



## International Master regulation

---

- *Mention Informatique:*
  - *Digital Security*
  - *Data Science and Engineering*
- *Mention Réseau et Télécommunication:*
  - *Mobile Computing Systems*
  - *Internet of Things*

# ACADEMIC REGULATION

**2019-2020**

-

## Table of Contents

<b>1</b>	<b>CURRICULUM.....</b>	<b>3</b>
<b>2</b>	<b>OBTAINING THE INTERNATIONAL MASTER DEGREE.....</b>	<b>3</b>
2.1	MINIMUM NUMBER OF CREDITS REQUIRED TO GRADUATE.....	3
2.2	MINIMUM NUMBER OF CREDITS PER SEMESTER.....	3
<b>3</b>	<b>EXAMS.....</b>	<b>4</b>
3.1	TERMS .....	4
3.2	MAKEUP EXAMINATION SESSION .....	4
<b>4</b>	<b>FAILURES .....</b>	<b>5</b>
4.1	FAILURES RELATED TO THE ACADEMIC CURRICULUM RESULTS .....	5
4.2	FAILURE RELATED TO THE INTERNSHIP .....	5
4.3	FAILURE RELATED TO LANGUAGE OBLIGATION.....	5
<b>5</b>	<b>CONDITIONS FOR EXCLUSION.....</b>	<b>5</b>
<b>6</b>	<b>VALIDATION OF STUDENTS RESULTS.....</b>	<b>5</b>
	<b>ANNEX: INTERNATIONAL MASTER TEACHING PROGRAMS .....</b>	<b>6</b>

## 1 CURRICULUM

The 4 semester curriculum of the International Master degree is structured in Teaching Units (TU). Teaching units are composed of teaching modules (language courses, non-technical and technical courses), or correspond to projects and internship activities. ECTS credits are granted for each Teaching Unit.

The Academic Program (courses and projects Teaching Units ) takes place over a period of 18 months as follows:

A **Fall 1** semester, starting in the beginning of October through the end of February,  
A **Spring** semester, starting at the beginning of March through the end of June, and  
A **Fall 2** semester, starting in the beginning of October through the end of February.

The **internship** takes place over a six-month period.

The internship itself must last at least 22 weeks (between March and August), and be carried out in an R&D lab or in a company. The Program Committee must approve the internship subject.

The language of instruction is English.

Participation in all activities is mandatory.

The International Master program is under the supervision of a Program Committee.

A Teaching Committee meets at the end of each semester to examine students results, and gives recommendations to the Program Committee.

## 2 Obtaining the International Master Degree

The Master degree Diploma is delivered to students who secure the required number of credits within the designated period based on the following terms.

### 2.1 Minimum number of credits required to graduate

A total of **120 ECTS credits** are required to graduate. These credits are distributed as follows:

Academic curriculum - Fall 1 + Spring + Fall 2 semesters		ECTS
Technical Teaching Units		55
Language courses Teaching Units		3
Non-technical Teaching Units		15
Project Teaching Units		17

  

March through August		ECTS
Internship (22 weeks) Teaching Unit		30

### 2.2 Minimum number of credits per semester

For each semester, students must validate at least the credits from the Teaching Units of the corresponding semester.

Additional credits obtained by students are mentioned in the appendix attached to the Diploma.

Credits from the Teaching Units cannot be carried over from one semester to another.

A teaching unit is dedicated to Project activities and the corresponding credits are obtained each semester either through the same subject, or through a different project per semester.

## 3 Exams

### 3.1 Terms

Teaching Units are assessed based on written and oral exams of the teaching modules scheduled at the end of each semester.

Their organization is under the responsibility of the professors.

Grades are sent to students within two weeks following the end of term.

Teaching Units of Projects are evaluated based on a written report and an oral presentation.

Students must attend the examination sessions of the courses in which they are registered. Absences to exams without any valid reason notified in advance to the Program Committee or without a medical certificate invalidate the corresponding credits without the possibility of re-taking the exams at the makeup examination session.

Undesirable behavior during exams will result in their nullification, and disciplinary sanctions might be taken by the Program Committee.

Each exam and project is graded on a 20-point scale.

A grade of at least 10 over 20 must be obtained for each project or course to receive the corresponding credit.

