ASIIN Seal & EUR-ACE®

Accreditation Report

National Diploma
Computer Science
Telecommunications

Provided by
Private Higher School of Technology and Management (SUPTECH)

Version: 24 September 2024

Table of Content

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 Informatique	Computer Science	ASIIN, Euro-Inf®	/	04
	Telecommunications	ASIIN, EUR-ACE®	/	02
Date of the contract: 08.02.2017 **Submission of the final version of the self-assessment report:** 15.07.2022 **Date of the on-site visit:** 18-21 October 2022				
Peer panel: Prof. Dr. Kirsten Weide-Zaage, Leibnitz University of Hannover Prof. Dr.-Ing. Moustafa Nawito, IU International University of Applied Sciences Prof. Dr. Bernd Becker, University of Freiburg Uwe Sesztak, Independent Consultant Islem Agrebi, Student at EPI Sousse				
Representative of the ASIIN headquarter: Sophie Schulz				
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				

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

[2] TC: Technical Committee for the following subject areas: TC 02 - Electrical Engineering/Information Technology; TC 04 - Informatics/Computer Science

Subject-Specific Criteria of Technical Committee 02 – Electrical Engineering/Information Technology as of December 9, 2011 Subject-Specific Criteria of Technical Committee 04 – Informatics/Computer Science as of March 29, 2018	

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
Computer Science	Diplôme d'ingénieur en Informatique	- Computer Engineering - Computer systems and networks - Information and knowledge systems	7	Full time	/	6 semesters	180 ECTS	Annually; November 2002
Telecommunications	Diplôme d'ingénieur Télécom	- Mobile networks and services - Telecom services engineering	7	Full time	/	6 semesters	180 ECTS	Annually; October 2012

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

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:

- Learning objectives per program
- Objective-module-matrix per program
- Module descriptions per program
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:

The Private Higher School of Technology and Management (SUPTECH) has described program objectives and program learning outcomes for both degree programs. The peers approve that for each program a presentation of learning outcomes is given in combination with learning outcome matrices matching the described learning outcomes with the respective modules of the programs. The peers acknowledge that updating the qualification objectives and learning outcomes is a crucial element of SUPTECH's quality management, which should guarantee that students are trained in conjunction with the demand of the employment market as well as adapt to technological changes. The learning objectives are therefore regularly evaluated by participants of SUPTECH's scientific council, the teaching staff, students, alumni and related institutional stakeholders. The latter include a number of partner companies that work closely with SUPTECH, e.g. by teaching courses, planning industrial visits or supervising end of studies projects. A detailed overview of the defined learning objectives can be found in the appendix of this document.

Although the HEI has formally defined and described learning objectives for both programs, the peers note that they are written in a rather unclear manner and do not reflect the level

[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.

of academic qualification aimed at. The learning objectives of the Computer Science program, for example, are divided into several sub-categories (e.g. basic activities and skills, specific activities and skills, abilities, scientific skills, procedural knowledge and theoretical knowledge) that do not seem to follow any logical path and do not reflect the skills and competencies of a computer science graduate at EQF level 7. Most of the objectives listed in these sub-categories are rather generic, and in particular, the majority of all skills described aims at business and management related skills rather than competencies to be acquired in the field of computer science. While the objectives for the Telecommunications program are generally described in a more reasonable way, a closer look at them (and in particular also at the individual module descriptions) shows that, while they are for most part relevant and continuous, they mostly reflect in an introductory to intermediate level. Moreover, both sets of learning outcomes lack any specific information on job profiles and career opportunities of the future graduates.

Furthermore, the qualification objectives of both degree programs clearly show a professional focus and lack an adequate scientific aspect. 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, in particular if they aim at obtaining a degree at master's level. The peers are convinced that due to the lack of scientific and methodological 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 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 scientific nature of the degree programs, the peers conclude that the qualification objectives overall do not fully correspond to EQF level 7.

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

Criterion 1.2 Name of the degree program

Evidence:

- Ministerial agreements

- Self-assessment report
- Module descriptions per program
- Discussions during the on-site visit

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). However, the peers note that regarding the specialization "mobile networks and services" within the Telecommunications program, the telecommunications component is rather low, and thus point out that this could be taken into account when revising the curriculum.

Criterion 1.3 Curriculum

Evidence:

- Study plan per program
- Module descriptions per program
- Objective-module-matrix per program
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
The curricula of both programs are designed to comply with the program objectives and learning outcomes, and, according to the self-assessment report, are subject to continuous revision processes. As such, the curricula are reviewed regularly and commented on by students and lecturers as well as by external stakeholders such as alumni or partners from schools and the private sector.

In the Computer Science program, all students study the same core contents during the third year and subsequently choose their specialty for the fourth and fifth year of the program. Here, the students can choose between three different specialties: computer engineering, computer systems and networks, and information and knowledge systems. Similarly, the students of the Telecommunications program start their studies with one core curriculum during the third year and choose their specialty for the fourth and fifth year according to their individual interests. In this program, students can choose between two specialties: mobile networks and services, telecom services engineering.

In the self-assessment report, SUPTECH 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, both 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 program, although they share some concerns given the equipment used in the laboratories (cf. criterion 4.3).

As already discussed in criterion 1.1, the peers are not convinced, however, that the study programs are at a level that is appropriate for a master's program (EQF Level 7). When reviewing the study plans as well as the module descriptions, they miss both a deepening and a broadening of the knowledge acquired during the students' previous studies and notice a clear lack of R&D components in the curricula. The peers find that – although the sequence of courses and the topics chosen do in general follow a clear learning path – many of the modules cover only basic competencies rather than broadening or deepening them, which does not do justice to a level EQF 7. Overall, the programs consist of a very large number of very small courses, which means that most of the topics are discussed only superficially, without conveying sufficient technical and scientific knowledge. Next to the structural issues, the peers also find that a large part of the courses of both programs cover topics that do not correspond with master's level requirements.

