ASIIN Seal & European Label

Accreditation Report

Bachelor's Degree Programme
Architecture
Environmental Engineering

Master's Degree Programme
Construction Management

Provided by
Ho Chi Minh City University of Technology (HCMUT)

Version: 28.06.2024

Table of Content

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]
Kiến trúc	Bachelor of Architecture	ASIIN	-	03
Kỹ thuật Môi trường	Bachelor of Environmental Engineering	ASIIN, EUR-ACE® Label	-	03
Quản lý xây dựng	Master of Construction Management	ASIIN	-	03
Date of the contract: 09.08.2022 **Submission of the final version of the self-assessment report:** 16.12.2022 **Date of the onsite visit:** 08.-09.02.2023 **at:** campus 1 HCMUT				
Peer panel: Prof. Dr.-Ing. Lutz Beckmann, Jade University of Applied Sciences Oldenburg Prof. Dr.-Ing. Ulrich Neuhof, Erfurt University of Applied Sciences Prof. Dr.-Ing. Renatus Widmann, University Duisburg-Essen Nguyen Thi Phuong Chi, FICT Viet Nam Company Limited - Facility Control Department Dang Hung Long, student at Danang University of Science and Technology				
Representative of the ASIIN headquarter: Yanna Sumkötter				
Responsible decision-making committee: Accreditation Commission for Degree Programmes				
Criteria used:				

[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

European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 7, 2021 Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy and Architecture as of September 28, 2012	

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
Architecture	Kiến trúc sư/ Bachelor of Architecture	-	6	Full time	.	8 semesters	132 Vietnamese credits (264 ECTS)	Annually / 2010
Environmental Engineering	Cử nhân Kỹ thuật Môi trường/ Bachelor of Environmental Engineering	-	6	Full time	-	8 semesters	131 Vietnamese credits (262 ECTS)	Annually / 2000
Construction Management	Thạc sĩ quản lý xây dựng/ Master of Engineeering in Construction Management	-	7	Full time	-	4 semesters	60 Vietnamese credits (120 ECTS)	Each semester / 2014

For the Bachelor's degree programme Architecture, Ho Chi Minh City University of Technology (HCMUT) has presented the following objectives in the Self-Assessment Report:

"The objectives of the Architecture programme

- PO 1: Through general knowledge blocks, identify the close relationship with specialisation in architecture, planning, other industries, economics, and politics. Understand and apply subjects of knowledge blocks: Basic Science, Social Science and Humanities, Industry, and specialised basic knowledge from industry history, paintings, shaping arts, construction techniques, and composition principles.
- PO 2: Compose and practise designing architectural works, closely argument thinking and creativity in career activities.
- PO 3: Practise and cultivate personal skills, communication, and teamwork.
- PO 4: Occupational ethics, colleagues, and cultural relations.PO-4. Training engineers with sufficient knowledge and ability to continue to study Biotechnology graduate programme in country and abroad."

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

For the Bachelor's degree programme Environmental Engineering, Ho Chi Minh City University of Technology (HCMUT) has presented the following objectives in the Self-Assessment Report:

"The objectives of the Environmental Engineering programme

- PO 1: Identifying environmental protection problems through pollution control solutions with innovative, practical applications of environmental engineering
- PO 2: Having ability to apply knowledge of engineering, technology, and management for solving environmental pollution problems and contributing to the national environmental protection goal in the course of sustainable socio-economic development of the country.
- PO 3: Having skills and methods of working independently, having critical thinking, having communication skills in foreign languages, and being able to self-study and improve professional qualifications in the field of environmental engineering.
- PO 4: Having the appropriate professional ethics and social responsibility."

For the Master's degree programme Construction Management, Ho Chi Minh City University of Technology (HCMUT) has presented the following objectives in the Self-Assessment Report:

"The objectives of the Construction Management programme

- PO 1: Graduates will gain basic knowledge of mathematics and natural science to meet the acquisition of professional knowledge and the ability to study at a higher level.
- PO 2: Graduate will acquire technical and industry knowledge: (a) Basic Knowledge of physical processes in Construction Management. (b) Basic Knowledge of equipment and technological processes in the areas of Construction Management; (c) Knowledge of analytical and design tools in the Construction Management industry
- PO 3: Graduates will be able to perform critical thinking and other skills in careers such as communication, teamwork, and to proper professional ethics to work in a multi-disciplinary and multicultural environment.
- PO 4: Graduates will learn about economy and politics as well as basic knowledge in the field of social sciences and humanities which are suitable for the domain of construction management to contribute to the social sustainable development effectively."

C Peer Report for the ASIIN Seal

1. The Degree Programme: Concept, content & implementation

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

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions
- Webpage HCMUT
- Webpage Faculty of Civil Engineering
- Webpage Faculty of Environment and Resources
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The peers refer to the respective ASIIN Subject-Specific Criteria (SSC) of the Technical Committee 3 (Civil Engineering, Geodesy and Architecture), 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 Bachelor's degree programmes Architecture and Environmental Engineering as well as the Master's degree programme Construction Management 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.

The Ho Chi Minh City University of Technology (HCMUT) has described programme objectives (POs) and student outcomes (SOs) for each of the three degree programmes under review. While the POs are developed based on the vision and mission of the university as well as the respective faculty and are rather general and concise, the SOs describe in greater detail the competences the students should acquire during their studies. To what

extent the information, including the POs and SOs about the three degree programmes should be accessible to the students as well as to all stakeholders, for instance by publishing them on the faculty's website, will be described under criterion 4.3. Furthermore, there are regular revision processes in place that take into account feedback by external and internal stakeholders. A major revision including consultations of stakeholders takes place every five years for the Bachelor's degree programmes and every two years for the Master's degree programme.

The peers note that the development of SOs of the study programmes involves both internal and external stakeholders so that the curricula can be adapted and modified according to the needs of the industry and the graduates on a regular basis. For example, HCMUT regularly conducts surveys, through which the different stakeholders get the chance to assess the programmes and their main objectives. Based on this feedback HCMUT adapts the degree programmes if necessary. Internal stakeholders include all of HCMUT members (students, teaching staff, and non-academic employees), while the external stakeholders include the industry, alumni, the government, and society.

At the end of their studies, graduates of the Bachelor's degree programme Architecture have acquired basic and advanced knowledge in architectural design and design methods. They should be able to master the principles of urban planning and design, housing and settlement that put reference on the local context. They know how to design and develop a research-based architecture, produce creative, contextual and theoretically valid architectural works and have gained extensive presentation, writing, manual and digital graphic skills. Moreover, they have gained a solid understanding of mechanical and engineering issues in order to design safeguards and adaptation solutions to regional climatic conditions. Therefore, graduates of this study programme are capable of working in several professions, especially as architect, architectural technologist, interior and spatial designer, as well as in the area of building construction or construction management.