Projects are evaluated on the basis of a written report and an oral presentation, according to the following criteria:

- Study of problematics (coefficient 2)
- Results (coefficient 2)
- Project management (coefficient 1)
- Written report (coefficient 1)
- Oral exam (coefficient 1)

For their projects to be accepted, students must obtain a final grade of at least 10/20 (and a minimum grade of 8 for each of the criteria).

Internships are defended in front of a jury made up of the academic head and an external expert who may be the industrial supervisor.

Internships are assessed on five criteria: time management, conceptual work, results, report, and presentation. The five grades are combined and weighted as follows:

- Coefficient 1 for overall management, oral presentation and report,
- Coefficient 2 for conceptual work and results.

To obtain the 30 ECTS credits of the internship Teaching Unit, students must receive a final grade of at least 10 over 20 and no less than 8 over 20 in one of the five criteria.

### 3.2 Makeup examination session

For each course of teaching units and the project, a makeup session is possible.

If after the makeup exam, a student does not obtain a grade of at least 10 over 20, the corresponding ECTS credits are not validated.

The organization of makeup exams is under the responsibility of the course professor at periods defined by the global academic schedule.

Semester projects can be re-taken according to the terms set with each professor.

## 4 Failures

### 4.1 Failures related to the academic curriculum results

Students fail a teaching unit when they do not obtain the minimum number of credits required after the makeup examination session of the courses. Students shall acquire the missing ECTS credits when the corresponding courses are scheduled.

Students in that situation may choose to repeat the same course or take another course provided it belongs to the teaching unit they failed.

In all cases, credits that have been obtained during the teaching program are still valid.

Students Fail the project teaching unit if they do not secure the corresponding ECTS credits after makeup session.

### 4.2 Failure related to the internship

If Internship work is deemed insufficient, (students received a final grade less than 10 over 20 or less than 8 over 20 in one of the five criteria),

the Program Committee may request that it be completed according to the terms and conditions which will be decided during the meeting. A full repetition is also possible, in this case, the student redo a complete internship.

### 4.3 Failure related to Language Obligation

Apart from satisfying the requirements of the Language Teaching Units in the 3 academic semesters, students must validate an English language B2 level via an external certificate (TOIC, TOEFL, other).

## 5 Conditions for exclusion

The Teaching Committee will examine these students' situations on a case by case basis and recommend to the Program Committee the students who should extend their studies partially a semester, a complete semester, or a complete academic year.

If after a one year extension period the students still fail, they can be excluded from the teaching program.

The Program Committee can decide to exclude a student for the following reasons:

- Insufficient number of credits based on the rules laid out in section 4 "Failures"
- Disciplinary reasons: breach of responsibilities written in the Academic Charter.

Students who are excluded are not allowed to continue their studies. Upon request, a student can obtain a credit certificate showing the credits validated.

## 6 Validation of students results

A Teaching Committee meets at the end of each semester to examine students results. It notifies the Program Committee about any possible failing cases as early as possible.

The Program Committee validates all the results required to graduate.

Date:

**Ulrich Finger**  
Director  
EURECOM

## Annex: International Master Teaching Programs

Annex: International Master Teaching Programs

### Master Data Science and Engineering

Responsible: Raphael TRONCY

SEMESTER S1 FALL			
Teaching Units	Hours	ECTS	Teachers
<b>TU - Fundamentals I</b>		<b>10</b>	
DBSYS - Database Management System Implementation	42	5	Paolo PAPOTTI
MALIS - Machine Learning and Intelligent Systems	42	5	Maria ZULUAGA
<b>TU – Web Science and Mathematical Methods</b>		<b>10</b>	
ImCod - Image Coding	21	3	Jean-Luc DUGELAY
ImProc - Digital Image Processing	21	3	Jean-Luc DUGELAY
Infotheo - Information theory	42	5	David GESBERT
MathEng - Essential Mathematical Methods for Engineers	21	3	Nicholas EVANS
Netw_I - Hands on approach to computer networking	42	5	Marc DACIER
Optim - Optimization Theory with Applications	21	3	Thrasylvoulos SPYROPOULOS
SoftDev - Software development methodologies	21	3	Davide BALZAROTTI
SSP - Statistical signal processing	42	5	Dirk SLOCK
WebInt – Interaction Design and Development of Modern Web Applications	21	3	Raphaël TRONCY
<b>TU - Fundamental in Business, Innovation and Project Management (I)</b>		<b>5</b>	
B_INNOV - How to adopt the right posture and move from idea to market!	42	5	Pascaline THIEBAUT
ManagIntro - Introduction to Management	42	5	Kenneth POPE
Property - Intellectual property Law	21	3	Dominique SERIO
RDI - Responsible Digital Innovation: Risks, Ethics and Technology	21	3	Laura DRAETTA
TeamLead - Personal Development and Team Leadership	42	5	Kenneth POPE
<b>TU - Semester project (I)</b>	<b>80 h</b>	<b>5</b>	
<b>TU - Language French or other one* S1</b>	<b>22 h</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S1 FALL total</b>		<b>31</b>	