The peers are therefore of the opinion that the curricula of both study programs need to be redesigned in order to meet the requirements of a master's program (EQF 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 both study programs students do not learn how to work scientifically or how to use scientific methods.

Criterion 1.4 Admission requirements

Evidence:

- Official admission regulations
- Self-assessment report

- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
The admission requirements and conditions are defined for both study programs in the study guide as well as the respective student handbook. In accordance with the provision of Law No. 2000-73, regulating private higher education in Tunisia, two types of admissions are possible: Admission through the preparatory cycle and direct admission to the study programs (engineering cycles).

The preparatory cycle is open for all students holding a technical baccalaureate. Students that have completed this two-year preparatory cycle have a right to choose any of the offered engineering programs at SUPTECH.

It is also possible to apply directly to the engineering programs. Any student, whether Tunisian or international, is eligible for the study programs if he or she holds a technology license (EQF 6) matching the chosen engineering course, a master's degree or has completed a preparatory cycle at a different university. Master's degree students may directly advance to the second year of the program if they have already achieved the necessary skills and knowledge in their previous degree.

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 SUPTECH, 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 SUPTECH are given preference.

The lack of clear admission requirements also reflects in the fact that the students complain about the contents of the courses being often repetitive. The basic problem lies in the fact that students come from two different backgrounds, i.e. the preparatory cycle and bachelor's programs. The peers learn that 50 % of the modules are on the bachelor's level, which means that those with a bachelor's degree face a lot of repetition while those who completed the preparatory cycle have to make up a lot of content in a limited amount of time.

In summary, the peers urge SUPTECH 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 cri-

teria 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.

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

The peers do not consider the criterion to be fulfilled.

2. The degree program: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Module descriptions per program
- Study plan per program
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:

SUPTECH 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 SUPTECH, each student has to undertake a two-year long preparatory cycle before beginning studying his specialty, which in this case are computer science and telecommunications. 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 prac-

tical work, mini-projects, excursions and compulsory internships (s. below). The sixth semester is mainly devoted to the development of the end of study project that is generally carried out at a company.

By the time of the on-site visit, the programs offered at SUPTECH are designed based on a set of modules that are entirely mandatory. Thus, the programs do not offer any elective courses. SUPTECH 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 SUPTECH management. They are currently planning to take actions in the near future to introduce elective courses. The peers believe this to be a very promising undertaking and support SUPTECH 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. The peers therefore believe it to be necessary that SUPTECH re-designs the curricula for both study programs. In this undertaking, it would also be possible to re-organize the modules so that they appear more coherent and cohesive.

Mobility

SUPTECH 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 SUPTECH. The students have the opportunity to spend a study semester abroad through mobility agreements and partnerships with foreign institutes, mainly in France and China. In addition, students can also spend time at other universities or colleges that they choose on their own and will receive support from SUPTECH 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. During the on-site visit, the peers learn that currently though, only very few students take the opportunity to spend a semester abroad, which they find very regrettable. The main reasons why the number of students going abroad is so low are because students are not well informed about the different opportunities to go abroad and also the funding opportunities. Moreover, the number of partner universities is also rather limited, and the peers are convinced that increasing the range of attractive cooperation partners would encourage more students to study abroad. The peers therefore recommend improving the opportunities for students to complete a semester or an internship abroad, without any prolongation of their studies. They also urge SUPTECH 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 on-site visit

Preliminary assessment and analysis of the peers:
All modules in the programs are assigned ECTS credits. Every semester comprises 30 credits while each credit is valued 30 working hours. The modules usually consist of three (in some cases two or four) courses relating to one overarching topic and are thus compiled in a meaningful structure. Feedback concerning the workload is collected through the course evaluation survey at the end of the study year and adaptions are made if necessary. During the on-site visit, the students confirm that the workload is generally well reflected by the number of credits awarded and more or less equally divided through the study years and program. They also emphasize that they have enough time for repetition and self-study and also to work on the side in order to finance their studies. The peers consider the workload to be overall manageable and transparent.

Criterion 2.3 Teaching methodology

Evidence:

- Module descriptions per program
- Self-assessment report
- Discussions during the on-site visit

Discussions during the audit Preliminary assessment and analysis of the peers:
From the presented material as well as the discussions on-site, it becomes apparent that the pedagogical skills and adequate teaching methodology are highly valued at SUPTECH and in the programs under review. The pedagogical skills and teaching methods are also part of the evaluations that SUPTECH carries out for each course.

As was already pointed out, the teaching methodology in the programs is strongly attached to practical approaches and the students' ability to find adequate jobs after the completion of the programs. Teaching is usually done in the form of lectures, seminars, tutorials and practical work. To support the practical orientation, both programs contain a large number of mini projects and end-of-year projects, next to the final project which is also aimed at the practical application of the competencies acquired during the studies.

The peers acknowledge that all members of the teaching staff are dedicated and committed to good teaching and are also open to use new/alternative forms of teaching where

appropriate. The peers further appreciate that the programs are partly taught by representatives from the industry (who have the necessary qualification to teach in a university program) that only offer one or two courses with a specific professional background. Overall, the teaching methodology is considered up-to-date and adequate in order to convey the contents envisaged by the programs.

Criterion 2.4 Support and assistance

Evidence:

- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
The aim of SUPTECH is to ensure the provision of a good educational service for all its students. The peers get a comprehensive impression of the offers related to support and assistance of the students. Being a private institution, student groups are small and limited in size and the well-being of the students is very much looked after. They have good opportunities to pursue their projects, and the teaching staff is always open to support if requested. During the discussion with the students, they confirm that they feel greatly supported and supervised. During their studies, students are always in direct contact with their professors who are responsible for listening to them and responding to their requests concerning the progress of their studies and the difficulties they encounter. The students also particularly praise the great support they receive when it comes to finding a placement for the internships. Next to the direct support by the professors, the school's alumni association helps students familiarize themselves with the professional environment and equally supports them in obtaining internships or final projects in an entrepreneurial environment.

