Regulations of the Second-Level Study Course in Computer Engineering (Class LM-32)

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1. Premises and aims

The present Regulations govern the organizational and teaching aspects of the Course of Studies in accordance with the regulations in force, the Statute of the International Telematic University UNINETTUNO, the University Didactic Regulations, as well as other regulations in force.

This Course of Studies belongs to the Faculty of Engineering and is supervised by the Managing Collegial Board which is represented by the Faculty Council; the role of teaching structure of reference for administrative purposes is represented by the Engineering Faculty. The Collegial Board carries out its activities in accordance with the Statute and the regulations in force on the subject, in so far as they are not governed by these Regulations.

2. Access Modes and Rules for ECTS University Training Credits Recognition

The enrolment to the Study Course can take place throughout the Academic Year in order to be consistent with the request for flexibility in access that the International Telematic University UNINETTUNO must have; this access model conditions the course delivery models that are described below. To be admitted to the Second-Level Degree Course (*Laurea Magistrale*) of the Engineering Faculty one must have earned a Three-year or Second-Level (*Laurea Magistrale*), a Degree as per previous regulations or a degree, in particular:

1) Earning a three-year degree, second-level degree as per previous regulations or a degree belonging to the class of degrees in engineering allows a direct access, namely without training debits to the Second-Level Degree of the Engineering Faculty;

2) Earning a three-year or second-level, a degree as per previous regulations or a degree not belonging to the classes of degrees in engineering requires, instead, the assignment of training debits.

Further to a request of assessment of the study program of the title he earns, the student is assigned any training debits and/or credits and/or are recommended to follow some courses that are propedeutical to second-level degree chosen. The student must submit a request for assessment of his study path connected to the study title he earned through an application for recognition of the ECTS University Training Credits by means of a special form available on the University's portal (following path Enrollment ◊ Training Credits Recognition. The assessment is made by the Commission for the Recognition of the ECTS Credits, appointed by the Engineering Faculty Council.

The ECTS training credits can derive previous certified study paths (even if not completed), from professional activities and from certifications supported by appropriate documentation. The training debits assigned by the Commission must be cancelled before the enrolment to the modules of the Second-Cycle Degree Courses; the cancellation entails that the student enrolls in the modules related to the training modules assigned by the Commission and passes the corresponding exams; the grades earned for these exams are not counted to calculate the finale average grade.

The recommended exams are communicated by the Commission in order to allow the student to acquire skills that are useful for his second-level degree study path. These modules are not reported (not "traced", according to the terminology mentioned below in this document) and since they are not training debits and do not require to pass the corresponding exam. It is the student's duty and interest the check and possible acquisition or full mastery of the skills offered by the modules corresponding to the recommended exams.

The number of ECTS credits resulting from the recognition establishes the year in which the student is enrolled:

0-44 ECTS credits: first year

At least 45 ECTS credits: second year.

3. Structure of the Study Programs

At the following link you can find all information about the Second-Level Degree Course in Computer Engineering.

The Second-Level Degree in Computer Engineering (LM-32) aims at training a high-level professional profile possessing skills in the Information Engineering, expert in engineering, programming, development, use and management of complex computer applications and systems, computer networks, processing systems and data and information management. The graduate will be able to design, develop and contribute to innovation in the framework of information processing systems and automation systems.

This Degree Course pursues the characterizing objectives of the LM-32 (Computer Engineering) class with a study path aimed at supplying specific knowledge of languages, advanced model and methods of the sector of the information processing systems, needed to design, realization and control of complex computer systems. In order to achieve these objectives and in order to privilege an interdisciplinary approach, the training path deepens mathematical and electronic issues, develops a wide theoretical knowledge in the field of computer engineering and skills in the sector of automatics.

Following these considerations, therefore, the learners are offered groups of courses referable to two main specialized thematic areas (Programming Area and Big Data Area) to make them capable of dealing, by widening their theoretical learning, with multiple practical application and problems characterized by a high degree of complexity. The courses proposed for the Second-Cycle Degree Course in Computer Engineering refer to three fields. The Software field refers to the design of complex software packages, service and databases management. The Hardware field, instead, supplies specific competences that refer to the architecture of processing complex systems, computer networks and web-based services, databases as well as electronics and basics of robotics and automation. Finally, in order to suitably complete the training of a Second-Level graduate in Engineering, we deemed appropriate deepening mathematical skills in the field of numerical calculus and supply basic knowledge of Law in the field of juridical computer science as complementary skills.

The study program includes two paths: the first one, named as "Programming and Security" and the second one as "Big Data". The training path is structured on two years; the two paths differ for about a half of the modules, both sharing the basic ones, but differentiating since the first year. The "Programming and Security" path aims at consolidating the competences of the students acquired in the three-year degree course, in particular, on the one hand, on the development and design of complex software packages and, on the other hand, on a deep focus on aspects linked to hardware, taking in to account system programming and micro-controllers' programming in all fields of automation and robotics. The "Big Data" path aims a providing a deep knowledge on the creation and management of big databases targeted to massive analytical investigation, which is presently of great interest, above all for big companies, for example, in customers' profiling and characterizing and searching for their needs.

In the framework of the Study Course it is possible to envisage stages and visits to businesses for students willing to carry on face-to-face activities. It will also be possible to envisage seminars, organized in the distance mode thanks to the computer-based technologies made available by the University. A lot of importance will be given to the preparation of the final exam which represents a veritable summary of the training activities carried on; under the supervision of one or more professors (also at research centers from which many UNINETTUNO professors come from), the student will be able to develop an original and innovative work in one of the many sectors presented during the study path.

