# EURECOM Engineering Degree – 2&3A

## RULES AND REGULATIONS

## 2022-2023

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# 1  ORGANIZATION

## 1.1  Recruitment

Students are recruited through a competitive examination (Mines-Télécom examination for entry into the first year) or on the basis of their qualifications to be admitted in the first year or, starting in the 2023 academic year, in the second year, with or without an interview after validation by the admission jury.

## 1.2  Registration

Students must register each year with Student Affairs. Registration is confirmed after payment of the year's tuition fees and validation of CVEC.

## 1.3  Curriculum duration

The academic engineering program is usually covered in three years. However, for students admitted directly to the second year by an admission jury, the normal duration is reduced to two years. Students must spend a minimum of three academic semesters at EURECOM.
These periods may be extended if students:
- Repeat a year (one year maximum),
- Do a gap year (one year maximum),
- Interrupt voluntarily their studies (one year maximum),
- Do a study leave,
- Do a double degree.

### 1.3.1  Repeating a year

Only one school year can be repeated during the curriculum. This requires registration with Student Affairs. In case of repetition, the regulations of the year of repetition apply.

### 1.3.2  Gap year

Between the first and second year, or between the second and third year, a gap year of up to one year may be granted to students, depending on their personal project. The request must be made in writing to Student Affairs.

The request is studied by the *gap year jury, composed of the Director of Studies, the Head of Student Affairs and at least one professor,* for approval or rejection. The student's possible obligation to retake or repeat a year will be taken into account.
If the petition is approved, the student will be enrolled in the school as any other student, and will be allowed to sign internship agreements in accordance with the May 18, 2018 2018-372 Decree. Under no circumstances can this internship replace the final-year internship .
A gap year agreement will be drawn and signed by the student and the school's representative.
Students whose request was denied may appeal to the School Director within one week of the decision.
Tuition fees are reduced during the gap year.
The terms of the gap period will be determined in accordance with the provisions of the *Code de l'éducation* in force on the date of the request. At the end of the gap year, students resume their initial study program and keep their previous credits. The regulations applicable the year students resume their studies are enforced.

### 1.3.3 Voluntary suspension of studies

Students may request to suspend their studies for a maximum of one year. The request must be made in writing to Student Affairs.

The petition may be motivated by a personal project, i.e. setting up a business or carrying out a civic/volunteer project. Students are notified of the decision in writing. Students remain registered, but are exempted from paying the tuition fees. The school can support their projects if they are deemed in line with the overall objectives of the curriculum. At the end of the year, students resume their course of study, and keep their credits as well as their requirements to catch up or repeat a year. The regulations applicable the year students resume their studies are enforced.

### 1.3.4 Study leave

The Director of Studies will review the situation of students who had to interrupt their studies for justified reasons of *force majeure* (illness, accident, maternity leave, etc.). They may decide to consider that the student is on "study leave" for all or part of the academic year. They may invite the student to re-register for the incomplete academic year. This new registration may be subject to the authorization of a medical doctor. Study leaves are different from repeating a year.

At the end of the leave, students resume their course of study and keep their credits and their requirements to catch up or repeat a year. The regulations applicable the year students resume their studies are enforced.

### 1.3.5 Double degree opportunities in France and abroad

With bilateral agreements, students can opt for a double degree, with one period at EURECOM and the other at the other institution. At the end of the training, and if successful, students graduate from EURECOM with an engineering degree and from the second institution, or receive a joint degree. The criteria to obtain a double degree are described in the bilateral agreements.

## 1.4 Teaching formats

Several formats can be used to teach courses: lectures or conferences, tutorials, practical work, tutored self-training, asynchronous tutored self-training, planned personal work (supervised projects), projects, visits, and internships. Students are informed of the number of hours devoted to each course. This is the supervised part, duly posted on the timetable. Students' personal work is not indicated, but it is built in the attribution of ECTS credits.

English is the primary language of instruction.

# 2 ACADEMIC PROGRAM

## 2.1 Semesters - ECTS credits - Teaching units

Each academic semester is made up of indivisible and compulsory Teaching Units representing a total of 60 ECTS credits per year. Each year is made up of two semesters of 30 ECTS credits each.

Courses are presented in the form of teaching units (UE in French) with components (ECUE in French). The names of the teaching units and components as well as the names of the relevant professors are clearly identified.

ECTS credits are awarded for each teaching unit, regardless of the type (technical or general courses, language courses, internships, projects, research awareness, job fairs...).

Each component has a coefficient used to calculate the weighted average within teaching units.

The list of teaching units and the corresponding ECTS credits are set for each semester of each academic year. The different tracks are organized equally so to build balanced and homogeneous curricula.

All of the teaching units of one year, their credits, and their validation terms are communicated to students at the beginning of the year.

Some teaching units are elective. Students must make their choice at the beginning of the semester. The procedure and the deadline are communicated to them at the beginning of the academic year. It is forbidden to choose two components that are taught in the same time slot.

The number of components to be chosen in each unit is communicated to students for each unit. A unit cannot be validated if a student chooses less than the required number of components. In this case, no ECTS credit can be obtained for said unit. Within a unit, students can choose more components than the required number, provided that the schedule allows them to follow all the selected components. Choosing more than the required number of components does not change the number of ECTS credits of the unit, and does not give the right to additional credits.

A component can only be chosen once during the curriculum, except when repeating the corresponding teaching unit.

A component can only be a component of one teaching unit.

### 2.1.1  First year: semesters 5 and 6

The first academic year is common to all students.

### 2.1.2  Introduction-to-business internship (*stage de découverte du monde professionnel*)

Between semesters 6 and 7, students must complete an internship in a company for a minimum of four weeks. This is an opportunity for them to become familiar with the business environment.

The objective is to provide students with the following skills:

- To understand the working conditions of the personnel in charge of the execution tasks in a company
- To understand the importance of human relations in companies
- To understand the hierarchical structure of a business
- To understand the flow of information in the company and its role
- To be able to describe the company organization and its production processes

It is up to students to look for their internship which must be pre-approved by Student Affairs. All internships are subject to a contractual agreement which specifies the name of the company supervisor and the school's academic director.

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This internship validates 3 ECTS credits.

### 2.1.3  Study tracks: semesters 7, 8, and 9

From the second year on, curricula are divided into areas of focus, or study tracks. At the end of the first year, the jury makes the final decision of students' tracks based on the following:

- The wishes expressed by students,
- Their results.