The aim of the Bachelor's degree programme Environmental Engineering is to produce graduates who are able to identify environmental problems and implement environmental engineering solutions through the application of mathematical, natural science, and specialised knowledge. Graduates of this programme know how to apply environmental engineering expertise to deploy solutions to meet environmental protection requirements according to national regulations and international conventions, serving the country's socio-economic development. Moreover, they must be able to gain and apply new knowledge, pursue a lifelong self-learning approach to develop and perform appropriate experiments, data analysis and interpretation for generalization of conclusions, as well as to propose technical solutions to timely adjust the impacts of engineering solutions in terms of social,

economic and environmental aspects. Consequently, graduates of this programme are capable of working as environmental engineer specializing in hydraulic engineering, environmental pollution control equipment and urban water management.

Graduates of the Master's degree programme Construction Management should be able to design and conduct experiments (directly or indirectly via models) for Construction Management systems and analyse and interpret experimental results. They are capable of designing a system (or parts of a system) or a technological process to meet desired criteria, including economic, environmental, societal, ethical constraints, and technical feasibility and sustainability. They know how to conduct and develop research in the field of construction management, either within a scientific or an applied outfit. Consequently, graduates of this programme are capable of working in different construction areas, e.g. construction management companies, construction consulting companies, main contractors, subcontractors, construction materials suppliers, construction investment companies or real estate companies.

Next to the professional skills, the students of all three study programmes are supposed to acquire personal and social skills such as critical and creative thinking, communication skills, adaptability, the capacity to work in (international) teams, and leadership skills. In addition, they should be able to solve problems through research and the application of different concepts and methods.

In the peers' opinion, the intended qualification profiles of all degree programmes are clear, plausible and allow students to take up an occupation, which corresponds to their qualification. They learn that the graduates of HCMUT are much sought after in the labor market. The representatives of industry emphasise the high quality of the graduates of all three programmes under review and students as well as graduates are satisfied with and well aware of their good job perspectives.

In summary, the peers conclude that, in formulating the intended learning outcomes for the three degree programmes, the university has followed the EUR-ACE framework standards of engineering programmes and the Subject-Specific Criteria of the ASIIN Technical Committee 03 for Civil Engineering, Geodesy and Architecture. The peers confirm that the study aims and learning outcomes of the two Bachelor's degree programmes correspond to level 6 of the European Qualifications Framework while the learning outcomes of the Master's degree programme correspond to level 7 of the EQF. They aim at the acquisition of specific competences and are well-anchored and binding.

Criterion 1.2 Name of the degree programme

Evidence:

- Self-Assessment Report
- Samples of Diploma Supplement for each degree programme

Preliminary assessment and analysis of the peers:
The peers confirm that the English translation and the original Vietnamese names of all three degree programmes under review correspond with the intended aims and learning outcomes as well as the main course language (Vietnamese).

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Guidelines for the recognition of externally acquired academic achievements
- Cooperation agreements (MoU)
- Study plans of the degree programmes
- Module descriptions
- Webpage HCMUT
- Webpage Faculty of Civil Engineering
- Webpage Faculty of Environment and Resources
- Discussions during the audit

Preliminary assessment and analysis of the peers:
Structure of the programmes

The curricula of the two Bachelor's degree programmes under review are structured for eight semesters and 131 or 132 Vietnamese credits respectively (equivalent to 262 or 264 ECTS points) need to be achieved by the students, whereas the Master's degree programme spans over four semesters and at least 60 Vietnamese credits (equivalent to 120 ECTS).

Elective courses can be chosen by the students in accordance with their areas of interest and after consultation with their academic advisor. The courses in the first two semesters of the Bachelor's programmes convey basic knowledge of natural sciences, mathematics

and languages. Courses from different sciences are offered from the third to the sixth semester. Students absolve the internship in the sixth semester. During the seventh and eighth semester, students must complete projects and the Bachelor's thesis.

The general education courses include the areas of (1) mathematics and natural sciences, (2) social sciences, humanities, (3) foreign languages (4) military training and physical education. Four English courses are designed to help students achieving a minimum level equivalent to Test of English for International Communication (TOEIC) of 500 upon graduation. However, these English courses can be exempted for the students who have an international standardized test of English language proficiency which is equivalent to TOEIC of 500.

The core modules consist of courses in architecture or environmental engineering. These modules aim to equip students with the necessary knowledge and skills in the relevant field. The specialized modules consist of both compulsory and elective courses. Depending on each degree programme, these modules are designed to impart the necessary competences in the specific field of architecture or environmental engineering. The modules "Project/studio", "Internship", and "Bachelor's thesis" are intended to provide students with opportunities to apply their theoretical knowledge in a professional way, to learn about the requirements of the job market, and to show their proficiency with scientific work.

The internship is usually conducted during the sixth semester. At the end, students have to write a progress report and give a presentation. The employers are also required to give feedback and comments about the students. In the project or studio courses students are required to put the theoretical knowledge into practice, often in cooperation with the industry partners.

All courses of the Master's degree programme are generally divided into five blocks. Courses in the first semester are pre-requisite courses and mandatory core courses. The second semester includes general mandatory courses and general elective courses. The third semester includes elective subjects outside the programme with the consent of the instructor and the faculty. During the final semester, students must complete the Master's thesis.

Before preparing the final thesis, students need to design a proposal for their Bachelor's and Master's thesis with the support of their supervisor. The result should be presented and defended in front of a panel, which consists of two lecturers. The theses are comprehensive projects that require a student to apply all knowledge and skills acquired during the programme. Writing a thesis is done in two stages (1) proposal and (2) final thesis. In the final stage, the thesis is reviewed by a lecturer and the results need to be presented in front of a panel.

The current curricula of the Architecture and Environmental Engineering degree programmes were implemented in 2019, while the current curriculum of the Construction Management degree programme was implemented in 2021. Previously, the Architecture degree programme started with 5 years, was then reduced to 4,5 years and now spans over 4 years. The standard duration of the Environmental Engineering degree programme has also been reduced from 4,5 years to 4 years. In the course of the same curricula reviews, HCMUT reduced the credits of the two Bachelor's degree programmes from 151 credits (1999) to 131 credits (2019) and to 132 credits (2020) in order to adapt both curricula to international standards and facilitate credit transfer for student mobility. The peers are convinced that these changes match the learning outcomes of the degree programmes and reflect the demand on the job market. In the self-assessment report, the university gives a detailed overview of how the competences acquired with the Environmental Engineering curriculum match the individual EUR-ACE learning outcomes.

In summary, the peers gain the impression that the choice of modules and the structure of the curricula ensure that the intended learning outcomes of the respective degree programme can be achieved.

