ASIIN Seal & EUR-ACE®

Accreditation Report

National Diploma
Civil Engineering
Computer Engineering
Electrical Engineering
Industrial Engineering
Electromechanical Engineering
Mechatronics Engineering

Provided by
École superieure d'ingénieurs et des études technologiques (ESIET), Tunis

Version: 07 December 2021

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A About the Accreditation Process

Name of the degree program (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Génie civil	Civil engineering	ASIIN, EUR-ACE®	/	03
Génie informatique	Computer engineering	ASIIN, EUR-ACE®	/	04
Génie électrique	Electrical engineering	ASIIN, EUR-ACE®	/	02
Génie industriel	Industrial engineering	ASIIN, EUR-ACE®	/	06
Génie éléctromécanique	Electromechanical engineering	ASIIN, EUR-ACE®	/	01, 02
Génie mécatronique	Mechatronics engineering	ASIIN, EUR-ACE®	/	01, 02
Date of the contract: 25.11.2020 **Submission of the final version of the self-assessment report:** 06.07.2021 **Date of the onsite visit:** 21./22.10.2021 **Online**				
Peer panel: Prof. Dr. Horst Brezinski, Technical University of Bergakademie Freiberg Prof. Dr. Markus Esch, Saarbrücken University of Applied Sciences				

[1] ASIIN Seal for degree programs; EUR-ACE® Label: European Label for Engineering Programs.

[2] TC: Technical Committee for the following subject areas: TC 01 - Mechanical Engineering/Process Engineering; TC 02 - Electrical Engineering/Information Technology; TC 03 - Civil Engineering, Geodesy and Architecture; TC 04 - Informatics/Computer Science; TC 06 - Engineering and Management, Economics.

Prof. Dr.-Ing. Moustafa Nawito, IU International University of Applied Sciences Prof. Dr.-Ing. Tim Ricken, University of Stuttgart Prof. Dr.-Ing. Hartmut Ulrich, Ruhr West University of Applied Sciences Martin Holzwarth, MAHO Consulting Martin Holzwarth Dominik Kubon, student at RWTH Aachen	
Representatives of the ASIIN headquarter: Sophie Schulz, Jan Philipp Engelmann	
Responsible decision-making committee: Accreditation Commission	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015 Subject-Specific Criteria of Technical Committee 01 – Mechanical Engineering/Process Engineering as of December 9, 2011 Subject-Specific Criteria of Technical Committee 02 – Electrical Engineering/Information Technology as of December 9, 2011 Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy and Architecture as of September 28, 2012 Subject-Specific Criteria of Technical Committee 04 – Informatics/Computer Science as of March 29, 2018 Subject-Specific Criteria of Technical Committee 06 – Engineering and Management, Economics as of September 20, 2019	

B Characteristics of the Degree Programs

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double / Joint Degree	f) Duration	g) Credit points / unit	h) Intake rhythm & First time of offer
Civil Engineering	Diplome national d'ingénieur en génie civil/ National Diploma in Civil Engineering	/	7	Full time	/	6 semesters	180 ECTS	Yearly Since 2001
Computer Engineering	Diplome national d'ingénieur en génie informatique/ National Diploma in Computer Engineering	/	7	Full time	/	6 semesters	180 ECTS	Yearly Since 2001
Electrical Engineering	Diplome national d'ingénieur en génie électrique/ National Diploma in Electrical Engineering	/	7	Full time	/	6 semesters	180 ECTS	Yearly Since 2001
Industrial Engineering	Diplome national d'ingénieur en génie industriel/ National Diploma in Industrial Engineering	/	7	Full time	/	6 semesters	180 ECTS	Yearly Since 2001
Electromechanical Engineering	Diplome national d'ingénieur en génie électromécanique/ National Diploma in Electromechanical Engineering	/	7	Full time	/	6 semesters	180 ECTS	Yearly Since 2001
Mechatronics Engineering	Diplome national d'ingénieur en génie méchatronique/ National Diploma in Mechatronics Engineering	/	7	Full time	/	6 semesters	180 ECTS	Yearly Since 2011

For the National Diploma in Civil Engineering the institution has presented the following profile in the self-assessment report:

[3] EQF = The European Qualifications Framework for lifelong learning

"The civil engineer is responsible for designing, constructing and rehabilitating buildings, infrastructures and works of art essential to human activities. These are the missions of the civil engineer. When placing an order, the first task of the Civil Engineer is to carry out the complete study of the preliminary design. It considers all the consequences of the planned construction on the environment, the habitat, the economy of the territory concerned. An analysis on the ground allows him to make the topographical and geological surveys that will determine the feasibility of the project as well as the most suitable methods and materials to carry it out while ensuring the safety of the populations and the sustainability of the building. The Civil Engineer is then responsible for calculations and simulations, the invitation to tender and the selection of subcontractors. He examines the plans and modifies them if necessary. He supervises the realization of the works from their beginning to their completion. He ensures compliance with standards and regulations, paying particular attention to the safety of workers and the public. He also ensures that the progress of the work corresponds to the deadlines and writes the reports intended for the contracting authority. The role of the Civil Engineer extends to maintenance and repair operations of existing structures.

In order to properly carry out these activities, the Civil Engineer benefits from:

- Solid fundamental scientific training allowing him to go beyond the black box aspect of various technologies and to be a source of innovation in the exercise of his profession.
- Training in economics, management, communication techniques for understanding the mechanisms governing society and business, the workings of the national economy, setting up and managing large projects.
- Solid training in the fundamental disciplines of Civil Engineering: Soil mechanics, materials, reinforced concrete, hydraulics...
- Specialization in the third year in one of the branches of Civil Engineering: Infrastructure and Planning - Hydraulics and Environment and Works and Construction."

For the National Diploma in Computer Engineering the institution has presented the following profile in the self-assessment report:

"In computer engineering, engineers have a good knowledge of the structure of computers and they design and develop software and systems. This type of engineering encompasses

several specialized fields including systems, programming, hardware and software architecture, networks and telecommunications, digital electronics, embedded systems, industrial computing, software engineering, robotics and technology, artificial intelligence.

In general, a solid culture in the field of IT, both in terms of issues and developments, is recommended. It is a constantly evolving industry, so IT engineers must demonstrate passion and self-discipline to constantly update their knowledge.

Opportunities

Thanks to his versatility, the Computer Engineering engineer works in several sectors.

• Internet engineering: creation of sites, online services (e-commerce ...), information research...

• IT oriented towards decision-making and logistics

• Business information systems: management, documentation, communication...

• Security: anti-intrusion systems, authentication (cryptography), etc.

• Imaging: biomedical imaging, synthesis, animation...

• Telecommunications: from coding information to new services...

• Computing for / with other sciences: bioinformatics, linguistic computing, etc."

For the National Diploma in Electrical Engineering the institution has presented the following profile in the self-assessment report:

"It is a multidisciplinary engineer with a bundle of multiple skills in the field of electrical engineering. The skills acquired at the end of his training allow him to work in a team, to intervene in high-tech fields including renewable energies, telecommunications, robotics and on-board computer systems, to understand and solve complex problems and to manage a team of specialists on interdisciplinary projects in order to design these new technologies.

Career opportunities

The electrical engineer can work in the field of very large-scale integrated circuits and microprocessors, networks, instrumentation and control, security, telecommunications, renewable energies of distribution and production of electrical energy, d industrial automation….

To carry out these different activities, the electrical engineer has:

- A solid general education that is focused on mastery of communication and expression techniques in French and English and knowledge of the company, its organization and its management.

- A solid fundamental scientific training: Mathematics - Applied Physics - Probability and Statistics - Operational research - Numerical analysis…

- A solid technological training in the specialty of Electrical Engineering based primarily on Automation, Electronics, Electrical Engineering, Computing and Telecommunications."

For the National Diploma in Industrial Engineering the institution has presented the following profile in the self-assessment report:

"Industrial engineering encompasses the design, improvement and installation of integrated systems. It uses knowledge from the mathematical, physical and social sciences, as well as the principles and methods specific to "engineering" or, to the art of the engineer, in order to specify, predict and evaluate the results resulting from these systems.

The objective of training in industrial engineering is to provide the various sectors of the economy (manufacturing production, small and medium-sized enterprises, services, design offices, banks, etc.) with engineers capable of designing, managing, organizing. Another objective is to optimize the operation of complex systems for the production of goods or services, systems that integrate both human, financial, material and immaterial resources and the flow of materials, materials, energy and information, etc.

Opportunities

Thanks to his versatility, the Industrial Engineering engineer works in several sectors.

Industry: automotive, aeronautic, electrical, mechanical equipment, food industry, pharmaceutical industries, wood and furniture, etc.

Services: telecommunications whether in equipment manufacturers or operators, banks and insurance, health (clinics and hospitals), etc.

Design offices, research centers, universities and schools, etc.

He occupies key positions within the strategic staff of the company. Its missions cover various and varied fields such as: production, methods office, quality, supply chain, organization and information system, project manager, maintenance, planning, finance, etc."

For the National Diploma in Electromechanical Engineering the institution has presented the following profile in the self-assessment report:

The electromechanical engineer is an engineer capable of integrating the fundamental and innovative aspects of mechanics and electricity. It designs and manufactures facilities and processes used in several industry sectors.

The objective of electromechanical engineering training is to train engineers capable of:

ensure the manufacture, assembly, verification and maintenance of electromechanical equipment, developing the assembly of prototypes and the manufacture, testing and installation of electromechanical devices in order to ensure high quality manufacturing, write guides for the evaluation, operation and maintenance of industrial installations, ensure that the designed product meets safety and quality standards as well as the technical specifications required, contribute to the mastery and development of new technologies.

The opportunities for this training come from the versatility of the electromechanical engineer who occupies key positions within the strategic staff of the company. Its missions cover various and varied fields such as: production, methods office, quality, supply chain, organization and information system, project manager, maintenance, planning, finance, etc.

The electromechanical engineer is involved in several sectors such as: Industry: energy, aviation, medicine, automation, etc. Services: telecommunications, maintenance, supply of utilities, etc. Design offices, research centers, universities, etc."

For the National Diploma in Mechatronics Engineering the institution has presented the following profile in the self-assessment report:

"Mechatronics is a new discipline combining mechanics, electronics, computer science and new information and communication technologies. The alliance of these different fields makes it possible to think of a product differently from its conception to recycling through its maintenance. Mechatronics aims to create increasingly intelligent components and solutions to meet requirements. He is an engineer capable of designing and developing products with high benefit. The mechatronic engineer is an integration specialist. He has extensive knowledge in electronics, electrical engineering, automation, mechanics and on-board computing.

The mechatronic engineer is a design, studies and development, validation, automotive engineer, Project Manager, Robotics Engineer

The applications of mechatronics are very diverse and varied: Aeronautical sector, Automotive industries, Naval industry, Design offices, Industrial research, Consulting companies, Railway industry, Medical sector, Consumer electronics, Public works machines, Robotics mobile, etc.”

C Peer Report for the ASIIN Seal[4]

1. The Degree Program: Concept, content & implementation

Criterion 1.1 Objectives and learning outcomes of a degree program (intended qualifications profile)

Evidence:

- Objective-module-matrix per program
- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:
The École superieure d'ingénieurs et des études technologiques (ESIET) has described program objectives and program learning outcomes for all degree programs under review. The peers refer to the Subject-Specific-Criteria (SSC) of the Technical Committees Mechanical Engineering/Process Engineering (01), Electrical Engineering/Information Technology (02), Civil Engineering, Geodesy and Architecture (03), Informatics/Computer Science (04) and Engineering and Management, Economics (06) respectively as a basis for judging whether the intended learning outcomes of the programs, as defined by ESIET, correspond with the competences as outlined by the SSC.

The peers approve that for each program a detailed presentation of learning outcomes and graduates' profiles is given in combination with learning outcome matrices matching the described learning outcomes with the respective modules of the programs. For some of the degree programs, ESIET also provides graduate profiles with potential fields of employment, while for others this information is not specifically given. The peers acknowledge that the qualification objectives and learning outcomes are generally updated in cooperation with stakeholders such as students or industry, although the precise structures and procedures, in which this is done, remain unclear.

[4] This part of the report applies also for the assessment for the European subject-specific labels. After the conclusion of the procedure, the stated requirements and/or recommendations and the deadlines are equally valid for the ASIIN seal as well as for the sought subject-specific label.

At the end of their studies, graduates of the Civil Engineering program should be able to use the common types of construction materials, to identify and design building structures, to analyze urban structures, and to diagnose problems within a given civil engineering work. For these purposes, they need to implement project management skills and to have mastered the relevant software for the design, modeling and numerical calculation of structures.

Graduates of the Computer Engineering program shall be able to design and model applications using methods, standards and design languages. To do so, they must have the capacity to develop software by using different programming languages and development platforms. They should be able to master network and computer systems design and administration, embedded systems design and associated software development. Finally, they should know how to design, manage and analyze data.

The aim of the Electrical Engineering program is to train the students so that they will be able to design and implement measurement and data acquisition systems and to design and master the various communication tools and electronic circuit development tools. Moreover, the graduates are expected to use adequate computer tools for the design and simulation of systems. Finally, they shall be able to create and further develop regulation strategies for industrial processes.

Graduates of the Industrial Engineering program shall be able to analyze industrial systems with regards to their function and impact, to design, manage, and optimize production systems, and to make strategic and operational decisions on this basis. Thanks to their versatile education, they should be able to work in various sectors, both in industry and services.

The Mechatronics Engineering graduates shall be able to integrate different technologies within the same mechatronic system and to constantly improve the performance of that system. They shall acquire the necessary knowledge and competencies in order to analyze, model and optimize a complex mechatronic system and to master the main parameters of a mechatronic system, which are energy exchanges, electromagnetic interactions, and control-command. Moreover, they must be able to adequately use different computer tools for the validation, simulation and control of mechatronic systems. Summarizing, they must be shall be capable to intervene in all stages of the design of a robot – from mechanics to full automation.

The aim of the Electromechanical Engineering program is to produce graduates who should be able to design, implement and improve an electromechanical system. To do so, they must be familiar with different computer tools for the validation, simulation and control of electromechanical devices. Moreover, they are expected to develop and apply methods of industrialization and implement production processes. At the same time, they shall be able

to develop quality procedures, to comply with applicable standards and to implement corrective actions. Finally, they must have the necessary skills and competences in order to plan and supervise production and maintenance procedures and to optimize energy consumption.