### 2.1.4  The final-year project (PFE): semester 10

The final-year project takes the form of a professional thesis based on an internship and a dissertation which students defend before a jury.

The purpose of the final-year internship is to prepare students for their transition to the corporate world.

At the end of their internship, students must demonstrate the ability to:

- Be a team player, and demonstrate adaptability and interpersonal skills.
- Be able to manage time across the different phases of their work assignments.

- Know how to present the progress of their work
- Be able to carry out substantial tasks that showcase knowledge and know-how, both theoretical and practical, acquired during their training.
- Be able to analyze the internship topic through analytical and/or formal and bibliographical approaches of the subject.
- Be able to provide a relevant and substantial contribution to the host company.
- Be able to present and analyze the results, and draw conclusions from the work carried out, both orally and in writing.

The final-year internship covers at least 24 weeks over a period of one semester, and usually takes place in a company. In exceptional cases, part of the internship may be carried out in a research laboratory. During their training, students are required to complete a minimum of 14 weeks of internship in a company.

Students are responsible for contacting companies and obtaining interviews to be recruited as interns. Students are assisted in their search by Student Affairs, which provides a database of internship offers from companies.
The company and the topic must be pre-approved by Student Affairs. All internships are subject to a contractual agreement which specifies the name of the company supervisor and the school's academic director.
The final-year internship validates 30 ECTS credits.

## 2.2 Timetable

For each semester, a timetable is set by Student Affairs and communicated to students, professors and outside contributors before the beginning of each semester. The assessment exams of the 1st and 2d exam sessions are explicitly mentioned.

# 3 ASSESSMENTS

## 3.1 Assessment of teaching units

### 3.1.1 Methods

At the beginning of the year, the faculty of each teaching unit provides students with a list of the learning outcomes (knowledge, abilities and/or skills).
For each teaching unit, the evaluation of the learning outcomes may include a continuous assessment and/or a final assessment. It can also include an assessment of the practical work, and/or of a tutored project or a personal work related to the teaching unit.

Based on the faculty decision, assessment of the learning outcomes can be based, uniformly within a UE, on:
- Grades or
- An assessment of learning outcomes
Whatever the method, the principle of compensation within the teaching unit applies.

## 3.2 Assessment of internships and projects

### 3.2.1 Assessment of projects

Second and third-year projects are evaluated on the basis of a written report and an oral defense, according to the following criteria:
- Analysis of the topic/issue (coefficient 2)
- Outcomes (coefficient 2)

- Project management (coefficient 1)
- Written report (coefficient 1)
- Oral exam (coefficient 1)

The rules to assess first-year projects are described on the corresponding descriptive sheets.

### 3.2.2 Assessment of the Introduction-to-businesses internship

The grade of this internship is based on the following:
- A report, which must be validated by the internship academic director,
- The evaluation by the company's internship supervisor.

### 3.2.3 Assessment of the final-year internship

Final internships are defended before an internship panel and assessed based on five criteria:

**Analysis of the topic/issue:** i.e. the analytical, formal and bibliographical approach of the subject.
**Results:** i.e. the usefulness of the results for the host company.
**Project management:** i.e. how students defined the topic, analyzed the phases, reviewed their progress at regular intervals (in particular by communicating regularly with the academic director), and managed unforeseen events (changes in topic, deadlines, etc.).
**Quality of the written report:** presentation of the report, clarity, precision, references used, oral skills.
**Quality of the defense:** quality of the presentation, capacity for synthesizing, speech delivery, relevance of demonstrations, if any.

For each criterion, a score out of 20 is awarded by the jury. The five scores are combined and weighted as follows:
- Coefficient 1 for the project management, the oral presentation and the report
- Coefficient 2 for the conceptual work and analysis of the issue and the results

## 3.3 Validation of teaching units

Each academic semester includes two examination sessions.

At the end of the 1st session, the teaching unit team meets to assess each student's outcomes. The assessment of the unit is defined by a grade between A+ and F. The grading system is as follows:
- A+ =     18 - 20    OUTSTANDING
- A =       16 - <18   EXCELLENT
- B =       14 - <16   VERY GOOD
- C =       12 - <14   GOOD
- D =       11 - <12   SATISFACTORY
- E =       10 - <11   FAIR
- F =       0 - <10    NOT VALID

Students who receive an "A" to "E" grade get their teaching unit validated and the corresponding ECTS credits. An F means that the unit is not validated and no ECTS credits are awarded for this unit. The validation of teaching units and credits is definitive.

### 3.3.1 Results of the first assessment session

- In the case of a grade-based assessment, the average of the 1st[t] session of the unit is calculated based on the grades obtained in each component of the unit, and by applying the coefficients provided in the syllabus. If the average mark of the teaching unit is greater than or equal to 10/20,

the student receives the ECTS credits of said teaching unit and the status corresponding to the average.

- If a student has chosen one or more additional courses within a unit, he/she can ask Student Affairs to drop these additional courses, provided that the minimum number of courses of said unit is respected. In this case, these courses will not appear on the student's report card, and the average and grade of the teaching unit will be recalculated based on the grades and coefficients of the remaining courses.

- If the average of the teaching unit is below 10/20, the student is asked to take the exams at the 2d session for the components with a grade below 10/20.

- The student is not authorized to take the exams of the 2d session for the components of a validated unit, whatever the mark obtained in this component.

- The student is not authorized to take the exams of the 2d session for the components of a unit that is not validated in which he/she received a mark higher or equal to 10/20.

- In a learning outcome-based assessment, the jury of the unit gives directly the unit grade based on the level of the skills assessed. For an F grade, the student is called for the exams of the 2d session, according to the terms proposed by the unit jury.

### 3.3.2  Results of the second assessment session

The exams of the 2d session are organized by semester only for the components for which the student had a mark below 10 and which are included in a teaching unit that the student did not validate in the first session. The component grades greater than or equal to 10/20 received at the 1st session are maintained for the calculation of the 2d session grade average.

Following the exams of the 2d session, the teaching unit jury meets again as it does after the 1st session. If the average mark of the teaching unit is greater than or equal to 10/20, and the jury validates the learning outcomes when evaluating student's learning, the student receives the ECTS credits of said teaching unit.

In case the average of the teaching unit is below 10/20, the jury may propose to validate the teaching unit through a jury decision if it deems the learning outcomes as sufficient. In this case, the students receives the ECTS credits for this unit with the E grade.