Content

The two degree programmes, Architecture and Construction Management, are managed by the Faculty of Civil Engineering (FCE) while the Environmental Engineering degree programme is managed by the Faculty of Environment and Natural Resources (FENR). All Bachelor's degree programmes at HCMUT are required to have a minor revision annually and a major revision every five years, the Master's programmes every two years.

An academic year at HCMUT consists of two semesters and a short summer term which lasts for ten weeks. The summer term is normally used for conducting the internship. Some courses are offered in the summer term, based on the demands of students. A regular semester consists of sixteen weeks for learning and teaching, one week for mid-term tests, and two to three weeks for final exams. The mid-term tests are normally given at the ninth week of a semester.

The general structure of the curriculum is similar for both Bachelor's degree programmes. In the first year, students mainly take general courses from subject areas such as mathematics, natural sciences, social sciences, humanities, and economics with the same content for all students in both faculties. From the second year on, students can take part in core courses and specialized courses in their respective architecture or engineering field. Furthermore, after consultation with their academic advisor, students can select electives according to their personal interests. During their studies, all students must spend at least six weeks to study and work in companies for their internship. In the final year, students have

to complete their Bachelor's thesis. For both internship and thesis, students have to submit their reports, present and defend it in front of a panel.

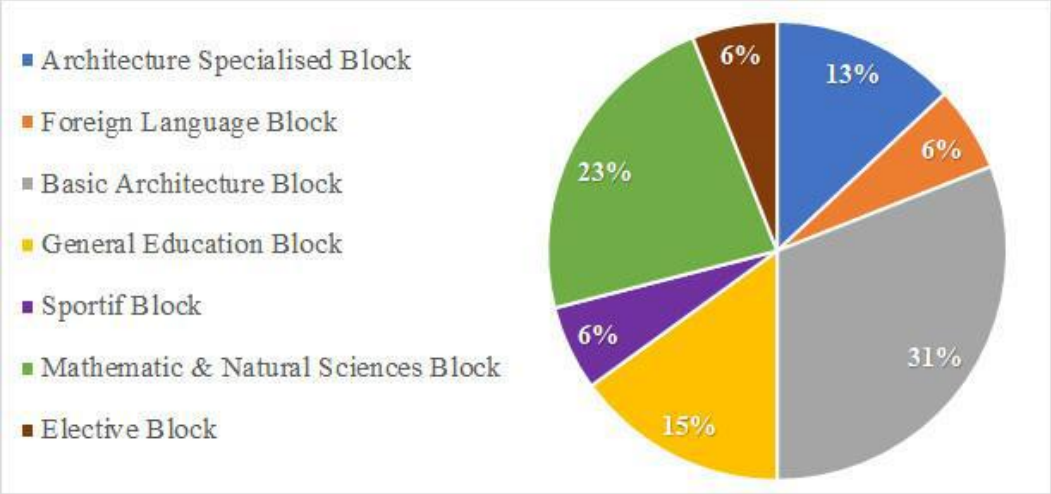
In the Master's degree programme, the courses in the first semester are pre-requisite and mandatory core courses. During the second semester, students need to complete general mandatory courses and general elective courses. The third semester includes elective subjects outside the degree programme with the consent of the academic advisor and the faculty. During the final semester, students must complete the Master's thesis.

The members of the teaching staff explain on demand of the peers that they offer possible topics for the final projects related to their own research projects. All members of the teaching staff supervise theses. Students have to design a research proposal with a time schedule for the project, which is discussed with the supervisor. If agreed on, the students apply formally for being allowed to work on the suggested topic.

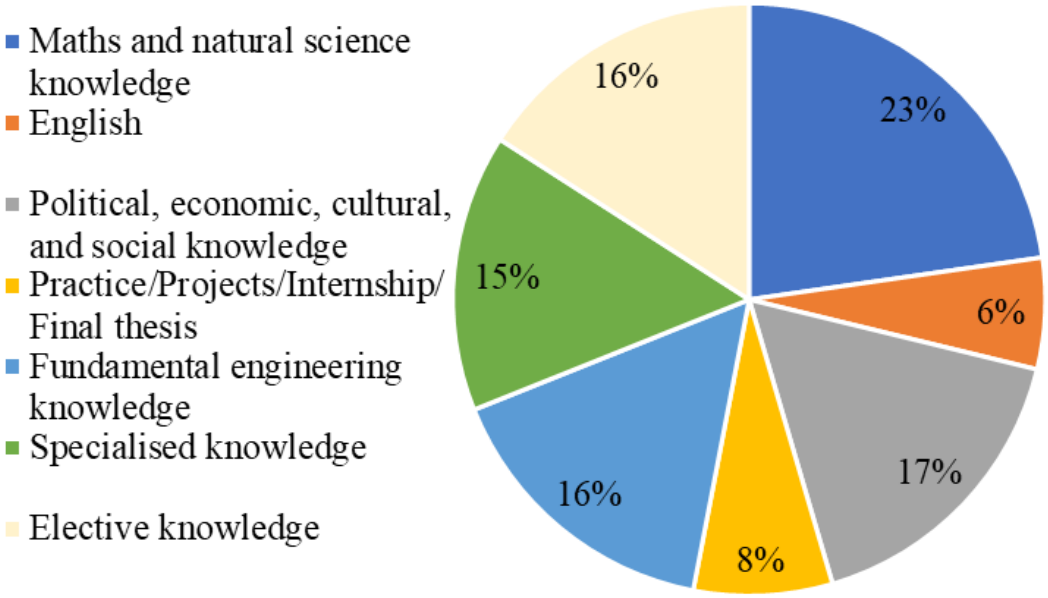
The degree programmes consist of courses in the areas:

- Mathematics and Natural Sciences (only for Bachelor's degree programmes, all compulsory)
- Social Sciences and Humanities (only for Bachelor's degree programmes, all compulsory)
- Foreign Languages (only for Bachelor's degree programmes, all compulsory)
- Military Training and Physical Education (only for Bachelor's degree programmes, no credits)
- Core Courses (all compulsory)
- Complementary Skills Courses (compulsory and elective)
- Concentration Courses (all elective)
- Internship (only for Bachelor's degree programmes, compulsory)
- Thesis (all compulsory)

