

**First Year**

**Semester I**

**Computer Engineering**

Course Id	Code	Teaching Unit	L	PW	L+PW	Self pr.	T	COEF	ECTS	E	Contents

**■ Compulsory courses**

	GM1.1	Fundamental & Applied Mathematics 1	60	0	60	80	140	3	5	CC+E	Mathematics for engineer Numerical analysis
	GM1.2	System Architecture 1	63	27	90	90	180	5	8	CC+E	Logic systems and circuits Computer architecture Foundations of operating systems
	GM1.3	Algorithms & Programming Fundamentals 1	54	27	81	80	161	4	6	CC+E	Object Oriented Programming with C++ Algorithms & Data Structures
	GM1.4	Web & Multimedia & Networks 1	57	45	102	110	212	6	9	CC+E	Introduction to computer networks (CCNA1) Multimedia Systems Web Computing
	GM1.5	Communication & Engineering Culture 1	42	0	42	40	82	2	2	CC+E	English TOEIC I introduction to the management of business information systems

Total: 276 99 375 400 775 20 30

**First Year**

**Semester II**

**Computer Engineering**

Course Id	Code	Teaching Unit	L	PW	L+PW	Self pr.	T	ECTS	E	Content
Course Id	Code		L	PW	L+PW	Self pr.	T	ECTS	E	Subject

**■ Compulsory courses**

	GM2.1	Fundamental & Applied Mathematics 2	42	12	54	50	104	2.5	4	CC+E	Probability
											Operational research and optimization
	GM2.2	System Architecture 2	63	48	111	105	216	6	8	CC+E	Linux enviroment (LPI 101)
											System programming
											Databases
	GM2.3	Algorithms & Programming Fundamentals 2	60	36	96	130	226	5.5	9	CC+E	Competitive programming
											Language theory and compilation
											Object Oriented Programming with JAVA
	GM2.4	Web & Multimedia & Networks 2	39	21	60	50	110	4	5	CC+E	Serious games
											Network administration (CCNA2)
	GM2.5	Communication & Engineering Culture 2	42	0	42	20	62	2	2	CC+E	English TOEIC II
											Communication techniques I
Total:			246	117	363	355	718	20	28		

**■ Stage Ouvrier**

**Practical work or additional courses**

1.2.13	MGINF12.25	Stage ouvrier	-	60	60	-	60	-	2	-	Worker internship
		Total Semestre :	246	177	423	355	778	20	30	-	
		Total (Année/Year):	522	276	798	755	1553	40	60	-	

**Second Year**

**Semester I**

**Computer Engineering**

Idnt	CTSE	Intitulé	CI	TP	CI+TP	T.per	T	COEF		E	
Course Id	Code		L	PW	L+PW	Self pr.	T		ECTS	E	Contents

**■ Compulsory courses**

	GM3.1	Applied Mathematics	75	9	84	90	174	4	7	CC+E	Advanced operational reserach Statistics tools for engineer Numerical Reciepes with Python
	GM3.2	Advanced Information Systems	72	30	102	130	232	6	9	CC+E	Distributed Systems Databases management system LINUX system administration (LPI-102)
	GM3.3	Software Engineering & Development	60	24	84	80	164	4	6	CC+E	Distributed Component Development: WEB (JSP, Servlet, JSTL) Fundamentals of Software Engineering
	GM3.4	Web & Mobile Computing	36	27	63	90	153	4	6	CC+E	Servers Administration and Programming Mobile Computing
	GM3.5	Communication & Engineering Culture 3	42	0	42	20	62	2	2	CC+E	Accounting for engineer Soft skills and communication techniques

Total: 285 90 375 411 786 20 30

**Semester II**

**Computer Engineering**

Idnt	CTSE	Intitulé	CI	TP	CI+TP	T.per	T	COEF		E	
Course Id	Code		L	PW	L+PW	Self pr.	T		ECTS	E	Subject

**■ Compulsory courses**

GM4.1	Business Intelligence	69	42	111	120	231	6	9	CC+E	ERP Development and Intégration ODOO
										Datawarehouse
										Artificial Intelligence & Data Mining
GM4.2	Advanced Web Computing	63	36	99	110	209	6	8	CC+E	Web services and platforms
										Server virtualization
										Front-End Web Framework
GM4.3	Advanced Software Development	84	42	126	120	246	6	9	CC+E	JEE Architecture
										Dot Net Architecture
										Software architecture and design pattern
GM4.4	Communication & Engineering Culture 4	42	0	42	15	57	2	2	CC+E	English TOEIC III
										Computer law and intellectual property
Total:		258	120	378	371	749	20	28		<b>PFA</b>

**■ Optional Courses (Choose 1)**

EUROPEAN CREDIT TRANSFER SYSTEM (ECTS) INFORMATION PACKAGE

	GM4.5	Optional Courses	21	0	21	9	30	1	1	CC+E	Advanced topics in Software Engineering
			21	0	21	9	30	1	1	CC+E	Advanced topics in Artificial Intelligence
			21	0	21	9	30	1	1	CC+E	Advanced topics in Cloud Computing
			21	0	21	9	30	1	1	CC+E	Advanced topics in Information Systems

Total:                    258    120    378    371    749    20    28

■ **Stage ingénieur**

**Practical work or additional courses**

2.2.13	MGINF22.49	Stage technician	-	60	60	-	60	-	2		Technician internship
		Total Semestre/ Semester) :	258	180	438	371	809	20	30		
		Total (Année/Year):	543	270	813	782	1595	40	60		

**Third year**

**Semester I**

**Computer Engineering**

Idnt	CTSE	Intitulé	CI	TP	CI+TP	T.per	T	COEF		E	
Course Id	Code		L	PW	L+PW	Self pr.	T		ECTS	E	Content

**■ Compulsory courses**

	GM5.1	Data Science & Engineering	42	18	60	100	160	4	6	CC+E	Business Intelligence Data Science
	GM5.2	Advanced Software Engineering	102	54	156	170	326	8	12	CC+E	Software quality and performance engineering Software engineering and agile development DotNet advanced development Development of distributed business components
	GM5.3	Industry 4.0	48	60	108	100	208	6	8	CC+E	Distributed application integration and tutored projects Big Data Internet of things (IOT)
	GM5.4	Entreprise & Project Management	42	9	51	50	101	2	4	CC+E	Business plan Project Management
Total:			234	141	375	420	795	20	30		

**■ Optional Courses (Choose 1)**

	GM4.5	Optional Courses	21	0	21	9	30	1	1	CC+E	Advanced topics in Software Maintenance
21			0	21	9	30	1	1	CC+E	Advanced topics in Deep Learning	
21			0	21	9	30	1	1	CC+E	Advanced topics in Edge Computing	
21			0	21	9	30	1	1	CC+E	Advanced topics in NoSQL Databases	
Total:			258	120	378	371	749	20	28		

**Third year**

**Semester II**

**Computer Engineering**

Idnt	CTSE	Intitulé	CI	TP	CI+ TP	T.per	T	COEF		E	
Course Id	Code		L	PW	L+PW	Self pr.	T		ECTS	E	Subject

■ **Compulsory courses**

<b>3.2</b>	MGINF32.61	Stage de fin d'études	0	450	450	450	900	0	30	R	
		Total Semestre/ Semester) :	0	450	450	450	900	0	30		
		Total (Année/Year):	234	591	825	852	1677	22	60		

<b>Director's approval</b>	<b>Date :</b>
	<b>Seal &amp; Signature :</b>