If, at the end of the 2d session a teaching unit is not validated, the student's report shows this unit as "With a debt" (see 3.7.2).

## 3.4  Validation of projects

For their project to be validated, students must obtain a final grade of at least 10/20 in a grade-based assessment, or validate the required competencies in a learning outcome-based assessment.
Even if the project is carried out in a group, the assessment is individual and may differ among students in the same group.

If the project is not validated, the teaching committee decides on the possibility of making up the project and defines the terms (e.g. new report, additional work, etc.). This is not systematic and it will depend on the quality of the student's work and his/her personal investment during the project.

If this possibility is not authorized by the teaching committee, the student does not validate the corresponding unit and must repeat it.

## 3.5  Validation of internships

### 3.5.1  Introduction-to-business internship (*stage de découverte du monde professionnel*)

To obtain the ECTS credits for this internship unit, students must obtain a final grade of at least 10/20. The internship must last at least 4 weeks.

If a student's work is judged insufficient, the Teaching Committee may ask the student to revise it and stipulate conditions (for example, a new report).

A complete repetition of the internship is also possible, in which case the student will do a new internship.

### 3.5.2  Internship as part of the Final-Year Project

To obtain ECTS credits for the internship unit, students must validate their learning outcomes corresponding to this teaching unit. In case of a grade-based assessment, their final grade must be at least 10 over 20. The final-year project must last at least 24 weeks.

Only one professional thesis defense is allowed.

If the professional thesis is deemed insufficient, the internship jury (cf. 4.2.2) may request that it be further developed in a manner to be decided at the Teaching Committee meeting. A complete repetition of the internship is also possible, in which case the student will do a new internship.

## 3.6  Semi-annual pedagogical assessment

A pedagogical assessment is organized at the end of each semester. It is held by class or by field of study if necessary, with faculty members and student representatives present.

## 3.7  Validation of the academic year

### 3.7.1  Criteria

The year is validated if students obtain 60 ECTS credits, i.e. all of the teaching units. The jury may propose that a student who does not have 60 ECTS credits still advance to the next year.
In this case, the student will have "debts" and will need to validate the missing teaching units in the following year(s).  After the juries make their decisions, the Teaching Committee will define the terms for the validation of the teaching units "with a debt".

### 3.7.2  Teaching units with a debt

- Students who have teaching units with a debt and who advance to the next year keep all the components' grades greater than or equal to 10 that they received at the 1st or 2d session. The following year, they will only retake the exams for which the mark was still below 10 after the 2d session, including the practical work (TPs) and guided studies (TDs) (oral if necessary). The weighed average of the teaching unit with a debt is then calculated with the new grades, and the grades are maintained.

- Students with a teaching unit with a debt who repeat the year (complete repetition of the year or semester) retake all the components of said teaching unit that was not validated. No grade of a teaching unit with a debt is maintained. The ECTS credits obtained in the other teaching units are permanently kept.

In all cases (advancing to the next year with one or several debt(s) or repeating the year), a study contract specifying the subject matters to be passed will be issued by Student Affairs and co-signed by the student.

# 4  EXAMS AND JURIES

## 4.1  Examination sessions

For each semester of the academic year, two examination sessions are organized.

Only students registered in the components of a teaching unit will be able to take an exam.
For each component, a make-up exam is possible at the second session.

Students who did not attend the first examination session without a valid reason will not be able to attend the second examination session of the relevant component.

The schedule of examination sessions is communicated each semester by Student Affairs.

The Teaching Committee may authorize a student to retake a project. The terms are set by the Teaching Committee.

Only one professional thesis defense is allowed, except in the case of a medical reason duly justified by a doctor.

### 4.1.1  Absences and late arrivals

Students must arrive on time at the examination sessions of the courses in which they are registered. Absences from exams without a medical certificate written in French or English and sent to Student Affairs beforehand will result in the cancellation of the relevant credits without the possibility of a make-up session.
Any unjustified absence from an exam will result in a grade of zero (when the assessment is based on grades).
Student who are late will not be allowed to take the exam once the distribution of subjects has begun. They will be considered absent.

For students with a valid absence to one or several exams, the exam taken during the 2d session will serve as the first session exam. The result of the test will then replace the results of the exams not taken by the student. The terms of any make-up session are decided on a case-by-case basis.

### 4.1.2  Frauds

The terms for the examinations as well as the consequences of any fraud (including plagiarism) are specified to students by Student Affairs for each Teaching Component before each examination session.

Any misbehavior during exams will result in the nullification of the exams and disciplinary sanctions may be taken by the Disciplinary Board and communicated to Student Affairs and the Teaching Committee. These sanctions can go as far as the temporary or permanent exclusion of the student.

## 4.2  Juries

### 4.2.1  Teaching unit juries

Teaching unit juries are made up of the teaching unit academic heads and professors. They decide on the awarding of ECTS credits after each examination session, and recommend decisions to the Teaching Committee.
A semi-annual assessment is made by Student Affairs to identify students who may face difficulties early on.

## 4.2.2 Final-year internship juries

These juries are made up of the academic supervisor and the representative of the host company or, failing that, an outside specialist.

## 4.2.3 First-year juries

The first-year jury is made up of the academic supervisors of the first-year teaching units.
The jury reviews all students who have not obtained 60 ECTS credits.
The jury may decide to set up individual hearings with students who have failed.

For each of these students, a proposal is submitted to the Teaching Committee:
- Validation of teaching units if the unit jury deems the skills acquired
- Admission in 2d year with a teaching unit with a debt
- Authorization to repeat the year, or
- Exclusion.

Student Affairs inform these students of the Teaching Committee's proposals.

## 4.2.4 Second and third-year juries

Juries can also be set up by study track. They operate the same way as first-year juries.
For students who do not meet the criteria to advance to the next year, the jury may propose to the Teaching Committee that they be allowed to repeat the year or that they be excluded. Exclusions require a motivated decision by the jury to the Teaching Committee.

## 4.2.5 Appeals

Following the juries' recommendations, students have 72 hours to submit a written request for appeal to Student Affairs who reviews them in the presence of the students' elected representatives.

## 4.2.6 Teaching Committee

The Teaching Committee reviews the results of all students who are administratively registered in the year, and the juries' proposals. It also makes sure that every student is treated equally across all tracks. Its decisions are final. The Teaching Committee is made up of EURECOM's permanent research professors, a representative of Student Affairs, and a representative of the founding member. Four elected students also attend the meetings but without voting rights. The committee is chaired by the Director of Studies.