SEMESTER S2 SPRING			
Teaching Units	Hours	ECTS	Teachers
<b>TU - Machine Learning</b>		<b>10</b>	
ASI - Advanced Statistical Inference	42	5	Maurizio FILIPPONE
AML - Algorithmic machine learning	21	3	Pietro MICHIARDI
DeepLearning - Deep Learning	21	3	Benoit HUET
<b>TU - Applications I</b>		<b>10</b>	
3DGraph - 3-D and virtual imaging (analysis and synthesis)	42	5	Pascal GROS
APPIOT - IoT Application Protocols	21	3	Adlen KSENTINI
Forensics - Cyber-crime and Computer forensic	42	5	Davide BALZAROTTI
FormalMet – Formal methods and verification of systems	21	3	Rabea AMEUR
ImSecu - Imaging for security applications watermarking & biometrics	21	3	Jean-Luc DUGELAY
SecAppli - Security applications in networking and distributed systems	21	3	Marc DACIER
Speech - Speech and Audio processing	21	3	Nicholas EVANS
WebSem - Introduction to semantic Web Technologies	21	3	Raphaël TRONCY
<b>TU - Fundamental in Business, Innovation and Project Management (II)</b>		<b>5</b>	
Business - Business Simulation	42	5	Kenneth POPE/Francis BIDAULT
Law - General Introduction to Law: contracts, setting up business	21	3	Dominique SERIO
ProjMan - Project Management	42	5	Jean-Jacques AUREGLIA
SATT - Sociological approaches of Telecom Technologies	21	3	Marc RELIEU
<b>TU - Semester project (II)</b>	<b>100h</b>	<b>6</b>	
<b>TU - Language French or other one* S2</b>	<b>22 h</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S2 SPRING total</b>		<b>32</b>	

SEMESTER S3 FALL			
Teaching Units	Hours	ECTS	Teachers
<b>TU - Fundamentals II</b>		<b>5</b>	
Clouds - Distributed systems and cloud computing	42	5	Raja APPUSWAMY
<b>TU - Applications II</b>		<b>10</b>	
BigSec – Security and Privacy for Big Data and Clouds	21	3	Melek ÖNEN
Imcod - Image Coding	21	3	Jean-Luc DUGELAY
Improc – Digital Image Processing	21	3	Jean-Luc DUGELAY
Mobserv - Mobile application and services	42	5	Navid NIKAEIN
SSP - Statistical signal processing	42	5	Dirk SLOCK
SysSec - System and Network Security	42	5	Aurélien FRANCILLON
WebInt - Interaction Design and Development of Modern Web Applications	21	3	Raphaël TRONCY
Optim - Optimization Theory with Applications	21	3	Thrasyvoulos SPYROPOULOS
<b>TU - Fundamental in Business, Innovation and Project Management (III)</b>		<b>5</b>	
B_INNOV - How to adopt the right posture and move from idea to market!	42	5	Pascaline THIEBAUT
ManagIntro - Introduction to Management	42	5	Kenneth POPE
Property - Intellectual property Law	21	3	Dominique SERIO
RDI - Responsible Digital Innovation: Risks, Ethics and Technology	21	3	Laura DRAETTA
TeamLead - Personal Development and Team Leadership	42	5	Kenneth POPE
<b>TU Semester project (III)</b>	<b>100 h</b>	<b>6</b>	
<b>TU Language French or other one* III</b>	<b>22 h</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
		<b>27</b>	