In general, the peers acknowledge that the objectives have been selected in accordance with the title of the degree programs. However, they notice that the objectives of the programs are formulated in a rather generic manner and often cover rather general competences, thereby not always differentiating sufficiently between the different programs. Moreover, all programs cover a very wide range of subjects, with only quite limited options for students to specialize in any direction. This gives rise to the impression that students receive a generalist rather than an in-depth education.

Many of the learning outcomes as set by ESIET refer to a relatively basic level of competences in a higher education context. For instance, in the Civil engineering program, graduates should be able to "*identify* construction processes", "*study* the physical, mechanical and hydraulic properties […]", or "*understand* the main types of networks […]".

Furthermore, the qualification objectives of all degree programs clearly show a vocational/professional focus and lack any scientific aspect, which would be absolutely necessary on level 7 of the European Qualifications Framework (EQF). This becomes even more apparent when looking closer at the individual modules, where the objectives and learning outcomes do not cover any research skills or methodological competencies. Thus, the qualification objectives indicate a very high level of applied relevance. The peers, however, emphasize the necessity of students being trained to do scientifically sound work, given that they aim at obtaining a degree at EQF level 7. The program coordinators emphasize that the programs are geared towards the needs of the Tunisian labor market (mainly in the field of production, operation and maintenance) and are not aimed at producing graduates who pursue a research career, as they are officially not eligible for PhD programs.

The peers are convinced that due to the lack of scientific and methodological skills and advances technical knowledge, the graduates of the two programs will not be able to take up appropriate (senior) positions in companies, in particular in direct comparison with graduates of a master's degree of a standard corresponding to EQF level 7. Similarly, the peers do not see the possibility of graduates of the two programs pursuing a research career, for example in the form of a PhD. Given the very broad orientation of the degree programs, which miss specification in the sense of deepening or broadening knowledge, as well as the lack of information on career opportunities and the scientific nature of the degree programs, the peers conclude that the qualification objectives do not correspond to EQF level 7.

The industry representatives emphasize that graduates of the programs are welcome on the labor market due to their practical skills in their respective disciplines. The peers appreciate this, but at the same time notice that their occupations appear to be mostly oriented towards application and that they do not necessarily reflect competences related to EQF level 7.

In summary, the peers are of the opinion that although ESIET has defined qualification objectives for all degree programs, these must be rewritten as they currently do not match EQF level 7 and lack certain aspects, in particular the scientific aspects of the educational programs and the precise employment opportunities of the graduates but also partly their precise and program-specific orientation.

Criterion 1.2 Name of the degree program

Evidence:

- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:
The expert panel considers the names of the study programs to be adequately reflecting the respective aims, learning outcomes, and curricula as well as the course language (in their original French title).

Criterion 1.3 Curriculum

Evidence:

- Study plan per program
- Module descriptions per program
- Objective-module-matrix per program
- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:
In the discussions during the online audit, ESIET states that it considers practical training a fundamental basis for engineering students to constitute the strength of the qualification granted by the diploma. As such, all study programs currently entail four different kinds of practical trainings. First, practical work is carried out in the laboratories. Here, students put into practice the theoretical knowledge they have received during their courses. Second, students undertake so-called mini-projects. Here, students develop and research a theme

relating to a subject of his or her field of study and capture the findings in a report and/or a presentation. Third, students have to participate in mandatory internships in order to gain an understanding of the nature of working in a company of their chosen area. Finally, the end of study project enables students to carry out practical work associated with this project at the industrial level. Here, they must apply all the theoretical and practical knowledge they have received during their years of study. The peers are generally satisfied with the practical aspects of the programs, although they have some concerns related to the equipment used in the laboratories (cf. criterion 4.3).

Fundamentally, however, and in line with the findings described in criterion 1.1, the peers are not convinced that the content of the study programs corresponds to EQF level 7. When reviewing the study plans as well as the module descriptions of all six programs, they are missing both a deepening and a broadening of the knowledge acquired during the students' previous studies. Unfortunately, the module descriptions are not always very informative and only address the qualification goals and the contents of the individual modules to a varying degree. As a consequence, the peers cannot be completely sure what exactly is taught in the degree programs, which means that an assessment is only possible to a limited extent. The objectives-module matrices submitted by the university are also not very informative in this respect. Nevertheless, the peers find that many of the modules cover only basic competencies rather than broadening or deepening them, which does not do justice to EQF 7 level.

Overall, the programs consist of a very large number of very small courses, which means that most of the topics can only be discussed superficially, without conveying sufficient technical and scientific knowledge. This is also reflected in the workload that is assigned to the individual courses (cf. criterion 2.2). At the same time, the sequence of courses and the topics chosen do not present a clear learning path. Rather, the curricula appear to be a collection of numerous topics without following a coherent structure, as it remains unclear how the different contents and competences build upon each other.

In the following, only some of the degree programs' incoherence can be exemplified. For instance, there are mandatory French language courses in all programs and students are expected to reach level B2 during their studies, although all courses are taught in French and most of the students are native speakers. In the Computer Engineering program, OOP with C++ is taught in the second semester, while the basics of OOP are only taught in the following semester. Likewise, web programming is already taught in the first semester, although the basics of programming have not yet been taught. Moreover, it is generally striking that advanced topics that require solid basics – such as artificial intelligence, databases or matlab – are placed at the very beginning of the curriculum (first or second semester), while at the same time, other topics (for example those covered in all the programming

courses) are normally to be found in the very foundational modules of a bachelor's program. In the Industrial Engineering program, students learn thermodynamics in the first semester, before being taught engineering mathematics in several courses over the following semesters. The economics courses, which are vital for the graduates' careers and whose importance is stressed by ESIET in the learning outcomes, appear quite superficial and do not touch on all important aspects. The courses "Mathematics for engineers" of the first semester as well as "Probability and statistics" are usually taught during the first three semesters of bachelor programs. The introduction into industrial engineering is taught only based on literature of the chemical industry. The course on business management has only a very small part devoted to accounting and cost accounting (5 hours). It is not visible that the foundations of accounting, controlling, cost accounting, finance and investment are taught in an appropriate manner. Morever, the field of economics seems to be completely missing. This is usually taught as a basic course labelled „Business Economics". Thus, the peers do not recognize how the students acquire knowledge about competition, market structures, without having acquired basic knowledge of business economics. In the Civil Engineering program, the Finite Element Method is only taught in one small course, although it is crucial for statics and structural analysis. There are no courses that cover the competences needed to design large-scale buildings. Thus, the peers get the impression that graduates of this program might be well trained to be working at the construction site (as site manager), but lack essential competences to construct and design buildings or public works. The Electrical engineering program, on the one hand, contains the basics of physics (including electricity) and mathematics, although they are normally to be found in the very first semesters of a bachelor's program. The basics of control engineering and thermodynamics are also taught in this program, also they clearly belong to a bachelor's program as well. On the other hand, it remains unclear to the peers where the students acquire the necessary foundations in order to be able to successfully complete more advanced modules. A good example here is the course "Electrical circuits and measurement" that, according to the module description, teaches many different contents and skills ranging from DC analysis, AC analysis using phasors to the basics of electrical machines and transformers, but is only assigned with 3 ECTS, which gives the impression that all these topics are only superficially addressed but not deepened. This issue becomes even more pronounced for the electromechanical and mechatronics engineering study programs, since the same exact course with exactly the same contents, albeit under different names (Electrical Engineering I, or Electrical Circuits), is being taught with even less hours (52,5 h for mechatronics. This raises many questions regarding the possibility of covering so many important topics with the necessary focus. Already in an EQF level 6 program, a solid basic education in the mentioned areas would be indispensable to understand all further courses within an electrical engineering program.

Furthermore, the peers notice that the content of all degree programs (but in particular concerning the Industrial engineering program) is quite outdated. This refers both to the concepts, theories and methods that are taught in the programs and to the literature which is used. Large parts of the recommended literature are 30 to 50 years old and therefore do not include recent changes and developments. While this may be less of a problem for some fundamental subjects, it is certainly insufficient for rather specialized and application-oriented courses.

The peers are therefore of the opinion that the curricula of all study programs need to be redesigned in order to meet the requirements of a program at EQF level 7. This should be done in accordance with the revision of the qualification objectives, as all shortcomings identified there are also reflected in the curricula. This applies not only to the deepening or broadening of subject-specific knowledge, but also to the scientific aspects of the training, because in all study programs students do not sufficiently learn how to work scientifically or how to use scientific methods. However, the peers stress that it remains unclear whether upgrading the curricula to a higher level is ESIET's intention, since – as the peers learn from the industry representatives – the graduates currently meet the needs of the Tunisian labor market.

Finally, the peers recommend that the language skills of the students and teaching staff be further developed and promoted. As it turned out during the online audit, the proportion of participants being able to communicate in English was very small. However, as students are expected to be able to work in international teams after their studies, and also taking to account that the majority of current technical literature is published in English, the peers highly recommend strengthening the use of English language in the curricula and actively promoting the language proficiency of both teaching staff and students.

Criterion 1.4 Admission requirements

Evidence:

- Student handbook per program
- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:
The peers do not have access to any official admission requirements and procedures. However, according to the Self-Assessment Report and the discussions, most students are admitted to the programs under review after having successfully finished the preparatory cycle. On the other hand, students can be admitted if they have completed a vocational education or if they hold a Bachelor's degree or license in the respective engineering field.

After reviewing the documents, the peers notice that the admission requirements are by no means specific. For example, there do not seem to be any subject-specific prerequisites for admission to the degree programs. If students apply from outside and have not already taken the preparatory cycle at ESIET, it is not defined what prerequisites these students must bring with them, which means that in theory, a student with previous knowledge in a completely different field could apply for the program and not be rejected.

It is also not regulated how applicants are selected if the capacity is exceeded, how a selection is made here or whether students who have already completed their preparatory course at ESIET are given preference. In the discussions, it becomes clear that normally all applicants are admitted, which makes it even more urgent to define proper admission requirements in order to ensure the students' qualifications.

The basic problem lies in the fact that students can come from different backgrounds, i.e. the preparatory cycle, bachelor's programs and a license. Consequently, they have acquired very different competences and as there are no subject-specific admission requirements, a common basis for all students has to be established. This might contribute to the phenomenon that already in the first semesters, there is a strange mixture of very basic and quite advanced courses (cf. criterion 1.3).

In summary, the peers urge ESIET to clearly define the admission requirements, thereby focusing particularly on the professional/technical aspects. It must be clear to the different stakeholders, and in particular the potential applicants, what the specific professional criteria are that must be fulfilled in order to be admitted to a specific master's degree program. The peers consider the thorough revision of the admission criteria to be a fundamental cornerstone in order to successfully redesign the curricula so that they eventually correspond to EQF level 7.

Finally, the peers point out that the amount of tuition fees remains unknown even after the online audit. In the interest of (prospective) students, they urgently advise that these be presented in an appropriate and transparent manner, especially also on the website.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 1:

The peers recognize that ESIET has provided a statement and some additional documents with regards to this report. However, this has not improved the information base. To the contrary, many of the claims and documents directly contradict information contained in the Self-Assessment Report or statements made during the audit. Therefore, the peers cannot accept them as factual evidence.

The peers consider criterion 1 not fulfilled.

2. The degree program: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Student handbook per program
- Study calendar
- Training plan and practical training descriptions
- Module descriptions per program
- Study plan per program
- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:
ESIET is a polytechnic school accredited by the Tunisian Ministry of Higher Education and Scientific Research. Its mission is to train engineers and to provide applied research and technology transfer.

At ESIET, each student has to undertake a two-year long preparatory cycle before beginning studying his specialty, which in this case are civil engineering, computer engineering, electrical engineering, industrial engineering, electromechanical engineering and mechatronics engineering. A student is admitted to the preparatory cycle according to the nature of his or her baccalaureate: the technical baccalaureate is oriented towards the Technology preparatory cycle, the baccalaureate in experimental sciences or mathematics is directed either to the preparatory cycle in physics and chemistry or to the preparatory cycle in mathematics and physics. Any student of the preparatory cycle, who has passed his second-year exam, has the right to choose the engineering cycle he prefers (cf. criterion 1.4).

After the preparatory cycle, each study program is spread over five face-to-face semesters during which the engineering students receive the necessary theoretical fundamental knowledge. In addition, the student reinforces and improves his knowledge through practical work, mini-projects, excursions and compulsory internships. The sixth semesters is mainly devoted to the development of the end of study project that is generally carried out at a company. Each semester is composed of 16 weeks and between four and six so-called

teaching units during which the students take between nine and twelve modules and gain 30 ECTS.

By the time of the online audit, the programs offered at ESIET are designed based on a set of modules that are entirely mandatory. Thus, the programs do not offer any elective courses. ESIET states that this topic, which hinders the individual specialization of students based on their interest or future career plans, is currently discussed by the teachers and ESIET management in order to take actions in the near future to introduce elective courses. The peers believe this to be a very promising undertaking and support ESIET in this endeavor.

The peers further notice that the modules are generally very small, encompassing mostly 2 or 3 ECTS-points. As such, some of these modules should be integrated to form one larger, thematically coherent module. They also regard the structure of the modules to be in need of improvement. As already explained under criterion 1.3, not all modules are structured in a manner that allows a smooth transition from fundamental to basic modules to more advanced ones. The peers therefore believe it to be necessary that ESIET re-designs the curricula for all study programs. In this undertaking, it would also be possible to re-organize the modules so that they appear more coherent and cohesive.

Mobility

The study programs offered at ESIET attract a considerable share of students from abroad (mainly from other French speaking countries in Africa) who move to Tunisia for their studies. Thus, many students are already international students and are not interested in further international experiences. Nonetheless, ESIET offers all students a continuation of their studies at any institution that presents a curriculum identical or similar to the student's study profile at ESIET. The students have the opportunity to spend a study semester abroad through mobility agreements and partnerships with foreign institutes. In addition, students can also spend time at other universities or colleges that they choose on their own and will receive support from ESIET in planning the semester abroad. Students are encouraged to go on exchange specifically during the final stage of their studies, either during the internship period or while writing the final theses. A combination of both is also possible. Currently though, very few students take the opportunity to spend a semester abroad. Although the peers do not manage to identify the main reasons behind the low number of students going on exchange, they suspect that a significant obstacle might be lack of recognition regulations. Currently, it is not officially regulated how ESIET deals with the recognition of competencies or achievements gained at other universities. Therefore, the peers ask ESIET to define rules for externally achieved competencies in a binding fashion. More-

over, recommend improving and further promoting the opportunities for students to complete a semester or the internship abroad, without any prolongation of their studies. They also urge ESIET to establish more support for the students planning to conduct a semester abroad.