The Teaching Committee makes the final decision on:
- The validation of the year or semester
- The possible validation of one or several teaching units based on a jury decision
- The admission with a teaching unit with a debt
- The terms to repeat one or several courses or projects
- The possibility to repeat or the exclusion of failing students

The Teaching Committee's decisions are communicated to students via Student Affairs. For students who are repeating, a study contract specifying the teaching units to be passed successfully is issued by Student Affairs and is co-signed by the student.
The Teaching Committee may decide to exclude a student following an interview and the recommendations of the juries.

### 4.2.7 Diploma jury

The diploma jury meets after the Teaching Committee to decide on the graduation of students at the end of the program. The diploma jury is made up of the following members:

- The Director of the School, who chairs it
- The Director of Studies
- The Head of Student Affairs
- The heads of the curricula
- A referent professor
- A representative of the founding member of EURECOM's consortium

The jury ensures that all the prerequisites for the diploma are validated.

The diploma jury is sovereign and as such has full authority over the awarding of the diploma.

### 4.2.8 Disciplinary Board

For all years of study, the Disciplinary Board is made up of the Director of the School or his/her representative, the Director of Studies, the Head of Student Affairs, a referent professor and a professor involved in the student's curriculum.
The board decides on possible sanctions to be taken

- following cases of examination fraud,
- more generally, in case a student did not comply with the responsibilities set out in the Academic Charter.

After an interview, the Disciplinary Board may decide to exclude a student temporarily or permanently for failure to comply with the above, and after an interview.

# 5   GRADUATION REQUIREMENTS

The diploma jury takes into account the following elements when deciding whether or not to grant a diploma:

- The academic program must be validated (see 5.2).
- The international experience requirements must be validated (see 5.4).
- The business experience requirements must be validated (see 5.3).
- The Introduction-to-Research module must be validated (cf.5.5).
- Proof of a proficient level of English (cf. 5.2)
- Proof of successful French level for non-French speaking students (cf. 5.2).

The diploma jury is sovereign.

## 5.1   Validation of the academic program

Students must have obtained 60 ECTS credits per academic year, i.e.:
- 180 ECTS at the end of the 3rd year for students admitted in the first year
- 120 ECTS at the end of the 3rd year for students admitted in the second year

## 5.2   Level of English and French

During their training, students whose native language is not English must validate a minimum level in English which will be assessed by an external test. Allophone students must also validate a minimum level in French.

If the required level is not reached by the end of the third year, the jury will suspend the delivery of the diploma for a maximum of two years. After said period, the student will no longer be able to graduate from EURECOM. If the required level is reached, the diploma will be issued immediately as long as the other conditions are met.

EURECOM covers the cost of registering for a test in English or French for each student during the course of their studies, as part of group tests organized by EURECOM. Registration for additional tests is the responsibility of each student.

### 5.2.1   End-of-studies requirement in English

A minimum level of B2 in English is required to graduate. It must be validated by an external test of the student's choice:
Grade A, B or C in the Cambridge English Advanced or Proficiency Certificate
- TOEFL ITP: 575
- TOEFL IBT: 90
- TOEIC: 850
- IELTS: 7.0

English-speaking students are exempted from the test.

### 5.2.2   End-of-studies requirement in French for Allophone students

A minimum level of B2 in French is required to graduate. It must be validated by an external test of the student's choice:
- DELF B2
- TFI: 605
- DCL FLE B2
- DALF B2
- TCF: 400

### 5.2.3   Second foreign language

It is strongly recommended that French (and English) speaking students choose a second foreign language (this choice can be made via the opening units starting in semester 7).

## 5.3   Validation of internships

During their training, students must complete at least 28 weeks of internships: 24 weeks during the final-year project and a minimum of 4 weeks for the introduction-to-business internship between the first and the second year (between semesters 6 and 7).
During their training, students must complete a minimum of 14 weeks in a company.
These internships lead to the validation of ECTS credits at semesters 6 and 10.

## 5.4   Validation of the international experience

All students are required to spend a semester of at least 17 weeks in a country other than their home country, either during internships or during study periods, possibly as part of a mobility agreement or a double degree with partner universities.

## 5.5   Validation of the Introduction-to-research module

During their studies, students must take once the "Aware" component (Introduction to Research) which is offered during semesters S7, S8 and S9 as part of the opening units.

## 5.6 Community service

Students are encouraged to demonstrate civic involvement during their curriculum.
The activity can be validated through a project submitted by students and approved via Student Affairs as part of the "StudInt" component offered in the opening units of semesters S7, S8 and S9.
A student may validate up to three community service projects during three different semesters.

# 6 Special accommodations

EURECOM has a disability advisor whose name will be communicated to students.
Any student with a disability is invited to contact the disability advisor. Specific accommodations suited to each student will be examined by Student Affairs.
Students admitted with the "Sportif de haut niveau" status are invited to report to Student Affairs to present their DRJCS certificate.
Students looking to be considered as "Artistes de haut niveau" may apply to Student Affairs, with any document proving their artistic status.
Students with the "Etudiant entrepreneur" status for the current academic year are invited to apply to Student Affairs to present their certificate.

Specific pedagogical accommodations may be proposed to artists and high-level athletes and to student entrepreneurs based on their personal situation. Any such accommodations will be specified in a study contract signed by the student and the school representative.

# 7 Graduating from EURECOM through the VAE program

The terms of the April 24, 2002 decree relating to the validation of acquired experience (VAE, in French) by higher-education institutions allow candidates to graduate from EURECOM with an engineering degree through their experience.
The goal is to compare the applicants' skill sets, taking into account their initial and continuing education as well as the skills acquired during their professional career, with the skill set delivered by EURECOM's engineering training (currently being registered with the RNCP).
This comparison can only be meaningful if the candidate's skills pertain to the same field as those delivered by the EURECOM diploma.

A jury is convened, chaired by the Director of the School and made up of a majority of researchers-professors participating in the training program delivering the engineering degree, plus a minimum of two other persons whose professional activity relates to the fields targeted by the training program.

After reviewing the case and interviewing the applicant, the jury decides on the extent of the validation:
- It can be total and lead to the delivery of the engineering diploma.
- It can be partial when skills are missing based on the training reference system, in which case the jury specifies said skills. These must to be acquired through different methods–courses, research, projects, etc. – which are selected by the candidate.
  It should be noted that these skills can be acquired at the school from which the candidate is seeking to graduate, as well as in any other institution and/or company of which the candidate may be an employee.

