



ASIIN Seal & EUR-ACE® Label

Accreditation Report

Master's Degree Programmes

Civil Engineering

Architecture

Provided by

**Institut International de Technologie
in Sfax, Tunisia**

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A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for ¹	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC) ²
Diplôme National d'Ingénieur en Génie Civil	National Diploma of Civil Engineering	ASIIN, EUR-ACE® Label	--	TC 03
Diplôme National d'Architecture	National Diploma of Architecture	ASIIN	--	TC 03
Date of the contract: 21.02.2021 Submission of the final version of the self-assessment report: 28.02.2021 Date of the online visit: 28.-29.06.2021 at: online				
Peer panel: Peter Kersten, Student representative, University Wuppertal Prof. Dr. Johannes Alexander Schmidt, University Duisburg-Essen Prof. Dr. Ralf Weber, Technical University Dresden Univ.-Prof. Dr.-Ing. Tim Ricken, University of Stuttgart Univ.-Prof. Dr.-Ing. Mike Gralla, Technical University Dortmund Dipl.-Ing. Sebastian Sage, Experts Sage Popp Schagemann				
Representative of the ASIIN headquarter: Yanna Sumkötter				
Responsible decision-making committee: Accreditation Commission for Degree Programmes				

¹ ASIIN Seal for degree programmes; EUR-ACE® Label: European Label for Engineering Programmes

² TC: Technical Committee for the following subject areas: TC 03 - Civil Engineering, Geodesy and Architecture

Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria, as of 10.12.2015 Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy and Architecture as of 28.09.2012	
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B Characteristics of the Degree Programmes

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	National Diploma of Civil Engineering	--	7	Full time	--	6 Semesters	180 ECTS	Once a year in Fall/Winter Semester; first offered in 2013
Architecture	National Diploma of Architecture	--	7	Full time	--	12 Semesters	360 ECTS	Once a year in Fall/Winter Semester; first offered in 2013

For the National Diploma in Civil Engineering the institution has presented the following profile on their website:

“Civil Engineering is a set of professional and technical activities which are necessary to realize civil constructions. The civil engineer takes in charge design, construction, management, maintenance and repair work in the building domain and public works. He is required to meet the growing needs of people while ensuring public safety and respecting the environment and sustainable development.

The Civil Engineer mobilizes the skilled human resources, as well as technical and financial means to realize projects. The fields of activity of Civil Engineering contribute directly or indirectly to the creation of employment in other sectors in national and international contexts.

In order to fulfill his tasks, the civil engineer benefits from a multidisciplinary and high level education at IIT which enables him to master the design, study, dimensioning of the elements of his work, the realization of a construction project and the rehabilitation of constructions (buildings, engineering structures, roads, etc.) by relying on fundamental scientific methodologies and the most recent technical and technological methodologies relevant to his specialty: structures, soil mechanics, materials, reinforced concrete, hydraulics, etc. In addition, the civil engineer exploits his practical and theoretical knowledge enhanced with computer skills and mathematics to design and meet any actual or potential

³ EQF = The European Qualifications Framework for lifelong learning

need in his sector. His training is enriched by practical insights related to project management, quality control and communication techniques. It is also based on a research activity that is increasingly close to the needs of the job market or required for higher program of education (ex. PhD degree).

All these skills give this specialty a wide range of potential sectors of activities in which the engineer can work and innovate.

Civil engineering comprises all the activities related to two main sectors building and public works. This includes design, management and construction activities in the fields of buildings, major specific dam and marine works, the building materials industry and infrastructures such as roads or pipelines.

These activities can be carried out in the private (mainly corporate), public (administrations, ministries, research and innovation centers) or semi-public (public-private partnership companies) sectors.”

For the National Diploma in Architecture the institution has presented the following profile on their website:

“At the International Institute of Technology, the fundamental challenge of architectural education is the training of architects who are sensitive to environmental, cultural and socio-economic issues that will challenge them and enable them to respond with relevance and creativity throughout their professional life.

Generally speaking, the architect's mission is to conceive, design and supervise the construction of a building, regardless of its nature. As a result, he is required to coordinate with other team members and trades in order to successfully accomplish his projects. In his professional career, the architect can work on different modes of practice in the private sector as well as the public sector. Different missions can be assigned to him/her:

- To ensure by his expertise the support and the assistance to the owner in the various phases of the project from the idea to the realization including the process of design.
- To make the necessary architectural studies in the different phases of the design (programming, sketch, Preliminary Project, execution files...).
- Coordinate all the studies with other trades (Engineers, design offices ...)
- Supervise and co-ordinate the execution of all work activities
- Supervise and co-ordinate the execution of all work activities
- Master the management of the various technical, regulatory and administrative aspects of the architectural project.

To pursue a career in architecture with all this diversity, being open-minded remains as important as technical knowledge. This is why architectural education at IIT aims to stimulate the imagination and innovation of students, which must be combined with scientific rigor, sound knowledge and initiative. In order to properly fulfill his/her professional responsibilities, an architect who is a graduate of IIT must have a real sense of creativity, precision and rigor. He/she must master perfectly the graphic representation because his/her profession requires the knowledge of how to transmit his ideas until they become concrete. Although he must acquire certain autonomy in the practice of the profession, the architect must know how to coordinate with a large number of team-members. Having excellent communication skills and being able to build good professional relationships are crucial to work in harmony with the various members involved in the act of building.”

C Peer Report for the ASIIN Seal⁴

1. The Degree Programmes: Concept, content & implementation

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

Evidence:

- Objective Module Matrices for both degree programmes
- Presentation of the IIT Group
- Pie Charts for both degree programmes
- Self-Assessment Report
- Discussions during the audit
- Module descriptions for both study programmes
- Website

Preliminary assessment and analysis of the peers:

The auditors base their assessment on the learning outcomes as detailed in the Self-Assessment Report of the two Master's degree programmes under review.

The auditors refer to the Subject-Specific Criteria (SSC) of the Technical Committee Civil Engineering, Architecture and Geodesy, the objective-module-matrices for each degree programme, the matching learning objectives and the modules as a basis for judging whether the intended learning outcomes of the Master's degree programmes Civil Engineering and Architecture as defined by IIT correspond with the competences as outlined by the SSC.

The descriptions of the qualification objectives are comprehensive and include the achieved competencies and possible career opportunities of the graduates. These are made accessible to all stakeholders as they can be found on IIT's website.

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.

This summary is also always anchored in the Diploma Supplement in order to provide graduates with an official short presentation of their respective degree programme to facilitate applying for career opportunities worldwide. This is not the case in the provided documents. Therefore the peers notice that a shortened description of the qualification objectives needs to be included in the Diploma Supplement (cf. criterion 5.2). Moreover, in order to inform applicants the peers recommend to create a mission statement for both study programmes that define their profiles in order to help students and prospective applicants understand what the key contents and objectives of the degree programmes are. This statement is intended to provide a quick overview of the programmes on offer.

With university and departmental representatives the peers discuss the name “North American Private University” which occurs, besides the name “International Institute of Technology”, on the Diploma Supplement. As the educational structure is close to the traditional French university system and because the primary language of instruction is French, the name might lead to confusion for prospective applicants, especially since there are no formal or legal ties to any university on the North American Continent. The university and departmental representatives justify this with the fact that the university’s approach is closer to the North American approach than to the French university system, because the founders of IIT received their diplomas at the North American Private University.

Based on the information presented in the SAR, the peers learn that the degree programme Architecture aims at educating innovative, responsible, and efficient architects who are able to develop design concepts, detail buildings of differing scales and functions, supervise their construction and coordinate with other team members and professions in order to successfully accomplish their projects. Students in this degree programme should be capable of meeting 21st century expectations in terms of the design of the built environment. Therefore they should be open to continuous professional development and be aware of transformations that the industry is undergoing, the market’s needs, as well as the various scientific and technological innovations related to the world of construction.

In the Civil Engineering degree programme, students are taught to design, analyse, calculate, appraise and manage projects in the construction sectors. Students should gain fundamental knowledge about various areas of civil engineering, including construction of residential buildings, industrial buildings, infrastructural and spatial planning, and environmental issues. Thus, graduates should be capable of intervening in any stage of the construction process, from the soil assessment to the delivery of a purpose-built facility.

The peers analysed the described learning outcomes and agree that they are overall consistent with the expectations of the European Qualification Framework Level 7 (equivalent to a Master’s degree programme) as well as the respective Subject-Specific Criteria of the

ASIIN Technical Committees 03-Civil Engineering, Geodesy. Furthermore, they comply with the standards and criteria of the EUR-ACE Label.

In the discussion with partners from the industry, it was obvious that the Civil Engineering and Architecture students at IIT have a good reputation in professional practice. The peers note that the industry is satisfied with the performance of IIT students. The peers also notice that IIT enjoys a good reputation among applicants and students alike.

In summary, the peers regard the qualification objectives to be adequate. They ask IIT, however, to add the students' scientific preparation to these qualification objectives and to include a short and precise version of them on IIT's website and – once implemented – in the Diploma Supplements.

Criterion 1.2 Name of the degree programme

Evidence:

- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The peers consider the names of the degree programmes to be adequate as far as reflecting the respective aims, learning outcomes and curricula. The name of the degree programmes in the original language also reflect the main teaching language which is French.

Criterion 1.3 Curriculum

Evidence:

- Objective-module-matrices for both degree programmes
- Study plans for both degree programmes
- Module descriptions for each degree programme
- Elective modules choice minutes for each degree programme
- Pedagogical committee minutes for each degree programme
- Scientific council minutes for each degree programme
- Pie Charts for both degree programmes
- Educational Monitoring for each degree programme
- Overview of Tunisian higher education
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The International Institute of Technology (IIT) is a private higher education institution that belongs to the North American Private University and is approved by the Tunisian Ministry of Higher Education and Scientific Research. Its mission is to train engineers and architects and to provide applied research and technology transfer. The strategic plan of IIT is based on the following three objectives: education (maximize the chances of success academically and professionally), openness (broaden its collaboration with the academic and industrial world at a national and international level) and quality of student life (enable students to excel and develop social values by getting involved in various clubs and associations at the IIT and attending scientific and cultural events and fairs).

At IIT, students may apply directly to the Civil Engineering degree programme when they have already obtained a Bachelor's degree or a Licence or they have to undertake a two-year long preparatory course before beginning studying their speciality, in this case civil engineering. The integrated preparatory course is open to all graduates of the scientific sections Mathematics, Technical Sciences, Experimental Sciences and Computer Sciences and it allows graduates to access one of the study fields offered by the school. The preparatory course includes a common first year for all students of IIT and a second year of pre-course selection where students are given different study fields to choose from. As will be

discussed under criterion 5.1, the successful participation in some of the modules of the preparatory course is an access requirement for some modules in the Civil Engineering degree programme. For example, it is not clear whether the students acquire sufficient knowledge in the preparatory course in order to pass the module “finite element methods for structural design”. Moreover, if the preparatory course does not prepare the students for this module, the peers consider the 2 ECTS points granted for this module as too little. Consequently, the contents of the courses are not clear to the peers. Therefore, they ask to provide a corresponding module handbook of the preparatory courses.

After the second year of study, students decide which of the six engineering study programmes they want to pursue, among them Civil Engineering. In the following, the curriculum will focus on those three years when students study their specification. At IIT, those are the last three years of a five-year programme. Yet, as detailed under criterion 1.4, this study programme may also be studied by students, who have already achieved a Bachelor’s degree or a Licence.