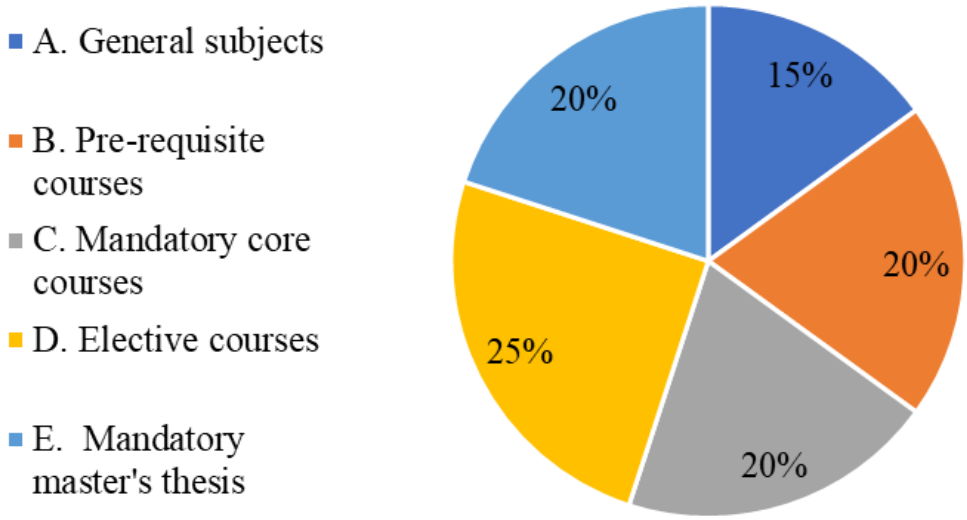
The structure of the programmes is depicted in the following tables:



Architecture programme



Environmental Engineering



Construction Management

Foreign students do not have to do military training.

The internship in the Bachelor's degree programmes is conducted through collaboration with companies or other external institutions. Taken full-time, the internship usually lasts six weeks which is valued by the students as this allows them to apply the skills they learned in the programmes in a real working environment. The students point out that the university is very supportive in finding placements for the internship and always encourages them to gain as much practical experience as possible. The university has established useful guidelines for these internships and every student has one advisor at the company and one at the university to ensure that the work contributes to achieving the programme's learning outcomes. The assessment methods to evaluate this phase is comprehensive and includes a written report and a presentation of their results in front of a panel of two lecturers. The evaluation takes into account the aspects work plan, discipline, teamwork, programme implementation, and activity report.

With regard to the study plan of the Master's degree programme Construction Management, the peers ask what the "outside the programme modules" are about and where students need to complete them. From the programme coordinators and the teaching staff they learn that especially in the third semester, students can take courses outside the study programme (a maximum of 6 Vietnamese credits), which may help them complete the Master's thesis proposal or support them for their future career. Students can also choose other elective courses within the study programme instead of outside courses to complete the programme requirements. This means that in the second or third semester, students have to complete 5 electives amounting to 15 Vietnamese credits in total. Students can choose between completing 5 electives included in the study programme or 3 electives included in the study programme and 2 outside the programme courses that are offered by other faculties at HCMUT with 15 Vietnamese credits in total. The students have the possibility to discuss their choice with their academic advisor. The peers appreciate the wide range of topics that the Master's students can choose from, but they think that the study plan of the programme should indicate which electives are to be taken in which semester. Moreover, they recommend to use module identification codes for all modules in the study plan of the Master's degree programme.

Since HCMUT has the goal to become more visible internationally and wants to further internationalize its degree programmes, the peers discuss with the programme coordinators and students what classes in regular programmes are taught in English. The programme coordinators explain that usually all courses are delivered in Vietnamese, but some projects and the related presentations are done in English. Furthermore, English textbooks are used in the advanced courses in the last two years of studies. In all study programmes, students have also the possibility to join the English study club, which is offered by the Language Centre. In addition, students are obliged to achieve the required TOEIC 500 score in order to graduate from their Bachelor's studies. Furthermore, the Architecture

degree programme is offered as a regular programme and as an advanced study programme. Both programmes have the same programme objectives and programme learning outcomes. However, the advanced programme is designed for 150 Vietnamese credits (equivalent to 300 ECTS), spans over ten semesters and requires a higher level of English proficiency for admission (IELTS 6.0). Moreover, it includes an intensive course about soft skills. Lecturers who join this programme are also required to have a high level of English language skills, more experience and publications. The students confirm that some projects as well as parts of other modules are done in English, English textbooks are used and that both Architecture programmes are appreciated. The peers support HCMUT in further promoting these efforts.

Finally, the peers ask how the teaching staff and the prospective employers evaluate the soft skills of the students. They learn that the students from HCMUT are particularly resilient in many respects: both in terms of competition and in terms of their perseverance. In spite of this, the industry representatives also underline that specific soft skills as debating skills could still be improved. Consequently, the peers recommend to strengthen the soft skills of the students through designated coursework or integration into existing coursework, in particular debating skills.

In summary, the peers gain the impression that the graduates of all degree programmes under review are – besides the mentioned restrictions – well prepared for entering the labour market and can find adequate jobs in Vietnam.

International mobility

The peers learn that the university provides various mobility opportunities for students. These include semesters abroad, short programmes, internships, and international conferences. To foster these, there are cooperation agreements with hundreds of partner institutions worldwide, with a certain focus on Asia (for instance Korea, Japan), but also including many institutions in Europe and United States. Partly due to the COVID-19 pandemic, the number of students participating in mobility programs in 2020 and 2021 was relatively low, but is expected to markedly increase again after the pandemic. An international office has been established in order to coordinate HCMUT's efforts and to support the students in the planning and administration of international mobility. Moreover, the university provides scholarships for international mobility programmes and manages various external scholarships sponsored for instance by the Vietnamese government.

According to a regulation from the Ministry of Education and Training, a course taken at an international university can be considered equivalent to a course at the home university by a Scientific Academic Committee. Before a stay abroad, the university concludes a learning agreement with the respective student to ensure that the courses taken are relevant to the study programme and can thus be recognised.

As the students confirm, there are no problems with credit transfer or the organization of student mobility. They emphasize that the international office as well as their academic advisors are eager to support them and to find adequate study programmes and courses.

The peers appreciate the efforts undertaken by the university to foster student mobility and they are very satisfied with the structures and support mechanisms for international mobility.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- Admission Regulations
- Study plans of the degree programmes
- Webpage HCMUT
- Webpage Faculty of Civil Engineering
- Webpage Faculty of Environment and Resources
- Discussions during the audit

Preliminary assessment and analysis of the peers:
According to the Self-Assessment Report, admission for three degree programmes under review is conducted once a year in September of each year. Information about the admission procedure is described in the admission advisory book and on the website of Academic Affairs Office and thus accessible for all stakeholders. In addition, HCMUT provides support on admission requirements and procedures for high school students. An admission committee is established by the Rector of HCMUT each year to manage all admission issues. High school graduates can join the programmes through one of the following five admission paths:

1. National University Competency Assessment Test
2. Annual National University Entrance Exam.
3. Priority for admission according to the regulations of VNUHCM, candidates who are good students from 149 specialized/gifted high schools and high schools possessing the highest annual National University Entrance Exam average score.