SEMESTER S4 SPRING			
Teaching Units	Hours	ECTS	Teachers
<b>TU Master Thesis</b>	<b>22 weeks</b>	<b>30</b>	
<b>S4 SPRING total</b>		<b>30</b>	
<b>TOTAL MASTER</b>		<b>120</b>	

## Master Mobile Computing Systems

Responsible: Navid NIKAEIN

SEMESTER S1 FALL			
Teaching Units	Hours	ECTS	Teachers
<b>TU Fundamentals</b>		<b>10</b>	
<b>Digicom</b> - Digital communications	42	5	Raymond KNOPP
<b>MobCom</b> - Mobile communication techniques	42	5	Petros ELIA
<b>TU Network and tools</b>		<b>10</b>	
ATWireless - Advanced topics in wireless communications	42	5	David GESBERT
InfoTheo - Information theory	42	5	David GESBERT
MathEng - Essential Mathematical Methods for Engineers	21	3	Nicholas EVANS
MobMod - Mobility Modeling	21	3	Jérôme HAERRI
MobServ - Mobile application and services	42	5	Navid NIKAEIN
MobSys- Mobile communication systems	42	5	Adlen KSENTINI
Netmod - Network Modeling	42	5	Thrasylvoulos SPYROPOULOS
Optim - Optimization Theory with Applications	21	3	Thrasylvoulos SPYROPOULOS
SSP - Statistical signal processing	42	5	Dirk SLOCK
<b>TU Fundamental in Business, Innovation and Project Management (I)</b>		<b>5</b>	
B_INNOV - How to adopt the right posture and move from idea to market!	42	5	Pascaline THIEBAUT
ManagIntro - Introduction to Management	42	5	Kenneth POPE
Property - Intellectual property Law	21	3	Dominique SERIO
RDI - Responsible Digital Innovation: Risks, Ethics and Technology	21	3	Laura DRAETTA
TeamLead - Personal Development and Team Leadership	42	5	Kenneth POPE
<b>TU Semester project (I)</b>	<b>80</b>	<b>5</b>	
<b>TU Language French or other one* S1</b>	<b>22</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S1 FALL total</b>		<b>31</b>	

SEMESTER S2 SPRING			
Teaching Units	Hours	ECTS	Teachers
<b>TU Radio Access</b>		<b>10</b>	
Radio - Radio engineering	42	5	Florian KALTENBERGER
SP4Com - Signal Processing for Communications	42	5	Dirk SLOCK
<b>TU Techniques</b>		<b>5</b>	
AML – Advanced Machine Learning	21	3	Pietro MICHIARDI
Coding - Chanel coding theory	21	3	Petros ELIA
CompMeth - Computational Methods for digital communications	42	5	Raymond KNOPP
DigitalSystems - Digital systems, hardware - software integration	42	5	Renaud PACALET
WebSem - An Introduction to Semantic Web technologies	21	3	Raphaël TRONCY
<b>TU Network Systems I</b>		<b>5</b>	
ModAdv - Mobile Advanced Networks Mobile	21	3	Navid NIKAEIN
APPIOT - Iot Application Protocols	21	3	Adlen KSENTINI
MobWat - Wireless Access Technologies	21	3	Jérôme HAERRI
NetSoft – Network Softwerization	21	3	Adlen KSENTINI
ProtIoT- Iot Communication Protocols	21	3	Adlen KSENTINI
<b>TU Fundamental in Business, Innovation and Project Management (II)</b>		<b>5</b>	
Business - Business Simulation	42	5	Kenneth POPE/Francis BIDAULT
Law - General Introduction to Law: contracts, setting up business	21	3	Dominique SERIO
ProjMan - Project Management	42	5	Jean-Jacques AUREGLIA
SATT - Sociological approaches of Telecom Technologies	21	3	Marc RELIEU
<b>TU Semester project (II)</b>	<b>100</b>	<b>6</b>	
<b>TU Language French or other one* S2</b>	<b>22</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S2 SPRING total</b>		<b>32</b>	

