



Computer Networks and IoT Systems Master

**Computer Science department – Equipe Pédagogique Nationale
(EPN) 5 Informatique**

Study Regulations (règlement des études)

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Computer Networks and IoT Systems Master

Study Regulations

Preamble

The present document defines the rules of study of the Cnam master « Computer Networks and IoT Systems », MR11601C.

1 ORGANIZATION OF THE TRAINING

1.1 Organization of the curriculum

The training provided by the Cnam comprises 2 years of study, each year is divided into 2 semesters.

The detailed calendar was provided to all students at the beginning of the year.

The last semester is dedicated to an internship in a research and development unit at academic laboratory or industrial companies.

The weeks start on Monday morning (8:30 am at the earliest time) and end on Friday evening (6:00 pm at the latest), with an average of 30 hours of presence per week. If necessary, and on an exceptional basis, Saturdays and evening lessons (for language courses) can be included in the week.

The students follow the lessons according to a timetable established according to the availability of the speakers and the rooms. It can be modified at any time and is updated by the training secretariat.

1.2 Master curriculum

The educational content is validated by the Cnam's educational authorities. It is likely to evolve according to the needs of companies and/or educational institutions. The curriculum is fixed at the beginning of each academic year and is fixed by a training agreement ("contrat d'apprentissage") signed by the student.

The curriculum is given in the annex.

The teaching includes lectures, tutorials, practical work, projects and seminars.

The curriculum can include attendance to up to two scientific conferences per year, with free attendance for the student. Oral and/or written report on the attendance can be included in the evaluation of one of the teaching modules (coded as *US, Unité Spécifique*) of the corresponding semester, with specific instructions given by the master coordinator.

1.3 Internship program

The internship place is a place of training. As such, the periods spent during internship meet specific objectives and the internship supervisor has a role in evaluating the work and skills of the trainee.

The internship periods covers the last semester.

An optional internship can happen between the second and the third semester (summer), if authorized by the master coordinator.

Each internship needs an internship agreement that is signed both by the computer science department (EPN5) and the receiving institution or research unit.

Internships evaluations are part of the overall assessment:

- **Development of interpersonal and group work skills**

Objectives: to put the student in a real teamwork situation, allowing him to test and develop his interpersonal and communication skills.

- **Computer Networks and IoT Systems project management**

Objectives: to apply certain business knowledge to deal with a company problem by applying appropriate tools and methodologies.

- **Final year project (minimum 500 hours of actual work)**

Objectives: to place the student in a situation that will enable him/her to carry out a Master's level mission ("BAC +5") in a professional environment, to validate the transfer of the academic training contributions into a professional reality.

Internship intermediate and final reports will have to be prepared and submitted by the intern upon verification by the internship supervisor, accordingly to a calendar fixed by the coordinator.

2 ASSIDUITY

2.1 Obligation of attendance

The attendance of students is compulsory at all sessions. If a professor is absent, and the absence is notified in advance, attendance to the session is not required.

Each teaching module professor can decide to collect attendance sheets depending on the teaching module modalities; in such a case, attendance sheets are to be completed and signed at the beginning of each session by the students, and regularly sent to the master coordinator.

All late arrivals and absences must be justified to the secretariat. In case of absence for health reasons, students must produce a medical certificate and/or a work stoppage within 48 hours, working days.

Exceptionally, leave of absence may be granted if the student makes a justified request at least 72 hours in advance.

2.2 Abstentions and sanctions

When two unjustified absences have been noted in a module, the student is considered to have failed and is therefore not authorised to sit the examination in the first session.

Similarly, in the case of justified absences exceeding 20% of the volume of a course, the student is considered to have failed the course and is therefore not allowed to take the examination in the first session.

The above limitation is not applicable in the case of long-term illness, pregnancy, disability or exceptional decision of the educational commission and the person in charge of the course.

3 BEHAVIOUR

The student must behave in such a way as to ensure that the lessons run smoothly.

Any inappropriate behaviour during a lesson (late arrival, chatting, use of technological tools not foreseen by the course such as mobile phones and devices as well as computers, inappropriate posture, etc.) may be sanctioned by the professor present by an exit from the classroom. The student will then be considered absent without justification for the said session, the reason for which must be written on the attendance sheet by the professor. The student will have to go to the office of the administrative manager to wait for the next session.

