Required PEES	Seminar	1	Exam Substitute
IE 4	PEES				Introduction to Mechanical Process Engineering	Required PEES	Tutorial	1	
IE 4	PEES	IE-1.542	Techniques of Analysis and Measurement	3	Techniques of Analysis and Measurement	Required PEES	Lecture	1	Exam Substitute
IE 4	PEES				Techniques of Analysis and Measurement	Required PEES	Practicum	2	
IE 4	PEES	IE-1.543	Process Engineering Installations I	6	Design Engineering II	Required PEES	Seminar	2	Exam Substitute
IE 4	PEES				Design Engineering II	Required PEES	Tutorial	1	Exam Substitute
IE 4	PEES				Installation Planning and Costing	Required PEES	Seminar	2	
IE 4	PEES	IE-1.544	Energy Engineering and Power Supply Indust.	6	Energy Engineering and Power Supply Industry	Required PEES	Lecture	3	Examination
IE 4	PEES				Energy Engineering and Power Supply Industry	Required PEES	Tutorial	2	
IE 5	IE	IE-1.061	Supervised Internship and Workshop	30	Supervised Internship and Workshop	Required			
IE 5	IE								
IE 6	IE	IE-1.161	Controlling	6	Controlling I	Required	Seminar	2	Exam Substitute
IE 6	IE				Controlling I	Required	Tutorial	1	Exam Substitute
IE 6	IE				Controlling II	Required	Seminar	2	
IE 6	IE				Business Simulations	Required	Practicum	1	
IE 6	IE	IE-1.361	Product Innovation	6	Management of Innovation Processes	Required	Lecture	2	Exam Substitute
IE 6	IE				Management of Innovation Processes	Required	Tutorial	1	Exam Substitute
IE 6	IE				Marketing Concepts	Required	Seminar	2	
IE 6	IE	IE-1.362	Applied Economic Policy	3	Applied Economic Policy	Required	Seminar	1	Exam Substitute
IE 6	IE				Applied Economic Policy	Required	Practicum	1	
IE 6	IE	IE-1-1.163	Foreign Trade	3	Foreign Trade	Required	Seminar	3	Exam Substitute

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Concentrations

IE 6	Prod.	IE-1.461	Design-Manufacturing Interfaces	3	Design-Manufacturing Interfaces	Required Prod.	Seminar	1	Exam Substitute
IE 6	Prod.				Design-Manufacturing Interfaces	Required Prod.	Practicum	2	
IE 6	Prod.	IE-1.462	Arrangement of Work Places and Factories	6	Human Factors Engineering	Required Prod.	Seminar	2	Exam Substitute
IE 6	Prod.				Human Factors Engineering	Required Prod.	Practicum	1	
IE 6	Prod.				Design of Process Layout and Flow	Required Prod.	Seminar	1	Exam Substitute
IE 6	Prod.				Design of Process Layout and Flow	Required Prod.	Practicum	1	
IE 6	Prod.	IE-1.463	International Economic Integration	3	International Economic Integration	Required Prod.	Seminar	2	Exam Substitute
IE 6	PEES	IE-1.562	Introduction to Thermal Process Engineering	3	Introduction to Thermal Process Engineering	Required PEES	Seminar	1	Examination
IE 6	PEES				Introduction to Thermal Process Engineering	Required PEES	Tutorial	2	
IE 6	PEES	IE-1.563	Process Engineering Installations II	3	Process Engineering Installations II	Required PEES	Seminar	2	Exam Substitute
IE 6	PEES				Process Engineering Installations II	Required PEES	Tutorial	1	
IE 6	PEES	IE-1.561	Environmental Policy and Management	6	Environmental Policy	Required PEES	Seminar	2	Exam Substitute
IE 6	PEES				Environmental Management	Required PEES	Lecture	2	Examination
IE 6	PEES				Environmental Management	Required PEES	Tutorial	1	