SEMESTER S3 FALL			
Teaching Units	Hours	ECTS	Teachers
<b>TU Software and Systems</b>		<b>5</b>	
Clouds - Distributed Systems and Cloud Computing	42	5	Raja APPUSWAMY
OS – Operating systems	42	5	Ludovic APVRILLE
SecCom – Secure communications	42	5	Marc DACIER
<b>TU Advances in Mobile Computing</b>		<b>10</b>	
AT-Wireless - Advanced topics in wireless communications	42	5	David GESBERT
InfoTheo - Information Theory	42	5	David GESBERT
Mobserv - Mobile application and services	42	5	Navid NIKAEIN
MobSys - Mobile communication systems	42	5	Adlen KSENTINI
SSP - Statistical signal processing	42	5	Dirk SLOCK
Stand - Standardization activities	21	3	Jérôme HAERRI
WiSec - Wireless Security	21	3	Aurélien FRANCILLON
<b>TU Fundamental in Business, Innovation and Project Management (III)</b>		<b>5</b>	
B_INNOV - How to adopt the right posture and move from idea to market!	42	5	Pascaline THIEBAUT
ManagIntro - Introduction to Management	42	5	Kenneth POPE
Property - Intellectual property Law	21	3	Dominique SERIO
RDI - Responsible Digital Innovation: Risks, Ethics and Technology	21	3	Laura DRAETTA
TeamLead - Personal Development and Team Leadership	42	5	Kenneth POPE
<b>TU Semester project (III)</b>	<b>100</b>	<b>6</b>	
<b>TU Language French or other one* III</b>	<b>22</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S3 FALL total</b>		<b>27</b>	

SEMESTER S4 SPRING			
Teaching Units	Hours	ECTS	
<b>TU Master Thesis</b>	<b>22 weeks</b>	<b>30</b>	
<b>S4 SPRING total</b>		<b>30</b>	
<b>TOTAL MASTER</b>		<b>120</b>	

## Master Digital Security

**Responsible: Davide BALZAROTTI**

SEMESTER S1 FALL			
Teaching Units	Hours	ECTS	Teachers
<b>TU Security I</b>		<b>10</b>	<b>Marc DACIER</b>
SecCom - Secure Communications	42	5	Melek ÖNEN
SysSec - System and Network Security	42	5	Aurélien FRANCILLON
<b>TU Computing and Communications I</b>		<b>10</b>	<b>Davide BALZAROTTI</b>
CompArch - Computer architecture	42	5	Renaud PACALET
ImCod - Image Coding	21	3	Jean-Luc DUGELAY
ImProc – Digital Image Processing	21	3	Jean-Luc DUGELAY
InfoTheo - Information Theory	42	5	David GESBERT
NetMod - Network Modeling	42	5	Thrasyvoulos SPYROPOULOS
Netw_I - Hands on approach to computer networking	42	5	Marc DACIER
OS - Operating systems	42	5	Ludovic APVRILLE
SoftDev - Software development methodologies	21	3	Davide BALZAROTTI
<b>TU Fundamental in Business, Innovation and Project Management (I)</b>		<b>5</b>	
B_INNOV - How to adopt the right posture and move from idea to market!	42	5	Pascaline THIEBAUT
ManagIntro - Introduction to Management	42	5	Kenneth POPE
Property - Intellectual property Law	21	3	Dominique SERIO
RDI - Responsible Digital Innovation: Risks, Ethics and Technology	21	3	Laura DRAETTA
TeamLead - Personal Development and Team Leadership	42	5	Kenneth POPE
<b>TU Semester project (I)</b>	<b>80</b>	<b>5</b>	
<b>TU Language French or other one* S1</b>	<b>22</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S1 FALL total</b>		<b>31</b>	