In conclusion, the peers have no doubt that sufficient support and assistance is given to the students, thus ensuring their best possible success. 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 SUPTECH 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 consider the criterion to be partly fulfilled.

3. Exams: System, concept and organization

Criterion 3 Exams: System, concept and organization

Evidence:

- Exam regulations
- Examination charter
- Module descriptions per program
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
At SUPTECH, assessment is conducted according to the regulations defined in the examination regulations and the exam charter. The assessment system at SUPTECH 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. A typical form of continuous monitoring is reporting on a specific topic, an oral presentation or a combination thereof. Laboratory work is assessed through reports and practical work exams. 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. The relevant rules for examination and evaluation criteria are transparently put into a legal framework, as both students and lecturers confirm in the audit discussions. All final exams take place within a certain timeframe at the end of each semester. This timeframe (exam week) is communicated at the beginning of each academic year. Before each exam week, SUPTECH carries out a revision period of one week for students to prepare intensively for their final exams. A detailed schedule is published in due time that informs about the exact time and date when each exam takes place. The peers confirm that rules have been defined for disability compensation measures, illness and other mitigating circumstances.

During the on-site visit, the peers were provided with a selection of exams and final projects to check. The peers note that, 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. Although the peers generally get a better impression of the academic standard of the final theses presented, as most of them cover demanding topics, they still lack the necessary 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 consider the criterion to be partly fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Staff handbook
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:

SUPTECH teachers include university professors, lecturers, assistant professors and assistants or engineers. Assistants must hold a Master's degree, while assistant professors and professors must hold a PhD. During the on-site visit, the peers learn that at least 50% of the staff members need to be permanent employees and, similarly, at least 50 % of all staff need to hold a PhD. By the time of the on-site visit, 14 staff members hold a PhD. 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.

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. SUPTECH has recently established a monitoring process that allows students to evaluate the lecturers at the end of each class (cf. criterion 6)

The peers learn that temporary teachers are bound by contract to finish the module they have started in order to ensure that students can finish the course (and the exam) without disruptions. However, most temporary teachers, despite their title, tend to stay at SUPTECH for a very long time, mostly for eight to nine years, thus guaranteeing a consistent

teaching of the modules and the curriculum. The peers thus can 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 SUPTECH and are highly qualified 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 two programs. During the audit they acknowledge that the workload is evenly distributed and that, for example, temporary teachers are only allowed to teach up to six hours a week at SUPTECH given their professorship at another university as well. As such, the peers do not identify major risks potentially impeding a responsible execution of the services offered to students.

Criterion 4.2 Staff development

Evidence:

- Self-assessment report
- Discussions during the on-site visit

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 SUPTECH, 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, the number of staff members actively conducting research and develop recognized research activities through publications is comparatively low. However, with regard to the practical orientation of the HEI and the degree programs and the fact that the majority of the teaching staff has a PhD, the peers do not consider this to be a problem. In addition, SUPTECH lists all institutes with which there is cooperation in terms of laboratories, which convinces the peers.

The peers gather the impression that there are no opportunities offered for the teaching staff that aim at didactical training. Although the staff members can regularly participate in trainings offered, for example, by CISCO, these focus on content-related issues rather than didactical/pedagogical questions. However, didactical training is something the peers deem to be absolutely necessary and also something that should be offered directly by the institution itself, especially since SUPTECH also recruits a large share of staff members from the industry who have little prior experience in teaching.

Criterion 4.3 Funds and equipment

Evidence:

- Self-assessment report
- Tour through the institution and laboratories during the on-site visit

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

The peers learn that SUPTECH 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.

During the on-site visit, the peers inspect the different facilities of the faculty, and in particular, the laboratories that are used in the two study programs. While the peers agree that the laboratories might in general be adequate for teaching purposes, they emphasize that the available equipment is not sufficient for research activities, as they do not have any labs with product development, specialized software, hands-on hardware equipment beyond PCs, nor research capabilities, which guarantee the implementation of the study programs at master's level. Students reaching a master's level in higher education should be able to design, develop, and eventually build and test systems in the field of mechanics, electronics or mechatronics. The peers, however, conclude that the labs are not adequately equipped for that purpose. Similarly, the peers also emphasize that the library in its current state and with its equipment available is not adequate in order for programs to be taught and implemented at master's level. The library is extremely small and the number of books very much limited. Also, students do not have sufficient access to scientific journal articles and other academic and scientific online sources.

The peers thus urge SUPTECH to provide adequate access to current scientific literature as well as labs with product development, specialized software, hands-on hardware equipment beyond PCs, and research capabilities in order to allow the implementation of the study programs at master's level.

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

The peers consider the criterion to be partly fulfilled.

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:

- Module descriptions per program

Preliminary assessment and analysis of the peers:
SUPTECH presents module descriptions for all modules offered in both study programs. The peers notice that while all necessary categories are included, the module descriptions are in several cases rather unspecific, as in particular the description of the qualification goals and the taught contents is often too short and thus does not give a sufficient overview of the expectations and outcomes of the module.

The peers ask SUPTECH to standardize the module descriptions and to describe all essential categories precisely so that students as well as external stakeholders can get a detailed overview of the study programs, also on the website and in English. 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 for each program
- Sample transcript of record for each program
- Sample diploma supplements for each program

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 entail all necessary information. SUPTECH provides examples of all these documents. However, the Diploma Supplement provided is so far only available in French. The peers thus ask SUPTECH to issue Diploma Supplements in English to all students.

Criterion 5.3 Relevant rules

Evidence:

- Ministry authorization of both degree programs
- Examination regulations
- Admission regulations

Preliminary assessment and analysis of the peers:
The peers confirm that most rights and duties of both the university and the students are defined and binding. In addition, many regulations stem directly from the ministry and are thus authorized accordingly. From the documents provided and the discussions during the on-site visit, the peers learned that SUPTECH follows a policy of transparent and open rules and regulations. All required rules and regulations are made accessible to students. The discussion with the students confirmed that they feel well informed about regulations and comfortable about the access to any information about their degree program.