The peers review the curricula of the two degree programmes under consideration in order to identify whether the modules prepare the students to achieve the described qualification objectives. They take into consideration the study plans, objective-module-matrices and the individual module descriptions. The peers assess that the curricula of both degree programmes, detailed in the annex of this accreditation report, are not scientifically well-founded in terms of international standards. Both curricula lack fundamental skills: in the Civil Engineering degree programme, subjects of the basic area such as Higher mathematics I and II (analysis, linear algebra, ordinary differential equations), Engineering Mechanics I and II (statics and elastostatics), Statics (force and displacement methods) and Dynamics (kinematics of relative motion, undamped and damped single-mass oscillators, vibration theory) are underrepresented. Consequently, the peers are of the opinion that it must be ensured to strengthen the scope of the basic area in the first semester of the Civil engineering degree programme. In the first cycles of the Architecture degree programme the scope of design fundamentals (design creative process; design of architectural form and space) does not satisfy the peers and thus must be strengthened. Therefore, the peers are of the opinion that the curricula of both degree programmes do not yet adhere to the standards of the European Qualification Framework Level 7 stated in the learning outcomes.

Furthermore, in the Civil Engineering degree programme the students must choose one elective module which corresponds to 6 ECTS points. They can choose from four modules. The peers find 6 ECTS points a very small amount in order for students to specialize in an area and to further specify the education of civil engineers, especially with regard to the demands of the Tunisian labour market. In their opinion, one module is not enough to earn

a specialization. Moreover, they consider it useful to define areas of specialization for instance in construction engineering, water construction, construction business. Therefore, the peers recommend to adapt the number of elective modules to the specialization direction in the Civil Engineering degree programme.

The Architecture degree programme is a six-year programme. It does not provide for any preparatory course. The peers discuss the teaching of the core competencies in the first cycles of the Architecture degree programme. The programme coordinators explain that design fundamentals such as the design creative process and the design of architectural form and space are taught in different workshops. The peers recognize these explanations but consider the scope to be too narrow and therefore urge the university to strengthen the scope of design fundamentals in the Architecture degree programme.

The peers notice that aspects of urban design and planning as well as landscape architecture and planning are introduced at a rather late stage in the curriculum. Since individual buildings are part of a larger urban context, it would be advised to consider earlier introductory courses to these subjects, i.e. in the first year. Moreover, while the issues of sustainability in urban design and building construction may be introduced as part of individual design projects, IIT must consider at least one module that exclusively focuses on such pressing issues of contemporary design, planning and construction. This should include topics like for example climate change and climate adaptation, sustainability and related environmental issues, related to architecture and engineering. Moreover, elective modules are offered only in the fifth semester. As the Architecture degree programme is a twelve-semester-programme, the peers think that this amount is insufficient. Such modules would aid students to further deepen their area of strengths and specialization. Therefore they recommended to introduce elective modules in the architecture program in order for students to further develop their area of strengths.

IIT is striving to grow considerably during the future years and play a leadership role in the education of architects and civil engineers in Northern Africa. While a number of Middle Eastern Universities deliberately aim to further strengthen a contemporary modern architectural identity that is rooted in the tradition of the region, IIT seems to focus on the architecture of the so-called international style. For future applicants the peers find that it would be vital information to know which architectural direction IIT wants to develop and to anchor this in its mission statement.

Moreover, IIT aims to be accredited according to European standards. The peers judge the conformity with the Master's curriculum at the Tunisian State University of Architecture and Urban Planning not to be sufficient to prove the conformity with the 11 points of Article 44 of the European Qualifications Framework of the EU; as well as the UNESCO/UIA Charter

for Architectural Education, Version 2011 Tokyo; II Objectives of Architectural Education and in particular III,1 Ateliers.

Finally, the peers ask about the role of the profession of Architecture and Civil Engineering in the further development of the two study programmes. They learn that IIT has a pedagogical committee that consists of both teachers and representatives from the profession. Here, the curricula have been jointly established and is continuously updated according to the demands of the labour market. As IIT is a private educational institution, they enjoy greater freedom in developing the study plans. For example, while the Ministry of Higher Education is involved at the beginning of creating a study programme by giving general guidelines, IIT then develops the individual curricula in its pedagogical committee. Furthermore, the peers learn that IIT holds close relationships with industries and that – due to the private nature of the institute – industry partners regularly contact IIT when the market demands new skills, which are then transferred and implemented into the study plans.

During the online discussion the peers furthermore learn that students of each programme also have to complete three internships. Each internship as well as the associated report that has to be written by the students, is a mandatory part of the curriculum. The peers appreciate that the students are encouraged to conduct internships in order to improve their career opportunities after graduation. In the Civil Engineering degree programme, the third internship corresponds to the final project. The peers understand that apart from the academic supervisor, there is a professional supervisor who leads the architecture and civil engineering students through their final projects and also grades the thesis. The peers fear that these circumstances might create a conflict of interest as the industry partner both supervises and gives the final grade. Consequently, the peers urge the university to ensure the academic supervision of the thesis in the Architecture and Civil Engineering degree programmes.

Finally, the peers discuss with the programme coordinators whether the students also learn interpersonal skills, such as teamwork, leadership, project management or communication techniques. They learn that certain modules exist that teach students these interpersonal or soft-skills. During the third year of studies, for example, all students of the Civil Engineering degree programme have to complete a so-called mini-project where students spend some time in the industry and learn about topics such as organization and management. Afterwards, students have to prepare a presentation about their experiences. Additional courses, for example “Entrepreneurial Culture” or “Scientific research and writing methodology” in the Civil Engineering degree programme and “Communication skills 1, 2 and 3” in the Architecture degree programme aid the students in learning soft-skills and practicing

their leadership role. The programme coordinators also emphasize the importance of extra-curricular activities in learning these interpersonal skills. Lecturers and experts, for example, hold regular seminars on topics such as stress management and preparing for one's future career. Various scientific and artistic clubs at the university also enable students to learn to act in a group and prepare for leadership. While these programmes are not mandatory, the peers nonetheless feel that they serve as great additions to the interpersonal skills already taught in the mandatory part of the curricula.

Criterion 1.4 Admission requirements

Evidence:

- International Students Guide
- Admission Form
- Admission Report
- Overview of evolution of the student's number at the IIT since its creation
- Self-Assessment Report
- Discussions during the audit
- Website

Preliminary assessment and analysis of the peers:

From the information provided, the peers understand that admission to IIT and the respective degree programmes is generally based upon the final grade of the previous degree, notwithstanding the different types of educational options. As has been mentioned under criterion 1.3, students may apply directly to the Civil Engineering degree programme when they have already obtained a Bachelor's degree or a Licence. Yet, students may also participate in the two-year preparatory courses at IIT. Regardless of which educational path has been chosen, prospective students must pass the entrance examination to be admitted even if there are fewer applicants than places available. Afterwards a ranking of the final grade of each applicant is established. Based on this ranking, interviews are carried out by members of the relevant committee to assess the motivation of the best applicants.

The purpose of this interview is to assess the scope and level of the candidates' previous studies, particularly in the basic sciences that are related to the targeted branch. In this way, the Institute makes sure that the candidate's previous studies and the capacities are sufficient to satisfy the admission requirements. The interview is also an opportunity to ensure that the candidate has the right information about the institution and the desired engineering program, as well as the details of the admission process. Following the inter-

view, the committee accepts or refuses the application or may also direct candidates towards another more suitable program based on the applicant's academic background and abilities. Moreover, the admission board may also recommend additional courses in specific subjects depending on the insufficiency of the level noted. In this case, the final admission of the candidate will depend on the student's agreement to register and pass the required courses. These courses are organized as intensive sessions outside the regular schedule and take place before and at the beginning of the new academic year. The tuition fees incurred by these courses are generally supported by IIT. For international students, the admission procedure remains the same with the possibility to conduct interviews online.

As for the Architecture degree programme, the candidates must be holding the baccalaureate degree. They should achieve 80% of the score required by the National School of Architecture and Urbanism. Those who lack this requirement have to pass a test which measures their level and which becomes a reference for the Order of Architects, the institution which approves their application.

During the discussion with the students, the peers gained the impression that students are well informed about the admission requirements and procedures as all necessary information is gathered on IIT's website and published in the International Students Guide. Since the rules are based on decrees by the Ministry of Higher Education and Scientific Affairs, the peers deem them binding, transparent and adequate for selecting the best students for each degree programme.

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

Criterion 1.1:

IIT has not delivered a mission statement for both study programmes with its statement. Therefore, the peers stick to their recommendation.

Criterion 1.3:

IIT's explanations merely describe the procedure again in a similar way. The peers underline that the distribution of roles as well as the academic qualification are not clearly stated in IIT's statement. The peers explain that an external supervisor can be brought in, but the main supervisor should come from the university and have a correspondingly stronger weight. Therefore, they conclude that the assessment by academic staff has to be clearly structured. As this hasn't happened yet, they conclude that the requirement should remain in place.

Regarding the scope of design fundamentals in the first cycles, IIT states that fundamental sciences of architectural design are integrated into the academic curriculum of the Architecture degree programme. Compulsory modules included in the different levels of study are supposed to allow the acquisition of this basic knowledge. The architecture workshop, based on the teaching of the methodology of the architectural project, should be, through the application exercises and the mini-projects, a practical and interdisciplinary synthesis of this learning. IIT listed some examples of these modules in its statement and provided further explanations and photos in order to illustrate the scope and the teaching methodology of design fundamentals in this degree programme. However, the peers are of the opinion that fundamentals of design of form and space are not yet sufficiently included in the curriculum and a must in architectural education. As CAD drawing, technical drawing or BIM fundamentals, as described in IIT's statement, do not replace applied architectural and urban design theory, the peers think that the topic of urban design is treated too lightly. The shape of the city is not the result of the addition of individual buildings, but rather requires separate considerations on a different scale and taking into account other disciplines. Therefore, the peers conclude that the area of the fundamentals of architecture/urban design must definitely be supplemented and that the requirement is not fulfilled.

Regarding the scope of the basic area in the first semester of the Civil Engineering degree programme, IIT provides a list and descriptions for all preparatory courses in order to prove that students acquire sufficient knowledge in the preparatory course. In addition, the scope of the basic area was discussed during the last pedagogical committee on 27th August 2021. In the course of the modifications integrated into the academic year 2021-2022, IIT combined some modules as for example "Mathematics 1 and 2" which constitute now one single module. Other modules, for example "Algebra", "Probabilities and Statistics" and "General Mechanics", have been added to the study plan. However, the peers are of the opinion that the necessary basic subjects are still missing and that the new combined or added modules are not sufficient in order to strengthen a curriculum that should meet the expectations of EQF Level 7.

With regard to the elective modules in the Civil Engineering degree programme, IIT explains in its statement, that this matter has been discussed during the meeting of the pedagogical committee. The teachers as well as the experts approved the point of view of the peers and decided to take the necessary corrective actions by changing the awarded credit points for the one and only elective module that has to be chosen: as of now, one elective module corresponds to 10 credit points. The peers appreciate this decision, but still think that one elective module is not sufficient to specialize in an area. Therefore, they stick to their recommendation.

Concerning the introductory courses to aspects of urban design and planning as well as landscape architecture and planning and a module that exclusively focuses on the issues of sustainability in urban design and building construction, IIT decided in its last pedagogical

committee to introduce some new courses in order to comply with the requirement. In the first year, two new courses (“Natural and Built Environment” and “Introduction to landscape and Urban Design”) were introduced. Two more courses (“Introduction to Anthropology and Social Sciences” and “Climatology and Sustainable Approaches”) were added to the second year. Especially with regard to the lack of aspects of urban design, the peers are of the opinion that these courses are not sufficient to meet the expectations. Therefore, they judge the recommendations as not fulfilled.