The Study Program of the Second-Cycle Degree Course in Computer Engineering includes twelve modules and among them, one at the student's choice, structured in two years. Seen the importance of the final exam in terms of ECTS credits and, consequently of the work requested to suitably develop the graduation paper, whether it has a theoretical or experimental character, the Study Program includes seven modules at the first year and five ones at the second year, and an optional module included for both paths.

Specific aspects related to the software field are widely treated in the methodologies of development of complex programs, in the analysis of the software lifecycle in traditional and innovative processes as well as in the management of hardware resources through system programming techniques. Courses dealing with more modern databases with specific reference to the analysis of big data numbers, namely the so-called Big Data sector, are included in this context. The picture is completed with cross-field notions related to systems and networks cybersecurity.

The modules that are specific of the hardware field supply competences integrating the previous ones. This field aims at supplying specific skills in the design of the architectures of processing systems, management of the various components and peripherals, on the various infrastructures and architectures of computer networks, with specific reference to the technologies that are nowadays mainly utilized and more commonly offered services, and in particular those referring to databases. They also provide notions of robotics, industrial automation and programming of microcontrollers.

Finally, the study program includes modules aimed at completing the training of a modern second-cycle graduate in computer engineering, supplying competences in law in the sector of juridical computer science and advanced mathematics and in numeral calculus. A module at the student's choice is envisaged to allow him to further customize his training path. The course is comprised in the second year when the student will be prepared enough to suitably choose the module based on his own personal interests or employment prospects to which he aspires after graduating. The University will propose him a set of modules; some closely linked to computer engineering, other ones belonging to other disciplinary fields such as industrial engineering, management engineering, economics and others offered by the other Faculties of the University.

As regards the study program of the two paths, see the following links: Programming and Security and Big Data.

4. Structure of the Teaching Activities

The teaching activities of this Study Course, according to UNINETTUNO's psycho-pedagogic-didactic model, establishes that, for each academic year, the course delivery must be repeated for three times. When they enroll in the Study Course, the students can access all the contents of the courses that are available in the Didactic Cyberspace without constraints of course delivery periods. In the course delivery period the student is followed his learning processes by the teacher / tutor of the subject (hereafter, simply the Tutor; instead, the Area Professor performs control and supervisory tasks). The interaction with the Tutor typically takes place a distance, mainly – but not exclusively - through the interactive tools available in the UNINETTUNO portal and via e-mail, possibly face-to-face based on the scheduling of the teaching activities posted in the University's portal or by appointment.

Each course delivery period has a duration of two and a half months. The students, through their own "Student's Page" and the "My Courses" feature, autonomously enroll in the disciplines of their interest, respecting the constraints of propaedeuticity and year of enrolment.

The ECTS University Training Credits corresponding to each training activity are acquired by the student after successfully passing a final exam or after another mode of assessment of the acquired knowledge, according to what is established by the Exam Commission.

At the end of each of the three course delivery periods an examination session is carried out, each consisting of two turns. Each turn is divided in more days, but it is considered a single session; the exams are held at UNINETTUNO's headquarters at the technological poles (exam centers). The students can book their exams at the headquarters or at the technological poles within the following limitations: 1) the enrolment to the module has to have taken place not after the half of course delivery period preceding the session for which the student wishes to book; 2) the tutor's admission of the student to the exam is required based on the module's specific modes; 3) it is not possible to enroll in the same exam in the same session in more exam centers; 4) at each exam center it is possible to take maximum 3 exams lasting 2 hours or 1 exam lasting 3-4 hours and 1 exam lasting 2 hours (instead, it is possible to enroll in several exams in different exam centers on different dates).

The correction of the papers and the publication of the results is carried within the following working 10 days from the date of the last day of the exam session. Any oral exams, organized at the Area Professor and/or Tutor's discretion, take place in Rome's headquarters; in particular cases, they take place at distance at the presence of the guarantor of the University who sit by the student.

For the final exam of title awarding (Graduation exam) 4 sessions are envisaged: the autumn (October/November), Winter (January/February), Spring (March/April), Summer (July) session. Detailed information are included in the Regulations for the Graduation Thesis.

5. Course Delivery

At the beginning of each delivery period, the Tutor sends all students a welcome letter including information on the course, including the prerequisites to be admitted to the exam.

The students' activity on the platform is defined as "tracing" and allows the Tutor to check the learning progress and to report on it. The admission to the exam has, as its first prerequisite (to which those of the course must be added) a tracing reporting the complete watching of all the videolessons. The self-evaluation processes and interactive activities with the Tutor are also traced and represent a mid-term assessment element to be admitted to the exam.

The interactive real-time meetings (Interactive Classrooms) are included into a schedule by the Tutor and – if they are of general interest – further on posted in the section of the Delivered Interactive Classrooms in the Cyberspace, to be used by the students who were unable to follow them live. They complete and/or update the contents of the videolessons and, consequently represent an integral part of the exam program, if specified by the Tutor.

Exercises, possible virtual laboratories and other teaching activities are used as tools to assess the students' mid-term learning progress, namely, during the delivery period, consequently, they can represent a fundamental feedback tool. This is useful to the tutor to scale his teaching activities and to the student to get aware of his learning progress in order to scale his study strategies for the exam.