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

With its statement, SUPTECH hands in a revised version of the Diploma Supplement, which is now also available in English.

The peers consider the criterion to be partly fulfilled.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- SUPTECH quality approach
- Sample evaluation questionnaires
- Self-assessment report
- Discussions during the on-site visit

Preliminary assessment and analysis of the peers:
According to the self-assessment report, SUPTECH has implemented a quality management process to establish and implement methods for monitoring the satisfaction of relevant stakeholders (students, teachers, industry), and in particular to evaluate teaching and to monitor student success/progress.

SUPTECH maintains contact with its graduates to ensure their level of employability and relies in particular, for this action, on the collaboration of the alumni association. In addition, the management of the school works to create favorable conditions for the development of teachers, administrative staff and students and ensures this through periodic surveys to measure satisfaction. In addition, students are called upon to discuss with the

teachers about the course of the training. They are also represented in the school's scientific council and are associated with decisions relating to the improvement of training courses and the general conditions for the conduct of training.

The industry perspective is reflected in the quality management process through the involvement of industry representatives in teaching and seminars and their co-supervision of final projects which are supposed to constitute an opportunity for a fruitful exchange on adjusting training to the needs of the industrial environment

During the on-site visit, the peers discuss the topics related to quality assurance in great detail with all stakeholders. While the peers get the impression that the programs under review are subject to internal quality assessment procedures aiming at continuous improvement, they hardly find any binding mechanisms used for this purpose. This becomes particularly apparent during the discussion about the evaluations carried out at SUPTECH. The peers learn that evaluations take place on a regular basis and always per subject. Here, SUPTECH aims at reaching response rates of at least 60-70 % per evaluation and continuously strives to increase these rates and encourage students to use their opportunity to have an influence on the courses and teaching. Although all stakeholders confirm that evaluations are carried out on a regular basis, the peers find that the results of evaluations are not systematically analyzed and are neither discussed with students, nor published. In addition, it remains unclear how exactly the evaluation results are dealt with, and whether or how any measures are derived from them.

The peers conclude that the basic elements for an internal quality management system have been laid. However, as a next – and highly relevant – step, quality assurance must be actively practiced in the everyday life of the HEI in the future. This means that binding mechanisms must be introduced and, in particular, systematic analyses (both of evaluation results but also with a view to adapting learning objectives and curricula) must be introduced and actually carried out and concrete measures derived from them. Concerning the evaluations, this entails that SUPTECH ensures a closed feedback loop by sharing and discussing evaluation results with its students and all other stakeholder. Finally, the understanding of quality, the quality approach implemented and the individual mechanisms of the quality management system must be anchored in a binding document.

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

The peers do not consider the criterion to be fulfilled.

D Additional Documents

Not applicable.

E Comment of the Higher Education Institution (28.02.2023)

SUPTECH submits a comprehensive statement including revised supporting documents describing how the prerequisites, requirements, and recommendations will be implemented. The reviewers thank SUPTECH for the explanations and acknowledge that the described plans for the study programs are going in the right direction, but emphasize that all explanations are plans for the future. For this reason, they propose that all prerequisites, requirements, and recommendations (except the requirement for the Diploma Supplement) be retained.

F Summary: Peer recommendations (19.03.2023)

Taking into account the additional information and the comments given by SUPTECH, 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 Science	Suspension for max. 18 months	Euro-Inf	Suspension for max. 18 months
National Diploma Telecommunications	Suspension for max. 18 months	EUR-ACE	Suspension for max. 18 months

Prerequisites

V 1. (ASIIN 1.1) Draft educational objectives which 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. Consequently, completely revised 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.

V 4. (ASIIN 4.3) Provide adequate access to current scientific literature as well as labs with product development, specialized software, hands-on hardware equipment beyond PCs, and research capabilities in order to allow the implementation of the study programs at master's level.

Requirements

A 1. (ASIIN 1.3) Ensure that students learn methods of scientific work.

A 2. (ASIIN 4.2) Offer opportunities for didactical training and career development of teachers.

A 3. (ASIIN 5.1) The module descriptions must be extended, in particular with regards to the content, the person responsible for the module and the form of examination, and indicate a level corresponding to EQF 7. Moreover, include a table of content.

A 4. (ASIIN 5.2) Provide Diploma Supplements in English.

A 5. (ASIIN 6) Establish a university-wide quality management system that incorporates all mechanisms and processes to ensure continuous academic quality and improvement.

Recommendations

E 1. (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 2. (ASIIN 2.1) It is recommended to integrate elective modules in the curricula of all programs.

G Comment of the Technical Committees

Technical Committee 04 – Informatics/Computer Science (08.03.2023)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee agrees with the assessment of the peers without any changes.

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

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

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 Science	Suspension for max. 18 months	Euro-Inf	Suspension for max. 18 months

Prerequisites

V 1. (ASIIN 1.1) Draft educational objectives which 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. Consequently, completely revised 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.

V 4. (ASIIN 4.3) Provide adequate access to current scientific literature as well as labs with product development, specialized software, hands-on hardware equipment beyond PCs, and research capabilities in order to allow the implementation of the study programs at master's level.

Requirements

A 1. (ASIIN 1.3) Ensure that students learn methods of scientific work.

A 2. (ASIIN 4.2) Offer opportunities for didactical training and career development of teachers.

A 3. (ASIIN 5.1) The module descriptions must be extended, in particular with regards to the content, the person responsible for the module and the form of examination, and indicate a level corresponding to EQF 7. Moreover, include a table of content.

A 4. (ASIIN 5.2) Provide Diploma Supplements in English.

A 5. (ASIIN 6) Establish a university-wide quality management system that incorporates all mechanisms and processes to ensure continuous academic quality and improvement.