According to the preceding remarks and explanations as well as the high number of requirements regarding the curricula of both degree programmes that are still not fulfilled, the peers are still of the opinion that the quality of the curricula do not meet the expectations of the European Qualification Framework Level 7. Therefore, the corresponding precondition remains in place.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules
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Evidence:

- Study plans for both degree programmes
- Objective Module Matrices for both degree programmes
- Module descriptions for each degree programme
- Internship module description
- Pie Charts for both degree programmes
- Different partnership agreements
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:

Modularization

Both degree programmes under review are divided into modules, which comprise a sum of teaching and learning. The peers found the amount of work in the individual modules is appropriate and manageable. However, as will be explained under criterion 3, due to the fact that every module is examined individually, students have problems with the large number of exams at the end of the semester and at the end of the year.

In both degree programmes, modules consist of a varying number of courses: while some modules entail only one course, others may hold up to five courses in the Civil Engineering degree programme and up to six courses in the Architecture degree programme. The peers notice that if a module consists of more than one course, all courses are linked thematically and thus create one entity. For example, the module “representation techniques” in the first year of the Architecture degree programme consists of the courses “design and creation”, “plastic arts – volume & colour”, “plastic arts – drawing and rendering techniques” and “perspective and descriptive geometry 1” while the module “technological and experimental sciences 1. Materials and geotechnics” in the first year of the Civil Engineering degree programme comprises the courses “construction materials”, “soil mechanics 1” and “Engineering geology”.

However, as will be further explained under criterion 3, the large number of small modules, some with only 2 ECTS, does not allow for the creation of larger subject blocks and thus leads to an unnecessary large number of final exams. The description of the modules does not distinguish between subject content, educational objective and teaching method.

International Mobility

Internationalization is of increasing importance in Tunisian higher education in general and at IIT especially, where internationalization is already referenced in the institute’s name “International Institute of Technology.” Compared to this international agenda, the current options for international mobility are rather limited as only a few engineering and architecture students each year are spending a semester at a university abroad.

Traditionally, Tunisian higher education institutions hold strong relations with French universities due to their common language as well as their similar educational system, including the degrees “Licence” and “Diploma”. The peers acknowledge that cooperation with French HEIs (EPSI of Grenoble and Lyon, Lorraine University and Côte d’Opale University) and French speaking HEIs (University of Sherbrooke, University of Quebec, University of Monton) is already underway and that the university as well as the departments of IIT are

working on increasing these cooperation to also include other countries. For example, every year a small number of the best students are selected for an internship of final graduation, for two double degrees at the Côte d'Opale University or for a PhD bridging programme at the University of Sherbrooke.

The peers gain the impression that mobility is currently in high demand among the students, but that the framework conditions are in place. They appreciate that international mobility is very high on the agenda of IIT. Although opportunities of international mobility are still limited, the peers find that credit transfer and the recognition of credits gained at foreign universities is possible and regulated by IIT. These regulations, anchored on IIT's website and the credit validation procedure, are known to the students, easily accessible and in line with the Lisbon-convention.

Criterion 2.2 Work load and credits

Evidence:

- Study plans for both degree programmes
- Module descriptions for both degree programmes
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:

All modules of the programmes are assigned ECTS credits. Every semester comprises 30 credit points and every year comprises 60 credit points. According to the standards of EQF, ASIIN and EUR-ACE each credit point should correspond to 25 - 30 student working hours. However, in both degree programmes these scopes are not respected. In the Civil Engineering degree programme one credit point corresponds to 17,5 student working hours in the sub module "Operational research" and to 35 student working hours in the sub module "mathematics for engineers 1". In the Architecture degree programme one credit point corresponds to 22,75 students working hours in the sub module "DAO: BIM methodology" and to 34,6 student working hours in the sub module "plastic expression". Therefore the peers judge that one credit point corresponds to between 25 and 30 student working hours to be of imperative importance.

As has been discussed under criterion 2.1, modules can consist of one to five or six courses. In this regard, the module structure for both degree programme corresponds to the standards of the EQF, ASIIN and EUR-ACE.

The peers further analyse the workload of each course and module and find it to be only partly manageable. As will be explained in detail under criterion 3, the large number of exams in both degree programmes leads to an unsuitable and unnecessary workload. Therefore, it must be ensured that the number of exams is reduced e.g. by implementing exams for whole modules instead of exams for each course in order to reduce the examination load both within a semester and at the end of the year. Apart from the examination load, the feedback regarding the workload, regularly compiled through the course evaluation survey undertaken at the end of each study year, shows that students are generally content with their workload and believe the awarded credits to reflect the workload adequately.

Criterion 2.3 Teaching methodology

Evidence:

- Photos of study trips, workshops and visits
- Overview of research procedure
- Self-Assessment Report
- Module descriptions for each degree programme
- Discussions during the audit

Preliminary assessment and analysis of the peers:

Both degree programmes under review make use of different educational methods for teaching the courses, such as lectures, seminars, laboratory practical work, excursions, internships, mini-projects and the final projects. The teachers further emphasize that for the majority of courses, scripts are available and that videos, mostly for the utilization of programming software, are also produced by IIT so the students can continue learning at home.

While students are taught in lectures or seminars as these forms of teaching are important to convey the theoretical aspects of each topic, the peers especially appreciate that the students of both degree programmes also learn how to apply these skills. The peers acknowledge that students gain some practical skills through the two mandatory internships during the summer holidays, through the final project that is often undertaken in cooperation with industrial partners as well as through practical visits and work in the laboratories or the design studios of IIT. Especially the work in laboratories is of great importance to the education of future engineers. While work spaces do exist, a design studio atmosphere does not seem to exist. This includes a design studio where students of one project class stay during the whole term in one assigned space and work on their projects

without having to share their space with other classes and without having to transport their projects back and forth from home to the university and where they can exchange ideas on site with their fellow students and teachers on a regular basis. This is why the peers wonder why they are not used more intensively, as they are a crucial part in the education of future architects who work in teams in shared spaces.

For the Civil Engineering degree programme, students receive weekly workshops in the laboratories at IIT. Here, no more than 10-12 students are in one class, with 2-3 students working together on one of the tools. The programme coordinators and students explain to the peers that most parts of the practical training are outsourced to external laboratory facilities, which students visit regularly, at least once per month for an entire day. Topics such as soil-mechanics, construction materials and topography are all taught in workshops within facilities of other universities or industrial partners.

With regard to the Architecture degree programme, students also participate in weekly workshops which provide a place for the synthesis and practical application of the various knowledge acquired. There are three different workshop types for the architecture degree programme: the fundamental architecture workshops center on architectural projects through the simulation of an architectural design problem. The students are supervised individually on a biweekly basis. The drawing and plastic arts workshops aim to develop the students' manual graphic representation skills while emphasizing the aesthetic aspect of the architectural training as well. The computer graphics workshops (applied computer science, CAD/CAM, computer graphics, modelling, rendering, BIM) aim to provide students the techniques and computer tools which are necessary for the digital graphic representation of the architectural projects.

The peers also discuss the usage of programming software with the programme coordinators. They recognise that students are taught, to name a few, to apply Archicad, Robot Structural Analysis and AutoCAD. IIT holds full licences of said software for its students. However, IIT holds no full licence of programming software such as Matlab and Ansys. These student licenses would help the students meet the demand of the labour market. The peers, as well as the students, are nonetheless of the opinion that the limited versions are sufficient for the skills the students should learn and advance.

The peers continue to discuss whether and how the supply of students with the necessary literature is guaranteed. They learn that the professors in charge often make complete copies of private books and hand them out to the students. This infringes the copyright law and consequently is illegal.

In summary, the peers acknowledge that IIT uses a variety of teaching methodologies.

Criterion 2.4 Support and assistance

Evidence:

- Psychological Report
- International Students Guide
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:

During the on-site discussions with the programme coordinators, the teachers and especially the students, the peers gather a comprehensive impression of the offers related to supporting and assisting the students. Being a private university, IIT manages to offer small classes of 12-15 students which enables close relations between staff and students and thus allows for constant and direct feedback in case any issues arise. Maintaining this faculty-to-student ratio within the projected future growth of the university remains an important ongoing task.

The students confirm that they are generally very satisfied with the support and assistance they receive from their professors and that they can contact them at any time if problems occur, whether related to the taught subjects or of a personal nature. As most teachers are non-permanent teachers, meaning they hold other occupations as well, the peers ask how students hold contact to these members of staff. They learn that non-permanent teachers have certain days during which they are always available in person at IIT but that students can also reach them throughout the entire week via email or phone.

Apart from subject-specific support, IIT also offers several other methods to aid its students: the international relations office supports international mobility and annual career fairs allow students to connect with possible future employers. The university also offers financial support in the form of scholarships to help students pay their annual fee.

In summary, the peers are satisfied with the support and assistance the students at IIT receive.

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

Criterion 2.2:

The peers appreciate that IIT took this matter into consideration and discussed it at the last pedagogical committee meeting on 25th August. IIT took corrective measures by adapting the student working hours for different modules in both degree programmes. One credit point corresponds now to between 25 and 30 student working hours in all modules. These modifications have been integrated in the study plans. There the peers judge this requirement to be fulfilled.

Criterion 2.3:

The peers appreciate the explanations IIT provided regarding the copyright law. They understand that IIT doesn't tolerate making complete copies of documents. Most of the time, the teachers do refer to some passages for pedagogical purposes while having the original document for consultation by the students. In this regard, IIT reminds that access to these documents is provided to students either through their teachers (having original documents) or by consulting them directly in the databases of IIT, the School of Arts and Crafts of Sfax and mainly the National School of Architecture and Urbanism of Tunis. Therefore the peers don't see any need for further action.

Regarding the design studios in the Architecture degree programme, IIT explains that at all levels of study, except the 6th year (reserved for the professional internship outside IIT), the 10 to 15 students from each group benefit from a well-equipped workshop studio. Each workshop contains: large and small tables with chairs and stools, high speed Internet connectivity (network and Wifi), a video projector (datashow) and a board, a personal and secure storage space (a locker with keys for each student) and a hot/cold air conditioning. Moreover, IIT explains that the workshop block is fully secured (24 hours a day) with a network of surveillance cameras and security guards. Students have free access to the block for the entire day. If students need to use the workshops during vacations or at night (outside administrative hours), they can occupy the workshops after a request signed by one of the department heads and the school service according to IIT procedures. The peers appreciate these explanations and therefore see no need for further action.

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation
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Evidence:

- Overview of grades distribution for both degree programmes
- Guidelines for deliberating results

- Statistics Drop-out-rate
- Discussions during the audit
- Self-Assessment Report
- Module descriptions for each degree programme
- Internal Rules and Regulations
- International Students Guide
- Academic Calendar

Preliminary assessment and analysis of the peers:

Examination types are selected based on their competencies tested and may include written exams, oral exams, presentations and project work, either individually or in teams. All relevant rules and regulations regarding the exam procedure are anchored in IIT's Quality System Management.

There are end-of-term exams and mid-term exams as well that make up 30% of the final grade. The peers ask how students are informed about the date of the exam, its form and its duration. The programme coordinators explain that all examinations are held during the fifteenth week of each semester. The module descriptions note the form of the examination and the dates of the examination period are communicated at the beginning of each academic year and published in the academic calendar. One or two weeks prior to the examination period, the schedule of the examination period is published, stating which exam is written at what precise day and time during the aforementioned one-week period. Each subject must be assessed by at least three marks: an oral mark, a mark for the supervised assignment and a mark for the final examination. For subjects with T.P. (practical work, laboratory) or mini-projects a fourth mark will be added. The oral mark takes into account the student's attendance and motivation in class. For each module, an average of the marks obtained in the various tests is calculated.