4. Direct admission according to the regulations of the Ministry of Education and Training, candidates who won the National Excellent Student Prize, the National Science and Technology Prize.
5. Admission to Vietnamese and foreign candidates graduating from international high schools (Australia, USA, Canada, etc.).

Every summer, the Vietnamese Ministry of Education and Training will organise the Annual National Entrance Exam. All high school students in Vietnam must take part in this exam. It covers several subjects, such as mathematics, foreign languages, physics, chemistry, literature, and history and lasts three to four days. Based on the score in the exam and on their preferences, prospective students will get admitted to the different universities.

In addition, the two National Universities in Ha Noi and Ho Chi Minh conduct their own admission exam the so called National University Competency Assessment Test. The National Universities have introduced this test in order to give high school graduates another chance to get admitted to university, it only lasts about 3 - 4 hours and consists of several questions and problems to assess the applicants' knowledge and skills in different subjects.

For each academic year, the university determines the ratio of students admitted through these different ways. The number of applicants has slightly increased within the last few years and now partly exceeds the number of available places. In 2017, there were 786 students applying for admission to the Architecture degree programme and only 71 new students were enrolled. In 2021, there were 907 students who applied for admission and only 113 new students could be enrolled. With regard to the Environmental Engineering degree programme, in 2017, there were 160 students who applied for admission and only 110 new students were enrolled. In 2021, there were 180 students who applied for admission and only 120 new students could be enrolled. Finally, with regard to the Construction Management degree programme, in 2017, 84 students applied for admission and only 72 new students were enrolled. In 2021, 95 students applied for admission and only 85 new students could be enrolled.

There are different levels for the tuition fees, depending on the amount of credits the student registered to fulfil in each semester and the tuition fee rate. Furthermore, the Academic Affairs Office awards scholarships to the students with excellent performance based on the student's academic performance. Students with very good results (top 10% GPA of their respective intakes at their School) can receive scholarships in the following semester. In addition, students at HCMUT can also receive scholarships from external sources such as companies, non-government organisations, faculty alumni, and individuals.

In addition, HCMUT has a policy to award tuition fee waivers for students who are orphaned by both parents, students with disabilities in poor or near-poor households or students from remote areas.

In summary, the peers find the terms of admission to be binding and transparent. They confirm that the admission requirements support the students in achieving the intended learning outcomes.

Criterion 1.5 Workload and Credits

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions
- Academic Guidelines
- Discussions during the audit

Preliminary assessment and analysis of the peers:

According to the legal requirements, the total credit load is 132 Vietnamese credits (equivalent to 264 ECTS) for the Bachelor's degree programme Architecture, 131 Vietnamese credits (equivalent to 262 ECTS) for the Bachelor's degree programme Environmental Engineering and 60 Vietnamese credits (equivalent to 120 ECTS) for the Master's degree programme Construction Management. The workload is spread relatively evenly over the semesters. Moreover, the effective number of credits the students can take depends on their achievements in the previous semester. In the three degree programmes, students need to take at least 12 credits and maximum up to 21 credits in one semester. The workload of the last two semesters in the Bachelor's degree programmes and the workload of the last semester in the Master's degree programme are markedly reduced to give the students enough time for their theses as well as to already start looking for a job. This mechanism is supposed to ensure that the students can really handle the workload. It also means that theoretically, students can finish their studies in less than 8 or 4 semesters respectively, although this is relatively rare due to the high workload in general.

In the Vietnamese system, each credit is equivalent to 15 periods of theoretical lecture in class or 30 periods of practical laboratory work with additional 30 periods of self-study. In the internship it is equivalent to 60 periods, whereas in the project work and the thesis, it

is worth 45 periods. One period lasts for 50 minutes. The workload calculation is depicted in the following table:

Form of study for one credit	In-class periods	Self-study periods	Total Periods	Total hours
Theoretical lecture	15	30	45	37.5
Practice in a Laboratory	30	30	60	50
Quizzes in class	30	30	60	50
Assignment	45		45	37.5
Project, Thesis	45		45	50
Internship	60		60	50

According to the ECTS credit system, 1 ECTS equals 25-30 hours of students' workload. As a result, there cannot be the same conversion rate between Vietnamese credits and ECTS points for all courses. For theoretical lectures, the rate would be 1 to 1.25 and for practical work 1 to 1.67.

However, the module descriptions mention a different workload. For example, the module descriptions for "English 1" mention a total workload of 217,5 hours (45 hours contact time, 22,5 hours exercises, 150 hours self-study) and 2 Vietnamese credits (4 ECTS) are awarded, while 2 Vietnamese credits would mean 75 hours (2 x 37.5) and 4 ECTS would require 120 hours. Therefore, the peers underline that the workload and credit calculation is faulty and inconsistent in several ways. The peers point out that it is necessary to eliminate the inconsistencies in the workload and credit calculation of the Vietnamese as well as the ECTS system. HCMUT should follow the ECTS Users' Guide and define how many hours of students' total workload are required for one ECTS point (including lecture hours and self-study hours).

Moreover, with regard to the workload of the thesis module in all three degree programmes under review, the peers ask the students how much time they have in order to write their thesis and how much time they actually need in order to finish it. From the Bachelor's students they learn that it requires them 15 weeks in order to finish the Bachelor's thesis which is worth 4 Vietnamese credits (8 ECTS). According to the Vietnamese credit calculation, this would mean 200 hours (4 x 50), whereas 8 ECTS would require 240 hours. As already mentioned in the previous paragraph, the workload and credit calculation is faulty and inconsistent in several ways. Furthermore, it becomes evident that the credits awarded for the Bachelor's thesis do not correspond with the actual workload of the students, because 15 weeks of work require considerably more

working hours than the calculated credits. The Master's students explain that they usually need 1 up to 2 semesters in order to finish the Master's thesis which is worth 12 Vietnamese credits (24 ECTS). However, the selection of thesises that the peers had access to during the audit discussions shows that the preparation time of the Master's thesis has been 2 semesters for all Master's students. From the teaching staff, the peers learn that the research proposal is included in this timeframe. Therefore, the peers conclude that HCMUT must ensure that the credits awarded for the Bachelor's and Master's thesis correspond with the actual workload of the students.

During the discussions with the programme coordinators and the students, the peers learn that so far there has been no specific survey asking the students to evaluate the amount of time they spend outside the classroom for preparing the classes and studying for the exams. Since this is necessary in the ECTS framework, the peers suggest asking the students directly about their experiences. This could be done by including respective questions in the course questionnaires. The peers point out that both faculties should follow the ECTS Users' Guide, while determining the students' total workload. This is the time students typically need to complete all learning activities (such as lectures, seminars, projects, practical work, self-study and examinations).