Criterion 2.2 Work load and credits

Evidence:

- Study plan per program
- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:
Within the framework of Tunisian regulations, training in engineering cycles is governed by a system based on coefficients and not credits; thus, coefficients are allocated for each module, according to the following regulations:

- A module consisting of 30 working hours, including tutorials will have a coefficient of 2, at most.
- A module consisting of 30 hours of lessons, including tutorials and practical work will have a coefficient of Coef ≥ 2.5.
- For a transverse module, the coefficient is: 1≤ Coef <2

The first year worker internship and the second-year technical internship of engineering studies, although compulsory, are not taken into account by the coefficient. Similarly, personal working time is not taken into consideration. To comply with the international system and accreditation requirements, ESIET has introduced ECTS credit points, which considers both personal work and the various internships. Here, the internships are given 2 and 3 ECTS points, respectively. However, this rule applies not only to the conversion into the ECTS system but also to the national credit point system. Accordingly, the workload here must also include both the students' presence and self-learning time, as well as all compulsory parts of the study program.

Generally, all study programs consist of 180 ECTS with each semester covering 30 ECTS. One credit point is equivalent to 25-30 hours of work. Without probation periods or delays, students will thus complete the degree programs in six semesters. Students, who have previously received a license (equivalent to a bachelor’s degree) can shorten their study to four semesters. During the audit discussions, the peers learn that the vast majority of students finish their studies on time. The students confirm that the workload is feasible and that there are no structural problems that would hinder finishing on time.

During the online audit, the peers find that credit points are allocated arbitrarily and thus do not reflect the actual workload of the individual courses. There are several examples in which the same courses have a varying amount of credit points in different documents or in different degree programs. While ESIET claims that a credit points is equivalent to 25 to 30 hours of students' workload, the module descriptions show a range from 17 to 75 hours per credit point.

Overall, the peers get the impression that the ESIET representatives are struggling to understand the reason behind a credit point system, as they are unable to explain how credit points are allocated to the different courses. The peers clarify that courses with a higher workload (i.e. more teaching and self-study hours) must clearly show a higher number of credits than courses with a lower workload. To do so, ESIET must implement a consistent credit point system based on the amount of work the students spend on each module, including self-study time as well as all mandatory parts of the curriculum. In addition, a process must be established to systematically monitor the student workload to ensure a just credit point allocation.

Criterion 2.3 Teaching methodology

Evidence:

- Module descriptions per program
- Self-assessment report
- Discussions during the online audit

Discussions during the audit Preliminary assessment and analysis of the peers:
According to the self-assessment report, the teaching methodology includes lectures, practical work, tutorials, and projects. They are aimed at achieving the learning outcomes of the courses as laid down by ESIET. Lecturers and students emphasize that in the courses, theory and practice are generally combined in a fruitful way, for instance by the implementation of small projects. The peers are thus satisfied with the teaching methods.

Criterion 2.4 Support and assistance

Evidence:

- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:
The aim of ESIET is to ensure the provision of a good educational service for all its students. According to the program coordinators, there are some general support services offered to

students. For example, international students are assisted in addressing administrative issues and with finding housing. In terms of academic support, teachers offer additional upgrading courses to allow the students to better succeed in their university course as quickly as possible and with good results. The students report that they rely on direct contact with their teachers. In this regard, the small class sizes and many group works are advantageous, allowing students and staff to form stronger relationships. It appears that the relationship between teachers and students is respectful, helpful and esteeming, and that sufficient resources are available to provide students with individual assistance, advice and support. The students confirm that the ESIET teachers are available for them at any time and for any advice and support, even on a personal level.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 2:

The peers recognize that ESIET has provided a statement and some additional documents with regards to this report. However, this has not improved the information base. To the contrary, many of the claims and documents directly contradict information contained in the Self-Assessment Report or statements made during the audit. Therefore, the peers cannot accept them as factual evidence.

The peers consider criterion 2 not fulfilled.

3. Exams: System, concept and organization

Criterion 3 Exams: System, concept and organization

Evidence:

- Module descriptions per program
- Sample exams and final projects
- Discussions during the online audit

Preliminary assessment and analysis of the peers:

The assessment system at ESIET has two purposes: a formative and a summative purpose. The formative assessments are used by the lecturer to continuously monitor the progress of achieving the course objectives and usually take place in the middle of the semester. Typical forms of continuous monitoring are small tests, mini projects, presentations, exercises and homework. The summative assessments are used to display whether the course objectives have been met at the end of each semester. The panel as well as the students welcome the continuous learning assessment as it not only allows a close monitoring of the

students' learning progress but also encourages students' motivation throughout the semester. By way of helping students to consciously assess their actual state of knowledge, the assessment procedure at the same time contributes to an adequate exam preparation.

The organization of the exams guarantees examinations that avoid delay to students' progressions. All final exams take place within a certain timeframe at the end of each semester. For each course, the students have to take a written exam of 90 minutes. The final grade for a course consists of the average of the continuous assessment (40%) and the final exam (60%). In case the students fail an exam, they get the chance to retake it two weeks after the regular exam. Then, the average of the failed and the passed exam are calculated in order to determine the final grade. The peers emphasize that all information on the exams is based only on the discussions during the online audit. Although ESIET has handed in examination regulations in the aftermath of the online audit, the peers note that these are official ministerial regulations rather that do not contain information about the programs and the rights and duties of students. Therefore, it also remains unclear if any compensation measures exist, for example in case of illness or disability. The peers urge ESIET to define official and binding examination rules which also contain information on re-sit examinations and compensation measures.

Shortly before the online visit, the peers were provided with a selection of exams and final projects to check. The peers note that the only form of examination is the traditional written exam, which is very unusual in an EQF level 7-program and, more importantly, limits competence-oriented testing. At the same time, and as a consequence of the fact that large parts of the curriculum do not correspond to EQF level 7, the requirements and standards of most of the exams presented do not reach master's level either. The topics of the final theses are more comparable to those from bachelor programs and the theses generally lack an analytical, scientific and research-oriented approach and instead focus almost entirely on practical application.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 3:

The peers recognize that ESIET has provided a statement and some additional documents with regards to this report. However, this has not improved the information base. To the contrary, many of the claims and documents directly contradict information contained in the Self-Assessment Report or statements made during the audit. Therefore, the peers cannot accept them as factual evidence.

The peers consider criterion 3 not fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Staff handbook
- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:

ESIET has 90 lecturers, 39 of whom are permanent, and 51 of whom are temporary staff. The temporary staff members are either university teachers, who also work at a different university in Tunisia, or industrialists with several years of both industrial and educational experience. The teachers include university professors, lecturers, assistant professors and assistants or engineers. All teaching staff must hold a Master's degree, while assistant professors and professors must hold a PhD.

ESIET provides information on all staff involved in the study programs as well as their respective CVs. In the Industrial Engineering program, there are 6 permanent and 16 temporary teachers. All but one permanent and the majority of the temporary teachers hold PhDs. In the Electrical Engineering program, there are 15 permanent teachers and 13 temporary teachers. Of the 15 permanent ones, 14 already hold a PhD and the remaining one is currently in the process of obtaining a PhD. Most of the temporary staff members also hold PhDs. In the Mechatronics Engineering program, there are 13 permanent teachers (12 of which hold a PhD) and 14 temporary teachers. In the Electromechanical Engineering program, there are 15 permanent teachers (13 with a PhD, 2 doctoral students) and 16 temporary teachers. In the Computer Engineering program, there are 7 permanent teachers (5 holding a PhD, 2 currently acquiring one) and 10 temporary teachers, both academics and professionals. In the Civil Engineering program, there are 6 permanent teachers, four of which holding a PhD, the remaining two in the process of obtaining a PhD, and 16 temporary teachers. Teachers, whether permanent or temporary, are recruited based on professional and educational experience, scientific knowledge, reputation and the correspondence to the profile of the module that needs to be taught.

The peers learn that most temporary teachers, despite their title, tend to stay at ESIET for a very long time, thus guaranteeing a consistent teaching of the modules and the curriculum. The peers can therefore confirm that, despite the unusual low number of permanent staff members, all lecturers are taking their profession serious, tend to spend a long time

at the university and are qualified for their tasks given their previous backgrounds in teaching or in the industry.

Overall, the peers get the impression that the staff seems to have the right skill set in order to meet the teaching demands requested to ensure high quality teaching and training for the students of the programs. The problem that ESIET cannot conduct research (cf. criterion 4.2) is partly compensated by the involvement of teaching staff who are mainly employed at state universities and are thus able to connect their research to the teaching at ESIET.

Criterion 4.2 Staff development

Evidence:

- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:
According to the program coordinators, private higher education institutions in Tunisia are not authorized to conduct research or create research units, to provide training in research or to supervise theses. In response to this situation, all private schools in Tunisia, including ESIET, have implemented cooperation and exchange programs in the field of research with some public and foreign laboratories, mostly at other universities or in some industries. Given this limitation, only the teachers who are employed at Tunisian state universities are currently conducting research and developing recognized research activities through publications. However, with regard to the practical orientation of the university and the degree programs and the fact that the majority of the teaching staff has a PhD, the peers do not consider this a major problem.

With regard to didactical training, the peers gather the impression that the university does not systematically offer any such opportunities for the teaching staff. While according to the SAR, there are sometimes talks on interactive teaching methods, it becomes clear during the discussions that ESIET mainly relies on the trainings which those lecturers that are mainly employed by state universities receive there. The peers consider it absolutely necessary to establish trainings and workshops particularly on didactics, especially since a large share of the temporary staff is recruited from the industry and consequently has little prior experience in teaching.

Criterion 4.3 Funds and equipment

Evidence:

- Self-Assessment-Report
- Photos and videos of the laboratories

Preliminary assessment and analysis of the peers:
As a private institution, ESIET depends fully on its own resources, as it does not receive financial support from the Tunisian government. The university is therefore funded mostly through tuition fees.

As has been mentioned (cf. criterion 2.3), the peers note that ESIET does currently not offer adequate software in all relevant fields, particularly regarding the design and analysis of circuits, which should be provided.

In the self-assessment report, ESIET gives an overview of its four different buildings and the available learning spaces and laboratories. The peers learn that ESIET is constantly striving to improve its laboratory equipment, although the different stakeholders emphasize that the current equipment is sufficient in order to carry out the programs adequately. Any lack of material is compensated by agreements with other public or private institutions. The students consider the labs to be satisfactory and confirm that they get access to some laboratories with the help of their teachers also beyond the regular classes.

Due to the ongoing Covid-19 pandemic, it is not possible for the peer panel to travel to Tunisia and to visit ESIET in person. In preparation of the online audit, ESIET therefore provides some photos and videos showing the laboratory equipment. Unfortunately, the peers get only limited insight into the premises and equipment due the limitations of these media. Yet, what they can see from laboratories is that, while the equipment might be up to date and adequate for teaching purposes, it is mostly not sufficient for research activities. Students reaching a degree at EQF level 7 should be able to design, develop, and eventually build and test systems in the various engineering fields related to the degree programs, for instance mechanics, electronics or mechatronics. The peers, however, are not convinced that the labs are adequately equipped for that purpose.

Overall, the peers are unsure whether ESIET has the necessary capacities and capabilities to appropriately implement programs on EQF level 7. However, taking into account the limited insight gained from photos and videos as well as communication problems in the different discussion rounds in general, there might have been considerable misunderstandings. Consequently, the peers request a follow-up visit to take place on-site in order to inspect the facilities in person. The safety precautions and regulations in the labs should be thoroughly reviewed during this follow-up visit.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 4:

The peers recognize that ESIET has provided a statement and some additional documents with regards to this report. However, this has not improved the information base. To the

contrary, many of the claims and documents directly contradict information contained in the Self-Assessment Report or statements made during the audit. Therefore, the peers cannot accept them as factual evidence.

The peers consider criterion 4 not fulfilled.

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:

- Module descriptions per program

Preliminary assessment and analysis of the peers:
ESIET presents module descriptions for all modules offered in the six study programs. The peers notice that while all necessary categories are included, the module descriptions nonetheless are very unspecific as most of them fail to give clear insight into the contents taught and the learning outcomes to be achieved. As for the learning outcomes, some are kept very short and unspecific while others are so detailed that the peers find it hard to believe that all the mentioned objectives can really be taught, especially given the low ECTS (and thus workload) of most modules. Similarly, the module contents are also very unspecific by either being too short or too detailed. Unfortunately, the module descriptions are full of inconsistencies and errors, so that an assessment of the contents is only possible to a limited extent.

Therefore, the peers ask ESIET to revise the module description with a focus on reformulating the objectives and contents in order to ensure that they reflect the actual contents taught and learning outcomes to be achieved by the students. The revised module descriptions should be published on the website so that (potential) students as well as external stakeholders can get a detailed overview of the study programs. In addition, the module descriptions should also indicate which modules adhere to a EQF Level 7. In line with the requested redesigning of the curriculum, the module descriptions must obviously be completely revised and re-written as well.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Sample diploma
- Sample diploma supplement

Preliminary assessment and analysis of the peers:
Upon graduation, students of both degree programs are handed a diploma, a transcript of records as well as a diploma supplement, which generally entail all necessary information. However, the peers are only provided with a sample diploma supplement for the Industrial engineering program. Therefore, they ask ESIET to issue diploma supplements for the five remaining programs as well.

Criterion 5.3 Relevant rules

Evidence:

- Discussions during the online audit

Preliminary assessment and analysis of the peers:
The peers understand that many regulations stem directly from the ministry and are thus authorized accordingly. However, as has been mentioned in various chapters throughout this report, the most relevant rules are missing, in particular examination regulations, admission requirements and internship regulations. In addition, not all information available to the peers are also available to the students, such as the module descriptions. Thus, the peers urge ESIET to ensure that all relevant rules, regulation and information are available to the students.