To avoid any complication with the schedule, the students receive a draft version of the examination schedule to review. If the students are not satisfied with this schedule, changes will be made; an approach the peers appreciate.

Due to the fact that each course is examined, architecture students have approximately twenty exams per year, whereas civil engineering students have approximately twenty-six exams per year. The students tell the peers that this workload sometimes overwhelms them and that it is therefore difficult to properly prepare for them. They emphasize that the large number of sub-modules leads to an increased examination burden and thus probably to exceeding the standard period of study. Consequently, the peers urge the university to ensure that the number of exams is reduced in order to reduce the examination load

both within a semester and at the end of the year. This could be done for instance by implementing exams for the entire module instead of for all courses within a module.

Furthermore, as has been explained under criterion 1.3, the peers analyse the provided documents and notice that the scope of the basic area has to be strengthened both in the Architecture and in the Civil Engineering degree programme. Design fundamentals (design creative process; design of architectural form and space) in the Architecture degree programme and subjects such as Higher mathematics I and II, Engineering Mechanics I and II, Statics and Dynamics in the Civil Engineering degree programme are not sufficiently integrated into the curricula and therefore not sufficiently examined. The peers also inspect a sample of examination papers and final project works and are not satisfied with the general quality of the samples. The master's examinations in the Architecture degree programme should cover whole houses rather than just staircases in order to demonstrate that students have the competencies for a generalist approach to architecture. The only master's examination that was submitted for the Civil Engineering degree programme was a design and static dimensioning of the load-bearing elements of an industrial building (hall made of steel components). The design was carried out using standard software. For a thesis in a master's programme, the peers judge this topic to be much too application-oriented and not research-oriented enough. The peers think that with this topic it is not possible to check whether the student has the ability to work scientifically. It would have been more desirable, for example, if the thesis would have compared and evaluated different constructive concepts with different materials (steel, concrete, wood). Another possibility would be to optimize the construction in terms of construction costs, durability, sustainability or construction time. The peers conclude that the final projects in both degree programmes do not adhere to an academic level comparable to the European Qualification Framework (EQF) level 7.

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

The peers welcome the fact that IIT has taken up the requirement and consider it didactically reasonable to convert written exams into projects in both degree programmes. Nevertheless, this does not reduce the resulting high number of exams. Therefore, the peers think that the requirement is not fulfilled and should remain unchanged.

Furthermore, the peers take into consideration that the final projects and exams submitted are only a representative sample of different levels. In its statement, IIT explains that, in order to meet the EQF (level 7) requirements, it requires that research topics must be treated and written professionally while respecting very specific standards. To this end, a module on "Methodology of writing and scientific research" is inserted in all study programmes. IITs provides the

minutes of the pedagogical committee, samples of exams and graduation internships as well as the updated curricula. However, according to the current quality and number of exams and final projects, the peers stick to their previous assessment and consequently to the precondition which still has to be fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Self-Assessment Report
- Form of recruitment for teachers
- Matrices of competences of teachers
- Staff Handbook with résumés of teachers
- Discussions during the audit

Preliminary assessment and analysis of the peers:

In the self-assessment report the university presents data about the number and overall qualification of staff for the respective programmes. Based on legal requirements, teaching staff must at least have a qualification at the Master level and it is recommended that 50% of the staff members should hold a PhD. In both study programmes, this ratio is not met. Since IIT is a private university, it does not have to follow the hierarchy of public universities in Tunisia. Full professorships are not awarded, the only difference between the staff members is their salary based on the individual teaching load as well as the qualification and performance. In total, the staff is composed of full-time staff members solely employed by IIT and of part-time staff that is recruited either among the staff of the public HEIs or among industry partners. For the Civil Engineering degree programme, there are currently two permanent teachers. One of them is a PhD candidate, the other one holds a Master degree. For the Architecture degree programme, four professors hold full-time positions. Once again, one of them is a PhD candidate, the other teachers hold a master degree. In addition, these full time positions are to a considerable part devoted to administrative duties, thus one cannot really speak of four full time teaching positions.

With the new campus, which is currently under construction, IIT is emphasizing that it is a university geared towards expansion. However, the peers regard the high number of non-permanent teachers as not conducive to this intention and therefore unacceptable for a

proper functioning university system. The peers are of the opinion that the available staff is not sufficient to take care of the programmes, especially not with regard to larger infrastructures and possibly with an increasing number of students. Moreover, with the qualifications of the teaching staff and due to the teaching load, adequate research projects that would also further develop the teaching methodology can hardly be carried out.

Consequently, the peers conclude that the teaching staff is moderately qualified and quantitatively insufficient in order to sustain the programmes under review. They urge IIT to define a binding staff development concept which ensures that at least the core disciplines of both degree programmes and the way in which the subjects of both degree programmes could be taught by qualified permanent teaching staff. In a next step, IIT must ensure that new teaching staff is hired according to the main focus areas.

Criterion 4.2 Staff development
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Evidence:

- Self-Assessment Report
- Discussions during the audit
- Description of Enhance project
- Description of Intesa Tunisia-Italy project

Preliminary assessment and analysis of the peers:

In their self-assessment report as well as during the online visit, IIT declares that they value highly the pedagogical skills of their teaching staff and thus offer constant training and support for the teachers' improvement. If the student evaluations, for example, should reveal deficiencies in pedagogical or didactical skills, the Head of Department will approach the respective staff member and recommend special trainings or workshops. Apart from those measures, international experts are regularly invited to share their expertise with the local staff.

Besides the pedagogical development, the peers also emphasise the significance of research in order to make sure that the professors and the study programmes are always keeping pace with international standards in accordance with the Humboldtian educational ideal for universities with regard to the unity of research and education. In this context, IIT states that it joined the European programme "ERASMUS + Capacity Building in Higher Education" as the only private university in Tunisia by a project called "Strengthening HE skills and training expertise for Tunisian and Moroccan transition to industry 4.0 era ENHANCE" (2021-2024). This international project was developed in collaboration with the University Lumière Lyon 2, the NOVA University Lisbon and the Bremer Institut für

Produktion und Logistik Bremen and some regional industrial organizations. This international project focuses on developing a knowledge transfer framework and mechanisms which are crucial to follow the ongoing applied technical innovations applied in the industry. Being involved in these projects, teachers and students will have the opportunity to conduct research. In addition, IIT was selected in another international project called “Intesa Tunisia-Italy”. This project has the following theme: “Support to education, research, technological development and innovation”. As an engineering university, IIT's contribution in this project mainly concerns the technological development and scientific research components. The peers appreciate the initiation of these two projects.

Furthermore, the peers learn that although staff members do not have a lot of extra time, as many of them hold two positions already, they nonetheless produce publications. As the list of publications was not provided to the peers before the audit, they ask for it to be sent afterwards. The peers gain the impression that the scale of research could be increased and that the research infrastructure in particular should be enhanced. For example, the peers learn that so far, IIT does not provide financial resources for its staff to attend international conferences. Additionally, research in the form of paid spare time, such as sabbaticals of six to twelve months duration are not yet common in Tunisia but would greatly aid in increasing the research activities at IIT.

The peers generally gain the impression that the staff members are not active enough in research due to infrastructural circumstances. For this reason they advise IIT to further support the research activities of its staff.

Criterion 4.3 Funds and equipment
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Evidence:

- Partnership Agreements
- List of laboratories and equipment
- Video of the facilities
- Overview of scholarships for students
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:

During the online visit, the peers were able to gain a comprehensive impression of the facilities, studios and laboratories at the IIT. As a private institution, IIT belongs to the North American Private University and is funded by tuition fees, donations from private enterprises. In addition, a small government support is provided to sustain the institution.

The laboratories at IIT are considered to be adequate for the conveyance of the programmes' fundamentals. The peers learn that it is not common for private universities in Tunisia to possess laboratories on their own facilities and that in order to perform the practical work, the departments close contracts with public universities or private companies that own the necessary equipment. The students are gathered at IIT and are transported via bus shuttles to the respective facilities where the equipment is located. Although this seems quite unusual to the peers, they are able to understand that this procedure is well established and working and that the students are content with this arrangement.

While the peers understand that equipment for the two degree programmes under review is rather expensive, they support IIT in its endeavour of continuously developing its own laboratories studios. The peers learn from IIT's management that a new building, which will entail more laboratories, is already under construction. The peers expect that this will contribute significantly to the independence of the programmes from external factors and that it will further enable students as well as staff to work on their research projects.

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

Criterion 4.1:

The peers welcome the fact that IIT explains in its statement that it is aware of the need to define a binding staff development concept which ensures that at least the core disciplines of both degree programmes and the way in which the subjects of both degree programmes could be taught by qualified permanent teaching staff. There are nine full-time faculty members including four architects involved in the architecture degree programme. In addition, the IIT has an agreement with an academic senior named Mr Khaled Bouzid who has more than thirty years of professional and academic experience. Furthermore, IIT explains that currently, its Human Resources Responsible is focusing more on the full-time faculty member's career development. Therefore, IIT is currently recruiting PhDs in Architecture and plans to involve three more permanent teachers in the department. Regarding the Civil Engineering degree programme, the department contains ten full-time staff member and approximately twenty-five non-permanent. Currently, IIT is recruiting PhDs in Civil Engineering and plans to involve two more permanent staff members in the department. One of them, Ines Ghorbel, has already started and will be in charge of teaching the "General Mechanics" and "Continuous Mechanics" modules. In addition to the permanent teachers, an academic senior with whom IITs has an agreement is available to the department. The peers take these explanations into consideration. However, the peers think that IIT's statement didn't add any new information about the staff of the degree programmes. They still think that the quantity and the qualification of the staff is insufficient in order to lead the

study programmes with the necessary scientific requirements. Therefore, they judge the precondition to be still not fulfilled.

Criterion 4.2:

The peers appreciate that IIT took this recommendation into consideration. In its response statement, IIT explains that although it is a teaching oriented university, it tries to encourage all kinds of research activities by allocating a budget to each department. Moreover, IIT states to be flexible in promoting the research dimension by accepting the lecturers' desire to do a "sabbatical".

For example Mrs Ilhem Borcheni, full-time faculty member at the Civil Engineering department, assigned to her research laboratory at ENIT, benefited from a month's sabbatical to advance and progress her doctoral thesis. IIT also provided the curricula of the teachers which include their publications and research activities. However, as IIT only plans to increase the opportunities for members of the teaching staff to conduct research through the participation in international projects, the peers decide that the recommendation remains in place.

5. Transparency and documentation

Criterion 5.1 Module descriptions
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Evidence:

- Module descriptions
- Website
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:

From the discussion with the students, it became apparent that they receive detailed information about the respective content, learning outcomes, examinations, workload distribution and grading at the beginning of each course. However, in order to match international standards, it must be ensured that the module handbook of the Civil Engineering degree programme contains module descriptions for all modules. This also applies to internships and final projects.