3.1 Educational Commission

In the event that a student repeatedly behaves in a way that does not comply with the present rules, the person in charge of training may refer the matter to the master educational committee composed of the teaching unit responsible professors. The role of the committee is to make the student responsible, in the event of a breach, to bring him/her to question his/her behaviour by becoming aware of its consequences, to remind him/her of the meaning and usefulness of the law as well as the requirements of life in a community and the investment of the learning process. Each sanction is individualized and adapted to the particular case of the student.

3.2 Disciplinary action

The Cnam Disciplinary Board is convened by the General Administrator for serious breaches of the internal regulations.

These internal sanctions are taken independently of any complaint or criminal proceedings.

4 KNOWLEDGE CONTROL

4.1 Organization of examinations

The assessment of knowledge is based on an examination for each subject taught. These tests give rise to a numerical mark (out of 20) for each subject and each type of teaching for the first examination session. The modalities of these tests are fixed by the professor in charge at the beginning of the course. In the event of absence from a test, for whatever reason, the student is invited to the second examination session, unless the jury decides otherwise.

Access to the examination room remains authorized to any late candidate who arrives after the opening of the envelopes containing the subjects, but only if the delay does not exceed one hour. No additional time for composition can be granted to the candidate concerned. In addition, the late arrival and the reasons for it must be recorded in the minutes of the examination. No candidate is allowed to leave the examination room before one hour after the distribution of the subjects.

Any student who does not attend the examination will be given a mark of 0/20 for that examination.

Second session

The student with less than 10/20 in the first session exam is expected to be present for the second session exam, independently of his/her average. In case the student does not want to the second session exam, he/she should be ask authorization to the professor in charge of the teaching module.

Second session marks can be subject to specific set by the professor in charge of the teaching module.

The marks of the second session replace all the marks of the first session (examination, continuous assessment, practical work, homework etc.).

Fraud

Any fraud committed during an examination or any inappropriate behaviour likely to disturb the smooth running of the examination will result in the nullity of the examination for the student concerned and a mark of 0/20.

The person concerned may also be subject to a disciplinary sanction, including a permanent ban on registering for and taking any examination leading to a diploma from a public higher education establishment. Similarly, the person concerned may be summoned to appear before the Cnam Disciplinary Board.

Plagiarism

In all reports, dissertations and assignments, the student is expected to cite his or her sources and write his or her own analysis. Quotations or definitions must be enclosed in quotation marks, otherwise they may be considered plagiarism. As a reminder on the laws governing plagiarism:

- Section A335 - 2 on plagiarism
- Article 433-17 of the Penal Code for the related punishment:

"The use, without right, of a title attached to a profession regulated by the public authority or of an official diploma or of a quality whose conditions of attribution are fixed by the public authority is punishable by one year's imprisonment and a fine of 15,000 euros.

Natural or legal persons guilty of the offence provided for in this section shall also be liable to the following additional penalty: prohibition of the activity of provider of continuing vocational training within the meaning of Article L. 6313-1 of the Labour Code for a period of five years."

Coefficients and ECTS

The coefficients of the subjects for the average mark computation, subject to knowledge control for each year of study, are fixed by the pedagogical director of the Master and are indicated in the training agreement ("contrat d'apprentissage").

5 SANCTION OF STUDIES

5.1 Criteria for success

The curriculum is organized in blocks of courses as indicated in the annex.

The assignment of teaching modules to blocks are given in the annex.

The validation of the current year is conditional on the fact that

- the average grade of each block is higher or equal to 10/20.
- the general average grade is higher or equal to 10/20.

The block grade and the global grade of the year is obtained with the average of the teaching modules (US) weighted according to the weight of each US in number of ECTS.

The results will not be published until the secretariat has received the examination papers and the marks for the ongoing tests.

Students may, within 15 days of the publication of the results, request to consult their papers. A mark of less than 7/20 invalidates the subject, which will have to be retaken in the make-up sessions. The mark of the second session, whatever it may be, replaces the mark of the first session.

A jury at the end of each semester is organized to study the case of students with difficulties and to try to bring solutions through encouragement, support and closer supervision.

In the event of failure at the second session (less than 7/20), the student may submit a request for an indulgence to the end-of-year jury, explaining, if necessary, the difficulties encountered.

