

Academic Program 2019-2020
Biological and Food Engineering

Semester 5

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 5.0 Upgrading course						20	0	
Upgrading course						18	0	7110020
-> Biology		10		8		18	0	7110021
-> Mathematics for engineers			18			18	0	7110022
Hygiene and Safety			2			2	0	7110010
Unit 5.1 Biochemistry and Process Engineering 1						109	9	
Introduction to Chemical Engineering	10		16		6	32	3	711101
Biochemistry and Nutrition 1	20		6	30	21	77	6	711102
Unit 5.2 Bio-and Food Engineering 1						78	7	
Fundamentals of Microbiology	16		2	30	2	50	4	711202
Ecology and Biodiversity	28					28	3	711203
Unit 5-3 Industrial Engineering and Computing 1						88	7	
Statistics		10	24	18		52	4.5	711301
Automation	10		14	8		32	2.5	711302
Computers and Networks (upgrading course)			2	2		4	0	711304
Unit 5-4 Soft Skills 1						70	4	
Social and Environment Ethics	6		2		8	16	0.75	711401
Career Planning			10			10	0.75	711402
Sport					22	22	0.75	711403
Project 1 : Initiation to Academic Research				4	18	22	1.75	711404
Unit 5.5 Languages 1						44	3	
English			24			24	2	711501
Language 2								
-> German			20			20	1	711511
-> Spanish			20			20	1	711512
-> French			20			20	1	711513
Total :						409	30	

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According to the timetable, the personal work of the student for all the units of the semester is between 10 and 20 hours every week.

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Semester 6

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 6.1 Biochemistry and Process Engineering 2						118	9	
Chemical engineering : heat and mass transfer, separation and extraction	32		22		15	69	5	712101
-> Unit operations	9	10	13			32	1.75	712102
-> Heat and mass transfer	12		10			22	1.25	712103
->Process Engineering	3				12	15	2	712104
Biochemistry and Nutrition 2	26		2		21	49	4	712105
Unit 6.2 Bio-and Food Engineering 2						110	8	
Molecular and Plant Biotechnology, Bioinformatics	20		2	15	3	40	3.5	712201
Animal AgroResources	32		8			40	2.5	712202
Uses of Plant Biomass	30					30	2	712203
Unit 6-3 Industrial Engineering and Computing 2						73	6	
Mathematics		8	16			24	2	712301
Programming	10		16	12		38	3	712302
Experimental design	5		4		2	11	1	712303
Unit 6-4 Soft Skills 2						64	4	
Communication Tools			10			10	0.75	712401
Public Speaking			10			10	0.75	712402
Sport					22	22	0.75	712403
Fundamentals of Management	10					10	0.75	712404
Project 2 (critical project)					12	12	1	712405
Unit 6.5 Languages 2						44	3	
English			24			24	2	712501
Language								
-> German			20			20	1	712511
-> Spanish			20			20	1	712512
-> French			20			20	1	712513
Placement (minimum one month) during the summer								
Total :						409	30	

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Semester 7

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits
Unit 7.1 Process Engineering 3						83	6
Chemical and Bioreaction engineering	10		10			20	1.5
Microorganisms control	5		6	12		23	1.5
Drying technology	10		10	20		40	3
Unit 7.2 Bio- and food engineering 3						100	8
Sensory Analysis	6			8		14	1
Food Physico-Chemistry	12		14	15		41	3.5
Food Microbiology	12		12	12	9	45	3.5
Unit 7-3 Industrial Engineering and Computing 3						79	6
Process Control Engineering	10		14	16		39	3
Numerical Analysis	4		6	8		18	1
Data Mining	10			12		22	2
Unit 7-4 Soft Skills 3						91	7
Quality Control	20		2			22	1.5
Work placement debriefing			10			10	0.75
Project Management	8		4			12	0.75
Project 3: design of an agro-food plant or product (group of 3 students)					45	45	3.5
Social and Environment Ethics					2	2	0.5
Unit 7.5 Languages 3						52	3
English			26			26	2
Language 2							
-> German			26			26	1
-> Spanish			26			26	1
-> French			26			26	1
Total :						405	30

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 This course can be offered in English

Code
713101
713102
713103
713201
713202
713203
713301
713302
713303
713401
713402
713403
713404
713405
713501
713512
713513
713514