An English version of ESIET's website does not exist. Given that ESIET plans on extending their international recognition, visibility and relations, the peers recommend setting up an English website where all relevant regulations and information are published in English.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 5:

The peers recognize that ESIET has provided a statement and some additional documents with regards to this report. However, this has not improved the information base. To the contrary, many of the claims and documents directly contradict information contained in the Self-Assessment Report or statements made during the audit. Therefore, the peers cannot accept them as factual evidence.

The peers consider criterion 5 not fulfilled.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self-assessment report
- Discussions during the online audit

Preliminary assessment and analysis of the peers:
ESIET's vision is to offer its students the best level of quality and competence. To achieve this vision, it is involved in a continuous improvement process of its quality aiming at the satisfaction of all of its partners and the efficient use of the resources made available. According to the self-assessment report and the discussions during the online audit, the quality process resulted in the issuance of an ISO 9001 certification in 2018 that was valid until mid-2021.

The quality policy of ESIET is organized around the following main strategic axes:

- Axis 1: Strengthen the notoriety and development of the UAS in its environment
- Axis 2: Achieve international recognition of our programs through accreditation
- Axis 3: Ensure diversified relationships with the professional environment
- Axis 4: Develop appropriate international relations
- Axis 5: Developing the transversal skills (Soft-Skills) of our students
- Axis 6: Fostering an entrepreneurial and innovative spirit
- Axis 7: Anchoring the concepts of social responsibility, ethics and deontology.

Several models of satisfaction surveys have been created, including the one intended for students. These surveys are administered regularly (at least once a year) to all students of each program. The results of these surveys are analyzed by the various structures concerned and are the subject of meetings with student representatives, which lead to the implementation of corrective actions to improve the student satisfaction rate.

The peers do not have access to an official quality management policy, which illustrates the different processes that are anchored in ESIET's quality assurance system. Thus, the responsibilities and roles of the different participants are not officially determined, and it also remains unclear how the different internal and, in particular, external stakeholders are involved in the processes.

During the discussion with the students as well as the teachers, the peers learn that currently, not all modules are evaluated and even if surveys take place, they are neither systematically analyzed, nor discussed with the students. While they acknowledge that the current quality system at ESIET has only been recently established, the peers nonetheless notice that this system until now exists mainly in theory and so far has not been set out in practice, in particular since relevant processes and responsibilities have not been defined

so far. The peers thus urge ESIET to implement their quality management by clearly defining binding mechanisms of the internal quality assessment procedures. In particular, ESIET must ensure that evaluations are carried out on a regular basis and a closed feedback loop, which means that evaluation results are discussed with the students. Finally, the results must be systematically analyzed so that concrete improvement measures can be derived from them.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 6:

The peers recognize that ESIET has provided a statement and some additional documents with regards to this report. However, this has not improved the information base. To the contrary, many of the claims and documents directly contradict information contained in the Self-Assessment Report or statements made during the audit. Therefore, the peers cannot accept them as factual evidence.

The peers consider criterion 6 not fulfilled.

D Additional Documents

Before preparing their final assessment, the panel ask that the following missing or unclear information be provided together with the comment of the Higher Education Institution on the previous chapters of this report:

D 1. Examination regulations
D 2. Internship regulations
D 3. Admission regulations
D 2. Information on forms of examinations to be used in the continuous assessment

E Comment of the Higher Education Institution (12.11.2021)

The following quotes the HEI's statement:

"ESIET Statement

Responses to the ASIIN accreditation report

The ESIET would like to thank the ASIIN committees for the relevant and constructive remarks they have raised. In what follows, are provided the answers of the ESIET to the different remarks and questions identified from the ASIIN peers report (criterion by criterion and paragraph by paragraph)

1. The study program: concept, content and implementation

Criterion 1.1: Objectives and learning outcomes of a degree program (intended qualifications profile)

Regarding the remarks of the peers related to the objectives and results of the training as well as the study program, ESIET emphasizes that the different fields training programs that it offers respond well to the objectives and criteria required by ASIIN, and are generally identical to the programs presented in national (in Tunisia) or international engineering training establishments. Indeed, the programs of the various sectors clearly reflect the various components relating to the acquisition of technical skills and know-how skills, and concerning the analysis of engineering problems, the design of appropriates solutions, their evaluation and practical implementation.

On page 13, § 2 and 3, the ASIIN commission pointed out that "*the objectives of the programs are generic, that the training of the ESIET is quite generalist and the options are rather limited*". Regarding this point, the ESIET underlines that the objectives of the training offered are well aligned with EQF level 7 objectives, namely *Knowledge and understanding, Engineering analysis, Engineering design, Investigations and assessment, Engineering practice and product development, Transferable Skills*, and that this training is rather thorough and specialized. The six specialties (Electrical engineering, Industrial engineering, civil engineering, computer engineering, electromechanical engineering, mechatronic engineering) are made up of specific and advanced modules. Indeed, the following statistics summarize some characteristics of the training provided at ESIET in all programs (total number of hours over five semesters (apart from the end of studies project carried out in the sixth semester and corresponding to 625 hours), the proportion of time dedicated for scientific modules, for technological modules and for transversal subjects):

Civil engineering: 2078 hours, 33% for scientific modules, 49% for technological modules, 18% for transversal subjects

Computer engineering: 2040 hours, 38% for scientific modules, 44% for technological modules, 18% for transversal subjects

Electromechanics engineering: 2070 hours, 32% for scientific modules, 49% for technological modules, 19% for transversal subjects

Electrical engineering: 2085 hours, 32% for scientific modules, 49% for technological modules, 19% for transversal subjects

Mechatronics engineering: 2047.5 hours, 32% for scientific modules, 49% for technological modules, 19% for transversal subjects

Industrial engineering : 2003 hours, 35% Scientific modules, 44% Technological modules, 21% transversal subjects

It is also important to note that the educational programs afforded by ESIET are practically the same programs provided in other national and international engineering training establishments accredited by ASIIN.

On page 13 §4, it is stated that "*the programs show a professional vocational and lack any scientific aspect, …… the objectives and learning outcomes do not cover any research or methodological competencies*". With regard to this comment, ESIET points out that training programs in the different fields cover scientific and technological aspects. Also, these programs are similar to other as an engineer or master training in accredited national and international academic institutions. Moreover, the engineering diploma issued by the ESIET is recognized by the Tunisian Ministry of Higher Education and Scientific Research who delivers to our graduates an equivalence with the national engineering degree issued by the State. Also, our graduates are recognized and registered on Engineers Order Council following an audit carried out by the council.

In addition, our students are admitted to the doctoral cycle in Tunisian and foreign universities and there are those who are already doctors and university teachers.

On page 13 §5, it is stated "*due to the lack of scientific, methodological skills and advanced technical knowledge, graduates will not be able to take up appropriate senior positions in companies*". In response to this comment, we recall the statements of industrialists who are highly satisfied with the quality of our graduates. In fact, many of our graduates occupy key and senior positions in compagnies (see page 14 of the expert report).

On page 14 §2 "*The objectives must be rewritten because they do not match level 7 of EQF7*": The tables in Appendix 1 indicate the objectives of level EQF 7 for the different specialties provided at ESIET as well as the correspondence of the modules with these objectives.

Criterion 1.3: Study program

Page 15 §2: The auditors express their concern on "*the lack of deepening of the students' previous knowledge, the fact that the description of the modules is not really informative and on what is exactly taught in the curriculum*". With regard to this point, ESIET points out that this concern may be due to a lack of clarity in the documents submitted to the auditors (documents not sufficiently explicit). However, the ESIET emphasizes that the programs taught are in a good depth and correspond well to the objectives of level 7 of the EQF. Indeed, the program for each of the six streams is appropriately divided between the different aspects: theoretical foundations, technological aspects and practical aspects, which automatically enables graduates to acquire scientific and technological knowledge enabling them to tackle engineering problems relating to analysis, design, development and practical implementation. The programs provided within the ESIET in the six streams are very

comparable to the programs provided in engineering schools in Tunisia or abroad. It is important to point out that the programs taught, and the examinations given to the students are controlled by the Tunisian Ministry of Higher Education and Scientific Research.

Page 15 §3:"*… Very large number of small courses… How the different contents and competences are build upon each other …"*: In this respect, it is important to note that the presentation of training in a large number of modules does not imply a lack of depth study. On the contrary, this structuring reflects the importance given to each component and subcomponent of the training program. Each important component is ensured and evaluated in a separate module, without redundancy between the modules which are rather complementary to each other. The number of hours provided face-to-face per semester, which corresponds to an average of around 400 hours per semester, reflects the consistency and the depth of the training. In addition to that, this same training structure is also adopted in most high-level university institutions (whether national and international) providing training in the same fields.

The diagrams represented in Appendix 1 show the different modules relating to each program, as well as the cohesion between these modules. They also distinguish between modules with a rather scientific and research aspect, technological modules, practical modules and soft skills modules.

Thus, ESIET's training in these different fields allows the graduates to exercise the engineering profession in its different aspects such as: design, development, production, etc. It also allows them to pursue higher studies such as doctoral studies. Indeed, the studies provided within the ESIET are crowned by obtaining the national engineering diploma which is equivalent and similar to the master's degree (*five years of high studies*)

As for the teaching of French at ESIET, it is important to note that it is quite true that teaching at ESIET as well as teaching in all engineering schools in Tunisia is provided in French language. However, it should be pointed out that French, and English, are not the native language in Tunisia, thus, although the various programs are taught in French, language courses (French and English) are provided throughout the course, to endow ESIET graduates with soft skills of communication allowing them to communicate well in an international environment.

Regarding the teaching of OOP with C++ in the first semester of the Computer engineering program, it should be noted that this module gives the students the principles of OOP and prepares them to approach the advanced course of OOP with Java in the following semester – *hence*, *really we do not see the reported problem* – and the same logic of response corresponds to other raised remarks regarding the artificial intelligence, database and web modules.

However, the ESIET has taken note of the ASIIN committee's remarks concerning the teaching of certain subjects in certain fields. These remarks will be taken into account with a view

to re-studying them by the concerned educational authorities in order to remedy as soon as possible to the proposals raised.

Regarding the teaching of mathematics in the different streams and that it is provided at the same time with certain subjects, which highly require the mathematics course, it is important to note that:

- first of all, ESIET students come either from students who have already followed a preparatory cycle for engineering studies (two years of higher studies in Mathematics, Physics, Chemistry, Computer Science, Sciences and Techniques of the engineer - a very consistent and thorough preparation with a very elaborated national program) or students who have already obtained a license in a scientific or technological field and in which they have already followed a sufficient mathematics program. Thus, the student comes to ESIET in the third year of higher studies *(the first year at ESIET corresponds to the third year of higher studies)*. This student will have no problem to follow and assimilate the subjects of the first semester at ESIET. Such difficulty has never been raised or faced by our teachers nor our students.

- On the other hand, the engineering mathematics program planned from the first semester at ESIET (*third year of higher studies*) makes it possible to strengthen the student's mathematical background to follow and assimilate the modules requiring advanced maths tools and taught at ESIET in later semesters (from semester 2) (example: control theory, signal processing, optimal control, state variables, etc.).

Regarding the economics courses offered by ESIET, while it is true that a business economics course is provided in a relatively basic manner, but presenting nonetheless the essentials at the level of the five streams (electrical engineering, computer engineering, mechanical engineering, electromechanical engineering, mechatronics and civil engineering), more advanced economics modules are provided for the industrial engineering sector. Nevertheless, the ESIET will take into consideration the ASIIN committee's remarks and will ensure to re-review the content of the various modules that may possibly strengthening them.

Regarding civil engineering training, ESIET noted with great interest the ASIIN committee members' remarks. However, ESIET would like to point out that the programs provided in this branch are identical to the programs provided in various national and international high-level and accredited establishments. These programs allow graduates to approach advanced designs, analyzes and calculations in civil engineering. It should be noted that certain subjects such as the construction of large-scale buildings are discussed in conferences and seminars. However, the ESIET will take into account the comments raised to consolidate the content of certain subjects and set up other modules relating to the construction of large scale buildings in the near future.

Concerning electrical circuits and measurements module provided in electrical engineering field in 45 hours: normally this volume is sufficient to recall the principles of resolution of electrical circuits already seen in the previous studies of the student in preparatory cycle

or the studies of license (the circuits DC and single-phase circuits) and discuss three-phase circuits. And since this course in electrical circuits includes the basics of fundamental electrical calculations, it is presented with the same content for the fields of electrical engineering, electromechanical engineering and mechatronics engineering. However, the ESIET has been oriented to the peers remark in detail, to consider possible reinforcement of the module as soon as possible.

Page 17 §1 "*degree program quite outdated- especially for Industrial Engineering*": with regards to this point the ESIET underlines that the study programs are of two types:

- programs with a scientific content, and it is normal for these programs to be updated infrequently, and the development of these programs most often follows the evolution of science and scientific methods;

- programs with technological, computer and practical content, for which the updating is more frequent given the rapid evolution of technology and information technology.

Page 17 § 2 "study *programs need to be redesigned….* » : In general , and to respond to the ASIIN commission's final recommendation concerning criterion 1.3 « *the study programs must be redesigned*» ESIET notes that perhaps the documents submitted to ASIIN were not sufficiently explicit, but the programs of the various sectors are established in accordance with international standards (programs identical to those provided in other high-level establishments in Tunisia or abroad), and of course the ESIET considers that the evaluation carried out by the ASIIN provides her with a very important feedback for its programs, and then these programs will be improved as soon as possible so that the various raised comments are taken into account.

Page 17 § 3 "*English level needs to be developed and promoted*" : Regarding the promotion of the English language, ESIET fully agrees with ASIIN to give more importance to this component, and this act will be done by encouraging the certification of ESIET students in English. In addition, ESIET will set up in the very near future a language center to strengthen the soft skills of its students, particularly in terms of language and communication, especially in English. On the other hand, it is important to emphasize that some modules are already provided in English such as teaching computer networks and others...