Once the applicant has acquired these additional skills, the jury decides on whether to award the diploma in the presence of the candidate.

Date: 7/18/2022

**David Gesbert**
Director
EURECOM

ANNEX1

# Intelligent Communication Systems (ICS)

| Semester 7 [30 ECTS] | | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|---|
| **TU Wireless Communications: Principles and Trends** | | **10** | | | |
| ATWireless | Advanced topics in wireless communications | | L | 0.5 | Petros ELIA |
| DigiCom | Digital communications | | L | 0.5 | Raymond KNOPP |
| **TU networks and models for engineer** | | **10** | | | |
| MobiSec | Mobile Systems and Smartphone Security | | L | 0.5 | D. ANTONIOLI |
| Mobsys | Mobile communication systems | | L | 0.5 | A.KSENTINI/ R.KNOPP/N. NIKAEIN |
| MobCom | Mobile communication techniques | | L | 0.5 | Petros ELIA |
| SSP | Statistical signal processing | | L | 0.5 | Dirk SLOCK |
| **TU Human and Social Sciences 1** | | **4** | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 1** | | **5** | | | |
| Long technical course | | | L | 1 | / |
| Short technical course | | | S | 0.5 | / |
| Long Human and Social course | | | L | 0.8 | / |
| Short Human and Social course | | | S | 0.4 | / |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 3** | | **1** | | | |
| Languages | | | S | 1 | |

ICS

| Semestre 8 [30 ECTS] | | ECTS | Long/ Court | Coef | Professeur |
|---|---|---|---|---|---|
| **TU Optimization** | | 10 | | | |
| Malcom | Machine Learning for Communication systems communication | | L | 0.5 | Petros ELIA |
| Radio | Radio engineering | | L | 0.5 | F. KALTENBERGER |
| **TU Mathematical and algorithmic methods** | | 10 | | | |
| ASI | Advanced Statistical Inference | | L | 0.5 | M. FILIPPONE |
| CompMeth | Computational Methods for digital communications | | L | 0.5 | Raymond KNOPP |
| MobWat | Wireless Access Technologies | | S | 0.25 | Jérôme HÄRRI |
| AML | Algorithmic Machine Learning | | S | 0.25 | Pietro MICHIARDI |
| DeepLearning | Deep Learning | | S | 0.25 | Pietro MICHIARDI |
| Sp4Com | Signal Processing for Communications | | L | 0.5 | Dirk SLOCK |
| **TU Human and Social Sciences 2** | | 4 | | | |
| Business | Business simulation | | L | 1 | Kenneth POPE |
| Law | General introduction to law : contracts, setting up a business | | L | 0.5 | Dominique SERIO |
| ProjMan | Project Management | | S | 1 | J.J. AUREGLIA |
| SATT | Sociological Approaches of Telecom Technologies | | S | 0.5 | Marc RELIEU |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Kenneth POPE |
| WebStra | Web strategy and organizational Performance | | S | 0.5 | C. COMOLE-THEVENIAUD |
| **TU opening  2** | | 5 | | | |
| Long technical course | | | L | 1 | |
| Short technical course | | | S | 0,5 | |
| Long Human and Social course | | | L | 0,8 | |
| Short Human and Social course | | | S | 0,4 | |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 4** | | 1 | | | |
| Languages | | | S | 1 | |

ICS

| Semester 9 [30 ECTS] | | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|---|
| **TU Computing and Mobile Services** | | 7.5 | | | |
| Malis | Machine Learning and Intelligent System | | L | 0.67 | Maria ZULUAGA |
| Stand | Designing embedded systems with UMLEMB | | S | 0.34 | Jérôme HÄRRI |
| MobiSec | Mobile Systems and Smartphone Security | | L | 0.67 | D. ANTONIOLI |
| MobServ | Mobile application and services | | L | 0.67 | Navid NIKAEIN |
| Quantis | Quantum Information Science | | s | 0.34 | M. KOUNTOURIS |
| **TU TU Human and Social Sciences 3** | | 4 | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 3** | | 7.5 | | | |
| Long technical course | | | L | 0.67 | |
| Short technical course | | | S | 0.34 | |
| Long Human and Social course | | | L | 0.67 | |
| Short Human and Social course | | | S | 0.34 | |
| AddLang | Additional Language | | S | 0.17 | / |
| StudInit | Student Initiative | | S | 0.17 | / |
| Aware | Awareness-raising to research | | S | 0.34 | Co-teaching |
| **TU PROJECT** | | 10 | 200 h | | |
| Semester project | | | | | / |
| **TU Language 5** | | 1 | | | |
| Languages | | | S | 1 | |

| Semester 10 [30 ECTS] | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|
| **TU Internship** | 30 | | | |
| **6th months** Internship in a company/research laboratory | | | 1 | |

# INTERNET OF THINGS (IOT)

| Semester 7 [30 ECTS] | | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|---|
| **TU Basics in IOT** | | 10 | | | |
| SysSec | System and Network Security | | L | 0.5 | A. FRANCILLON |
| Malis | Machine Learning and Intelligent systems | | L | 0.5 | Maria ZULUAGA |
| **TU Software engineering, security and networks** | | 10 | | | |
| OS | Operating systems | | L | 0.5 | L. APVRILLE |
| CompArch | Computer architecture | | L | 0.5 | Renaud PACALET |
| SoftDev | Software development methodologies | | S | 0.25 | D. BALZAROTTI |
| MobServ | Mobile application and services | | L | 0.5 | Navid NIKAEIN |
| MobMod | Mobility Modeling | | S | 0.25 | Jérôme HÄRRI |
| **TU Human and Social Sciences 1** | | 4 | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 1** | | 5 | | | |
| Long technical course | | | L | 1 | / |
| Short technical course | | | S | 0.5 | / |
| Long Human and Social course | | | L | 0.8 | / |
| Short Human and Social course | | | S | 0.4 | / |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 3** | | 1 | | | |
| Languages | | | S | 1 | |