Moreover, as some of the modules of the preparatory course require a prerequisite for some modules in the Civil Engineering degree programme, the peers ask that IIT provides a corresponding module handbook of the preparatory courses.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Sample Diploma Supplement for each degree programme
- Self-Assessment Report

Preliminary assessment and analysis of the peers:

From the presented documents, the peers understand that at the graduation every student is awarded a Diploma, a Diploma Supplement and a transcript of records. However, the IIT does not yet award a Diploma Supplement as required by ASIIN. At the completion of the degree programme, all graduates should be provided a Diploma Supplement that contains a concise description of the programme's learning outcomes (compare also criterion 1.1), the individual module grades of the student, as well as statistical data of the comparable final grades in one cohort. Such a Diploma Supplement will increase the international comparability of the graduates and facilitate the employment process as employers receive a complete set of information together with the applicant's Diploma.

Criterion 5.3 Relevant rules

Evidence:

- Self-Assessment Reports
- Document about the official status of IIT
- Internal Rules and Regulations
- International Students Guide
- Communication Plan
- Discussions during the audit

Preliminary assessment and analysis of the peers:

From the documents provided as well as the discussions during the on-site visit, the peers recognize that IIT follows a policy of transparent and open rules and regulations. All required rules and regulations are accessible to students and are published on IIT's website. The discussion with the students confirms that they feel well informed about regulations and comfortable about the access to any information pertaining to their degree programmes.

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

Criterion 5.1:

The peers appreciate the fact that IIT provided module descriptions for all modules, especially for internships and final projects. Therefore the peers are of the opinion that the requirement is fulfilled.

Criterion 5.2:

The peers welcome the fact that IIT presents an updated version of the Diploma Supplement for architects and civil engineers. However, the shortened description of the learning outcomes, the individual module grades of the student as well as statistical data of the comparable final grades in one cohort are still not listed on the Diploma supplement. Although IIT included learning outcomes for both programmes in the Diploma Supplement, they are still not listed in shortened form. Consequently, the peers decide that the requirement is still not fulfilled and should remain.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Teaching evaluation follow-up for both degree programmes
- Pedagogical committee minutes for both degree programmes
- Statistics about students
- Questionnaire used for the evaluation of studies/teaching
- Industrial partners satisfaction questionnaire
- Certification of an implemented quality management system
- Overview of pedagogic monitoring
- Training/awareness plan
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:

From the documents presented and from the discussions during the online visit the peers gain a positive impression of the quality management procedures that are in place at IIT and for the programmes under review.

Since IIT is a private university funded among others by the fees paid by the students the reliance on students' feedback and the necessity to ensure and improve the employability of the graduates are of major importance to the coordinators. Each course is being evaluated constantly through different surveys by teachers and students. Further surveys are carried out by gathering statistics about graduates and alumni. The discussion with the students revealed that those in charge are always eager and open for feedback aside from the official evaluations and that students have the impression that their comments are taken into consideration with regard to the further improvement of the programmes. This becomes apparent in the constant curricular revision process that is performed under participation of students and industry partners. The industry representatives confirm in the discussion that the university is eager to receive feedback about new developments and trends and the employability of their graduates.

That this process is fruitful and effective, becomes visible in the high percentage of graduates that find employment immediately after graduation. Concerning the internal feedback loops the results of the course evaluations are centrally assessed and analysed before they are communicated to the Head of Department. He would then be responsible to initiate any measures if problems or needs for improvement have been detected. A summary of the results is made accessible to the students. In case the satisfaction of the students with staff members is deficient, the Heads of Department will contact the respective teacher, discuss the issue and propose solutions. If no improvement can be achieved over a longer period, the staff member will be dismissed. Thus, the peers agree that the quality management circles at IIT are well established and work under participation of all stakeholders.

In summary, the peers are satisfied with the quality management system at IIT, especially with the continuous feedback loops and the involvement of important stakeholder groups such as students, alumni and representatives from the industry.

D Additional Documents

Before preparing their final assessment, the panel asks 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. Module descriptions for preparatory modules which are requirements for modules in the Civil Engineering programme
- D 2. List of publications of staff members

E Comment of the Higher Education Institution (31.08.2021)

The institution provided a detailed statement as well as the following additional documents:

- Module descriptions for preparatory modules which are requirements for modules in the Civil Engineering programme
- List of publications of staff members

F Summary: Peer recommendations (06.09.2021)

Taking into account the additional information and the comments given by IIT the peers summarize their analysis and final assessment for the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Architecture	Suspension	-	—	-
Ma Civil Engineering	Suspension	-	EUR-ACE	-

Requirements

For both degree programmes

- A 1. (ASIIN 1.3) The academic supervision of the thesis in the Architecture and Civil Engineering degree programme must be ensured.
- A 2. (ASIIN 3) It must be ensured that the number of compulsory modules is reduced in order to reduce the examination load both within a semester and at the end of the year.
- A 3. (ASIIN 5.2) Include a shortened description of the learning outcomes, the individual module grades of the student as well as the relative grade of the comparable graduates' cohort in the diploma supplements of both degree programmes.

For the Master's degree programme Architecture

- A 4. (ASIIN 1.3) It must be ensured to strengthen the scope of design fundamentals (design creative process; design of architectural form and space) in the first cycles of the architecture programme.

For the Master's degree programme Civil Engineering

- A 5. (ASIIN 1.3) It must be ensured to strengthen the scope of the basic area in the first semester of the Civil engineering program.

Recommendations

For both degree programmes

- E 1. (ASIIN 1.1) It is recommended to formulate a mission statement for both study programmes.
- E 2. (ASIIN 4.2) It is recommended to increase the research opportunities for staff members.

For the Master's degree programme Civil Engineering

- E 3. (ASIIN 1.3) It is recommended to adapt the number of elective modules to the specialization direction in the civil engineering programme.

For the Master's degree programme Architecture

- E 4. (ASIIN 1.3) It is recommended to introduce more elective modules in the architecture programme in order for students to further develop their area of strengths.
- E 5. (ASIIN 1.3) It is recommended to offer introductory courses to aspects of urban design and planning as well as landscape architecture and planning at an earlier stage of the curriculum.
- E 6. (ASIIN 1.3) It is recommended to offer a module that exclusively focuses on the issues of sustainability in urban design and building construction.

Preconditions/suspension:

For both degree programmes

- P 1. (ASIIN 4.1) As the university is geared towards expansion:

The teaching staff is moderately qualified and quantitatively insufficient in order to sustain the programmes under review.

The peers urge IIT to present a binding staff development concept which defines the main focus areas of both degree programmes and the way in which the subjects of both degree programmes could be taught by permanent teaching staff. In a next step, IIT must ensure to hire new teaching staff according to the main focus areas.

- P 2. (ASIIN 3) The quality of exams and final projects has to meet the expectations of the European Qualification Framework Level 7.
- P 3. (ASIIN 1.3) The quality of the curricula has to meet the expectations of the European Qualification Framework Level 7.

G Comment of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture (06.09.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accreditation procedure and follows 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 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	Maximum duration of accreditation	Subject-specific labels	Maximum duration of accreditation
Ma Architecture (National Diploma)	suspension	-	-	-
Ma Civil Engineering (National Diploma)	suspension	-	EUR-ACE®	-

Requirements

For both degree programmes

- A 6. (ASIIN 1.3) The academic supervision of the thesis in the Architecture and Civil Engineering degree programme must be ensured.
- A 7. (ASIIN 3) It must be ensured that the number of compulsory modules is reduced in order to reduce the examination load both within a semester and at the end of the year.
- A 8. (ASIIN 5.2) Include a shortened description of the learning outcomes, the individual module grades of the student as well as the relative grade of the comparable graduates' cohort in the diploma supplements of both degree programmes.

For the Master's degree programme Architecture

- A 9. (ASIIN 1.3) It must be ensured to strengthen the scope of design fundamentals (design creative process; design of architectural form and space) in the first cycles of the architecture programme.

For the Master's degree programme Civil Engineering

- A 10. (ASIIN 1.3) It must be ensured to strengthen the scope of the basic area in the first semester of the Civil engineering program.

Recommendations

For both degree programmes

- E 7. (ASIIN 1.1) It is recommended to formulate a mission statement for both study programmes.
- E 8. (ASIIN 4.2) It is recommended to increase the research opportunities for staff members.

For the Master's degree programme Civil Engineering

- E 9. (ASIIN 1.3) It is recommended to adapt the number of elective modules to the specialization direction in the civil engineering programme.

For the Master's degree programme Architecture

- E 10. (ASIIN 1.3) It is recommended to introduce more elective modules in the architecture programme in order for students to further develop their area of strengths.
- E 11. (ASIIN 1.3) It is recommended to offer introductory courses to aspects of urban design and planning as well as landscape architecture and planning at an earlier stage of the curriculum.
- E 12. (ASIIN 1.3) It is recommended to offer a module that exclusively focuses on the issues of sustainability in urban design and building construction.

Preconditions/suspension:

For both degree programmes

- P 1. (ASIIN 4.1) As the university is geared towards expansion:

The teaching staff is moderately qualified and quantitatively insufficient in order to sustain the programmes under review.

The peers urge IIT to present a binding staff development concept which defines the main focus areas of both degree programmes and the way in which the subjects of both degree programmes could be taught by permanent teaching staff. In a next step, IIT must ensure to hire new teaching staff according to the main focus areas.

- P 2. (ASIIN 3) The quality of exams and final projects has to meet the expectations of the European Qualification Framework Level 7.
- P 3. (ASIIN 1.3) The quality of the curricula has to meet the expectations of the European Qualification Framework Level 7.

H Decision of the Accreditation Commission (16.09.2021)

Assessment and analysis for the award of the ASIIN seal:

The Accreditation Commission discusses the accreditation procedure and follows the assessment of the Technical Committee without any changes.

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 part of Subject-Specific Criteria of the Technical Committee 03.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN seal	Maximum duration of accreditation	Subject-specific labels	Maximum duration of accreditation
Ma Architecture (National Diploma)	suspension	-	-	-
Ma Civil Engineering (National Diploma)	suspension	-	EUR-ACE®	-

Requirements

For both degree programmes

- A 11. (ASIIN 1.3) The academic supervision of the thesis in the Architecture and Civil Engineering degree programme must be ensured.
- A 12. (ASIIN 3) It must be ensured that the number of compulsory modules is reduced in order to reduce the examination load both within a semester and at the end of the year.
- A 13. (ASIIN 5.2) Include a shortened description of the learning outcomes, the individual module grades of the student as well as the relative grade of the comparable graduates' cohort in the diploma supplements of both degree programmes.

For the Master's degree programme Architecture

A 14. (ASIIN 1.3) It must be ensured to strengthen the scope of design fundamentals (design creative process; design of architectural form and space) in the first cycles of the architecture programme.

For the Master's degree programme Civil Engineering

A 15. (ASIIN 1.3) It must be ensured to strengthen the scope of the basic area in the first semester of the Civil engineering program.

Recommendations

For both degree programmes

E 13. (ASIIN 1.1) It is recommended to formulate a mission statement for both study programmes.

E 14. (ASIIN 4.2) It is recommended to increase the research opportunities for staff members.

For the Master's degree programme Civil Engineering

E 15. (ASIIN 1.3) It is recommended to adapt the number of elective modules to the specialization direction in the civil engineering programme.

For the Master's degree programme Architecture

E 16. (ASIIN 1.3) It is recommended to introduce more elective modules in the architecture programme in order for students to further develop their area of strengths.

E 17. (ASIIN 1.3) It is recommended to offer introductory courses to aspects of urban design and planning as well as landscape architecture and planning at an earlier stage of the curriculum.

E 18. (ASIIN 1.3) It is recommended to offer a module that exclusively focuses on the issues of sustainability in urban design and building construction.