Criterion 1.4. Conditions of admission

Page 17 §4 " *…. Clearly define the admission requirements" :* Concerning the conditions of admitting students to ESIET, it is important to stress out that in order to be authorized to enroll in one of the ESIET courses with a view of pursuing an engineering cycle there, the candidate must have successfully completed:

- Either a two-year scientific preparatory cycle in accordance with the required national programs (access to the first year of the engineering cycle, which means the third year of university studies);

- Either a bachelor's program in the planned specialty (the student will therefore have already completed three years of successful higher education before entering ESIET in the first year of the engineering cycle);

- Either a master's program (one successful year M1 or two successful years M2) in the envisaged specialty and in this case the student enters ESIET in second year (i.e. in the fourth year of higher studies)

It is highly clear, that an advanced level in higher studies is required so that a student become able to apply and persuade engineering studies within ESIET.

Moreover, a student must have a good and significant previous results as well as level in order to be admitted. This level is assessed by calculating a required score which combines its general averages and the marks in the fundamental scientific modules obtained in its previous studies.

Also, the admission conditions are regulated by a Ministry of high education and scientific research‘s circular (see additional document D3)

The students achievements admitted directly into the second year of the engineering cycle are evaluated by a committee in order to identify the first year modules that the student may have to follow in order to complete his training in the planned program.

It should be noted, that students from professional training are unfortunately not able to be admitted to pursue an engineering cycle. Indeed, this path is unauthorized by the Ministry of Higher Education and Scientific Research.

Page 18 § 5 “ *…the amount of tuition fees*” : The amount of tuition fees is specified in the Appendix 5. It is listed on the university's website.

2. The Curriculum: structures, methods, and implementation

Criterion 2.1: Structures and modules:

Page 19 § 4:" *the programs do not offer any elective courses* ": Regarding elective courses, it is important to note that in several fields such as electrical engineering, civil engineering and electromechanical engineering, ESIET offers its third year students three different menus, mainly called options, in which a student will be free to choose which menu to follow. This mode corresponds well to the principle of elective modules. In fact, the student composes his training menu in a given field, and the diploma that will be obtained will bear only the name of the field (electrical engineering for example) and does not specify the chosen option in the third year (Appendix 4).

This principle of elective modules presentation will be studied with a view to its generalization for other programs soon (industrial engineering, computer science and mechatronics)

Page 20 § 2: " *generally small modules …, not well structured,… re-design the curricula for all programs*" : Regarding these remarks, the ESIET points out, as it was already specified above, that the modules represent essential complementary components for the training of the engineer, which must be ensured and evaluated in a well and precise manner. Integrating several modules into one larger has many disadvantages and risks that one part may be more developed than another, and that some parts may not be well assessed on the exam. Then, this structure of training in modules of 15 to 45 hours is a usual form used in all accredited engineering schools providing same programs to that of ESIET. Concerning the modules coherency, it is important to add that these aspects are well considered at the level of the training structure. Perhaps this was not very clear or maybe not really explicit in the documents submitted to the ASIIN instance. The schematic presentation provided in Appendix 1 clarifies for each program, the training structure, the different modules, their consistency, and cohesion.

However, ESIET took into consideration the ASIIN's recommendation to re-design curricula to improve them all.

Page 20 § 3:"*Low number of exchange students… a major obstacle for international recognition*": ESIET maintains fruitful relations with several equivalent national and international university institutions. It receives renowned university professors. As well as Exchange agreements have been established (see Appendix 3). Furthermore, ESIET's national and international partnership network continues to expand. No obstacle hinders the international recognition of ESIET. The only difficulty that ESIET students encounter in carrying out part of their training in another establishment abroad is rather financial.

Criterion 2-2: workload and credits:

Page 21 § 2:"*Traineeships are not rated* " : Students pursuing their engineering studies within ESIET must complete two internships: the first one called "worker internship" mainly during the first year. The second internship called "engineering internship" during the second year. These two internships are compulsory: no student can be awarded the diploma without completing two internships which must be validated by the concerned department at ESIET (see additional document D2). Since the traineeships are carried out in different organizations with different specifications, we do not assign a mark to the internships, but we assess and check the internship whether validated or not: if it is validated a certain number of credits is then assigned to the internship module: two credits for the worker internship, and three credits for the engineer internship.

Page 21 § 4: "*The credits are allocated arbitrarily and do not respect the hourly charges*" : The ESIET noted with great interest the remarks done by the ASIIN peers concerning the credits allocated to the different modules. In this regard, we would like to point out that the rule considered by ESIET is to award 1 credit for each volume of 25 hours between class learning and self learning (about 15 hours of in class learning and 10 hours of self learning). Therefore, the credits are proportional to the hourly volume. The documents provided to

the ASIIN authority have been revised and some corrections have been made to comply with this rule. The corrected documents are presented and attached in Appendix 2.

3- Exams : System, concept and organization

Page 23 § 2 "*Lack of information about the programs , rights and duties*": with regard to this comment related to the exams section, the ESIET would like to note that this section is subject to general rules imposed by the Ministry and has been taken into account in the internal examination regulations within the ESEIT reviews (see additional document D1). We would like remind that the exams are mainly controlled by the Ministry of Higher Education and Scientific Research.

ESIET students undergo high-level exams in the various modules followed. The student will therefore be assessed in a very detailed way in the different components that he has followed in order to ensure his good acquisition of the targeted skills. So that, the evaluation of students who tended to follow the engineering cycle is very consistent, and far exceeds an evaluation of a master's cycle which generally covers a reduced number of subjects.

The final average in each subject takes into account the final exam grade of the semester but also the grades obtained in continuous assessment which consists of tests, tutorials, personal work, practical work, ...

In addition to the written exams, several other evaluations are carried out such as: mini-project, oral Internship, visit to companies… ..

When registering, each student is informed - with his signature - of all these rules in total transparency (see additional document D1).

Page 24 §2 "*graduation project subjects*": Regarding graduation projects, we point out that these projects consist of design and development of a solution to a given engineering problem. In general, it is desirable that the student deals with a problem arising from the professional world (industrial and economic environment) to confront his theoretical, scientific and technological knowledge acquired within the ESIET with a practical reality. Thus, the depth of the proposed solution as well as its nature (such as: scientific, analytical, technological) obviously depends on the nature of the problematic being treated.

4- Resources

Criterion 4.1. Staff

Page 25 §3 "*Unusual low number of permanent teachers*": The teaching staff of ESIET is made up of three categories of teachers: full-time (permanent) teachers (40%), part-time university teachers (42%), personalities from the professional world (engineers and experts) (18%). To be more accurate, the number of permanent teachers meets the standards required by the Tunisian Ministry of High Education and the Engineers Order Council. In addition to that , ESIET counts, the permanent teaching staff, especially on part-time teachers whom it calls upon among the confirmed teachers the most recognized in their field in

Tunisian or foreign universities to provide very specific modules as well as supervise its students and young newly recruited teachers. It calls also industrial and economic skills, which provide modules requiring professional and technological expertise. However, the number of teachers from industry is less compared to the number of academics. Most of the ESIET teachers, are confirmed academics who have demonstrated their pedagogical and scientific research at Tunisian universities or abroad.

Criterion 4.2. Staff development

Page 26 §2 "*Didactial training … large share of the temporary staff is recruited from the industry …*": ESIET has taken note of ASIIN's recommendations concerning the training of its teachers. ESIET already ensures that its teaching staff is well trained and equipped with modern teaching methods. To do this, it encourages its teaching staff to participate in conferences and didactic workshops. Regarding the statement "*large share of the temporary staff is recruited from the industry…*", first of all we insist that it is not a question of the great part of the staff, but rather of a limited number (18 %), and then we call on skills recognized for their excellent teaching and communication capacity with students.

In addition, we point out that a "language and pedagogy center" is being set up within ESIET. Among the vocations of this center, it will provide didactic training sessions for our teachers.

Criterion 4.3. Funds and equipment

Page 24 §4"… *ESIET does not offer adequate software*…": ESIET emphasizes that the main teaching software for the different courses is available in laboratories as well as the teachers hemselves . We cite: Matlab, Autocad, Robot, Arche, Revit, Primavira, Piste, RDM6, ODO (ERP), SPSS, Labview, ISIS, Multisim, STEP7, Catia, Solidworks,….

Page 27§2 "*Equipment suitable for teaching but not for research*": focusing on this point, ESIET would like to note that the laboratories equipments are intended primarily for teaching. However, if necessary, they can be used to carry out limited research actions (trials or experiments). Furthermore, it should be noted that the ESIET maintains cooperative relations -via agreements- with a certain number of research laboratories in state university establishments to enable its students or teachers to carry out, if necessary, research actions falling within the framework of their end-of-studies work or their supervision work.

ESIET will be pleased to receive ASIIN committee to visit its laboratories.

5- Transparency and documentation

Criterion 5.1. Description of the modules

Page 28 § 2 "*Revise the description of the modules…. and to publish them on the website* ": The ESIET underlines that the current description of the modules will be revised to better reflect the goals aimed in relation to the objectives of the EQF 7 level. The training program

of the different streams including the already taught modules, their description will be soon published on the official ESIET website.

Criterion 5.2 Diploma certificate and diploma supplement

Page 28 § 3: "*Diploma supplement*" : ESIET issues to the graduates the Engineer Diploma, marks transcript, and a certificate of the credits validation. These documents are issued for the graduates of all six programs (see Appendix 4)

Criterion 5.3 Relevant rules

Page 28 § 4: "*Provide students with all the relevant rules and information: description of modules, examination rules, traineeships, etc.*": All relevant information relating to training, the content of courses, exams, internships are communicated to students. The ESIET will consider all the ASIIN's recommendations in this context to improve and better structure and organize the information system.

Page 29 § 1: "The *English website*": ESIET points out that the establishment of an English version of its website has been already initiated and will soon come to fruition.

6. Quality management: quality assessment and development

Page 30 § 2: "*Official quality management policy…*": ESIET emphasizes that it attaches paramount importance to quality assurance. In this context, it was ISO 9001 certified in 2018, and as a result it applies a quality management process. A quality direction set up within the ESIET guarantees the smooth running of this process. In addition to further improve its quality system, ESIET plans to obtain ISO 21001 certification, which goes well with the university training system

Page 30 § 3 : "*Monitoring of the teaching of the modules - feedback from the students*"

ESIET ensures that the teaching of the various modules is provided in the best educational and scientific conditions. For this a permanent follow-up is ensured and a feedback of the students is listened to, and the results are analyzed to draw from them the necessary improvement measures. Nevertheless, the ESIET will consider the comments raised by the ASIIN in this context to remedy any deficiencies observed in the level of student feedback and their relevant analysis."

F Summary: Peer recommendations (21.11.2021)

The peers take into account the additional information and the comments given by ESIET. However, as mentioned above, they do not believe that the university's claims can be taken at face value. Consequently, the majority of peers suggest a suspension of the procedure, while one peer recommends to outright refuse the accreditation.

By majority, the peers summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Programme	**ASIIN Seal**	**Subject-specific label**	**Maximum duration of accreditation**
National Diploma Computer Engineering	Suspension	EUR-ACE®	Suspension for max. 18 months
National Diploma Electrical Engineering	Suspension	EUR-ACE®	Suspension for max. 18 months
National Diploma Electrome-chanical Engineering	Suspension	EUR-ACE®	Suspension for max. 18 months
National Diploma Mechatro-nics Engineering	Suspension	EUR-ACE®	Suspension for max. 18 months
National Diploma Civil Engi-neering	Suspension	EUR-ACE®	Suspension for max. 18 months
National Diploma Industrial Engineering	Suspension	EUR-ACE®	Suspension for max. 18 months

Prerequisites, Requirements and recommendations for the applied labels

Prerequisites

V 1. (ASIIN 1.1) Draft the educational objective so that they describe the academic, subject-specific and professional classification of the qualifications gained in the programs while adhering to EQF 7.

V 2. (ASIIN 1.3; 2.1) Redesign the programs, especially their scientific focus, to ensure that they adhere to EQF 7, which includes qualifying the students for pursuing a PhD, and that the module concept follows a clear structure and learning path. Consequently, completely revised and consistent module descriptions must be provided.

V 3. (ASIIN 1.4) Define technical admission requirements that reflect the subject-specific focus of the different study programs and that ensure that the necessary competences for EQF level 7 are reached.

V 4. (ASIIN 4.3) An on-site inspection must be carried out in order to inspect the equipment.

Requirements

A 1. (ASIIN 1.3) Ensure that the content of the curricula is up to date.

A 2. (ASIIN 2.1) Binding regulations on the recognition of external achievements have to be defined in line with the Lisbon convention.

A 3. (ASIIN 2.2) A consistent credit point system based on the amount of work the students spend on each module (workload) must be implemented, which encompasses all compulsory parts of the curricula. In addition, a process must be established to systematically monitor the student workload to ensure a just credit point allocation.

A 4. (ASIIN 2.3, 4.3) Provide modern software for the design and analysis of circuits.

A 5. (ASIIN 3) In addition to written examinations, alternative forms of examination must also be offered in order to ensure competence orientation and alignment to EQF Level 7.

A 6. (ASIIN 4.2) Offer opportunities for didactical training of teachers.

A 7. (ASIIN 5.1) The module descriptions must be expanded according to the aspects listed in the report and indicate a level corresponding to EQF 7.

A 8. (ASIIN 5.3) Make all information concerning the degree available to the students.

A 9. (ASIIN 6) Define processes and responsibilities regarding the quality assurance of the programs in accordance with the European Standards and Guidelines.

Recommendations

E 1. (ASIIN 1.3) It is recommended to further enhance the English skills of students and teaching staff.

E 2. (ASIIN 2.1) It is recommended to improve the mobility opportunities for students to complete a period of vocational practice or a stay at a different higher education institution without any prolongation of the studies.

E 3. (ASIIN 2.1) It is recommended to integrate elective modules in the curricula of all programs.

E 4. (ASIIN 5.3) It is recommended to set up an English website and to publish all relevant information in English.

G Comment of the Technical Committees

Technical Committee 01 – Mechanical Engineering/Process Engineering (22.11.2021)

Assessment and analysis for the award of the ASIIN seal:

The technical committee discusses the procedure to what extent it makes sense to suspend the accreditation decision. In view of the serious deficits that were recorded in the prerequisites by the expert group, it seems unlikely to him that the university will be able to remedy these within 18 months. The fact that the university has defined study goals for all programs that do not correspond to EQF Level 7 seems not to be a problem of presentation, but shows – from the point of view of the technical committee - the university's content approach. Since private universities in Tunisia are not allowed to support lecturers' research activities without further ado, it seems unlikely to the technical committee that a corresponding academic level could be sought and achieved in the foreseeable future. In addition, there is the completely inadequate laboratory equipment, both in terms of equipment and in terms of the building facilities.