IOT

| Semestre 8 [30 ECTS] | | ECTS | Long/ Court | Coef | Professeur |
|---|---|---|---|---|---|
| **TU Advanced IOT** | | 10 | | | |
| APPIOT | Iot Application Protocols | | S | 0.25 | Adlen KSENTINI |
| ProtIOT | Iot Communication Protocols | | S | 0.25 | Adlen KSENTINI |
| DeepLearning | Deep Learning | | S | 0.25 | Pietro MICHIARDI |
| WebSem | Semantic Web and Information Extraction technologies | | S | 0.25 | Raphaël TRONCY |
| **TU Software engineering, security and networks 2** | | 10 | | | |
| HWSEC | Hardware Security | | S | 0.25 | Renaud PACALET |
| MalCom | Machine Learning for Communication systems communication | | L | 0.5 | M. KOUNTOURIS |
| MobAdv | Mobile Advanced Networks | | S | 0.25 | Navid NIKAEIN |
| MobWat | Wireless Access Technologies | | S | 0.25 | Jérôme HÄRRI |
| NetSoft | Network Softwerization | | S | 0.25 | Adlen KSENTINI |
| **TU Human and Social Sciences 2** | | 4 | | | |
| Business | Business simulation | | L | 1 | Kenneth POPE |
| Law | General introduction to law : contracts, setting up a business | | L | 0.5 | Dominique SERIO |
| ProjMan | Project Management | | S | 1 | J.J. AUREGLIA |
| SATT | Sociological Approaches of Telecom Technologies | | S | 0.5 | Marc RELIEU |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Kenneth POPE |
| WebStra | Web strategy and organizational Performance | | S | 0.5 | C. COMOLE-THEVENIAUD |
| **TU opening  2** | | 5 | | | |
| Long technical course | | | L | 1 | |
| Short technical course | | | S | 0,5 | |
| Long Human and Social course | | | L | 0,8 | |
| Short Human and Social course | | | S | 0,4 | |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 4** | | 1 | | | |
| Languages | | | S | 1 | |

IOT

| Semester 9 [30 ECTS] | | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|---|
| **TU Software and systems** | | 7.5 | | | |
| Mobsys | Mobile communication systems | | L | 0.67 | A.KSENTINI/ R.KNOPP/N. NIKAEIN |
| UMLEmb | Designing embedded systems with UMLEMB | | S | 0.34 | L. APVRILLE |
| MPC | Multiparty Computation and Blockchains | | S | 0.34 | Antonio FAONIO |
| MobiSec | Mobile Systems and Smartphone Security | | L | 0.67 | D. ANTONIOLI |
| **TU Human and Social Sciences 3** | | 4 | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 3** | | 7.5 | | | |
| Long technical course | | | L | 0.67 | |
| Short technical course | | | S | 0.34 | |
| Long Human and Social course | | | L | 0.67 | |
| Short Human and Social course | | | S | 0.34 | |
| AddLang | Additional Language | | S | 0.17 | / |
| StudInit | Student Initiative | | S | 0.17 | / |
| Aware | Awareness-raising to research | | S | 0.34 | Co-teaching |
| **TU PROJECT** | | 10 | 200 h | | |
| Semester project | | | | | / |
| **TU Language 5** | | 1 | | | |
| Languages | | | S | 1 | |

| Semester 10 [30 ECTS] | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|
| **TU Internship** | 30 | | | |
| **6th months** Internship in a company/research laboratory | | | 1 | |

# DATA SCIENCE

| Semester 7 [30 ECTS] | | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|---|
| **TU  Basics in data science** | | **10** | | | |
| Malis | Machine Learning and Intelligent systems | | L | 0.5 | Maria ZULUAGA |
| DBSys | Database Management System | | L | 0.5 | Paolo PAPOTTI |
| **TU Web science and mathematical methods** | | **10** | | | |
| ImCod | Image & Video Compression | | S | 0.25 | J.L. DUGELAY |
| Clouds | Distributed Systems and Cloud Computing | | L | 0.5 | R. APPUSWAMY |
| WebInt | Interaction Design and Development of Modern Web Applications | | S | 0.25 | Raphaël TRONCY |
| BigSec | Security and privacy for Big Data and Cloud | | S | 0.25 | Melek ÖNEN |
| SoftDev | Software development methodologies | | S | 0.25 | D. BALZAROTTI |
| **TU Human and Social Sciences 1** | | **4** | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 1** | | **5** | | | |
| Long technical course | | | L | 1 | / |
| Short technical course | | | S | 0.5 | / |
| Long Human and Social course | | | L | 0.8 | / |
| Short Human and Social course | | | S | 0.4 | / |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 3** | | **1** | | | |
| Languages | | | S | 1 | |

DSC

| Semestre 8 [30 ECTS] | | ECTS | Long/ Court | Coef | Professeur |
|---|---|---|---|---|---|
| **TU Advanced courses in machine learning** | | **10** | | | |
| ASI | Advanced Statistical Inference | | L | 0.5 | M. FILIPPONE |
| AML | Algorithmic Machine Learning | | S | 0.25 | Pietro MICHIARDI |
| DeepLearning | Deep Learning | | S | 0.25 | Pietro MICHIARDI |
| **TU Applications in data science** | | **10** | | | |
| 3DGraph | 3-D and virtual imaging (analysis and synthesis) | | L | 0.5 | Pascal GROS |
| APPIOT | Iot Application Protocols | | S | 0.25 | Adlen KSENTINI |
| Forensics | Cyber-crime and Computer Forensics | | L | 0.5 | D. BALZAROTTI |
| ImSecu | Imaging Security | | S | 0.25 | J.L DUGELAY |
| FormalMeth | FormalMethods-Formal specification and verification of systems | | S | 0.25 | Rabea AMEUR |
| Speech | Speech and audio processing | | S | 0.25 | Nicholas EVANS |
| WebSem | Semantic Web and Information Extraction technologies | | S | 0.25 | Raphaël TRONCY |
| **TU Human and Social Sciences 2** | | **4** | | | |
| Business | Business simulation | | L | 1 | Kenneth POPE |
| Law | General introduction to law : contracts, setting up a business | | L | 0.5 | Dominique SERIO |
| ProjMan | Project Management | | S | 1 | J.J. AUREGLIA |
| SATT | Sociological Approaches of Telecom Technologies | | S | 0.5 | Marc RELIEU |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Kenneth POPE |
| WebStra | Web strategy and organizational Performance | | S | 0.5 | C. COMOLE-THEVENIAUD |
| **TU opening  2** | | **5** | | | |
| Long technical course | | | L | 1 | |
| Short technical course | | | S | 0,5 | |
| Long Human and Social course | | | L | 0,8 | |
| Short Human and Social course | | | S | 0,4 | |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 4** | | **1** | | | |
| Languages | | | S | 1 | |