Recommendations

E 1. (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 2. (ASIIN 2.1) It is recommended to integrate elective modules in the curricula of all programs.

Technical Committee 02 – Electrical Engineering/Information Technology (06.03.2023)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee agrees with the assessment 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 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 Telecommunications	Suspension for max. 18 months	EUR-ACE	Suspension for max. 18 months

Prerequisites

V 1. (ASIIN 1.1) Draft educational objectives which 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. Consequently, completely revised 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.

V 4. (ASIIN 4.3) Provide adequate access to current scientific literature as well as labs with product development, specialized software, hands-on hardware equipment beyond PCs, and research capabilities in order to allow the implementation of the study programs at master's level.

Requirements

A 1. (ASIIN 1.3) Ensure that students learn methods of scientific work.

A 2. (ASIIN 4.2) Offer opportunities for didactical training and career development of teachers.

A 3. (ASIIN 5.1) The module descriptions must be extended, in particular with regards to the content, the person responsible for the module and the form of examination, and indicate a level corresponding to EQF 7. Moreover, include a table of content.

A 4. (ASIIN 5.2) Provide Diploma Supplements in English.

A 5. (ASIIN 6) Establish a university-wide quality management system that incorporates all mechanisms and processes to ensure continuous academic quality and improvement.

Recommendations

E 1. (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 2. (ASIIN 2.1) It is recommended to integrate elective modules in the curricula of all programs.

H Decision of the Accreditation Commission (24.03.2023)

Assessment and analysis for the award of the ASIIN seal:

The Accreditation Commission discusses the procedure and follows the recommendations of the peer group and the Technical Committees without any changes.

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

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

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 Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN-seal**	**Subject-specific label**	**Maximum duration of accreditation**
National Diploma Computer Science	Suspension for max. 18 months	Euro-Inf	Suspension for max. 18 months
National Diploma Telecommunications	Suspension for max. 18 months	EUR-ACE	Suspension for max. 18 months

Prerequisites

V 1. (ASIIN 1.1) Draft educational objectives which 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. Consequently, completely revised 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.

V 4. (ASIIN 4.3) Provide adequate access to current scientific literature as well as labs with product development, specialized software, hands-on hardware equipment beyond PCs, and research capabilities in order to allow the implementation of the study programs at master's level.

Requirements

A 1. (ASIIN 1.3) Ensure that students learn methods of scientific work.

A 2. (ASIIN 4.2) Offer opportunities for didactical training and career development of teachers.

A 3. (ASIIN 5.1) The module descriptions must be extended, in particular with regards to the content, the person responsible for the module and the form of examination, and indicate a level corresponding to EQF 7. Moreover, include a table of content.

A 4. (ASIIN 5.2) Provide Diploma Supplements in English.

A 5. (ASIIN 6) Establish a university-wide quality management system that incorporates all mechanisms and processes to ensure continuous academic quality and improvement.

Recommendations

E 1. (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 2. (ASIIN 2.1) It is recommended to integrate elective modules in the curricula of all programs.

I Resumption of the procedure for the NED Programmes Computer Science, Telecommunications

Comment/opinion of the university (08.07.2024)

The HEI submitted a report on 08/07/2024 commenting on the experts' assessment and outlining the changes that the HEI has implemented so far. The report is supported by evidence. The following is taken from the SUPTECH's report:

"Criterion 1.1 Objectives and learning outcomes of a degree program

Objectives and learning outcomes have been rewritten to match the academic and professional requirements of the EQF7 level. The description of the objectives and learning outcomes for each speciality of the two training programs has been reworded to clearly present the expected learning outcomes of the new study plans and the logical pathway of the modules in these curricula. It should be pointed out in this connection that we have taken care to respect the reference framework proposed by the Subject Specific Criteria drawn up by ASIIN for the two training programs.

2- Competencies for the IT program have been revised to align the program with the specific needs of the IT field and the requirements of the job market. The basic skills targeted are scientific and technical, but particular attention is paid to behavioral and communication skills through the introduction of "soft skills" modules and the organization of soft skills events (See document on drive).

3- With regard to the specificity and depth of study programs, the modules proposed in the new study plans have been rewritten to align them with the targeted level of study. These modules have been grouped into several units that follow a logical path from one semester to the next, in order to offer students increasingly advanced content, and awarding ECTS credits generally between 5 and 8 for each unit, with the exception of the soft skills units. Lectures, practical work, projects and self-study sessions have been integrated into both the IT and Telecom programs, while respecting the workload required for each module, based on self-assessment reports. A unit focusing on soft skills has also been added for each semester of the program, to enable students to master communication, teamwork, improve their language skills and more. In the new version of the program, an effort has been made to broaden and deepen technical and scientific knowledge, particularly in core skills such as mathematics and physics, as well as in scientific skills such as data analysis,

protocol engineering and NoSQL database systems. In addition, the programs have been broadened to emphasize the topicality of subjects and gear training towards new emerging professions. This organization ensures consistency in the development of skills throughout the student's course of study.

4-The qualification objectives of both study programs have been enriched by scientific modules, particularly in the first and second semesters. SUPTECH students in the engineering cycle are expected to acquire and engage in scientific activities through various "Sup-Skills" seminars and conferences organized by the university (See document Suptech events on Drive). These events give them the opportunity to deepen their technical skills and learn about the latest advances in their field of study. In addition, they are required to carry out scientific work through mini-projects integrated into most modules, PFAs in semester 4 and PFEs at the end of the curriculum (5th semester). This approach enables students to develop their skills through practical experience. A specific module, "Research Methods and Technology Watch", has been included in semester 5 to reinforce research methodology skills. In addition, since the 2023/2024 academic year, SUPTECH has required the inclusion in every internship report of a chapter dedicated to research methodology. A dedicated hourly volume for self-study has also been introduced into study plans to enable students to devote extra time to their research projects. In conclusion, engineers graduating from SUPTECH University will have a level of scientific and methodological knowledge enabling them to occupy appropriate senior positions in companies and administrations, or to pursue a career in research.