Assessment and analysis for the award of the EUR-ACE® Label:

The Technical Committee deems that the intended learning outcomes of the degree programmes do not comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 01 – Mechanical Engineering/Process Engineering

The Technical Committee 01 – Mechanical Engineering/Process Engineering recommends the award of the seals as follows:

Degree Programme	**ASIIN Seal**	**Subject-specific label**	**Maximum duration of accreditation**
National Diploma Mechatronics Engineering	Refusal	Refusal	/

Technical Committee 02 – Electrical Engineering/Information Technology (22.11.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and finds it hard to understand why the peer group suggests a suspension of the procedure. In the opinion of the Technical Committee, the identified deficiencies of the programs and the institution as a whole are so serious that the prerequisites and requirements formulated by the experts cannot be met within the specified time. For the technical committee, it also remains questionable whether, in view of the structural and legal obstacles in the Tunisian system, it is at all in the interest and at the discretion of the university to fulfill the requirements and thus to improve the quality of the study programs accordingly. The Technical Committee therefore recommends refusing the accreditation application.

Assessment and analysis for the award of the EUR-ACE® Label:

The Technical Committee deems that the intended learning outcomes of the degree programmes do not comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 02 – Electrical Engineering/Information Technology

The Technical Committee 02 – Electrical Engineering/Information Technology recommends the award of the seals as follows:

Degree Programme	**ASIIN Seal**	**Subject-specific label**	**Maximum duration of accreditation**
National Diploma Electrical Engineering	Refusal	Refusal	/
National Diploma Electromechanical Engineering	Refusal	Refusal	/
National Diploma Mechatronics Engineering	Refusal	Refusal	/
National Diploma Computer Engineering	Refusal	Refusal	/

Technical Committee 03 – Civil Engineering, Geodesy and Architecture (15.11.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and follows the decision of the peers without any changes.

Assessment and analysis for the award of the EUR-ACE® Label:

The Technical Committee deems that the intended learning outcomes of the degree programmes do not comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture

The Technical Committee 03 – Civil Engineering, Geodesy and Architecture recommends the award of the seals as follows:

Degree Programme	**ASIIN-Seal**	**Subject-specific label**	**Maximum duration of accreditation**
National Diploma Civil Engineering	Suspension	EUR-ACE®	Suspension for max. 18 months

Prerequisites, Requirements and recommendations for the applied labels

Prerequisites

V 1. (ASIIN 1.1) Draft the educational objective so that they describe the academic, subject-specific and professional classification of the qualifications gained in the programs while adhering to EQF 7.

V 2. (ASIIN 1.3; 2.1) Redesign the programs, especially their scientific focus, to ensure that they adhere to EQF 7, which includes qualifying the students for pursuing a PhD, and that the module concept follows a clear structure and learning path. Consequently, completely revised and consistent module descriptions must be provided.

V 3. (ASIIN 1.4) Define technical admission requirements that reflect the subject-specific focus of the different study programs and that ensure that the necessary competences for EQF level 7 are reached.

V 4. (ASIIN 4.3) An on-site inspection must be carried out in order to inspect the equipment.

Requirements

A 1. (ASIIN 1.3) Ensure that the content of the curricula is up to date.

A 2. (ASIIN 2.1) Binding regulations on the recognition of external achievements have to be defined in line with the Lisbon convention.

A 3. (ASIIN 2.2) A consistent credit point system based on the amount of work the students spend on each module (workload) must be implemented, which encompasses all compulsory parts of the curricula. In addition, a process must be established to systematically monitor the student workload to ensure a just credit point allocation.

A 4. (ASIIN 2.3, 4.3) Provide modern software for the design and analysis of circuits.

A 5. (ASIIN 3) In addition to written examinations, alternative forms of examination must also be offered in order to ensure competence orientation and alignment to EQF Level 7.

A 6. (ASIIN 4.2) Offer opportunities for didactical training of teachers.

A 7. (ASIIN 5.1) The module descriptions must be expanded according to the aspects listed in the report and indicate a level corresponding to EQF 7.

A 8. (ASIIN 5.3) Make all information concerning the degree available to the students.

A 9. (ASIIN 6) Define processes and responsibilities regarding the quality assurance of the programs in accordance with the European Standards and Guidelines.

Recommendations

E 1. (ASIIN 1.3) It is recommended to further enhance the English skills of students and teaching staff.

E 2. (ASIIN 2.1) It is recommended to improve the mobility opportunities for students to complete a period of vocational practice or a stay at a different higher education institution without any prolongation of the studies.

E 3. (ASIIN 2.1) It is recommended to integrate elective modules in the curricula of all programs.

E 4. (ASIIN 5.3) It is recommended to set up an English website and to publish all relevant information in English.

Technical Committee 04 – Informatics/Computer Science (26.11.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and cannot follow the argumentation for a suspension of the procedure. In the opinion of the Technical Committee, the identified weaknesses of the programs and the institution as a whole are so serious that the prerequisites and requirements formulated by the experts cannot be met within the specified time. For the technical committee, it also remains questionable whether, in view of the structural and legal obstacles in the Tunisian system, it is at all in the interest and at the discretion of the university to fulfill the requirements and thus to improve the quality of the study programs accordingly. The Technical Committee therefore recommends refusing the accreditation application.

The Technical Committee 04 – Informatics/Computer Science recommends the award of the seals as follows:

Degree Programme	**ASIIN Seal**	**Subject-specific label**	**Maximum duration of accreditation**
National Diploma Computer Engineering	Refusal	Refusal	/

Technical Committee 06 – Engineering and Management, Economics (26.11.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee recognizes that the study program under review has a number of structural deficiencies for which the university itself is only partly responsible, but which are specified by the Tunisian ministry. Nevertheless, the majority of the Technical Committee members are in favor of giving the HEI the opportunity to make improvements and fulfill the prerequisites with the suspension for a maximum of 18 months. To address the two structural deficiencies – few full-time staff and hardly any laboratory equipment – the Technical Committee suggests two additional prerequisites (V5 and V6).

The Technical Committee 06 – Engineering and Management, Economics recommends the award of the seals as follows:

Degree Programme	**ASIIN Seal**	**Subject-specific label**	**Maximum duration of accreditation**
National Diploma Industrial Engineering	Suspension	EUR-ACE®	Suspension for max. 18 months

Prerequisites, Requirements and recommendations for the applied labels

Prerequisites

V 1. (ASIIN 1.1) Draft the educational objective so that they describe the academic, subject-specific and professional classification of the qualifications gained in the programs while adhering to EQF 7.

V 2. (ASIIN 1.3; 2.1) Redesign the programs, especially their scientific focus, to ensure that they adhere to EQF 7, which includes qualifying the students for pursuing a PhD, and that the module concept follows a clear structure and learning path. Consequently, completely revised and consistent module descriptions must be provided.

V 3. (ASIIN 1.4) Define technical admission requirements that reflect the subject-specific focus of the different study programs and that ensure that the necessary competences for EQF level 7 are reached.

V 4. (ASIIN 4.3) An on-site inspection must be carried out in order to inspect the equipment.

V 5. (ASIIN 4.1) It must be ensured that the majority of lecturers – especially those responsible for programs – are employed full-time at the university.

V 6. (ASIIN 4.3) The university must provide the necessary technical equipment on site for the implementation of the study programs as well as the research of the teachers.

Requirements

A 1. (ASIIN 1.3) Ensure that the content of the curricula is up to date.

A 2. (ASIIN 2.1) Binding regulations on the recognition of external achievements have to be defined in line with the Lisbon convention.

A 3. (ASIIN 2.2) A consistent credit point system based on the amount of work the students spend on each module (workload) must be implemented, which encompasses all compulsory parts of the curricula. In addition, a process must be established to systematically monitor the student workload to ensure a just credit point allocation.

A 4. (ASIIN 2.3, 4.3) Provide modern software for the design and analysis of circuits.

A 5. (ASIIN 3) In addition to written examinations, alternative forms of examination must also be offered in order to ensure competence orientation and alignment to EQF Level 7.

A 6. (ASIIN 4.2) Offer opportunities for didactical training of teachers.

A 7. (ASIIN 5.1) The module descriptions must be expanded according to the aspects listed in the report and indicate a level corresponding to EQF 7.

A 8. (ASIIN 5.3) Make all information concerning the degree available to the students.

A 9. (ASIIN 6) Define processes and responsibilities regarding the quality assurance of the programs in accordance with the European Standards and Guidelines.

Recommendations

E 1. (ASIIN 1.3) It is recommended to further enhance the English skills of students and teaching staff.

E 2. (ASIIN 2.1) It is recommended to improve the mobility opportunities for students to complete a period of vocational practice or a stay at a different higher education institution without any prolongation of the studies.

E 3. (ASIIN 2.1) It is recommended to integrate elective modules in the curricula of all programs.

E 4. (ASIIN 5.3) It is recommended to set up an English website and to publish all relevant information in English.

H Decision of the Accreditation Commission (07.12.2021)

Assessment and analysis for the award of the ASIIN seal:

The Accreditation Commission discusses the procedure intensively, especially with regard to the many serious deficiencies. They find that many of these deficiencies are due to structural framework conditions of the type of higher education institution, for example the low proportion of permanent teaching staff, the lack of laboratory equipment especially for research, as well as the lack of EQF 7 level. The Accreditation Commission does not see how the higher education institution can remedy these deficiencies in 18 months (the period of suspension of the procedure) and therefore votes to refuse accreditation for both study programmes.

Assessment and analysis for the award of the EUR-ACE® Label:

The Accreditation Commission deems that the intended learning outcomes of the degree programme do not comply with the engineering specific parts of the Subject-Specific Criteria of the Technical Committee 02 – Electrical Engineering/Information Technology.

Assessment and analysis for the award of the Euro-Inf® Label:

The Accreditation Commission deems that the intended learning outcomes of the degree programme do not comply with the Subject-Specific Criteria of the Technical Committee 04 – Informatics/Computer Science.

The Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN Seal**	**EUR-ACE®**	**Maximum duration of accreditation**
Ma Computer Engineering	Refusal	Refusal	/
Ma Electrical Engineering	Refusal	Refusal	/
Ma Electromechanical Engineering	Refusal	Refusal	/
Ma Mechatronics Engineering	Refusal	Refusal	/
Ma Civil Engineering	Refusal	Refusal	/
Ma Industrial Engineering	Refusal	Refusal	/

Appendix: Program Learning Outcomes and Curricula

According to the self-assessment report, the following **learning outcomes (intended qualifications profile)** shall be achieved by the Civil Engineering degree program:

CS1. Identify and master the different types of construction materials used in civil engineering.

CS2. Identify construction processes and principles of design and execution of civil engineering constructions.

CS3. Study the physical, mechanical and hydraulic properties of the foundation soils of civil engineering structures.

CS4. Model, design and size the main structures and master the sizing and verification methods.

CS5. Understand the main types of networks in urban subdivisions and study their design, sizing and implementation.

CS6. Make a diagnosis of disorders in civil engineering works and propose solutions to remedy them.

CS7. Develop the various schedules of a project, design a before, take a quantity survey, and carry out a price study.

CS8. Use and master adequate IT tools and software for the design, modeling and numerical calculation of structures.

The following **curriculum** is presented:

First year Civil Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE11 Mathematics	Mathematics for engineers	30	15		45	30	3	5	x	x
	Probability and statistics	15	7,5		22.5	30	2			x
UE12 IT and technology	Algorithm and data structure	15	7,5	7,5	30	30	2	6	x	x
	Programming languages	7,5		15	22.5	30	2		x	
	Applied Computing			22.5	22.5	20	2		x	
UE13 Mechanical 1	General mechanic	15	15	7,5	37,5	30	3	8	x	x
	Strength of materials	15	15	15	45	30	3		x	x
	Measurements and instrumentation	15		7.5	22.5	20	2		x	
UE14 materials sciences	Construction materials	22,5	7,5	15	45	30	3	7	x	x
	Engineering geology	15	7,5		22.5	30	2			x
	Topography	15	15	15	45	30	2		x	x
UE15 languages-business	French 1	22.5			22.5	15	1	4	x	
	English 1	22.5			22.5	15	1		x	
	Business management	22.5			22.5	15	2		x	
Total		232.5	90	105	427,5		30	30	12	8

First year Civil Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE16 Mathematics	Numerical analysis	22.5	22.5		45	30	3	6	x	x
	Operational research and optimization	22.5	7,5		30	30	3		x	X
UE17 IT	TP digital tools			15	15	30	2	5	x	
	DAO 1			30	30	30	3		x	
UE18 Mechanical 2	continuum mechanics	22.5	15		37.5	30	3	7	x	x
	Fluid mechanics	15	7.5		22.5	30	2		x	x
	Thermal transfer	15	7.5		22.5	30	2		x	x
UE19 soils and structure	Soil mechanics I	30	15	15	60	30	3	6	x	x
	Structure theory	22.5	15	7.5	45	30	3		x	x
UE110 languages-business	Entrepreneurship and Innovation	22.5			22.5	15	1	6		x
	French 2	22.5			22.5	15	1		x	
	English 2	22.5			22.5	15	1		x	
UE111 Project studies	1st year GC end-of-year project			30	30	15	3		x	
Total		217.5	90	97,5	405		30	30	12	8

Second year Civil Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE21 Science and technology	Finished elements	30			30	30	2	4	x	x
	Structural dynamics	30			30	30	2		x	x
UE22 IT	Building design office - DAO 2			30	30	30	2	5	x	
	Arche building simulation software			30	30	30	3		x	
UE23 Processes and project management	General Construction	15	15		30	30	2	6	x	x
	Processes Project management	15	15		30	20	2			x
	Study of routes I	15	15		30	30	2		x	x
UE24 Soils and structures	Soil Mechanics II	30	15	15	60	30	3	9	X	x
	Structure Theory II	30	15		45	30	3		x	x
	Reinforced concrete I	15	15		30	30	3		x	x
UE25 languages-business	Preparation for certification - French	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Leadership	22.5			22.5	30	2		x	
Total		247.5	90	75	412.5		30	30	12	8