SEMESTER S2 SPRING			
Teaching Units	Hours	ECTS	Teachers
<b>TU Security II</b>		<b>10</b>	<b>Marc DACIER</b>
Forensics - Cyber - crime and computer forensics	42	5	Davide BALZAROTTI
HWSec - Hardware security	21	3	Renaud PACALET
ImSecu - Imaging for security applications: biometrics & watermarking	21	3	Jean-Luc DUGELAY
SecAppli - Security applications in networking and distributed systems	21	3	Marc DACIER
<b>TU Computing and Communications II</b>		<b>10</b>	
DigitalSystems - Digital systems, hardware - software integration	42	5	Renaud PACALET
DeepLearning - Deep Learning	21	3	To be defined
APPIOT - IoT Application Protocols	21	3	Adlen KSENTINI
MobWat - Wireless access technologies	21	3	Jérôme HAERRI
NetSoft – Network Softwerization	21	3	Adlen KSENTINI
TraffEEc - Emission and Traffic Efficiency	21	3	Jérôme HAERRI
WebSem - Introduction to semantic Web Technologies	21	3	Raphaël TRONCY
<b>TU Fundamental in Business, Innovation and Project Management (II)</b>		<b>5</b>	
Business - Business Simulation	42	5	Kenneth POPE/Francis BIDAULT
ProjMan - Project Management	42	5	Jean-Jacques AUREGLIA
Law - General Introduction to Law: contracts, setting up business	21	3	Dominique SERIO
SATT - Sociological approaches of Telecom Technologies	21	3	Marc RELIEU
<b>TU Semester project (II)</b>	<b>100</b>	<b>6</b>	
<b>TU Language French or other one* S2</b>	<b>22</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S2 SPRING total</b>	<b>332</b>	<b>32</b>	

SEMESTER S3 FALL			
Teaching Units	Hours	ECTS	Teachers
<b>TU Security III</b>		<b>10</b>	
MobiSec - Mobile Systems and Smartphone Security	42	5	Yanick FRATANTONIO
Wisec – Wireless system Security	21	3	Aurélien FRANCILLON
BigSec - Security and privacy for Big Data and Cloud	21	3	Melek ÖNEN
<b>TU Data Science and Networking</b>		<b>5</b>	
Clouds - Distributed systems and cloud computing	42	5	Raja APPUSWAMY
MALIS - Machine learning and intelligent systems	42	5	Maria ZULUAGA
WebInt - Interaction Design and Development of Modern Web Applications	21	3	Raphaël TRONCY
InfoTheo - Information Theory	42	5	David GESBERT
MobMod - Mobility Modeling	21	3	Jérôme HAERRI
Mobserv - Mobile applications and services	42	5	Navid NIKAEIN
Mobsys - Mobile communication systems	42	5	Adlen KSENTINI
NetMod - Network Modeling	42	5	Thrasylvoulos SPYROPOULOS
<b>TU Fundamental in Business, Innovation and Project Management (III)</b>		<b>5</b>	
B_INNOV - How to adopt the right posture and move from idea to market!	42	5	Pascaline THIEBAUT
ManagIntro - Introduction to Management	42	5	Kenneth POPE
Property - Intellectual property Law	21	3	Dominique SERIO
RDI - Responsible Digital Innovation: Risks, Ethics and Technology	21	3	Laura DRAETTA
TeamLead - Personal Development and Team Leadership	42	5	Kenneth POPE
<b>TU Semester project (III)</b>	<b>100</b>	<b>6</b>	
<b>TU Language French or other one* III</b>	<b>22</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S3 FALL total</b>	<b>290</b>	<b>27</b>	

SEMESTER S4 SPRING			
Teaching Units	Hours	ECTS	
<b>TU Master Thesis</b>	<b>22 weeks</b>	<b>30</b>	
<b>S4 SPRING total</b>		<b>30</b>	
<b>TOTAL MASTER</b>		<b>120</b>	

**Master Internet of Things****Responsible: Adlen KSENTINI**

SEMESTER S1 FALL			
Teaching Units	Hours	ECTS	Teachers
<b>TU Fundamentals</b>		<b>10</b>	
OS - Operating Systems	42	5	Ludovic APVRILLE
SysSec - System and Network Security	42	5	Aurélien FRANCILLON
<b>UE Software and Networking</b>		<b>10</b>	
MobMod - Mobility Modeling	21	3	Jérôme HAERRI
MALIS - Machine Learning and Intelligent Systems	42	5	Maria ZULUAGA
MobServ - Mobile application and services	42	5	Navid NIKAEIN
MobSys- Mobile communication systems	42	5	Adlen KSENTINI
Netmod - Network Modeling	42	5	Thrasyvoulos SPYROPOULOS
Netw_I - Introduction to computer networking and internet	42	5	Marc DACIER
Optim - Optimization Theory with Applications	21	3	Thrasyvoulos SPYROPOULOS
SoftDev - Software development methodologies	21	3	Davide BALZAROTTI
<b>TU Fundamental in Business, Innovation and Project Management (I)</b>		<b>5</b>	
B_INNOV - How to adopt the right posture and move from idea to market!	42	5	Pascaline THIEBAUT
ManagIntro - Introduction to Management	42	5	Kenneth POPE
Property - Intellectual property Law	21	3	Dominique SERIO
RDI - Responsible Digital Innovation: Risks, Ethics and Technology	21	3	Laura DRAETTA
TeamLead - Personal Development and Team Leadership	42	5	Kenneth POPE
<b>TU Semester project (I)</b>	<b>80 h</b>	<b>5</b>	
<b>TU Language French or other one* S1</b>	<b>22 h</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S1 FALL total</b>		<b>31</b>	