5- The learning objectives have been enriched with specific information about the job profiles of future graduates. All information concerning the career prospects of future SUPTECH engineers has been specifically mentioned for each specialization in the "Learning objectives and outcomes" appendix. This approach is designed to give students, from the moment they enter Suptech, a clear vision of the career opportunities open to them after graduation.

1.2 Name of degree program

The steering committee has taken into account comments on strengthening the "telecommunications" component in the "Mobile Networks and Services" specialization, by integrating advanced courses such as "Optical communication" in semester 4, "Evolution and migration to 5G" in semester 5, etc. ... All the changes made to the study plans are given in the new version of these curricula. As mentioned in the response to criterion 1.1, the new version of the study plans reflects an effort to broaden and deepen knowledge in order to reach EQF7 level.

The importance of research and development (R&D) has been taken into account in the two new curricula. Emphasis has been placed on ensuring that most science modules focus on understanding, creating and implementing innovative solutions. These modules focus on exploring cutting-edge concepts and solving problems in emerging fields such as artificial intelligence, computer networks, cyber security and many others. In addition, partnership agreements have been set up with research laboratories to offer students opportunities to learn about scientific research.

Both curricula have been redesigned to encourage students to adopt a scientific approach, by introducing modules that enable them to acquire research skills and adopt a scientific approach to problem-solving. One example of this is the reinforcement of the "Engineering tools" teaching unit, comprising scientific modules designed to improve students' ability to adopt a scientific approach. For further details, see criterion 1.1.

SUPTECH attaches the necessary importance to the practical aspect of laboratory training to enable students to apply their theoretical knowledge.

SUPTECH has recently invested in new equipment to further enhance this experience.

1.4 Admission requirements

SUPTECH has clarified the admission requirements for the engineering cycle. SUPTECH's admission criteria comply with the regulations laid down by Tunisia's Ministry of Higher Education and Research, and have been validated by the latter.

SUPTECH has clarified the different ways of accessing the IT and telecommunications engineering training program (integrated preparatory courses, traditional preparatory courses and specific competitive examinations).

Each of these routes has been detailed, with specific criteria and associated admission procedures.

The steps and criteria for taking part in the admissions competitions added by SUPTECH have been detailed to ensure total transparency and a clear understanding of the steps to be taken by applicants. Submission and complaint deadlines have also been specified to ensure a smooth and fair admissions procedure.

This selection process is designed to assess candidates' skills and potential, while maintaining an inclusive approach that reflects the diversity of our academic community.

Suptech has also improved communication around its admissions criteria, ensuring that applicants clearly understand the specific expectations and requirements associated with each program.

Clear selection criteria have been established by SUPTECH to manage overcapacity. For the first year of the engineering cycle, x% of our intake capacity is reserved for students who have completed the first year of the master's cycle. For the second year of the engineering cycle, x% of our intake capacity (CA2) is reserved for students who have completed the first year of the master's program.

Students who have completed the preparatory cycle at SUPTECH benefit from a specific admission pathway where their admission to Suptech's engineering training programs is conditional only on successful completion of the two preparatory years.

Concrete steps have been taken to address peer feedback on repetitive course content. Modules focusing on advanced topics and actuakity have been introduced in both the IT and telecommunications programs. In addition, course content has been revised to avoid redundancy and offer a smoother progression in the concepts taught.

In addition, efforts have been made to integrate interactive and innovative teaching methods, such as real-life case studies, as well as practical projects into most modules throughout the program, to further engage students in their learning, while respecting the workload required for each module.

Criterion 2.1 Structure and modules

Module descriptions have been revised and rewritten to fully meet peer-review criteria. Detailed descriptions of objectives and content have been included in each module sheet.

- A set of 5 elective modules has been added to the fifth semester of each specialization in both the IT and Telecom programs. Of these 5 modules, students have the option of choosing 3, the aim being to encourage individual specialization and enable students to shape their academic path according to their needs and career aspirations.

As already mentioned in the response to criterion 1.3, all modules have been restructured into units, following a logical sequence from one semester to the next, with ECTS credits generally ranging from 5 to 8 for each unit, with the exception of soft skills units. The established sequence of modules ensures that learning outcomes are achieved.

- SUPTECH promotes international student mobility by signing partnership agreements with other universities and renewing existing agreements, as explained in the partnership section. Within this framework, Suptech has just renewed the signature of an agreement with the Rusta Universities of Abidjan, in addition to the agreement already signed with the Kofi Annan University of Guinea Conakry. Discussions are also underway to renew other agreements, including one with Toulouse's INP.

Criterion 2.2 Workload and credits

- An ECTS credit system is implemented according to the student's workload. Workload includes contact hours and self-study time.

Credits are allocated to each module according to its estimated workload. It is regularly checked whether the credits awarded for each module correspond to the student's actual workload, and whether the distribution of the workload over all semesters is within the students' reach, while still enabling them to obtain a diploma of the required level. Students are involved in these processes, notably through questionnaires.

Criterion 2.3 Teaching methodology

- A variety of teaching methods and didactic media are used to achieve set learning outcomes and support student-centered teaching. It is considered that both online and face-to-face teaching methods at SUPTECH are crucial and complement each other. The balance between contact hours and self-study time is reinforced in the curriculum, with particular attention paid to students' academic autonomy. In addition, the introduction of students to independent practical and scientific work is integrated into the curriculum. Regular checks are made to ensure that the teaching and learning methods used support the achievement of program objectives. In addition, Suptech pays particular attention to ensuring that students acquire a solid grounding in the fundamentals and methods of scientific research? This reflects the company's concern to train engineers who are capable, depending on their choice, either of continuing their studies at doctoral level or of integrating into the job market.

Criterion 2.4 Support and assistance

SUPTECH is committed to continuing its efforts to maintain an educational environment where every student benefits from full support from their teachers, thus fostering an enriched learning experience.