Second year Civil Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE26 Science and technology	Calculation at break	15	15		30	30	2	7	x	x
	Reinforced concrete II	30	15		45	20	2		x	x
	Metal construction I	30	15		45	30	3		x	x
UE27 IT	Building project and CM Robot software			30	30	30	2	6	x	
	BE Routes and hydrology - Piste			30	30	30	2		x	
	Revit software			30	30	30	2		x	
UE28 Public works	General hydraulics	15	15		30	30	2	6	x	x
	Urban hydrology and hydraulics	15	15		30	20	2		x	x
	Road study II	15	15		30	20	2		x	x
UE29 languages-business	quality management	22.5			22.5	30	2	6	x	
	Communication techniques	22.5			22.5	30	2		x	
	Preparation for certification - English	22.5			22.5	30	2		x	
UE210 Project studies	End of year project 2nd year GC			30	30	45	5	5		
Total		187.5	90	120	397.5		30	30	12	6

Third year Civil Engineer - Semester I - Option: Structures and Constructions

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31 Science and technology	Metal Construction II	15	15		30	20	2	6	x	x
	Prestressed concrete	22.5	15		37.5	30	2		x	x
	Building physics and techniques	15	7,5		22.5	30	2		x	
UE32 Sizing and pathology	Design and calculation of building structures	15	15	15	45	30	3	7	x	x
	Building equipment and fire safety	15	7,5		22.5	20	2		x	
	Pathology of Constructions	15		15	30		2		x	
UE33 Infrastructure and works	Artwork	30	15		45	30	3	6	x	X
	Maritime Works	15	15		30	30	1		x	
	Hydraulic works	15	15		30		2			x
UE34 Construction management	Organization and planning	15	15	15	45	30	2	5	x	x
	Markets and regulations	7.5	7.5		15	30	1		x	x
	Economic evaluation of constructions	7.5	7.5		15	30	2			x
UE35 languages-business	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		255	135	45	435		30	30	13	8

Third year Civil Engineer - Semester I - Option: Infrastructures and Facilities

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31 Science and technology	Soil reinforcement	15	15		30	30	2	6	x	x
	Prestressed concrete	22.5	15		37.5	30	2		x	x
	Building physics and techniques	15	7,5		22.5	30	2		x	
UE32 Sizing and pathology	Design and calculation of building structures	15	15	15	45	30	2	4	x	x
	Building equipment and fire safety	15	7,5		22.5	20	2		x	
UE33 Infrastructure and works	Artwork	30	15		45	30	2	6	x	X
	Hydraulic and maritime works	15	7.5		22.5	30	2		x	x
	Pathology of works of art	15	7,5	15	37.5		2		x	
UE34 Construction management	Organization and planning	15	15	15	45	30	2	8	x	x
	Territory Development	15	15		30	30	2			x
	Urban infrastructure and management	7.5	7.5		15	30	2		x	
	Transport infrastructure and planning	7.5	7.5		15	30	2			x
UE35 languages-business	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		255	135	45	435		30	30	13	8

Third year Civil Engineer - Semester I - Option: Hydraulics and Environment

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31 Science and technology	Hydraulic works and works	15	15	15	45	20	3	7	x	x
	Prestressed concrete	15	15		30	30	2		x	x
	Modeling of transient flows	15	7.5	15	30	30	2		x	x
UE32 Building equipment	Building physics and techniques	15	7.5		22.5	30	2	4	x	
	Building equipment and fire safety	15	7,5		22.5	20	2		x	
UE33 Infrastructure and works	Underground hydraulics and aquifer systems	30	15		45	30	3	7	x	X
	Maritime hydraulics and coastal development	15	15		30	30	2		x	x
	Wastewater and Solid Waste	15	7,5		22.5		2			x
UE34 Planning and environment	Organization and planning	15	15	15	45	30	2	6	x	x
	Environmental impact	22.5	15		37.5	30	2		x	x
	Urban planning and flooding	15	15		30	30	2		x	
UE35 languages-business	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		255	135	45	435		30	30	13	8

Third year Civil Engineer - Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE36	Project Graduation					625	25	30	x	
	1st year internship					50	2		x	
	2nd year internship					75	3		x	
Total							30	30		

According to the self-assessment report, the following **learning outcomes (intended qualifications profile)** shall be achieved by the Computer Engineering degree program:

CS1. To be able to Design, model applications using methods, standards and design languages.

CS2. Proficiency in software development using different programming languages and development platforms.

CS3. To be able to optimize and secure the IT tool (hardware and software).

CS4. Mastery of network and computer systems design and administration

CS5. Mastery of embedded systems design and associated software development.

CS6. To be able to design, manage and analyze data for the decision support process.

The **following** curriculum is presented:

first year Computer Engineering Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE16	Probability and Statistics	30	15		45	30	3	7	x	x
	Numerical analysis	22.5			22.5	30	2			x
	Practical work: Matlab			15	15	35	2		x	
UE17	C ++ object-oriented programming	15	15	15	45	30	2	8	x	x
	Web2 programming	22.5			22.5	30	2			x
	Algorithm and programming	22.5			22.5	30	2			x
	Software engineering mini-project			22.5	22.5	30	2		x	
UE18	Architecture and microprocessors	15	15	15	45	30	3	5	x	x
	Logic systems	22.5			22.5	30	2			x
UE19	Introduction to AI	22.5			22.5	30	2	5		x
	Database management system	15	15	15	45	30	3		x	x
UE110	French 2	22.5			22.5	15	1	4	x	
	English 2	22.5			22.5	15	1		x	
	Final project			45	45	15	2			
Total		232,5	60	127,5	420		29	29	9	9

first year Computer Engineering Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE11	Mathematics	30	15		45	30	3	7	x	x
	Language theory	22.5			22.5	30	2			x
	Math tools lab			15	15	35	2		x	
UE12	C programming	15	15	15	45	30	3	6	x	x
	Web development	22.5			22.5	30	2			x
	Algorithm and programming			15	15	10	1		x	
UE13	Initiation to operating systems	22.5			22.5	30	2	5		x
	Database	15	15	15	45	30	3		x	x
UE14	Telecommunications networks	22.5			22.5	30	2	7		x
	Preparation for certification (HCNA)			22.5	22.5	30	2		x	
	Digital electronics	15	15	15	45	30	3		x	x
UE15	French 1	22.5			22.5	15	1	4	x	
	English 1				22.5	15	1		x	
	Business management	22.5			22.5	15	2		x	
Total		210	60	97.5	390		29	29	10	8

Second year Computer Engineering Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE26	Operational research	30	15		45	30	3	6	x	x
	Analysis and design methods	22.5			22.5	30	2			x
	Practical work: digital tools			15	15	10	1		x	
UE27	Advanced algorithmics and complexity	15	15	15	45	30	2	8	x	x
	Web programming (symphony)	22.5			22.5	30	2			x
	Software engineering	22.5			22.5	30	2			x
	Mini-project			22.5	22.5	30	2		x	
UE28	Object oriented programming	15	15	15	45	30	3	5	x	x
	C language#	22.5			22.5	30	2			x
UE29	Local corporate networks			22.5	22.5	30	2	5		x
	Linux operating systems	15	15	15	45	30	3		x	x
UE210	French	22.5			22.5	30	2	4	x	
	English	22.5			22.5	30	2		x	
Total		210	60	105	375		28	28	9	9

Second year Computer Engineering Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE26	JAVA J2EE	15	15	15	45	30	3	8	x	x
	Data Warehouse	22.5			22.5	30	2			x
	Artificial intelligence	15	15	15	45	30	3		x	x
UE27	Compilation Techniques	15	15	15	45	30	3	8	x	x
	IT in the company	15	15	15	45	15	2		x	x
	Software quality			15	15	15	1		x	
	C and Unix environment	22.5			22.5	30	2			x
UE24	Computer system and networks	22.5			22.5	30	2	3		x
	Cisco Security Certification			15	15	15	1		x	
UE29	Business creation	22.5			22.5	30	2	6	x	
	Communication techniques	22.5			22.5	30	2		x	
	English	22.5			22.5	30	2		x	
UE210	Final project			60	60	60	5	5		
Total		195	60	150	405		30	30	9	7

Third year Computer Engineering Engineer- Semester I-

computer engineering specialty

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31	Data Mining	15	15	15	45	30	3	8	x	x
	Big data	22.5			22.5	30	2			x
	Decision support systems	22.5			22.5	30	3		x	
UE32	Company IT II - ERP	15	15	15	45	30	3	5	x	x
	Project management with agile method	22.5			22.5	30	2			x
UE33	Advanced analysis and design methodology	15	15	15	45	30	3	6		x
	Network administration and security	15	15	15	45	30	3		x	
UE24	Object oriented architecture			22.5	22.5	30	2	7		x
	cloud computing			22.5	22.5	30	2			
	Mobile development	15	15	15	45	30	3		x	x
UE35	Labor law	22.5			22.5	30	2	6	x	
	English	22.5			22.5	30	2		x	
	French	22.5			22.5	30	2		x	
Total		202.5	90	135	427.5		32	32	9	9

Third year Computer Engineering Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE36	Project Graduation					625	25	30	x	
	1st year internship					50	2		x	
	2nd year internship					75	3		x	
Total							30	30		

According to the self-assessment report, the following **learning outcomes (intended qualifications profile)** shall be achieved by the Electrical Engineering degree program:

CS1. Design and implement measurement and data acquisition systems.

CS2. Design and master the various communication tools.

CS3. Design, size and master electronic circuit development tools.

CS4. Use adequate computer tools for the design and simulation of systems.

CS5. Design, implement and improve a regulation strategy for an industrial process.

CS6. Design and size an electrical installation and optimize its performance.

The following **curriculum** is presented:

First year Electrical Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE11	Mathematics I	30	15		45	30	3	8	x	x
	Numerical analysis	30	15		45	30	3		x	x
	Math tools lab			15	15	30	2		x	
UE12	A physics module of your choice	22.5			22.5	30	2	5		x
	Sensors and Instrumentation	22.5			22.5	30	2			x
	Practical work sensors &Instrumentation			15	15	10	1		x	
UE13	Computer science	15	15	15	45	30	3	5	x	x
	Mini IT project			15	15	30	2		x	
UE14	Electrical circuits and measurements	15	15	15	45	30	3	6	x	x
	Semiconductors & comp. electronic	22.5			22.5	20	1.5			x
	General Automatic	22.5			22.5	20	1.5			x
UE15	Business management	22.5			22.5	20	1.5	6	x	
	French 1	22.5			22.5	20	1.5		x	
	English 1	22.5			22.5	20	1.5		x	
	Opening module: Energy	22.5			22.5	20	1.5		x	
Total		270	60	75	405		30	30	11	8

First year Electrical Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE16	Mathematics for engineers	30	15		45	30	3	7	x	x
	Probability and statistics	15	15		30	25	2			x
	TP statistical tools			15	15	30	2		x	
UE17	Regulation and control	22.5			22.5	30	2	5		x
	General automatic workshop			15	15	10	1		x	
	Heat transfers	22.5			22.5	30	2			x
UE18	Electrical materials	22.5			22.5	30	2	7	x	x
	Strength of materials	22.5			22.5	30	2			x
	Electronic	22.5		15	37.5	40	3		x	x
UE19	Signal processing	22.5			22.5	30	2	5		x
	Logic systems	22.5		15	37.5	40	3		x	x
UE110	Entrepreneurship and Innovation		22.5		22.5	10	1	6	x	
	French 2	22.5			22.5	10	1		x	
	English 2	22.5			22.5	10	1		x	
	End of year project 1			45	45	30	3		x	
Total		247,5	52,5	105	405		30	30	10	9

Second year Electrical Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE21	Operational research - Optimization	15	15		30	45	3	6		x
	Identification & Estimation	22.5			22.5	30	2			x
	Practical work tools optimization				15	15	1		x	
UE22	Electrical Machines I	15	15	15	45	30	3	7	x	x
	Power Electronics I	15	15	15	45	30	3		x	x
	Apparatus and protection	22.5			22.5	10	1			x
UE23	C ++ programming	22.5			22.5	15	1.5	6		x
	Operating systems (UNIX)	22.5			22.5	15	1.5			x
	Microprocessors and microcontrollers	15	15	15	45	30	3		x	x
UE24	Discrete signals and systems	22.5			22.5	30	2	5		x
	Command in state space	15	15	15	45	30	2		x	x
	Electronic CAD mini-project			15	15	15	1		x	
UE25	Preparation for certification - French	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Leadership	22.5			22.5	30	2		x	
Total		255	75	75	405		30	30	9	9

Second year Electrical Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE26	Industrial automation	22.5			22.5	30	2	5		x
	Optimal Command	22.5			22.5	30	2			x
	workshop on N. Command of processes			15	15	10	1		x	
UE27	FPGA-VHDL elec programmable systems)	15	15	15	45	30	3	8	x	x
	Advanced Microcontrollers	15	15	15	45	30	3		x	x
	Analog signal transmission	22.5			22.5	30	2			x
UE28	Power Electronics II	15	15	15	45	20	2.5	6	x	x
	Electrical machines II	15	15	15	45	20	2.5		x	x
	design office (Autocad Electricity)			15	15	10	1		x	
UE29	quality management	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Communication techniques	22.5			22.5	30	2		x	
UE210	End of year project 2			60	60	60	5	5	x	
Total		195	60	150	405		30	30	10	7

Third year Engineer Electrical Engineering- Semester I-
Specialty: Electronics & Communication

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31	Data transmission networks	15	15	15	45	30	3	7	x	x
	Digital signal transmission	22.5			22.5	30	2		x	
	Coding and Information Protection	22.5			22.5	30	2			x
UE32	Real time computing	22.5			22.5	30	2	4	x	
	Embedded Systems Workshop			15	15	30	2		x	x
UE33	Routers and switchers	15	15	15	45	30	3	8		x
	Design office (Routing protocols)			15	15	30	2		x	
	Communication systems	30	15		45	30	3			x
UE34	Intelligent controls	15	15	15	45	30	3	5		x
	Mini-project intelligent control			15	15	30	2			x
UE35	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		307.5	15	60	382.5		30	30	8	8

Third year Engineer Electrical Engineering- Semester I-
Specialty: Electrical Engineering & Industrial Electronics

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31	Electrical engineering CAD	30		15	45	30	3	7	x	x
	Control & supervision of electrical sys	30		15	45	15	2		x	x
	Machine control workshop			15	15	30	2		x	
UE32	Renewable energies & ER workshop	30		15	45	30	2	4	x	x
	Design office (energy audit)			15	15	30	2		x	
UE33	Energy transport and distribution	22.5			22.5	30	3	8		x
	stability and protection of electrical res.	30		15	15	30	2		x	x
	Real time computing	22.5			22.5	30	3			x
UE34	Intelligent controls	15	15	15	45	30	3	5	x	x
	Mini-project intelligent control			15	15	30	2		x	
UE35	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		247,5	15	120	382,5		30	30	11	7

Third year Electrical Engineering Engineer- Semester I-
Specialty: Industrial IT Specialty

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31	Real-time operating systems	45			45	30	3	8	x	x
	Industrial management and supervision	45			45	30	3		x	x
	Real-time mini-project			15	15	30	2		x	
UE32	Industrial information systems	22.5			22.5	30	2	7		x
	Local networks and distributed architecture	45			45	30	3		x	x
	Mini local network project			15	15	30	2		x	
UE33	Artificial intelligence	45			45	30	3	5	x	x
	Robotics & vision workshop			30	30	20	2		x	
UE34	Intelligent controls	15	15	15	45	30	3	4		x
	Mini-project intelligent control			15	15	10	1		x	
UE35	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		247,5	15	120	382,5		30	30	11	6

Third year Engineer Electrical Engineering- Semester II

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE36	Project Graduation					625	25	30	x	
	1st year internship					50	2		x	
	2nd year internship					75	3		x	
Total							30	30		

According to the self-assessment report, the following **learning outcomes (intended qualifications profile)** shall be achieved by the Industrial Engineering degree program:

CS1. Master the processes and global issues of industrial systems and study the environmental, energy and financial impacts.