In other words, a seminar and a lecture may require the same number of contact hours, but one may require significantly greater workload than the other because of differing amounts of independent preparation by students. Typically, the estimated workload will result from the sum of:

- the contact hours for the educational component (number of contact hours per week x number of weeks),
- the time spent in individual or group work required to complete the educational component successfully (i.e. preparation beforehand and finalising of notes after attendance at a lecture, seminar or laboratory work; collection and selection of relevant material; required revision, study of that material; writing of papers/projects/dissertation; practical work, e.g. in a laboratory),
- the time required to prepare for and undergo the assessment procedure (e.g. exams).

Since workload is an estimation of the average time spent by students to achieve the expected learning outcomes, the actual time spent by an individual student may differ from this estimate. Individual students differ because some progress more quickly, while others progress more slowly. Therefore, the workload estimation should be based on the time an "average student" spends on self-study and preparation for classes and exams. The initial estimation of workload should be regularly refined through monitoring and student feedback.

As the statistical data provided by HCMUT shows, the average length of study was 4,5 years in the Architecture degree programme and the Environmental Engineering degree programme and 2 years in the Construction Management degree programme in the last 3 years. According to the SAR, this is due to all the written examinations and also due to the fact that they have research and a final thesis or work next to studying. Additionally, the peers see that almost all students complete the degree programmes as there have only been 18 % of the students of the Architecture degree programme, 10% of the students of the Environmental Engineering degree programme and less than 10% of the students of the Construction Management degree programme who dropped out of the degree programmes in the last 8 years. The data verifies that all three degree programmes under review can be completed in the expected period.

During the audit, the students emphasise that they consider the workload high but manageable and that it is possible to finish the degree programmes within the expected four or two years.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-Assessment Reports
- Study plans of the degree programmes
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the peers:

Various teaching and learning methods (including lectures, computer training and classroom and lab exercises, individual and group assignments, seminars and projects, etc.) have been implemented. Structured activities include tutorials, homework, assignments (reading or problem exercises) and practical activities. Group project assignments are given in some courses to develop students' skills in teamwork, communication, and leadership. The assignments and exercises should help students to develop their abilities with respect to critical thinking, written/oral communication, data acquisition, problem solving, and presentations.

The most common method of learning is class session, with several courses having integrated laboratory practices/studio workshops. Lecturers generally prepare presentations to aid the teaching process. With individual or group assignments, such as discussions, presentations, or written tasks, students are expected to improve their academic as well as

their soft skills. Laboratory work covers laboratory preparation, pre- or post-tests, laboratory exercises, reports, discussions, and presentations. Similar applies to the studios. In addition, practical activities should enable students to be acquainted with practical activities for research.

To help students achieving the intended learning outcomes and to facilitate adequate learning and teaching methods, HCMUT has developed an e-learning platform (My BK System), where students and teachers can interact.

In summary, the peer group considers the teaching methods and instruments to be suitable to support the students in achieving the intended learning outcomes. In addition, they confirm that the study concept of all three programmes under review comprises a variety of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format. It actively involves students in the design of teaching and learning processes (student-centred teaching and learning).

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

Criterion 1.3:

With regard to the recommendations to indicate which electives are to be taken in which semester in the Master's degree programme Construction Management and to use module identification codes for all modules in the study plan, HCMUT states in its response statement that the study plan for Master's programme has been revised (new version of 2022). HCMUT added the module codes and identified the elective subjects for each semester. All information, including the curriculum, study plan, and module descriptions, has been published on the website of HCMUT and can be accessed easily by any stakeholders. Therefore, the peers consider this recommendations to be fulfilled.

Regarding the peers' statement that the Architecture degree programme is offered as a regular programme and as an advanced study programme, HCMUT clarifies in its response that all three progammes offer standard (Vietnamese) programmes and advanced programmes taught in English. They have the same programme objectives and training period (eight semesters at the bachelor level and four semesters at the master level). The advanced programme requires a higher level of English for both students and lecturers. The peers appreciate this explanation and support HCMUT in further promoting the students' English skills by offering advanced programmes.

With regard to the recommendation to strengthen the soft skills of the students through designated coursework or integration into existing courses- work, in particular debating skills, HCMUT explains that the students' soft skills have already been designated for the

current course- work. At the bachelor level, many skills, such as writing and reading a report, communication, and group work, have been included in current courses with practices, exercises, experiments, or discussion components. The debating and critical thinking skills mainly focus on modules such as “Introduction to Architecture”, “Introduction to the engineering profession”, Internship, and Capstone Project. HCMUT states that students’ debating and critical thinking skills can be improved after taking these courses in this way. Moreover, students can participate in many clubs to practice and improve their soft skills. At the master level, the Master’s students are trained in reading and writing scientific papers, figuring out study gaps by applying critical thinking, and summarising the reference paper in the "Research Topic: Analyzing, Writing, Publishing Scientific Papers" module. The critical thinking and debating skills of the Master's students are supposed to be further improved when writing their Master's thesis (or Capstone Project for students enrolled from 2022). The peers appreciate these efforts, however, as the industry representatives have mentioned their concerns on this matter, HCMUT plans to further pursue this matter in order to improve the student’s soft skills. Therefore, the peers continue to adhere to the recommendation.

Criterion 1.5:

With regard to the requirement that HCMUT must eliminate the inconsistencies in the workload and credit calculation of the Vietnamese as well as the ECTS system and ensure that the credits awarded for the Bachelor's and Master's thesis correspond with the actual workload of the students, the university states that the module descriptions for "English 1, English 2, English 3, and English 4" mention a total workload of 114,5 hours (45 hours of discussion, 22,5 hours of exercises, 45 hours of self-study, 1 hour of midterm, and 1 hour of final exam). The module "English 1" is counted into 2 Vietnamese credits and is 3.82 ECTS (3.82 x 30 hours=114,5 hours), closely approximately to 4 ECTS. The credit is identified based on the structure or component of each module. One credit equals 15 hours of theory study, 30 hours of assignment/practice/experiment, 45 hours of project work / major assignment/essay/field trip, 60 hours of thesis for graduation, or 90 hours of outdoor internships. These total hours include exam/test hours. One credit hour equals 50 minutes of study. The bachelor thesis is worth 4 Vietnamese credits, meaning 240 hours of working (4 x 60). Students will spend 16 hours a week x 15 weeks a semester to complete the bachelor's thesis. It equals 8 ECTS which also require 240 hours (8x30 hours). At the Master's level, the Master's thesis requires 12 Vietnamese credits. It means that Master's students need 720 hours (12 x 60 =720 hours) to complete the Master's thesis. The required period equals 24 ECTS (24 x 30 =720 hours). In detail, after getting the research proposal, a master's student will spend 48 hours a week x 15 weeks focusing on completing the thesis in

the last semester. The peers appreciate the detailed explanations with regard to the workload and credit calculation. However, they point to the fact that each of the modules “English 1”, “English 2”, “English 3” and “English 4” is worth 4 ECTS and should therefore consist of 120 hours of workload each (4 x 30 hours). The module descriptions that HCMUT has submitted together with its response statement, however, display 47 hours of workload per English module. The internship module is also worth 4 ECTS and displays a workload of 136 hours. The peers conclude that the workload and credit calculation is therefore still not consistent and continue to adhere to the requirement.