Internship support initiatives are strengthened to guarantee professional opportunities, thanks to partnerships established with several companies. (See Quality section)

In this respect, Suptech's student associations and alumni association play an important role in communication between the university administration and students. A budget is allocated to these associations to support the activities they organize.

3. Examinations

- Following improvements to the objectives and content of the modules for both the IT and telecoms engineering programs, the final exams and projects will be automatically adapted to the new curricula and thus aligned to EQF7 level.

-SUPTECH exams cover each of the modules taught and assess the extent to which the defined learning objectives have been achieved.

-The curriculum includes a final year project (PFE). SUPTECH requires the inclusion of a chapter dedicated to the theoretical foundations of the problem studied and the research methodology adopted. These requirements are set out in the PFE charter drawn up by Suptech

- Transparent rules for examinations, absences, sickness and special arrangements for students with disabilities or special needs. These rules are posted on university premises and published on the Suptech website.

Exam scheduling takes into account students' workloads and allows them the time they need to prepare.

Examinations are graded according to criteria defined in advance and communicated to students. Students may appeal to the home department by written request or via the Suptech complaints e-mail address after the results have been announced.

As part of the quality assurance process, an assessment of the various aspects of the examination process is systematically and compulsorily carried out.

4. Resources

The composition, professional orientation and qualifications of the teaching staff are adapted to the success of both programs of study. SUPTECH places great importance on the continuous development of its teachers, enabling them to remain at the cutting edge of advances in their respective fields. To this end, SUPTECH registers its teaching staff for prestigious national and international conferences and events, such as Innov'Robots 2023 and 2024, and the MMS 2024 school, thus promoting the exchange of knowledge and the enrichment of skills. In addition, the institution financially supports part of its teachers' research, giving them the means to innovate and make a significant contribution to their disciplines. To stimulate pedagogical innovation, SUPTECH regularly plans dedicated seminars, encouraging the exploration of new teaching and learning methods. In addition, SUPTECH ensures that its teachers take part in certification sessions in their teaching fields, guaranteeing a high level of qualification and expertise among its teaching staff.

Criterion 4.3: Funds and equipment

Suptech has strengthened the technological equipment of its laboratories, particularly those linked to the telecommunications program, as shown by the photos illustrating the new acquisitions.

The library's content has been enriched with new titles following evaluation surveys and proposals from teachers and students, in particular to provide the bibliographic resources needed for the modules in the new study plans. In the same context, Suptech has subscribed to Cyberlibris services and to the Scholarvox International website. The subscription allows access to the Site, the Database and use of the Services.

Criterion 5.1: Module descriptions

All module descriptions have been reformulated and standardized according to the ASIIN format. Module descriptions are accessible to all students and external stakeholders on the website, and contain the following elements: Module title, module objectives, module leader, teaching methods, credit, module prerequisites, learning outcomes, content, assessment methods and bibliography.

Criterion 5.2: Diploma and diploma supplement

SUPTECH provides the diploma supplement in French and English.

Criterion 6 Quality

Suptech is committed to a quality assurance process in line with the letter of commitment signed by its management in 2022.

In this context, several actions have been undertaken, including:

-Setting up a quality committee

-Mapping out the various educational processes and the management of admissions, schooling and examinations within Suptech. -The implementation of an annual action plan with precise dates for binding evaluation actions, in concomitance with the annual calendar for the organization of the academic year at Suptech, drawn up before the start of classes (this calendar is required by the supervisory ministry).

-Surveys to evaluate modules (with students), satisfaction surveys (teachers and staff) and partner surveys. A survey on the employability of Suptech graduates is carried out every 3 years. Read the full document on the action plan and key achievements of the quality assurance program."

Assessment of the experts (23.08.2024)

The experts assess the quality development of the Master's degree programmes on the basis of the above-mentioned written documentation. The following gives an account of the experts' assessment of the programme's development.

Conditions for resumption of the procedure

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

The experts review the revised intended learning outcomes (ILOs) for both programmes. They note that the new ILOs address every specialization of the two programmes and describe the academic, subject-specific and professional classification of the qualifications of graduates and that the ILOs correspond to EQF 7. They note, for example, the distinction between technical, scientific and soft skills. They also welcome the fact that the ILOs now include specific information on the job profiles of future graduates. In conclusion, they consider that the precondition has been met.

V 2. (ASIIN 1.3; 2.1) Redesign the programs, especially their scientific focus, to ensure that they adhere to EQF 7. Consequently, completely revised module descriptions must be provided.

The experts can identify several changes that have been made to the programmes, which show an improvement to a certain degree. For example, they welcome the addition of several scientific modules to the programmes. For example, the "Research Methods and Technology Watch" module in the fifth semester is designed to strengthen students' research methodology skills. In addition, SUPTECH notes that students are now required to include a chapter on research methodology in each internship report. In terms of subject-specific changes, SUPTECH has followed the experts' suggestion to strengthen the "Telecommunications" component in the "Mobile Networks and Services" specialisation by integrating advanced courses such as "Optical Communications" and "Evolution and Migration to 5G". The experts appreciate the progress made; however, they feel that the scientific elements are not sufficiently integrated into the technical courses themselves. Therefore, they find that most modules in both programmes still do not correspond to EQF level 7, as most modules lack advanced content, integration of scientific components and academic work, and completion of advanced case studies and/or projects. As these deficiencies are still too severe, the experts recommend that both programmes be rejected.

V 3. (ASIIN 1.4) Define technical admission requirements that reflect the subject-specific focus of the different study programs.

SUPTECH provides revised and clarified admission requirements, detailing each step of the admission process. The experts believe that the admission requirements now adequately reflect the subject-specific focus of the different programmes.

V 4. (ASIIN 4.3) Provide adequate access to current scientific literature as well as labs with product development, specialized software, hands-on hardware equipment beyond PCs, and research capabilities in order to allow the implementation of the study programs at master's level.