SEMESTER S2 SPRING			
Teaching Units	Hours	ECTS	Teachers
<b>UE IoT Tools</b>		<b>10</b>	
WebSem - Introduction to semantic Web Technologies	21	3	Raphaël TRONCY
ProtIoT - IoT Communication protocols	21	3	Adlen KSENTINI
APPIOT - IoT Application protocols	21	3	Adlen KSENTINI
DeepLearning - Deep Learning	21	3	To be defined
<b>TU General Techniques</b>		<b>10</b>	
AML - Algorithmic machine learning	21	3	Pietro MICHIARDI
Netsoft - Network Softwerization	21	3	Adlen KSENTINI
ModAdv - Mobile Advanced Networks Mobile	21	3	Navid NIKAEIN
MobWat - Wireless Access Technologies	21	3	Jérôme HAERRI
SecAppli - Security applications in networking and distributed systems	21	3	Marc DACIER
HWSec - Hardware security	21	3	Renaud PACALET
<b>TU Fundamental in Business, Innovation and Project Management (II)</b>		<b>5</b>	
Business - Business Simulation	42	5	Kenneth POPE / Francis BIDAULT
Law - General Introduction to Law: contracts, setting up business	21	3	Dominique SERIO
ProjMan - Project Management	42	5	Jean-Jacques AUREGLIA
SATT - Sociological approaches of Telecom TechnologiesS	21	3	Marc RELIEU
<b>TU Semester project (II)</b>	<b>100</b>	<b>6</b>	
<b>TU Language French or other one* S2</b>	<b>22</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S2 SPRING total</b>		<b>32</b>	

SEMESTER S3 FALL			
Teaching Units			
<b>TU Software and Systems</b>	Hours	<b>15</b>	
CompArch - Computer architecture	42	5	Renaud PACALET
Clouds - Distributed systems and cloud computing	42	5	Raja APPUSWAMY
UMLEmb - UML for Embedded Systems	21	3	Ludovic APVRILLE
MobMod - Mobility Modeling	21	3	Jérôme HAERRI
MALIS - Machine Learning and Intelligent Systems	42	5	Maria ZULUAGA
Mobserv - Mobile application and services	42	5	Navid NIKAEIN
MobSys- Mobile communication systems	42	5	Adlen KSENTINI
SoftDev - Software development methodologies	21	3	Davide BALZAROTTI
Stand - Standardization activities	21	3	Jérôme HAERRI
<b>TU Fundamental in Business, Innovation and Project Management (III)</b>		<b>5</b>	
B_INNOV - How to adopt the right posture and move from idea to market!	42	5	Pascaline THIEBAUT
ManagIntro - Introduction to Management	42	5	Kenneth POPE
Property - Intellectual property Law	21	3	Dominique SERIO
RDI - Responsible Digital Innovation: Risks, Ethics and Technology	21	3	Laura DRAETTA
TeamLead - Personal Development and Team Leadership	42	5	Kenneth POPE
<b>TU Semester project (III)</b>	<b>100</b>	<b>6</b>	
<b>TU Language French or other one* SIII</b>	<b>22</b>	<b>1</b>	<b>Pascale CASTAING</b>
			External teachers
<b>S3 FALL total</b>		<b>27</b>	

SEMESTER S4 SPRING			
Teaching Units			
<b>TU Master Thesis</b>	<b>22 weeks</b>	<b>30</b>	
<b>S4 SPRING total</b>		<b>30</b>	

<b>TOTAL MASTER</b>	<b>120</b>	
---------------------	------------	--