Academic Programme 2019-2020

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Semester 8

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 8-1 Industrial and Environmental Engineering						40	3	
Material and Production planning	8			8		16	1.5	714101
Industrial Microbiology and Enzymology	8		4	8	4	24	1.5	714103
Unit 8-2 Specialization Modules						80	6	
Option 1								
<i>Choose between A and B</i>								
A.-> Food and Biological Production Management	40					40	3	714210
B.-> Food Innovation	18		16	6		40	3	714211
Option 2							3	714202
<i>Choose between C and D</i>								
C. -> Hygiene-Safety-Quality-Environment Management	20		20			40	3	714220
D. > Biotechnology Engineering in Food, Health And Environment	16		8	16		40	3	714221
Unit 8-3-Soft Skills 4						88	6	
Law, Regulations, Audit	22		0.2			24	1.25	714301
Cost Accounting	6		10			16	1.25	714302
Team Management			24			24	1.75	714303
Economic environment and Strategic Management in Food Industries	18		6			24	1.75	714304
Unit 8-4 Languages 4						32	3	
English			18			18	2	714401
Language 2								
-> German			14			14	1	714412
-> Spanish			14			14	1	714413
-> French			14			14	1	714414
-> Remedial English			18			18	0	714403
Unit 8-5 Assistant Engineer Placement Starting in mid-April : 10-13 weeks						168	12	
Assistant Engineer Placement							12	714560
Total :						408	30	

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Biological and Food Engineering


Semester 9

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 9-1 Quality Management and Environment						84	5	
Water technology	8		16			24	1.5	715102
Quality Management, Environment	12		8			20	1.5	715103
Green processes, innovation processes	26		4	4	6	40	2	715104
Unit 9-2 Industrial Food Engineering						60	6	
Agro-Food Plant Engineering	12		14			26	3	715201
Cold-chain Management	10		6			16	1.5	715202
Packaging	6					6	0.5	715203
Supply chain	12					12	1	715204
Unit 9-3 Languages 5						52	3	
English			20			20	1.75	715301
Cross-cultural communication			12			12	0.5	715302
Language 2								
-> German			20			20	0.75	715312
-> Spanish			20			20	0.75	715313
-> French			20			20	0.75	715314
Unit 9-4 Soft Skills 5						114	8	
Corporate Management	8		26			34	2.25	715401
Marketing	20					20	2	715402
To Succeed in a Job Interview	4		8			12	0.75	715403
Cross-Disciplinary modules* - 2 courses maximum to be chosen from the following list :						48	3	
-> Life Cycle Assessment (LCA) and eco-design			24			24	1.5	925510
-> intercultural management	24					24	1.5	925511
-> International strategic decision making	24					24	1.5	925518
-> high tech innovation management and business intelligence	24					24	1.5	925523
-> Introduction to cyber security	12			12		24	1.5	925530
-> Industrial waste management in France	24					24	1.5	925540
-> Entrepreneurship / Business Creation Seminar	16			8		24	1.5	925571
-> Mobilizing the collective intelligence: a key resource in the team work	24					24	1.5	925580
-> Economics, geopolitics and international geostrategy	24					24	1.5	925595
-> Fundamentals of project engineering and commercial negotiation	24					24	1.5	925598
-> International Supply Chain	16			8		24	1.5	925599
-> Symbolic computation and introduction to scientific documents typesetting	12			12		24	1.5	925619
-> Art & Sciences			24			24	1.5	925639
-> Agent-based simulation: a tool for understanding complex systems			24			24	1.5	925649
-> Stress management			24			24	1.5	925669
-> Marketing B to B	24					24	1.5	925679

-> Improve your relational efficiency through drama			24			24	1.5	925699
-> Quality of life at work	23.6					23.6	1.5	925709

Unit 9-5 Industrial Project							8	
Final year project (deliverable) : In a group of 6 students with industrial collaboration					60	60	5	715501
Industrial project: individual evaluation					30	30	3	715502
Total :						400	30	

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

 The project can be supervised in English

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Semester 10

Course	Lec.	LwT	Tut.	Prac.	Project	Student Hours	ECTS Credits	Code
Unit 10.1 Industrial Project							6	
Industrial Project					100	100	6	716101
Unit 10.2 Engineer Placement							24	
Engineer industrial placement (from February to the end of August)							24	716210
Total :						400	30	

 The project can be supervised in English

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