The assessment of the student's situation, in the light of the ECTS credits accumulated, is made by the jury which brings together the relevant Cnam professors, the apprenticeship supervisors and the training partners. This jury is sovereign.

5.2 Special situations

In the event of failure to meet the previously defined success criteria at the end of the first year, the jury may:

- Organize an extraordinary commission, possibly including the internship supervisor if the student has failed the internship, the student, the teaching tutor and the person in charge of the training in order to agree on the continuation of the training.
- Decide the student has to repeat the same master year (M1 or M2), and redo the exams of the year the student failed, indicating which ones in the re-admission letter.
- Decide to admit the student at the next master year (M2) under the condition that the student validate the teaching modules of the M1 during M2, by redoing corresponding examinations. The list of M1 teaching modules are indicated in the M2 admission letter.

5.3 End of study project defense

At the end of the second year (September), the students are invited to present their work and the results obtained during their internship in front of a jury presided by the master coordinator or an appointed replacement, the internship supervisor, and the master professors. Under certain conditions, the defense can be confidential, at the request of the company.

A third party, independent of the training partners, may be called upon to provide an outside perspective.

The internship work is evaluated with the following weighting:

- Written thesis: 30
- Oral presentation: 20
- Work in a company: 50

5.4 Graduation

At the end of each year, the jury (which brings together the teaching modules professors) meets to examine all the marks and assessments obtained by each student during their studies.

The Master degree of the Cnam in Computer Science is awarded at the end of the course by the jury when the conditions mentioned in section 5.1 have been met.

The official title appearing in the diploma parchment will be the one of the associated ministry accredited national diploma "Master Sciences, technologies, santé mention Informatique Parcours Systèmes Embarqués Mobiles Sûrs et objets connectés".

The global average is obtained on all the US weighted according to the weight of each US in number of ECTS.

The jury, which is sovereign, can, without having to justify it, modify the verdict in a way that is favorable to the student.

Student Signature

First-name :

Last name :

Date :

6 Appendix

6.1 Blocks

The blocks for the master in Computer Networks and IoT Systems (MR11601C) are as follows

For the first year, M1:

- scientific block,
- non-scientific block.

For the second year, M2:

- scientific block;
- non-scientific block;
- internship block.

6.2 List of M1 academic subjects with their coefficients

M1 – Semester 1

Scientific block :

Code UE	ECTS	Teaching module title	Acronym
USEEJ6	6	Telecommunications Networks	TELNET
USEEN2	6	Operating Systems & Computer Architecture	OSCA
USEEN3	4	Operations Research	OR
USRS2H	0	Refresh in programming languages	PROG1

Non-Scientific block :

Code UE	ECTS	Teaching module title	Acronym
USEEK3	4	Contemporary Economic Issues	CEI
USEEJ9	6	French as A Foreign Language	French

M1 – Semester 2

Scientific block :

Code UE	ECTS	Teaching module title	Acronym
USEEJ7	6	Networks : Complements and Applications	NCA

USEEN1	6	Computer Systems Modeling and Verification	CSMV
USEEJ8	6	Wireless Mobile Networks	WIMOB
USEEK7	6	Network Security	NETSEC

Non-Scientific block :

Code UE	ECTS	Teaching module title	Acronym
USEEK1	6	English	English
USEEK2	4	Engineer Job	ENGJOB

6.3 List of M2 academic subjects with their coefficients

M2 - Semester 3

Scientific block :

Code UE	ECTS	Teaching module title	Acronym
USRS78	0	Basis in python programming	PROG2
USEEN4	6	Network Evolutions with Virtualization and Automation	NEVA
USEEK8	6	Advanced Projects in Networks and IoT Systems	PROJ
USEEK9	2	Internet of things	IOT
USEEN5	6	Embedded Systems: Applications and Cybersecurity	ESAC
USEEN6	6	Artificial Intelligence and Machine Learning for Networks and IoT	AIML
USEEN7	1	Scientific Communications	SCICOM

Non-Scientific block :

Code UE	ECTS	Teaching module title	Acronym
USEEJ9	6	French as A Foreign Language	French
USEEK1	6	English	English

M2 – Semester 4

Internship block :

Code UE	ECTS	Teaching module title	Acronym
UAEE2B	21	Master thesis – internship	-