CS2. Model the process of building a production system for goods and services.

CS3. Design, size, manage and optimize production systems for goods and services.

CS4. Set up a continuous improvement process: Diagnosis / Action plan / Assessment and monitoring.

CS5. Manage the performance of a system by setting up relevant indicators for decision-making.

CS6. Be able to make strategic, tactical and operational decisions.

The following **curriculum** is presented:

first year Industrial Engineering Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP	Total		Module	UE	continuous control	Exam
UE11	Mathematics I	30	15		45	30	3	8	x	x
	Numerical analysis	30	15		45	30	3		x	x
	Math tools lab			15	15	30	2		x	
UE12	A physics module of your choice	22.5			22.5	28	2	5		x
	Measurement and Instrumentation	22.5			22.5	28	2			x
	TP measurement and Instrumentation			15	15	10	1		x	
UE13	Computer science	15	15	15	45	30	3	5	x	x
	Mini IT project			15	15	35	2		x	
UE14	Thermodynamics	30	15		45	30	3	6	x	x
	Electrical engineering	30	15		45	30	3		x	x
UE15	Business management	22.5			22.5	25	1.5	6	x	
	French 1	22.5			22.5	25	1.5		x	
	English 1	22.5			22.5	25	1.5		x	
	Opening module: Energy	22.5			22.5	25	1.5		x	
Total		270	75	60	405		30	30	12	7

first year Industrial Engineering Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE16	Mathematics for engineers	30	15		45	30	3	7	x	x
	Probability and statistics	15	15		30	20	2			x
	Practical work: statistical tools			15	15	30	2		x	
UE17	Operational research-optimization	15	15		30	20	2	5		x
	Introduction to Industrial Engineering	22.5			22.5	25	2			x
	Practical work: optimization tools			15	15	15	1		x	
UE18	Materials sciences	15	15		30	30	3	5	x	x
	Mini-project Materials Science			15	15	30	2		x	
UE19	Heat transfers	30	15		45	30	3	6	x	x
	Fluid mechanics	30	15		45	30	3		x	x
UE110	Entrepreneurship and Innovation		22.5		22.5	25	1.5	7	x	
	French 2	22.5			22.5	25	1.5		x	
	English 2	22.5			22.5	25	1.5		x	
	Final project			45	45	30	2.5		x	
Total		202.5	112.5	90	405		30	30	12	7

Second year Industrial Engineering Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE21	Electronic	15	15	15	45	30	3	7	x	x
	Automatic and systems control	15	15	15	45	30	2		x	x
	Logic systems	15	15	15	45	30	2		x	
UE22	Strength of materials	22.5			22.5	30	2	7		x
	Design methodology and tools	15	15	15	45	30	3			x
	Mechanical production processes	15		15	30	30	2		x	
UE23	Thermal machines	22.5			22.5	30	2	4	x	x
	Renewable energies	22.5			22.5	30	2		x	
UE24	Discrete optimization	22.5			22.5	30	2	6	x	x
	Stochastic processes	22.5			22.5	30	2		x	x
	Data base	22.5			22.5	30	2		x	
UE25	Preparation for certification - French	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Leadership	22.5			22.5	30	2		x	
Total		277.5	45	75	397.5		30	30	12	7

Second year Industrial Engineering Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE26	Analysis of Production Systems I	15	15	15	45	30	3	8	x	x
	Simulation of industrial systems	15	15	15	45	30	3		x	x
	Logistics and transport	22.5			22.5	30	2			x
UE27	Product industrialization process	22.5			22.5	30	2	4		x
	Quality management and mastery of Prof.	22.5			22.5	30	2			x
UE28	Da ta Mining	22.5			22.5	30	2	7		x
	Industrial IT-Industry 4.0	15	15	15	45	30	3		x	x
	Energy strategies	22.5			22.5	30	2			x
UE29	Financial management	22.5			22.5	30	2	6	x	
	Management control	22.5			22.5	30	2		x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Communication techniques	22.5			22.5	30	2		x	
UE210	Final project			60	60	60	5	5	x	
Total		247.5	45	105	397.5		30	30	8	8

Third year Industrial Engineering Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31	Analysis of Production Systems II	15	15	15	45	30	3	8	x	x
	Practical work: ERP	15		30	45	30	3		x	
	Breadmaking and scheduling	22.5			22.5	30	2			x
UE32	Project management	22.5			22.5	20	1.5	6	x	
	Lean management- certification	30		15	45	30	3		x	x
	Supply chain management	22.5			22.5	20	1.5			x
UE33	Business strategy	22.5			22.5	30	2	6	x	
	Technological strategies	22.5			22.5	30	2			x
	Industrial Marketing	22.5			22.5	30	2			x
UE34	Information systems engineering	22.5			22.5	30	2	4		x
	Decision theory	22.5			22.5	30	2			x
UE35	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		307.5	15	60	382.5		30	30	8	8

Third year Industrial Engineering Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE36	Project Graduation					625	25	30	x	
	1st year internship					50	2		x	
	2nd year internship					75	3		x	
Total							30	30		

According to the self-assessment report, the following **learning outcomes (intended qualifications profile)** shall be achieved by the Electromechanical Engineering degree program:

CS1. Design, implement and improve an electromechanical system.

CS2. Use of computer tools for validation, simulation and control of electromechanical devices.

CS3. Define the methods of industrialization and implement the production processes.

CS4. Develop quality procedures, comply with applicable standards and implement corrective actions.

CS5. Plan and supervise production and maintenance procedures.

CS6. Optimize energy consumption.

The following **curriculum** is presented:

First year Electromechanical Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE11	Mathematics I	30	15		45	30	3	7	x	x
	Numerical analysis	30	15		45	30	3		x	x
	Math tools lab			15	15	10	1		x	
UE12	Vibratory mechanics	22.5			22.5	30	2	8		x
	Mechanical concept	22.5		15	37.5	20	2			x
	Solid mechanics	22.5			22.5	30	2			x
	Strength of materials	22.5			22.5	30	2			x
UE13	Computer science	15	15	15	45	30	3	4	x	x
	Mini IT project			15	15	10	1		x	
UE14	Electrical engineering 1	22.5		15	37.5	30	3	5		x
	Automatic 1	22.5			22.5	30	2		x	x
UE15	Business management	22.5			22.5	20	1.5	6	x	
	French 1	22.5			22.5	20	1.5		x	
	English 1	22.5			22.5	20	1.5		x	
	Opening module: Energy	22.5			22.5	20	1.5		x	
Total		300	45	75	420		30	30	10	9

First year Electromechanical Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE16	Mathematics for engineers	30	15		45	30	3	7	x	x
	Probability and statistics	15	15		30	20	2			x
	Practical work :statistical tools			15	15	30	2		x	
UE17	continuum mechanics	22.5			22.5	30	2	6		x
	CAD 1			15	15	10	1		x	x
	Heat transfer	22.5	15		37.5	30	3			x
UE18	Manufacturing technology	22.5		15	37.5	30	3	6	x	
	Materials processing techniques	22.5		15	37.5	30	3			x
UE19	Electronics 1	22.5			22.5	30	2	5		x
	Logic circuits	22.5		15	37.5	30	3		x	x
UE110	Entrepreneurship and Innovation		22.5		22.5	10	1	6	x	
	French 2	22.5			22.5	10	1		x	
	English 2	22.5			22.5	10	1		x	
	Final project			45	45	30	3		x	
Total		225	67,5	120	412,5		30	30	9	9

Second year Electromechanical Engineer- Semester I-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE21	Manufacturing process	30	15		45	30	3	6	x	x
	Metallurgy	30		15	45	30	3		x	x
UE22	Applied thermodynamics	22.5		15	37.5	20	2	6	x	x
	Fluid mechanics	22.5		15	37.5	20	2		x	x
	Instrumentation and measurement	22.5		15	37.5	20	2		x	x
UE23	Power transmission	22.5			22.5	30	2	4		x
	CAD2			22.5	22.5	30	2		x	
UE24	Electronics 2	22.5		15	37.5	20	3	8	x	x
	Automatic 2	22.5		15	37.5	20	3		x	x
	Electric machine	22.5			22.5	30	2			x
UE25	Preparation for certification - French	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Leadership	22.5			22.5	30	2		x	
Total		285	15	112,5	412,5		30	30	11	9

Second year Electromechanical Engineer- Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE26	Implementation without removing material	22.5		15	37.5	30	3	7	x	x
	Destructive controls and not. metals	22.5		15	37.5	30	3		x	x
	Statistical control of production			15	15	10	1		x	
UE27	Lean manufacturing	22.5			22.5	30	2	6		x
	Industry 4.0	22.5			22.5	30	2			x
	SMA command	15		15	30	30	2		x	x
	Finished elements	15		15	30	30	2		x	x
UE28	Programmable controllers	22.5			22.5	30	2	6		x
	Power electronics	15		15	30	30	2		x	x
	State variables	15		15	30	30	2		x	x
UE29	Business creation	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Communication techniques	22.5			22.5	30	2		x	
UE210	Final project			60	60	60	5	5	x	
Total		240	0	165	405		30	30	11	9

Third year Electromechanical Engineer - Semester I- Option: thermal machines

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31	CNC machine technology	15	15	15	45	30	3	6	x	x
	Machining techn. on Special Machines	22.5			22.5	20	1.5			x
	Production line technology	22.5			22.5	20	1.5			x
UE32	Quality Control	22.5			22.5	30	2	6		x
	Maintenance of EM systems - CMMS	22.5		15	37.5	20	2		x	x
	Production management - CAPM	15		15	30	25	2		x	x
UE33	Dynamics of compressible fluids	22.5			22.5	30	2	6		x
	Study of industrial thermal systems	22.5		15	37.5	20	2		x	x
	Electrical installation	15		15	30	25	2		x	x
UE34(opt)	Construction of Thermal and Volumetric Machines	22.5			22.5	30	2	6		x
	Industrial energy	22.5			22.5	30	2			x
	Turbo machinery theory	22.5			22.5	30	2			x
UE35	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		315	15	75	405		30	30	8	12

Third year Electromechanical Engineer - Semester I- Option: Productics

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31	CNC machine technology	15	15	15	45	30	3	6	x	x
	Machining technique on Special Machines	22.5			22.5	20	1.5			x
	Production line technology	22.5			22.5	20	1.5			x
UE32	Quality Control	22.5			22.5	30	2	6		x
	Maintenance of EM systems - CMMS	22.5		15	37.5	20	2		x	x
	Production management - CAPM	15		15	30	25	2		x	x
UE33	Dynamics of compressible fluids	22.5			22.5	30	2	6		x
	Study of industrial thermal systems	22.5		15	37.5	20	2		x	x
	Electrical installation	15		15	30	25	2		x	x
UE34(opt)	CAM and Process Control	22.5			22.5	30	2	6		x
	Industrial control	22.5			22.5	30	2			x
	Robotics	22.5			22.5	30	2			x
UE35	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		315	15	75	405		30	30	8	12

Third year Electromechanical Engineer - Semester I- Option: Mechanics and Structure

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE31	CNC machine technology	15	15	15	45	30	3	6	x	x
	Machining technique on Special Machines	22.5			22.5	20	1.5			x
	Production line technology	22.5			22.5	20	1.5			x
UE32	Quality Control	22.5			22.5	30	2	6		x
	Maintenance of EM systems - CMMS	22.5		15	37.5	20	2		x	x
	Production management - CAPM	15		15	30	25	2		x	x
UE33	Dynamics of compressible fluids	22.5			22.5	30	2	6		x
	Study of industrial thermal systems	22.5		15	37.5	20	2		x	x
	Electrical installation	15		15	30	25	2		x	x
UE34(opt)	Modeling of structures	22.5			22.5	30	2	6		x
	Computer-aided structural calculation	22.5			22.5	30	2			x
	Turbo machinery theory	22.5			22.5	30	2			x
UE35	Labor law	22.5			22.5	30	2	6	x	
	Preparation for certification - English	22.5			22.5	30	2		x	
	Preparation for certification - French	22.5			22.5	30	2		x	
Total		**315**	**15**	**75**	**405**		**30**	**30**	**8**	**12**

Third year Electromechanical Engineer - Semester II-

Teaching unit	Module	Half-yearly hourly volume					Crédits/coefficients		Assessment method	
		In class				Self-learning				
		Lesson	TD	TP			Module	UE	continuous control	Exam
UE36	Project Graduation					625	25	30	x	
	1st year internship					50	2		x	
	2nd year internship					75	3		x	
Total							**30**	**30**		