Moreover, with regard to the fact that no specific survey asking the students to evaluate the amount of time they spend outside the classroom for preparing the classes and studying for the exams is used so far, HCMUT explains that so far, they haven’t done surveys for the entire degree programmes. In a short time, they however conducted a quick survey of master's and bachelor's students of the civil engineering faculty working on their dissertations in the last semester of their training programmes. The feedback results of 39 graduate and 22 undergraduate students working on dissertations and studying programmes in the last semester have been analysed. With a confidence interval of 95 %, graduate students need 21.92 ± 4.15 hours to finish their dissertations. As the final semester is designed for thesis work only, graduate students can thoroughly complete the thesis within 1 semester. The average working time of the students in the final semester is 36.82 ± 6.37 hours, because they also have to complete several courses to complete the entire designed volume of the curriculum and the thesis work of 16 hours / 1 week. The average number of working hours is feasible for students compared to the maximum allowable working hours in a week of 48 hours. However, in order to get more information and ensure that the training programmes are well designed for all students with sufficient time to take part in class, practice, self-study, and relax with extra activity, HCMUT plans to carry out detailed surveys for each course of the training programmes. It will be a big survey at the university level to ask the students how much time they spend outside the classroom preparing for classes and studying for exams. The survey is supposed to be organized every semester for all subjects from the next semester right after the students complete the course. HCMUT submits the template of questionnaire “Student workload survey” together with its response statement. The peers appreciate the explanations that show to what extent HCMUT is planning to introduce surveys asking the students to evaluate the amount of time they spend outside the classroom for preparing the classes and studying for the exams. However, as these plans haven’t been implemented yet, the peers continue to adhere to this requirement.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, concept and organisation

Evidence:

- Self-Assessment Reports
- Module descriptions
- Examination Regulation
- Samples of exams, project works and theses
- Academic Guidelines

Preliminary assessment and analysis of the peers:
Each course has to determine objectives, which support the achievement of the Programme Learning Outcomes of the respective programme. Accordingly, each course must assess whether all defined learning outcomes stated in the module descriptions have been achieved. For this purpose, HCMUT utilises various types of examination.

In each course, short class assignments/quizzes, a mid-term and a final examination are employed. There are different assessment methods in the programmes, such as quizzes, written tests, practical performances, assignments, small projects and presentations. In most courses, mid-term and final exam consist of written tests and additional quizzes or assignments are used. However, the other assessment methods are also used to a certain degree. Via the Academic Calendar, the students are informed about mid-term and final exams. The form and length of each exam is mentioned in the module descriptions that are available to the students via the internal university system known as My Bach Khoa system (MyBK). It is common to hold small quizzes every two or three weeks, but there are generally no unscheduled tests.

The final grade of each module is calculated based on the score of these individual kinds of assessment, whereby the lecturer determines the ratio between them in accordance with the Academic Guidelines. The exact formula is given in the module handbook. At the first meeting of a course, the students are informed about what exactly is required to pass the module and about how the final grade is determined through the teaching and learning plan. HCMUT uses a grading system with the grades A+, A, B+, B, C+, C, D+, D and F, where a C (equivalent to a Grade Point of 2) is necessary to pass a module.

Based on the university regulation, the students must retake the whole course if they fail. However, students can request to postpone the final exam due to important reasons (such as accidents, health problems, etc.). In these cases, students will take the final exam in the next semester without repeating the whole course. The reason, why there are no re-sits of

the final exam is that the final grade depends on the assessment of the learning activities that will be carried out continuously through the semester and not only on the final exam. Students who fail a course must attend the course again in the next semesters. The number of repetitions is unlimited. Students who have passed a course and want to improve the score, may also take the course again. The peers appreciate that corresponding rules are in place.

Students who underperform will receive academic warnings. The warning system has three levels: “Academic warning level 1”, “Academic warning level 2”, and “Suspension”. The academic warning is issued if the student violates one of the regulations, such as not affording the minimum number of required credits, finishing the semester with the average grade less than 3.0 (scale 10) or less than 4.0 in the last two consecutive semesters. Students who already have received “Academic warning level 1” would receive “Academic warning level 2” if their performance does not improve in the following semester. In those cases, the students will be suspended. As the student’s academic advisor receives the notifications during the course as well, help and support can be given in time to improve the student’s academic performance.

Every student is required to do a thesis in the last year of study. Prior to the actual research work, the students are required to write a research proposal and present it in a seminar attended by lecturers and other students who form a research group. The research proposal has to be accepted by the Dean and the supervisor committee who will then appoint the research supervisors. Usually, there are one or two research supervisors for each student. One will act as the principal supervisor and the other act as co-supervisor. In case the thesis is written in collaboration with the industry, a supervisor from the industry is assigned as well. After completing the work on the thesis, the student has to present and defend the results in front of teachers and fellow students.
The peers discuss with the programme coordinators, the members of the teaching staff, and the students about the process of finding suitable topic of the final project or thesis. There are two possibilities: either students can propose their own ideas or they can ask their academic advisor or other teachers for suggestions.

During the on-site visit, the peers had access to a selection of exams and final projects. They confirm that these represent an adequate level of knowledge as required by the EQF level 6 for the three Bachelor’s programmes and 7 for the Master’s programme. The forms of exams are oriented in-line with the envisaged learning outcomes of the respective courses, and the workload is allocated in an acceptable way.

The peers conclude that the criteria regarding the examinations system, concept, and organization are fulfilled and that the examinations are suitable to verify whether the intended learning outcomes are achieved or not.

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

Since HCMUT does not address this in its statement, the peers stand by their previous impression.

3. Resources

Criterion 3.1 Staff and Development

Evidence:

- Self-Assessment Reports
- Staff Handbooks
- Study plans of the degree programmes
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the peers:
At HCMUT, the staff members have different academic positions. There are full professors, associate professors, and lecturers. The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities.

According to the Self-Assessment Report, there are 13 full-time lecturers for the Architecture degree programme, 28 for the Environmental Engineering degree programme and 9 for the Construction Management degree programme. In addition, there are some visiting lecturers from other universities and companies. The technicians support practical classes in terms of preparing computer labs and teaching experiments. Both faculties have additional staff members who support the Dean in terms of administration, student work, undergraduate and postgraduate training management.