Preconditions/suspension:

For both degree programmes

P 1. (ASIIN 4.1) As the university is geared towards expansion:

The teaching staff is moderately qualified and quantitatively insufficient in order to sustain the programmes under review.

The peers urge IIT to present a binding staff development concept which defines the main focus areas of both degree programmes and the way in which the subjects of both degree programmes could be taught by permanent teaching staff. In a next step, IIT must ensure to hire new teaching staff according to the main focus areas.

- P 2. (ASIIN 3) The quality of exams and final projects has to meet the expectations of the European Qualification Framework Level 7.
- P 3. (ASIIN 1.3) The quality of the curricula has to meet the expectations of the European Qualification Framework Level 7.

Appendix: Programme Learning Outcomes and Curricula

According to the Self-Assessment Report, the following objectives and learning outcomes shall be achieved by the Architecture degree programme:

“At the International Institute of Technology, the fundamental challenge of architectural education is the training of architects who are sensitive to environmental, cultural and socio-economic issues that will challenge them and enable them to respond with relevance and creativity throughout their professional life.

Generally speaking, the architect's mission is to conceive, design and supervise the construction of a building, regardless of its nature. As a result, he is required to coordinate with other team members and trades in order to successfully accomplish his projects. In his professional career, the architect can work on different modes of practice in the private sector as well as the public sector. Different missions can be assigned to him/her:

- To ensure by his expertise the support and the assistance to the owner in the various phases of the project from the idea to the realization including the process of design.
- To make the necessary architectural studies in the different phases of the design (programming, sketch, Preliminary Project, execution files...).
- Coordinate all the studies with other trades (Engineers, design offices ...)
- Supervise and co-ordinate the execution of all work activities
- Master the organization and management of construction sites.
- Master the management of the various technical, regulatory and administrative aspects of the architectural project.

To pursue a career in architecture with all this diversity, being open-minded remains as important as technical knowledge. This is why architectural education at IIT aims to stimulate the imagination and innovation of students, which must be combined with scientific rigor, sound knowledge and initiative.

In order to properly fulfill his/her professional responsibilities, an architect who is a graduate of IIT must have a real sense of creativity, precision and rigor. He/she must master perfectly the graphic representation because his/her profession requires the knowledge of how to transmit his ideas until they become concrete. Although he must acquire certain autonomy in the practice of the profession, the architect must know how to coordinate with a large number of team-members. Having excellent communication skills and being

able to build good professional relationships are crucial to work in harmony with the various members involved in the act of building.

Based on the expectations, IIT defined the specificities of our study programmes, intended competencies profile, objectives and learning outcomes which are easily accessible to the public, i.e. to students, teaching staff and anyone else interested within the website or committees. This orientation clarifies the target sectors and potential professions that the architect trained at IIT will master.

To enable them to meet the expectations of 21st century societies in terms of the design of the built environment, the training of architects must meet **this need for continuous renewal and updating**. It should be open to the transformations that companies are undergoing, the market's needs, as well as the various scientific and technological innovations related to the world of construction.

In fact, in order to create new programs and to improve the existing ones, the IIT consults experts and studies their views about the current and future demand in the job market, both nationally and internationally, and the new competencies to be targeted. These experts can be from the industry or academia. However, IIT takes into account students' points of view on this same matter through academic meetings and assessments.

The training allows graduate IIT students to have a career such as:

P1 - Architect in private practice: the architect can work as a project manager in an architectural firm (design of new buildings, renovations, transformations of existing buildings), or in a design office.

P 2 - Site Pilot Architect: the architect can be in charge of in the follow-up and coordination of the execution of the various works on site. He is also responsible for the administrative and financial management of the project in assistance to the client.

P 3 - Civil Service Architect: the architect can work for local authorities and state services relating to equipment, construction, urban planning, etc...

P 4 - Architect Entrepreneur BTP: an architect can enter the field of construction through building and public works (BTP) companies.

P 5 - Architect Real Estate Developer: an architect can invest in the field of real estate development.

P 6 - Architect Heritage Conservator: an architect can specialize in the field of conservation of built heritage, rehabilitation and restoration of old buildings, management of monuments and historic sites ...

P 7 - Urban Architect: Urban planning is the science of designing cities. An architect can contribute to urban planning and land development in the private and public sector.

P 8 - Architect Designer: An architect can be specifically interested in the interior design of spaces as well as furniture design.

P 9 - Higher education research architect: an architect can lead an academic career in scientific research, higher education and professional training of architects

P 10 - Architect specializing in 3D visualization: with the new technologies in computer graphics and graphic representation, 3D visualization is a promising field for future architects with innovations in computer graphics and videos, virtual reality, augmented reality ...

P 11 - Architect BIM Manager: the architect can specialize in the BIM (Building Information Model) methodology, which is a new collaborative approach to understanding the architectural project.

P 12 - Expert Architect to the Courts: an architect can be solicited to take advantage of his knowledge and experience for expertise in the field of construction.

It is clearly explained in the attached Objectives-Module-Matrix and the pie charts the compliance of the intended competence profile with specific areas of the profession.

In order to meet the requirements of the architectural profession, IIT graduates must acquire a multitude of skills. These skills can be divided into two broad categories, in line with the UNESCO / UIA Charter of Architectural Education:

I- General Competences:

CG1 - Master the architectural design process: The project methodology.

GC2 - Have the necessary knowledge related to the architectural sector

- Cultural and artistic knowledge
- Knowledge in the humanities and social sciences
- Knowledge of environmental sciences
- Scientific and technical knowledge
- Methodological knowledge
- Project management knowledge

GC3 - Develop various communication skills

II- Specific Competences:

N°	Competences
CS1	The ability to design architectural and urban projects that meet technical, functional, aesthetic and regulatory requirements.
CS2	The mastery of the methodology of the architectural project through the reading and analysis of the context of the urban or architectural intervention, the definition of the qualitative and quantitative aspects of the functional program and the development of an adequate architectural expression

	through choices of implantation, structures and materials.
CS3	The mastery of the different scales of architectural design including the study phase (Sketch, Preliminary Project, Execution Study...) and the realization of the works (Management, monitoring, steering, coordination...).
CS4	A developed sensitivity to the socio-economic and environmental stakes of architectural practice, to the requirements related to sustainable development applied to buildings as well as to urban issues.
CS5	Awareness of the preponderant social role of the architect in the creation of a decent and pleasant living environment for society, taking into consideration the different human, cultural, socio-economic and environmental values of his urban or architectural intervention.
CS6	Adequate knowledge of the history and theory of architecture, as well as related arts and humanities.
CS7	Adequate knowledge of the history and theory of urban planning, as well as tools and methods related to urban planning, urban design, and land use planning.
CS8	Appropriate knowledge of arts and crafts likely to affect the aesthetic quality of the architectural product.
CS9	Appropriate knowledge of building science and technology, including knowledge of general construction processes, different types of structures, building materials, architectural details, and building and urban planning engineering sciences.
CS10	Awareness of the ecological stakes of architectural practice by adopting eco-responsible conceptual approaches likely to meet

0 Appendix: Programme Learning Outcomes and Curricula

	the requirements of sustainable development in architectural design and land use planning.
CS11	The understanding of the interactions that an architectural project can have with its natural and built environment and the architect's commitment to respect the environment, urban and natural landscapes and architectural heritage."

The following **curriculum** is presented:

Year 1:

Year	Modules group	Credit	Code	Module
1	GM1: Architectural Project Methodology	14	ARCH 01 101 A	Architecture Workshop 1
		4	ARCH 01 102 A	Technical drawings
	GM2: Representation Techniques	2	ARCH 01 103 S	Design & creation
		5	ARCH 01 104 A	Plastic arts - volume & color
		5	ARCH 01 105 A	Plastic Arts-Drawing and Rendering Techniques
		4	ARCH 01 106 A	Perspective & Descriptive geometry 1
	GM3: Sciences & Technologies	2	ARCH 01 107 S	Mathematics
		3	ARCH 01 108 A	Building Physics
		4	ARCH 01 109 A	General Construction 1
	GM 4: Communication	3	ARCH 01 110 A	English for communication 1
		3	ARCH 01 111 A	French for communication 1 - Preparation for the DELF B2 exam
	GM5: Environmental & Human Sciences	3	ARCH 01 112 A	Art & Architecture History 1
		3	ARCH 01 113 S	Theory of Architecture 1
		3	ARCH 01 201 S	Natural and Built Environment
		2	ARCH 01 202 S	Introduction to anthropology and social sciences
	Total	60		

Year 2:

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Year	Modules group	Credit	Code	Module
2	GM1: Architectural Project Methodology	14	ARCH 02 101 A	Architecture Workshop 2
	GM2: Representation Techniques	6	ARCH 02 102 A	Plastic and graphic expression
		4	ARCH 02 103 A	DAO
		4	ARCH 02 104 A	Perspective & Descriptive geometry 2
	GM3: Sciences & Technologies	4	ARCH 02 105 A	Mechanics of materials
		4	ARCH 02 106 A	General Construction 2
		2	ARCH 02 107 S	Materials
		2	ARCH 02 108 S	Typology of structures
	GM 4: Communication	2	ARCH 02 109 A	English for communication 2
		2	ARCH 02 110 A	French for communication 2 - Preparation for the DELF B2 exam
	GM5: Environemental & Human Sciences	4	ARCH 02 111 A	Art & Architecture History 2
		2	ARCH 02 112 S	Theory of Architecture 2
		2	ARCH 02 113 S	Sociology
		2	ARCH 02 201 S	Sitology and landscape
	GM6: Study Trip	6	ARCH 02 202 S	Study Trip 1
	Total	60		

Year 3:

Year	Modules group	Credit	Code	Module
3	GM1: Architectural Project Methodology	14	ARCH 03 101 A	Architecture Workshop 3
	GM2: Representation Techniques	4	ARCH 03 102 S	Plastic expression
		6	ARCH 03 103 A	DAO- Initiation to BIM Methodology
		2	ARCH 03 201 S	Photography
	GM3: Sciences & Technologies	4	ARCH 03 104 A	Construction Technology
		4	ARCH 03 105 A	Sustainable Energy Systems
		2	ARCH 03 202 S	Roads and various networks (VRD)
		2	ARCH 03 203 S	Soils et foundations
		2	ARCH 03 106 S	Architecture details
	GM4: Environemental & Human Sciences	4	ARCH 03 107 A	Art & Architecture History 3
		4	ARCH 03 108 A	History and theories of urban planning
		2	ARCH 03 109 S	Urban planning and economic development
		2	ARCH 03 110 A	Communication skills 1
	GM5: Law & Management	2	ARCH 03 111 S	Introduction to law
		2	ARCH 03 204 S	Construction and urban planning law
		2	ARCH 03 112 S	Metre and written pieces
		2	ARCH 03 205 S	Safety and security standards for goods and people
	Total	60		

Year 4:

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Year	Modules group	Credit	Code	Module
4	GM1: Architectural Project Methodology	12	ARCH 04 101 A	Architecture Workshop 4
	GM2: Representation Techniques	4	ARCH 04 102 A	DAO - BIM methodology
		2	ARCH 04 103 S	Synthesis image
	GM3: Sciences & Technologies	4	ARCH 04 104 A	Building equipment - Fluids
		4	ARCH 04 105 A	Building equipment - Electricity
		2	ARCH 04 201 S	Site organization
		2	ARCH 04 106 S	Envelope treatment
		2	ARCH 04 107 S	Acoustics
		2	ARCH 04 202 S	Pathology of construction
		4	ARCH 04 108 A	Art & Architecture History 4
	GM4: Environmental & Human Sciences	2	ARCH 04 109 S	Protection of the built heritage
		2	ARCH 04 110 S	Environmental impact study
		2	ARCH 04 203 S	Communication skills 2
		4	ARCH 04 111 A	Public procurement legislation
	GM5: Law & Management	2	ARCH 04 204 S	Professional ethics
		2	ARCH 04 205 S	Juridical Responsibility
		2	ARCH 04 112 S	Advanced rendering - Lumion (optional)
	GM6: Elective modules*	2	ARCH 04 206 S	Introduction to Sustainable Architecture (optional)
		2	ARCH 04 207 S	Project Management (optional)
		2	ARCH 04 207 S	Project Management (optional)
	GM7: Study Trip	4	ARCH 04 208 S	Study Trip 2
	Total	60		