DSC

| Semester 9 [30 ECTS] | | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|---|
| **TU Advanced data technologies and applications** | | **7.5** | | | |
| MobiSec | Mobile Systems and Smartphone Security | | L | 0.67 | D. ANTONIOLI |
| SysSec | System and Network Security | | L | 0.67 | A. FRANCILLON |
| OpTim | Optimization Theory with Applications | | S | 0.34 | Giulio FRANZESE |
| Quantis | Quantum Information Science | | S | 0.34 | M.KOUNTOURIS |
| MPC | Distributed Systems and Cloud Computing | | S | 0.34 | Antonio FAONIO |
| MobServ | Mobile application and services | | L | 0.67 | Navid NIKAEIN |
| **TU Human and Social Sciences 3** | | **4** | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 3** | | **7.5** | | | |
| Long technical course | | | L | 0.67 | |
| Short technical course | | | S | 0.34 | |
| Long Human and Social course | | | L | 0.67 | |
| Short Human and Social course | | | S | 0.34 | |
| AddLang | Additional Language | | S | 0.17 | / |
| StudInit | Student Initiative | | S | 0.17 | / |
| Aware | Awareness-raising to research | | S | 0.34 | Co-teaching |
| **TU PROJECT** | | **10** | 200 h | | |
| Semester project | | | | | / |
| **TU Language 5** | | **1** | | | |
| Languages | | | S | 1 | |

| Semester 10 [30 ECTS] | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|
| **TU Internship** | **30** | | | |
| **6th months** Internship in a company/research laboratory | | | 1 | |

# DIGITAL SECURITY

| Semester 7 [30 ECTS] | | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|---|
| **TU  Basics in security** | | 10 | | | |
| SecCom | Secure communications | | L | 0.5 | Melek ÖNEN |
| SysSec | System and Network Security | | L | 0.5 | A. FRANCILLON |
| **TU Systems and Network Computing** | | 10 | | | |
| MobiSec | Mobile Systems and Smartphone Security | | L | 0.5 | D. ANTONIOLI |
| WebInt | Interaction Design and Development of Modern Web Applications | | S | 0.25 | Raphaël TRONCY |
| SoftDev | Software development methodologies | | S | 0.25 | D. BALZAROTTI |
| Malis | Machine Learning and Intelligent systems | | L | 0.5 | Maria ZULUAGA |
| ImCod | Image & Video Compression | | L | 0.25 | Jean-Luc DUGELAY |
| **TU Human and Social Sciences 1** | | 4 | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 1** | | 5 | | | |
| Long technical course | | | L | 1 | / |
| Short technical course | | | S | 0.5 | / |
| Long Human and Social course | | | L | 0.8 | / |
| Short Human and Social course | | | S | 0.4 | / |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 3** | | 1 | | | |
| Languages | | | S | 1 | |

SEC

| Semestre 8 [30 ECTS] | | ECTS | Long/ Court | Coef | Professeur |
|---|---|---|---|---|---|
| **TU Advanced courses in security for the engineer** | | **10** | | | |
| Forensics | Cyber-crime and Computer Forensics | | L | 0.5 | D. BALZAROTTI |
| HWSEC | Hardware Security | | S | 0.25 | Renaud PACALET |
| WiSec | Wireless Security | | S | 0.25 | A. FRANCILLON |
| ImSecu | Imaging Security | | S | 0.25 | J.L DUGELAY |
| **TU Analysis and understanding of interactions with computer systems** | | **10** | | | |
| Speech | Speech and audio processing | | S | 0.25 | Nicholas EVANS |
| WebSem | Semantic Web and Information Extraction technologies | | S | 0.25 | Raphaël TRONCY |
| ASI | Advanced Statistical Inference | | L | 0.5 | M. FILIPPONE |
| FormalMeth | FormalMethods-Formal specification and verification of systems | | S | 0.25 | Rabea AMEUR |
| NetSoft | Network Softwerization | | | 0.25 | Adlen KSENTINI |
| APPIOT | Iot Application Protocols | | S | 0.25 | Adlen KSENTINI |
| ProtIOT | Iot Communication Protocols | | | 0.25 | Adlen KSENTINI |
| **TU Human and Social Sciences 2** | | **4** | | | |
| Business | Business simulation | | L | 1 | Kenneth POPE |
| Law | General introduction to law : contracts, setting up a business | | L | 0.5 | Dominique SERIO |
| ProjMan | Project Management | | S | 1 | J.J. AUREGLIA |
| SATT | Sociological Approaches of Telecom Technologies | | S | 0.5 | Marc RELIEU |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Kenneth POPE |
| WebStra | Web strategy and organizational Performance | | S | 0.5 | C. COMOLE-THEVENIAUD |
| **TU opening  2** | | **5** | | | |
| Long technical course | | | L | 1 | |
| Short technical course | | | S | 0,5 | |
| Long Human and Social course | | | L | 0,8 | |
| Short Human and Social course | | | S | 0,4 | |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 4** | | **1** | | | |
| Languages | | | S | 1 | |

SEC

| Semester 9 [30 ECTS] | | ECTS | Long/S hort | Coef | Teacher |
|---|---|---|---|---|---|
| **TU Advanced courses in data security and technology** | | 7.5 | | | |
| BigSec | Mobile Systems and Smartphone Security | | S | 0.34 | Melek ÖNEN |
| MPC | Optimization Theory with Applications | | S | 0.34 | Antonio FAONIO |
| Quantis | Quantum Information Science | | S | 0.34 | M.KOUNTOURIS |
| Clouds | Distributed Systems and Cloud Computing | | L | 0.67 | R. APPUSWAMY |
| MobiSec | Mobile Systems and Smartphone Security | | L | 0.67 | D. ANTONIOLI |
| DBSYS | Database Management System Implementation | | L | 0.67 | Paolo PAPOTTI |
| **TU Human and Social Sciences 3** | | 4 | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 3** | | 7.5 | | | |
| Long technical course | | | L | 0.67 | |
| Short technical course | | | S | 0.34 | |
| Long Human and Social course | | | L | 0.67 | |
| Short Human and Social course | | | S | 0.34 | |
| AddLang | Additional Language | | S | 0.17 | / |
| StudInit | Student Initiative | | S | 0.17 | / |
| Aware | Awareness-raising to research | | S | 0.34 | Co-teaching |
| **TU PROJECT** | | 10 | 200 h | | |
| Semester project | | | | | / |
| **TU Language 5** | | 1 | | | |
| Languages | | | S | 1 | |

| Semester 10 [30 ECTS] | ECTS | Long/S hort | Coef | Teacher |
|---|---|---|---|---|
| **TU Internship** | 30 | | | |
| **6th months** Internship in a company/research laboratory | | | 1 | |