In terms of laboratory equipment, the experts see some progress, for example that more specialised equipment has been acquired in the telecommunications laboratories. However, they note that some of this equipment is clearly outdated. They also agree that further equipment and software modules are still needed. With regard to scientific literature, the experts note that there is no description or evidence of newly provided access to state-of-the-art research libraries such as IEEE, Springer, etc. In conclusion, the experts hold that in the current condition, it is not possible for the student to achieve the programme learning outcomes and acquire qualifications that correspond to EQF level 7. They therefore recommend a refusal of the two programmes.

Requirements

A 1. (ASIIN 1.3) Ensure that students learn methods of scientific work.

On the one hand, the experts note that more elements have been included in both programmes to train students in scientific working methods (see V2). On the other hand, they also note that there is still a lack of access to state-of-the-art research libraries such as IEEE, Springer, etc., which are essential for scientific work. Furthermore, the expert group is unable to clarify how training in scientific methodology is integrated into the technical modules (with the exception of final projects). For these reasons, the experts consider the requirement to be partially fulfilled.

A 2. (ASIIN 4.2) Offer opportunities for didactical training and career development of teachers.

The experts welcome the fact that SUPTECH has outlined various plans to provide specific seminars for teachers. However, the experts find no evidence that these seminars have

been designed or implemented. They also find no evidence of teachers' participation in different conferences and competitions.

A 3. (ASIIN 5.1) The module descriptions must be extended, in particular with regards to the content, the person responsible for the module and the form of examination, and indicate a level corresponding to EQF 7. Moreover, include a table of content.

The experts note that SUPTECH has provided revised module descriptions which now include detailed information on the content, the person responsible for the module and the form of examination. The objectives and contents of the modules adequately reflect EQF 7. The experts therefore consider that the requirement is met.

A 4. (ASIIN 5.2) Provide Diploma Supplements in English.

SUPTECH states that it provides a Diploma Supplement in English and French. However, the HEI does not provide any samples in English as evidence. Therefore, the experts consider that the requirement is not met.

A 5. (ASIIN 6) Establish a university-wide quality management system that incorporates all mechanisms and processes to ensure continuous academic quality and improvement.

SUPTECH outlines the actions it has taken to meet this requirement. These include the establishment of a Quality Committee (minutes of the last meeting provided as evidence), the critical review of SUPTECH's educational and administrative processes, the development and implementation of an annual action plan with precise dates for binding evaluations, and the regular evaluation of students, teachers and industry partners. The experts welcome the measures taken by SUPTECH and consider the requirement to be met.

Recommendations

E 1. (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

The experts note that SUPTECH has expanded its portfolio of partnerships for student mobility opportunities by renewing existing agreements and signing new agreements with other universities. The institution has provided a full list of partners, including Tiangong University (China), Polytech Nantes Engineering School of the University of Nantes and Kofi Annan University of Guinea Conakry. The expert group welcomes the increased number of partner universities for student exchanges and considers the recommendation to be met.

E 2. (ASIIN 2.1) It is recommended to integrate elective modules in the curricula of all programs.

The experts note that five optional modules have been integrated into each programme. Students can choose three of the five modules. The experts appreciate the inclusion of electives in the two programmes and consider them a valuable addition to the curricula. They only point out that the new elective on 5G in the Telecommunications programme is rather outdated for a Master's programme and therefore suggest replacing it with a module on 6G. Overall, the view is that the recommendation has been fulfilled.

Taking into account the additional information and the comments given by SUPTECH, the peers summarize their analysis and **final assessment** for the award of the ASIIN certificate as follows:

Degree Programme	**ASIIN-seal**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
National Diploma Computer Science	Refusal	/	Euro-Inf	Refusal
National Diploma Telecommunications	Refusal	/	EUR-ACE	Refusal

Prerequisites

V 1. (ASIIN 1.3; 2.1) Redesign the programs, especially their scientific focus, to ensure that they adhere to EQF 7. Consequently, completely revised module descriptions must be provided.

V 2. (ASIIN 4.3) Provide adequate access to current scientific literature as well as labs with product development, specialized software, hands-on hardware equipment beyond PCs, and research capabilities in order to allow the implementation of the study programs at master’s level.

Requirements

A 1. (ASIIN 1.3) Ensure that students learn methods of scientific work.

A 2. (ASIIN 4.2) Offer opportunities for didactical training and career development of teachers.

A 3. (ASIIN 5.2) Provide Diploma Supplements in English.

Recommendations
/

Assessment of the Technical Committees (05.09.2024)

Technical Committee 02 – Electrical Engineering/Information Technology (28.08.2024)

Assessment and analysis for the award of the ASIIN seal:

The TC discusses the procedure and agrees with the experts that the NED programme Telecommunications does not meet all the prerequisites sufficiently and that there are still fundamental deficiencies in the programme. They therefore propose that the programme be rejected.

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

The Technical Committee deems that the intended learning outcomes and the curriculum 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	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
National Diploma Telecommunications	Refusal	/	EUR-ACE	Refusal

Technical Committee 04 – Informatics/Computer Science (13.09.2024)

Assessment and analysis for the award of the ASIIN seal:

The TC discusses the procedure and follows the assessment of the experts. They also find that the remaining deficits in the NED programme Computer Science are still too severe in order to award an accreditation. They therefore recommend a refusal of the degree programme.

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

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

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

Degree Programme	ASIIN-seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
National Diploma Computer Science	Refusal	/	Euro-Inf	Refusal

Decision of the Accreditation Commission (24.09.2024)

Assessment and analysis for the award of the ASIIN seal:

The Accreditation Commission discusses the procedure and follows the vote of the expert group and the Technical Committees. They also consider the remaining deficiencies to be too serious to grant accreditation and therefore decide to reject the two study programmes.

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

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

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

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

The Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN-seal**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
National Diploma Computer Science	Refusal	/	Euro-Inf	Refusal
National Diploma Telecommunications	Refusal	/	EUR-ACE	Refusal