Year 5:

Year	Modules group	Credit	Code	Module
5	GM1: Architectural Project Methodology	8	ARCH 05 101 S	Architecture Workshop 5
		1	ARCH 05 102 S	Introductory seminar to the methodology of the architecture thesis
	GM2: Sciences & Technologies	1	ARCH 05 103 S	New technologies in architecture
		1	ARCH 05 104 S	Energy systems and their integration in architectural design
	GM3: Law & Management	3	ARCH 05 105 S	Architecture and urban regulations
		2	ARCH 05 106 S	Infrastructure and urban planning
	GM4: Communication	2	ARCH 05 107 S	Communication skills 3
		2	ARCH 05 108 S	Investigation techniques
	GM5 **: Elective modules 1	3	ARCH 05 109 S	Revit for Architectural Design
			ARCH 05 110 S	Criticism in Architecture
		3	ARCH 05 111 S	Architecture in sensitive environments and specific areas
			ARCH 05 112 S	Vernacular Architecture
	GM6 **: Elective modules 2	2	ARCH 05 113 S	Cities, territories and landscapes (optional)
		2	ARCH 05 114 S	Professional rendering - 3dsmax (optional)
		2	ARCH 05 115 S	Smart Cities (optional)
	GM7: Internships & Thesis	3	ARCH 05 201 S	Practical internship - 1st cycle
		3	ARCH 05 202 S	Practical internship - 2nd cycle
		24	ARCH 05 203 S	Architecture Thesis
	Total	60		

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Year 6:

Year	Modules group	Credit	Code	Module
6	Professional Internship	60	ARCH 06 101	Introduction to Professional internship in architecture
				Professional internship in architecture
	Total	60		

According to the Self-Assessment Report, the following objectives and learning outcomes shall be achieved by the Civil Engineering degree programme:

“Civil Engineering is a set of professional and technical activities which are necessary to realize civil constructions. The civil engineer takes in charge the design, the construction, the management, the maintenance and the repair work in the building domain and public works. His mission is to meet the growing requirements and needs of people the company by ensuring public safety and environment’s respect and continuous development.

The Civil Engineer involves the skilled human resources, as well as technical and financial means to realize projects. The field of activity of Civil Engineering increases employment opportunities in other sectors at the national and international level.

Objectives of a degree programme of civil engineering

In order to fulfill his tasks, the civil engineer benefits from a multidisciplinary and high-level training at IIT which enables him to master the design, study, dimensioning of work elements, the realization of a construction project and the rehabilitation of constructions (buildings, engineering structures, roads, etc.) by using fundamental scientific, technical and technological methodologies relevant to his specialty: structures, soil mechanics, materials, reinforced concrete, hydraulics, etc ... In addition, the civil engineer exploits his practical and theoretical knowledge enhanced with computer skills and mathematics to design and meet any actual or potential need in his sector. His training is enriched by practical insights related to project management, quality control and communication techniques. It is also based on a research activity that is increasingly close to the job market’s needs or the requirement of higher education degree (example PhD degree).

All these skills give this specialty a wide range of potential sectors of activities in which the engineer can work and innovate.

Elaboration of study plans

At IIT, various surveys are conducted, with the different stakeholders in the field of civil engineering: director of studies, experts from industry (engineers from design offices, companies and laboratories...) and the academic world (teachers), to find out their expectations of civil engineers' qualifications and to define the real of the job market’s needs. Based on these expectations, IIT defined the specificities of our study programmes. This orientation clarifies the target sectors and potential professions that the engineer trained at IIT will master. We created students’ survey as well though academic meetings and feedbacks students' views on the same subject through pedagogical meetings and evaluation.

The development of the programmes

After consulting the different stakeholders, the IIT refers to two advisors to assist the director of studies in preparing the work/folder to be submitted for approval by the Ministry of Higher Education and Scientific Research.

Three fundamental elements must be included in this file: the skills to be developed, the professional reference framework of the new program and the methodology that guarantees the acquisition of the intended learning outcomes.

To analyze and enhance the existing program, the feedbacks and opinions of the different stakeholders mainly including students, experts from academia and industry are taken into consideration. Thus, the civil engineering programme was updated by highlighting the following areas of improvement:

- Teaching methods
- The content of study plans
- The expected time for some modules
- Modules dedicated to each semester
- Reinforcement of practical training to deepen the theoretical aspect

Activity sectors

Civil engineering comprises all the activities related to two main sectors building and public works. This includes design, management and construction activities in the fields of buildings, major specific dam and marine works, the building materials industry and infrastructures such as roads or pipelines.

These activities can be carried out in the private (mainly corporate), public (administrations, ministries, research and innovation centers) or semi-public (public-private partnership companies) sectors.

Civil engineering professions

These two sectors of activity lead to several professions of civil engineers. The training of Civil Engineers offered at IIT aims to prepare engineers to occupy the following responsibilities in companies, design offices or administrations:

P1: Engineer of studies and control of buildings: it consists in designing, calculating the frames and the foundation of buildings while taking into account the standards of fire safety and fire resistance of the elements in Armed Concrete and the standards of the earthquake-proof design of the buildings, as well as the control of the studies, the execution and the quality of the buildings.

P2: Building Company Engineer: deals with execution processes, preparation of measurements and accounts, stock and supply management, work planning, organization and installation of building sites, preparation of execution plans, preparation of offers, quality control of materials, etc...

P3: Steering and Coordination Engineer: in charge of work assistance, work planning, quantity surveying, evaluation and settlement in a project, work optimization, quality control of materials, ...

P4: Administrative Engineer: can occupy administrative positions in Ministries, regional directorates, offices, municipalities, investment banks, real estate developers ... and is generally responsible for writing report, communication, coordination, validation of work, accounts and settlement methods, project evaluation ...

P5: Roads and Bridges Engineer: in charge of the design and calculation of engineering structures, the stability of supporting structures, the design and calculation of roads, roadways and various networks, ...

P6: Roads and Bridges Company Engineer: deals with the processes of execution of the works of the engineering structures, quality control of materials, measurements and counts, management of stocks and supplies, planning of the works and organization of the building site, ... **P7:** Maintenance and Rehabilitation Engineer of Civil Engineering Structures: deals with the diagnosis of degraded structures and the knowledge of the probable causes, the resolution of pathological problems of the structures, rehabilitation and maintenance.

P8: Marine Works Engineer: in charge of the design, dimensioning, construction and maintenance of marine works (embankments, docks, wharves), ...

Learning outcomes of the civil engineering degree programme

In order to cover all the mentioned activities and to practice these professions, the engineer must master the fundamental sciences as well as the technical ones. He must also know foreign languages (in our case French and English), management and economics. Moreover, he must be aware of societal values, environment, and sustainable development.

The Civil Engineer who graduates from IIT must acquire a set of generic and specific skills to succeed in his career in one of the targeted professions. These skills can be obtained thanks to extracurricular activities.

Therefore, the training of civil engineers is a combination between generic and specific competencies. While the formers are necessary for every professional activity, the latter are strictly related to civil engineering professions. These two kinds of competencies will be detailed below.

Generic Competencies:

Generic competencies are a common denominator between all the engineering programmes at IIT that's why they are imminently covered. The engineer must have a solid scientific knowledge and a decent general culture to have a global vision on the project to create. It should also integrate technological developments. The opening to the international market for construction projects requires a deep understanding of people, traditions, cultures and civilizations. Mastering a foreign language and some communication techniques (English, French, Chinese, Arabic and others) are essential in the training of Civil Engineers.

The generic basis for all engineering training is scientific and technical knowledge, the ability to adapt to the specific requirements of the company and society, and the consideration of the organizational and cultural dimension.

This type of generic competencies is subdivided into six groups:

- CE1. Knowledge and understanding:

It refers to the abilities with relevance to sciences and skills development's mastery. They are needed for analysis, interpretations and the mobilization of the fundamental assets resulting in developed problems' resolution.

- CE2. Technical conception:

These are the technical science competencies that enable the engineer to gain several specific scientific techniques and to develop the capacity to analyze and synthesize. Also, these competencies allow the engineer to mobilize the resources of a specific technical science for the design and study of an innovative project or product using appropriate tools.

- CE3. Engineering analysis:

These are the competencies that enable the engineer to formulate the problems posed by the needs of people, study and apply analytical and numerical methods which aim to solve and propose innovative solutions to these complex problems.

- CE4. Investigations and evaluation:

These are research, development and investigation competencies that allow the engineer to carry out fundamental or applied research activities, development of experimental boards or test benches.

- CE5. Transferable competencies:

These are the transversal and human sciences competencies that enable engineers to develop:

- The ability to take into account the orientations of the company, the economic stakes and budgetary constraints, competitiveness and productivity and the commercial requirements of the consumer.

- The ability to make decisions shared with the user (ethical responsibilities), to work in multidisciplinary teams on a project, to respect health and safety during the realization and after exploitation of the proposed product.
- The ability to formulate the needs of people and to consider social and economic issues.
- The ability to integrate quickly into an organization or a team, to make a contribution that would allow the evolution and progress of the project. Taking initiative, collaboration and communication with all stakeholders are taken into consideration in the engineer's training.
- The ability to adapt to international contexts for companies operating internationally requires knowledge of foreign civilizations and mastery of foreign languages.
- CE6. Engineering Practice

These are the technological and experimental competencies that the engineer must acquire in order to have:

- The ability to plan, organize the work and master the procedures of realizing as well as managing projects.
- The ability to meet environmental requirements by applying the principles of sustainable development and to apply international standards.

Specific Competencies:

The Civil Engineer must have a solid technical and technological base to master the design, the study, the dimensioning of the elements of the work and the realization of a construction project. The mastery of numerical tools for structural modeling, quality control, construction processes, planning and organization of work and project management is essential for a company's competitiveness. These specific competencies can be divided as follows:

- Competencies related to the formulation of needs

SC1- the ability to analyze a client's needs and to write a project or product specifications document.

SC2- the ability to design the work or a product to be developed according to the established specifications.

SC3- the ability to elaborate a preliminary design or a prototype in harmony with the allocated budget.

- Competencies related to the design, modeling and dimensioning of the work

SC4- the ability to design the load-bearing framework of a reinforced concrete or metal structure, roadways and marine structures.

SC5- the ability to model a load-bearing framework and dimension its structural elements in accordance with the regulations in force, to dimension road and maritime structures.

SC6- the ability to choose the construction materials for the realization of the load-bearing structure taking into account the environmental restrictions.

SC7- the ability to dimension standard or special foundations: this involves carrying out a geotechnical study of the soil under the foundations and determining the bearing capacity of a soil.

SC8- the ability to prepare a detailed preliminary design of the proposed work.

- Competencies related to the realization of the work, or the production of a product

SC9- the ability to master the construction processes of civil engineering works.