# EMBEDDED SYSTEMS

| Semester 7 [30 ECTS] | | ECTS | Long/S hort | Coef | Teacher |
|---|---|---|---|---|---|
| **TU Computer systems** | | 10 | | | |
| OS | Operating systems | | L | 0.5 | L. APVRILLE |
| CompArch | Computer architecture | | L | 0.5 | Renaud PACALET |
| **TU Software engineering, security and networks** | | 10 | | | |
| SoftDev | Software development methodologies | | S | 0.25 | D. BALZAROTTI |
| Clouds | Distributed Systems and Cloud Computing | | L | 0.5 | R. APPUSWAMY |
| DigiCom | Digital communications | | L | 0.5 | Raymond KNOPP |
| ImCod | Image & Video Compression | | S | 0.25 | J.L. DUGELAY |
| Malis | Machine Learning and Intelligent systems | | L | 0.5 | Maria ZULUAGA |
| UMLEmb | Designing embedded systems with UML | | S | 0.25 | Ludovic APVRILLE |
| **TU Human and Social Sciences 1** | | 4 | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 1** | | 5 | | | |
| Long technical course | | | L | 1 | / |
| Short technical course | | | S | 0.5 | / |
| Long Human and Social course | | | L | 0.8 | / |
| Short Human and Social course | | | S | 0.4 | / |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 3** | | 1 | | | |
| Languages | | | S | 1 | |

SEM

| Semestre 8 [30 ECTS] | | ECTS | Long/ Court | Coef | Professeur |
|---|---|---|---|---|---|
| **TU Data processing technologies** | | **10** | | | |
| CompMeth | Computational Methods for digital communications | | L | 0.5 | Renaud PACALET |
| DigitalSystems | Digital systems, hardware - software integration | | L | 0.5 | Raymond KNOPP |
| **TU Algorithms, tools and methods for data processing** | | **10** | | | |
| AML | Algorithmic Machine Learning | | S | 0.5 | Pietro MICHIARDI |
| APPIOT | Iot Application Protocols | | S | 0.25 | Adlen KSENTINI |
| ASI | Advanced Statistical Inference | | L | 0.5 | M. FILIPPONE |
| DeepLearning | Deep Learning | | S | 0.25 | Pietro MICHIARDI |
| HWSEC | Hardware Security | | S | 0.25 | Renaud PACALET |
| SP4Com | Signal Processing for Communications | | S | 0.5 | Dirk SLOCK |
| Speech | Speech and audio processing | | S | 0.25 | Nicholas EVANS |
| FormalMeth | FormalMethods-Formal specification and verification of systems | | S | 0.25 | Rabea AMEUR |
| **TU Human and Social Sciences 2** | | **4** | | | |
| Business | Business simulation | | L | 1 | Kenneth POPE |
| Law | General introduction to law : contracts, setting up a business | | L | 0.5 | Dominique SERIO |
| ProjMan | Project Management | | S | 1 | J.J. AUREGLIA |
| SATT | Sociological Approaches of Telecom Technologies | | S | 0.5 | Marc RELIEU |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Kenneth POPE |
| WebStra | Web strategy and organizational Performance | | S | 0.5 | C. COMOLE-THEVENIAUD |
| **TU opening 2** | | **5** | | | |
| Long technical course | | | L | 1 | |
| Short technical course | | | S | 0,5 | |
| Long Human and Social course | | | L | 0,8 | |
| Short Human and Social course | | | S | 0,4 | |
| AddLang | Additional Language | | S | 0.2 | / |
| Aware | Awareness-raising to research | | S | 0.5 | Co-teaching |
| **TU Language 4** | | **1** | | | |
| Languages | | | S | 1 | |

SEM

| Semester 9 [30 ECTS] | | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|---|
| **TU Communicating and secure embedded systems** | | **7.5** | | | |
| UMLEmb | Designing embedded systems with UMLEMB | | S | 0.34 | L. APVRILLE |
| MobiSec | Mobile Systems and Smartphone Security | | L | 0.67 | D. ANTONIOLI |
| MobServ | Mobile application and services | | L | 0.67 | Navid NIKAEIN |
| SecCom | Secure communications | | L | 0.67 | Melek ÖNEN |
| SysSec | System and Network Security | | L | 0.67 | A. FRANCILLON |
| MPC | Multiparty Computation and Blockchains | | S | 0.34 | Antonio FAONIO |
| | | | | | |
| Property | Intellectual property law | | S | 0.5 | Dominique SERIO |
| B_INNOV | How to adopt the right posture and move from idea to market! | | L | 1 | Séverine HERLIN |
| ManagIntro | Introduction to Management | | L | 1 | Kenneth POPE |
| RDI | Responsible Digital Innovation: Risks, Ethics and Technology | | S | 0.5 | Kenneth POPE |
| TeamLead | Personal Development and Team Leadership | | L | 1 | Laura DRAETTA |
| CSE | The challenges of a sustainable economy | | S | 0.5 | Alain SAFA |
| **TU opening 3** | | **7.5** | | | |
| Long technical course | | | L | 0.67 | |
| Short technical course | | | S | 0.34 | |
| Long Human and Social course | | | L | 0.67 | |
| Short Human and Social course | | | S | 0.34 | |
| AddLang | Additional Language | | S | 0.17 | / |
| StudInit | Student Initiative | | S | 0.17 | / |
| Aware | Awareness-raising to research | | S | 0.34 | Co-teaching |
| **TU PROJECT** | | **10** | 200 h | | |
| Semester project | | | | | / |
| **TU Language 5** | | **1** | | | |
| Languages | | | S | 1 | |

| Semester 10 [30 ECTS] | ECTS | Long/Short | Coef | Teacher |
|---|---|---|---|---|
| **TU Internship** | **30** | | | |
| **6th months** <u>Internship in a company/research laboratory</u> | | | 1 | |