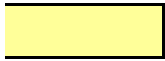
Concentrations/Electives

IE 7	Prod.		Elective Course Area I	6	Elective Course Area I	Required	Practicum	1	Exam Substitute
IE 7	IE		Elective Course Area II	3	Elective Course Area II	Required	Seminar	2	Exam Substitute
IE 7	IE		Elective Course Area III	3	Elective Course Area III	Required	Seminar	2	Exam Substitute
IE 7	IE		Elective Course Area IV	3	Elective Course Area IV	Required	Seminar	2	Exam Substitute
IE 7	IE	IE-1.071	Undergraduate (Bachelor's) Thesis and Defence	15	Undergraduate (Bachelor's) Thesis and Defence	Required			

Elective Courses

IE 7	IE	IE-1.701	Elective Course Area I	6	Robotics Project	Elective	Practicum	1	Exam Substitute
IE 7	IE	IE-1.702	Elective Course Area I	6	Factory Planning Project	Elective	Practicum	1	Exam Substitute
IE 7	IE	IE-1.703	Elective Course Area I	6	Installation Planning Project	Elective	Practicum	1	Exam Substitute
IE 7	IE	IE-1.263.1	Elective Course Areas II-IV	3	Introduction to ERP Systems	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.263.2	Elective Course Areas II-IV	3	ERP Systems and Business Process Implementation	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.612	Elective Course Areas II-IV	3	Economic and Fiscal Policy	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.613	Elective Course Areas II-IV	3	Creative Processes Facilitation	Elective	Seminar	3	Exam Substitute
IE 7	IE	IE-1.614	Elective Course Areas II-IV	3	Industrial Property Rights and Technology Transfer	Elective	Seminar	3	Exam Substitute
IE 7	IE	IE-1.704	Elective Course Areas II-IV	3	Management Methods in Production	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.708	Elective Course Areas II-IV	3	Methods of Rapid Prototyping	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.709	Elective Course Areas II-IV	3	Introduction to Pro-Engineer	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.710	Elective Course Areas II-IV	3	Fracture Mechanics Applications	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.711	Elective Course Areas II-IV	3	Recycling and Waste Disposal Engineering	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.720	Elective Course Areas II-IV	3	Statistical Methods in Quality Assurance	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.721	Elective Course Areas II-IV	3	Current Developments in the Economic Sciences	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.722	Elective Course Areas II-IV	3	Current Developments in the Engineering Sciences	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.725	Elective Course Areas II-IV	3	Innovation Laboratory	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.726	Elective Course Areas II-IV	3	Applied Engineering Design	Elective	Seminar	2	Exam Substitute
IE 7	IE	IE-1.727	Elective Course Areas II-IV	3	Engineering Economic Analysis	Elective	Seminar	3	Exam Substitute
IE 7	IE	IE-1.728	Elective Course Areas II-IV	3	Software Practicum	Elective	Seminar	4	Exam Substitute
IE 7	IE	IE-1.264	Elective Course Areas II-IV	3	International Economic Theory and Policy	Elective	Seminar	2	Exam Substitute
IE 7	IE	WI-1.730	Elective Course Areas II-IV	3	Technical English (English 1)	Elective	Seminar		Exam Substitute
IE 7	IE	WI-1.731	Elective Course Areas II-IV	3	Business English (English 2)	Elective	Seminar		Exam Substitute
IE 7	IE	WI-1.735	Elective Course Areas II-IV	3	Spanish 1	Elective	Seminar		Exam Substitute
IE 7	IE	WI-1.736	Elective Course Areas II-IV	3	Spanish 2	Elective	Seminar		Exam Substitute

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Term Paper
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Oral Report
Oral Exam
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Term Paper
Tests
90 minutes

Written and Oral Internship Report

Specified by Instructor
Test
Team Presentation
Test
Test
Simulations and Group Presentations
Test

Term Paper
Oral Report

Term Paper/Lab Report

Term Paper and Presentation 120 minutes
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Term Paper

Term Paper and Presentation 90 minutes

Term Paper of 150 Hours Preparation

Term Paper of 150 Hours Preparation
Term Paper of 150 Hours Preparation
Term Paper of 150 Hours Preparation

Test
Test

Test, Term Paper, Presentation

Term Paper, Oral Report

Term Paper, Oral Report

Oral Report, Team Project

Test

Test

Test

Presentation

Test

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Team Project with Written Report

Team Project with Written Report

Test

Test

Term Paper, Presentation

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