SC10- the ability to prepare a study of the impact of the project on its environment for the protection of cities against natural disasters.

SC11- the ability to elaborate a socio-economic study of the project while respecting the values of the society and ensuring the safety of goods and people.

SC12- the ability to draw up an execution schedule, to organize the work of realization of a work and to master the management tools.

- Competencies related to the rehabilitation of structures

SC13- the ability to diagnose an existing structure, identify pathologies and propose rehabilitation solutions.

SC14- the ability to preserve the monuments of different civilizations in the country by carrying out the necessary restoration works.

SC15- the ability to develop polluted sites by carrying out the clean-up and soil treatment works for future exploitation.

SC16- the ability to extend the existing works; to propose reinforcement solutions and to carry out reinforcement works for a better exploitation.

Indeed, the IIT civil engineering study plan includes attendance-based learning courses and preserves a space for extra-curricular self-study activities. The pie charts below describe the IIT's professions and competencies reference framework. The ratios are calculated on the basis of the hourly volume of each module, which includes both attendance-based learning hours and self-study hours.

In accordance with international standards, the IIT civil engineering student can choose elective modules to customize their major. The choice is made during the fifth semester between the following four optional specialties:

- management
- buildings
- bridges and roads
- marine works“

The following **curriculum** is presented:

Level of Study 1:

Level of Study	Module	Coef GM	ECTS	Rapport VH/Cr	Credit	Sem	Codification	S u b - M o d u l e	Total Hourly Volume of not Contact hours	Total Hourly Volume of Contact hours	V H			Total
											C	TP	Project	
1	GM1-1 Human Sciences I: communication, management and economics	10	2	32	2	1	GCV 03 101	Preparation for DELF certification 01	28	35	21		14	63
			2	32	2	2	GCV 03 201	Preparation for DELF certification 02	28	35	21		14	63
			2	21	2	1	GCV 03 102	Management for the engineer	21	21	21			42
			2	21	2	2	GCV 03 202	Economy for the engineer	21	21	21			42
			2	21	2	1	GCV 03 103	Scientific research and writing methodology	21	21	12		9	42
	GM1-2 Basic Sciences	6	1	35	1	1	GCV 03 104	Mathematics for engineers 1	14	21	21			35
			2	21	2	2	GCV 03 203	Mathematics for engineers 2	21	21	21			42
			3	26	3	1	GCV 03 105	Continuum mechanics	35	42	42			77
	GM1-3 Technical Sciences I: Fluids and hydraulics	6	2	28	2	2	GCV 03 204	Computer Aided Drawing CAD	28	28		28		56
			2	25	2	1	GCV 03 106	Fluid mechanics	21	28	21	7		49
			2	28	2	2	GCV 03 205	General and urban hydraulics	28	28	28			56
	GM1-4 Engineering sciences: modeling and digital tools	6	2	18	2	2	GCV 03 206	Operational research	14	21	21			35
			2	21	2	2	GCV 03 207	Numerical analysis	14	28	14	14		42
			2	28	2	1	GCV 03 108	IT: programming language	28	28	14	14		56
	GM1-5 Technical sciences	9	3	30	3	1	GCV 03 109	Resistance of materials	42	49	35	14		91
			3	28	3	2	GCV 03 209	Calculation of structures I	42	42	42			84

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	II: dimensioning of Structures		3	28	3	2	GCV 03 210	Reinforced concrete I	4 2	42	42			84
	GM1-6 Technological and experimental sciences I: Materials and geotechnics	8	3	26	3	1	GCV 03 110	Construction materials	3 5	42	28	14		77
			3	23	3	2	GCV 03 211	Soil mechanics I	2 8	42	28	14		70
			2	21	2	1	GCV 03 111	Engineering geology	1 4	28	21	7		42
	GM1-7 Human Sciences II: Urban planning, Environment and sustainable development	6	1	28	1	1	GCV 03 112	Environmental engineering	1 4	14	14			28
			2	25	2	1	GCV 03 107	Geographic information system	2 1	28	14	14		49
			1	28	1	2	GCV 03 212	Sustainable development	1 4	14	14			28
			2	25	2	1	GCV 03 113	Urban Planning and Development	2 1	28	28			49
	GM1-8 Technological and Experimental Sciences II: implementation and realization	9	3	21	3	1	GCV 03 114	Topography	2 8	35	21	14		63
			2	21	2	2	GCV 03 213	Concrete technology (Concrete composition)	2 1	21	21			42
			1	35	1	2	GCV 03 214	Survey and stakeout	1 4	21	14		7	35
			3	23	3	2	GCV 03 215	Construction processes	2 8	42	36		6	70
	Total	60	60	26	60				6 8 6	82 6	636	140	50	1512

Level of Study 2:

Level of Study	Module	Coef GM	ECTS	Rap- port VH/Cr	Credit	Sem	Codifica- tion	Sub- Module	Total Hourly Volume of not Contact hours	Total Hourly Volume of Contact hours	V H			Total
											C	TP	Pro- ject	
	GM2-1 Human Sciences I: communication, management and economics	10	2	3 2	2	3	GCV 04 101	Preparation for BEC certification 01	28	35	21		14	63
			2	3 2	2	4	GCV 04 201	Preparation for BEC certification 02	28	35	21		14	63
			2	2 1	2	3	GCV 04 102	Entrepreneurial Culture	21	21	21			42
			2	2 1	2	4	GCV 04 202	Personalized Professional Project	21	21			21	42
			2	2 1	2	3	GCV 04 103	End of Year Project	21	21	7		14	42
	GM2-2 Technical Sciences I: Calculation of concrete	8	3	2 6	3	3	GCV 04 104	Reinforced concrete 2	35	42	28	14		77
			2	2	2	4	GCV 04	Prestressed concrete 1	21	28	28			49

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2

frames			5			203							
	3	2 1	3	4	GCV 04 204	Design and calculation of building frame	28	35	28	7		63	
GM2-3 Technical Sciences II: Calculation of Structures	8	2	2 8	2	3	GCV 04 105	Calculation of structures II	28	28	28		56	
		2	2 8	2	4	GCV 04 205	Structural dynamics	28	28	28		56	
		2	2 8	2	3	GCV 04 106	Plates and shells	28	28	21	7	56	
		2	2 1	2	4	GCV 04 206	Finite element methods for structural design	21	21	21		42	
GM2-4 Technological & Experimental Sciences I: Building Physics and Rehabilitation	6	2	2 1	2	3	GCV 04 107	Pathologies, Diagnosis and rehabilitation of structures 1	21	21	14		7	42
		1	3 5	1	4	GCV 04 207	Pathologies, Diagnosis and rehabilitation of structures 2	14	21	14	7	35	
		2	2 5	2	4	GCV 04 208	Thermal applied to building	21	28	21	7	49	
		1	3 5	1	3	GCV 04 108	Acoustics applied to buildings	14	21	14		7	35
GM2-5 Technological sciences II VRD and hydrology	7	3	2 3	3	3	GCV 04 109	Roads	28	42	28	14		70
		2	2 5	2	4	GCV 04 209	Roads and various networks	21	28	28		49	
		2	2 5	2	3	GCV 04 110	Hydrology and hydraulic structures	21	28	28		49	
GM2-6 Technological Sciences III: Work planning and	6	3	2 6	3	4	GCV 04 210	Quantity survey, Markets and planning	28	49	35	14		77
		3	2 1	3	3	GCV 04 111	Site organization and machinery	28	35	28		7	63
GM2-7 Technical sciences III: Constructions and structures	8	2	2 1	2	4	GCV 04 211	Mixed construction	21	21	21			42
		3	2 6	3	3	GCV 04 112	Metal frame	35	42	42			77
		3	2 6	3	4	GCV 04 212	Design and calculation of works of art	35	42	28		14	77
GM2-8 Technical sciences IV: Soils and structural stability	7	3	2 3	3	3	GCV 04 113	Soil Mechanics II	28	42	28	14		70
		2	3 2	2	4	GCV 04 213	CAC computer aided calculation	21	42		42		63
		1	2 8	1	4	GCV 04 114	Calculation and stability of retaining structures	14	14	14			28
		1	2 8	1	4	GCV 04 115	Environmental impact of projects	14	14	14			28
Total	6 0	6 0	2 6	6 0				672	833	609	126	98	150 5

Level of Study 3:

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Level of Study	Mod ule		Coef GM	ECTS	Rap- port VH/Cr	Credi t	Sem	Codification	Sub- Mod- ule	Total Hourly Volume of not Contact hours	Total Hourly Volume of Con- tact hours	V H			Total	
												C	TP	Pro- ject		
3	GM 1 : Prepara- tion for Profes- sional Career	Common modules	8	2	21	2	5	GCV 05 101	Personalized Professional Project	21	21	21			42	
				2	17,5	2		GCV 05 102	Introduction to marine and coastal engineering	14	21	21			35	
				2	31,5	2		GCV 05 103	Structural modeling: BIM REVIT structure	28	35	14		21	63	
				2	21	2		GCV 05 104	Rheology of new materials	21	21	21			42	
	GM 2 : Mini Project 01		8	2	31,5	2		GCV 05 105	Mini project 1: Metal structures	28	35	14			21	63
				2	31,5	2		GCV 05 106	Mini project 2: Building	28	35	14			21	63
				2	24,5	2		GCV 05 107	Fire safety	21	28	21			7	49
				2	24,5	2		GCV 05 108	Introduction to seismic analysis	21	28	14			14	49
	GM 3 : Mini Project 02		8	2	35	2		GCV 05 109	Mini project 3: Girder bridge	28	42	14			28	70
				2	28	2		GCV 05 110	Mini project 4: Study and design of a road	28	28	14			14	56
				2	24,5	2		GCV 05 111	Mini project 5: Study of Sanitation Networks	21	28	14			14	49
				2	24,5	2		GCV 05 112	Calculation of deep foundations	21	28	14			14	49
	GM 4 : Elec- tive Mod- ules	GM4 op1 : Management	6	2	21	2		GCV_op 05 113	Management of Civil Engineering projects	21	21	14			7	42
				2	21	2		GCV_op 05 114	Quality of works and site safety	21	21	14			7	42
				2	28	2		GCV_op 05 115	Mini Project : Planning Project in Civil Engineering	28	28	14			14	56
		GM4 Op2 : Building	6	2	21	2		GCV_op 05 116	Electricity of buildings	21	21	14			7	42
				2	21	2		GCV_op 05 117	Air conditioner ; central heating and electricity of buildings	21	21	14			7	42
				2	28	2		GCV_op 05 118	Mini Project : ecological building	28	28	14			14	56
		GM4 Op3 : Bridges and roads	6	2	21	2		GCV_op 05 119	Rail infrastructure	21	21	14			7	42
				2	21	2		GCV_op 05 120	Roads, crossroads and interchanges	21	21	21				42
				2	28	2		GCV_op 05 121	Mini project : study and design of a slab bridge	28	28	14			14	56
		GM4 Op4 : Mari- time works	6	2	21	2		GCV_op 05 122	general construction procedures applied to marine engineering	21	21	14			7	42
				2	21	2		GCV_op 05 123	Design and study of port structures	21	21	14			7	42
				2	28	2		GCV_op 05 124	Mini project: study of maritime works	28	28	14			14	56
					3	50		3	GCV 03 301	Initiation internship	75	75				75

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	GMS : Internships	Internships	3 0	3 24	50 25	3 24	6	GCV 04 301	Perfection Internship	75	75			75	150
								GCV 05 201	Graduation project	550	50			50	600
	Total		6 0	60	25,666 7	60				1050	420	371	0	459	137 0