



**Academic Programme 2018-2019**

**Civil Engineering**

**Semester 5**

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
<b>Unit 5.1 Upgrading courses</b>						<b>26</b>	<b>0</b>	
Mathematics or Civil Engineering Technology		26				26		211020
<b>Unit 5.2 Mechanical Engineering</b>						<b>80</b>	<b>8</b>	
Structural Design 1	20		28	6		54	5	211110
Continuum Mechanics		26				26	3	21120
<b>Unit 5.3 Computing and Mathematics</b>						<b>108</b>	<b>8</b>	
Computing		14		4	24	42	3,5	211220
Mathematics 1	20		26			46	3,5	211230
(BIM) Building Information Modeling				20		20	1	211240
<b>Unit 5.4 Geology for Engineers,</b>						<b>82</b>	<b>7</b>	
Geology for Engineers 1	14		10	14		38	3	211310
Materials 1	4		10	12		26	2,5	211320
Building Processes		6	12			18	2	211340
<b>Unit 5.5 Project and Soft Skills 1</b>						<b>60</b>	<b>4</b>	
Career Planning			10			10	0,75	211410
Multidisciplinary Project			10			10	0,75	211420
Sport			22			22	1	211430
Structural Project	12		6			18	1,5	211440
<b>Unit 5.6 Languages</b>						<b>44</b>	<b>3</b>	
English			24			24	2	211510
Second language								
-> German			20			20	1	211530
-> Spanish			20			20	1	211540
-> French			20			20	1	211550
Remedial English			15			15	0	211560
<b>Total :</b>						<b>400</b>	<b>30</b>	

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## Academic Programme 2018-2019

### Civil Engineering

#### Semester 6

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credit	Code
<b>Unit 6.1 Mechanical Engineering and Mathematics</b>						<b>117</b>	<b>8</b>	
Multidisciplinary Project					54	54	4	212030
Numerical Structural Design	10		12	9		31	2	212040
Bridges		6	14			20	1,25	212050
Applied Statistics	6		6			12	0,75	212060
<b>Unit 6.2 Geology and Geotechnics</b>						<b>87</b>	<b>7</b>	
Geology for Engineers 2	8		6	13	16	43	2	212110
Geotechnics 1	12		20	12		44	2	212130
Geology and geotechnics							3	212140
<b>Unit 6.3 Materials and Structural Design</b>						<b>128</b>	<b>10</b>	
Materials 2	10		6	8		24	2	212210
Structural Design 2	8		14	6		28	2	212220
Dimensioning of Structures	20		24			44	3,5	212230
Continuum Mechanics 2		20				20	1,5	212240
Risk management - Robustness	6				6	12	1	212250
<b>Unit 6.4 Project and Soft skills</b>						<b>32</b>	<b>2</b>	
Corporate Communication			10			10	1	212430
Sport			22			22	1	212440
<b>Unit 6.5 Languages</b>						<b>44</b>	<b>3</b>	
English			24			24	2	212510
Second language								
-> German	20		20			20	1	212530
-> Spanish			20			20	1	212540
-> French			20			20	1	212550
Remedial English			18			18	0	212560
<b>Placement (minimum one month) during the summer</b>						<b>0</b>	<b>0</b>	
<b>Total :</b>						<b>408</b>	<b>30</b>	

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 This course can be offered in English

 The project can be supervised in English

## Academic Programme 2018-2019

### Civil Engineering

#### Semester 7

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
<b>Unit 7.1 Numerical tools</b>						<b>48</b>	<b>4</b>	
Numerical Analysis	6		10	12		28	2	213110
Fluid Mechanics	10		10			20	2	213120
<b>Unit 7.2 Concrete and Structures</b>						<b>94</b>	<b>8</b>	
Wood Construction	12		12			24	2	213210
Reinforced Concrete	22		24			46	4	213220
Dynamics of Structures	14		10			24	2	213230
<b>Unit 7.3 Soil and Rock Science 1</b>						<b>94</b>	<b>6</b>	
Topography	6		6	12		24	2	213310
Geotechnics 2	12		12			24	2,5	213320
Urban Hydrology	14		16	16		46	1,5	213330
<b>Unit 7.4 Management and Organisation of a Building Site</b>						<b>118</b>	<b>9</b>	
Security and Coordination	24					24	1,5	213410
Work placement debriefing			10			10	0,75	213420
Organization and Corporate Management : application to public works	14		12		26	52	4,25	213430
Fundamentals of Management	10					10	0,75	213440
Public Works Contract Management	12					12	1	213450
Initiation to Scientific Research	2				8	10	0,75	213460
<b>Unit 7.5 Languages</b>						<b>42</b>	<b>3</b>	
English			22			22	2	213510
Second language								
-> German			20			20	1	213530
-> Spanish			20			20	1	213540
-> French			20			20	1	213550
Remedial English			18			18	0	213560
<b>Total :</b>						<b>396</b>	<b>30</b>	

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## Academic Programme 2018-2019

### Civil Engineering

#### Semester 8

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
<b>Unit 8.1 Data Analysis, Topography and Dynamics of Structures</b>						<b>138</b>	<b>10</b>	
Finite Elements	14		14	20		48	3	214110
Metal Construction	12		14			26	2	214120
Matériaux 3			4	12		16	1,5	214130
Concrete Framework	26		22			48	3,5	214140
<b>Unit 8.3 Soil and Rock Science 2</b>						<b>88</b>	<b>7</b>	
Hydrogeology	12		8	8		28	2,5	214210
Geotechnics 3	21		11			32	2	214220
Earthworks	8		8			16	1,5	214230
Geographic Information Systems (GIS)	6		6			12	1	214240
<b>Unit 8.4 Languages</b>						<b>40</b>	<b>3</b>	
English			20			20	2	214310
Second language								
-> German			20			20	1	214330
-> Spanish			20			20	1	214340
-> French			20			20	1	214350
Remedial English			18			18	0	214370
<b>Unit 8.5 Soft Skills</b>						<b>56</b>	<b>3</b>	
Building Law	14					14	0,75	214420
Project Management	14					14	0,75	214430
Management of private building markets	12					12	0,75	214440
Social and Environmental Responsibility			4			4		214450
Marketing	12					12	0,75	214460
<b>Unit 8.5 Assistant Engineer Placement (starting in May : 8-13 weeks)</b>						<b>80</b>	<b>7</b>	
							7	
<b>Total :</b>						<b>402</b>	<b>30</b>	

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## Academic Programme 2018-2019

### Civil Engineering

#### Semester 9

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
<b>Unit 9.1 Advanced Courses in Civil Engineering</b>						<b>117</b>	<b>8</b>	
Sustainable construction	9					9	0,5	215110
Roads and main networks	12					12	0,75	215120
Soil-structure interaction	12					12	0,75	215130
Materials durability	12					12	0,75	215140
Composite construction	12		12			24	1,75	215150
Wooden construction	12		12			24	1,75	215160
Geophysics/ Non-destructive investigations	8		8	8		24	1,75	215170
<b>Unit 9.2 Workshops / Projects</b>						<b>123</b>	<b>12</b>	
<b>Choice of 2 thematic projects</b>								
-> Workshop 1 : Assistance to the contracting authorities	10				20	30	3	215211
-> Workshop 2 : Simulations on specific works	4				26	30	3	215212
-> Workshop 3 : Diagnostic and repairing defects in engineering structures	10				20	30	3	215213
-> Workshop 4 : Parasismic construction	10				20	30		215214
<b>Project : Quality - Safety - Environment</b>					<b>36</b>	<b>36</b>	<b>4</b>	<b>215220</b>
Project : Design of civil engineering works					57	57	5	215230
<b>Unit 9.3 Communication - Soft skills</b>						<b>110</b>	<b>7</b>	
Corporate Management	14		16			30	2	215310
Team Management and Change Management	24					24	2	215320
Performing well in a job interview			12			12		215330
<i>Cross-Disciplinary modules *</i> <i>2 courses to be chosen from the following list :</i>						48	3	925500
-> Eco-Design			24			24	1,5	925510
-> Intercultural Management			24			24	1,5	925511
-> International Corporate Strategy Simulation			24			24	1,5	925518
-> High Tech Innovation Management and Business Intelligence			24			24	1,5	925523
-> Internet of Things			24			24	1,5	925530
-> Management of Industrial Waste			24			24	1,5	925540
-> Renewable Energy			24			24	1,5	925571
-> Collective Intelligence			24			24	1,5	925580
-> Economics, Geopolitics and International Geostrategy			24			24	1,5	925595
-> The Basics of Business Engineering and Trade Negotiation			24			24	1,5	925598
-> Production Management			24			24	1,5	925599

-> Symbolic Computation and Introduction to Scientific Documents with Latex			24			24	1,5	925619
-> Art & Science			24			24	1,5	925639
-> Agent-based Modelling and Simulation			24			24	1,5	925649
-> Stress Management			24			24	1,5	925669
-> Marketing Business to Business			24			24	1,5	925679
-> The Engineer and Design			24			24	1,5	925689
-> Improve your relational efficiency through drama			24			24	1,5	925699
<b>Unit 9.4 English language</b>						<b>52</b>	<b>3</b>	
English			20			20	1,75	215410
Second language								
-> German			20			20	0,5	215440
-> Spanish			20			20	0,5	215450
-> French			20			20	0,5	215460
Cross-Cultural Communication			12			12	0,5	215470
<b>Total :</b>						<b>402</b>	<b>30</b>	

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\* The list of cross-disciplinary courses available may be slightly modified each year.

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**POLYTECH<sup>®</sup>**  
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## Academic Programme 2018-2019

### Civil Engineering

#### Semester 10

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
<b>Unit 10.1 Final -Year project</b>						<b>250</b>	<b>20</b>	
Final-Year project					250	250	20	216110
<b>Unit 10.2 Engineer Placement</b>						<b>150</b>	<b>10</b>	
Engineer placement					150	150	10	216210
<b>Total :</b>						<b>400</b>	<b>30</b>	

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The project can also be carried out during a full semester for a workload of 30 ECTS credits