The following table depicts the number of teachers who are involved in the three degree programmes:

Year		Full Professors	Associate Professors	PhD	Masters
AP Programme					
2017	*Number*	-	-	2	10
	Ratio (%)	0	0	16.67	83.33
2018	*Number*	-	-	2	10
	Ratio (%)	0	0	16.67	83.33
2019	*Number*	-	-	2	10
	Ratio (%)	0	0	16.67	83.33
2020	*Number*	-	-	2	10
	Ratio (%)	0	0	16.67	83.33
2021	*Number*	-	-	2	10
	Ratio (%)	0	0	16.67	83.33
2022	*Number*	1	-	2	10
	Ratio (%)	7.70	0	15.38	76.92
EE Programme					
2017	*Number*	-	09	07	09
	Ratio (%)	0.0	36.0	28.0	36.0
2018	*Number*	-	10	06	09
	Ratio (%)	0.00	40.0	24.0	36.0
2019	*Number*	1	10	06	09
	Ratio (%)	3.8	38.5	23.0	34.7
2020	*Number*	1	11	05	09
	Ratio (%)	3.8	42.3	19.2	34.7
2021	*Number*	1	11	08	08
	Ratio (%)	3.6	39.2	28.6	28.6
2022	*Number*	1	11	08	08
	Ratio (%)	3.6	39.2	28.6	28.6
CM Programme					
2017	*Number*	-	2	5	-
	Ratio (%)	0	28.57	71.42	0
2018	*Number*	-	2	5	-
	Ratio (%)	0	28.57	71.42	0
2019	*Number*	-	2	5	1
	Ratio (%)	0	25.00	62.50	12.50

Year		Full Professors	Associate Professors	PhD	Masters
2020	*Number*	-	3	4	1
	Ratio (%)	0	37.50	50.00	12.50
2021	*Number*	-	4	6	1
	Ratio (%)	0	36.36	54.54	9.10
2022	*Number*	-	5	3	1
	Ratio (%)	0	55.56	33.33	11.11

The university encourages the teaching staff with a Master's degree to pursue further qualification. The numbers shown above imply that the ratio between academic staff and students is 1:8 in the Bachelor's degree programme Architecture, 1:17 in the Bachelor's degree programme Environmental Engineering, and 1:5 in the Master's degree programme Construction Management. In addition, the faculties regularly invite visiting lecturers from Vietnam and abroad to foster academic exchange. As mentioned above, the academic staff is supported by a number of administrative and technical employees.

Open positions are announced on HCMUT's webpage. Candidates have to do a presentation on their research activities and their teaching abilities are verified. Most of the lecturers are graduates of HCMUT, who were hired after finishing their undergraduate studies and were conducting their Master's and PhD studies parallel to working as a lecturer or a supporting staff member. However, several teachers have graduated from international universities (for example, from USA, UK, France, Germany, Australia, Japan, Korea, Thailand, and Taiwan).

All full-time members of the teaching staff are obliged to be involved in teaching/advising, research, and administrative services. However, the workload can be distributed differently between the three areas from teacher to teacher and also depends on the academic position. For example, associate professors spend more time on research activities and less on teaching than lecturers. HCMUT expects staff members to conduct research activities and has issued a policy, which offers some financial support for publishing papers in international journals. In addition, students are encouraged to participate actively in scientific research activities.

Every year, associate professors or lecturers can apply for promotion to associate professor or full professor, respectively. The candidates are considered based on three main criteria such as: years of working, hours of teaching graduate students, quantity and quality of scientific published papers.

With regard to the low amount of full professors in the two Bachelor's degree programmes (1 full professor in each programme) and the absence of full professors in the Master's

degree programme, the peers learn from the programme coordinators that this is a common situation in many degree programmes in Vietnam, because the appointment of a full professor position is not only under the authority of the university. The academic position of each staff relies on regulations by the Vietnamese Ministry of Education that determines certain standards for reaching the next level. In Vietnam, in order to be promoted to the position of full professor, it is necessary to satisfy the state-required standards and be evaluated by the State Council of Professors. The satisfaction of these standards is time-consuming and includes complex administrative procedures. Every year nationwide, only a few candidates in the field of architecture and engineering meet the standards and are granted full professor's certificates from the State Council of Professors. The peers understand these circumstances.

Moreover, the peers note that the Environmental Engineering degree programme lists a large number of associate professors, while there are none in the Architecture degree programme. The programme coordinators explain that this is due to the young department of architecture, which was only founded 10 years ago. The peers have understanding for this, but in order to promote scientific excellence in terms of publications and project experience, e.g. in light of the development of the Architecture degree programme according to the university focus and the strategic plan 2012-2025 and the ability to gradually build the research expertise that allows PhD supervision, the peers recommend to increase the number of associated professors in the Architecture degree programme.

Staff development

According to the self-assessment report and the discussions during the on-site audit, HCMUT encourages the continuing professional development of its staff. For this purpose, various opportunities are provided. Faculty members regularly participate in didactic training that encompasses curriculum design, teaching material, and innovative teaching and learning methods. Moreover, workshops related to subject-specific fields are held to refresh and to deepen various didactic competences in each semester. The lecturers can also regularly participate in external didactical trainings offered and funded by the government.

The teaching staff is encouraged to study abroad or to participate in international research projects and conferences in order to enhance their knowledge, increase their English proficiency and to build international networks. For this purpose, the university informs about possible scholarships to support academic mobility. In general, the exchange programmes are funded by international partner universities and organizations. Particularly, for junior lecturers with a master's degree, the programmes offer systematic training to prepare them for acquiring a PhD abroad, for instance through English courses, information on foreign education systems, administrative support, and supporting (international) research collaborations. Teachers involved in a staff exchange programme are generally assigned to

a partner university abroad that has a MoU with HCMUT and the relevant faculty. According to a statistical overview provided by HCMUT, in the last five years, lecturers of both faculties have been sent abroad to conduct doctoral programmes and research collaboration, for instance in Germany, USA, Japan and Korea.

Moreover, the peers learn from the teaching staff that there are many different options to apply for funding for research projects, not only from HCMUT but also from the government and big companies the university collaborates with.

In summary, the peers highlight the well engaged staff members and confirm that the composition and scientific orientation of the teaching staff – besides the mentioned small restriction – are suitable for successfully implementing and sustaining the degree programmes. Furthermore, they appreciate the university's efforts in the further development of its employees and consider the support mechanisms for the continuing professional development of the teaching staff adequate and sufficient.

Support and assistance

HCMUT offers a comprehensive advisory system for all undergraduate students. Students in the same intake year are organised into classes and every class has an academic advisor. The role of the academic advisor is to help the students with the process of orientation during the first semesters, the introduction to academic life and the university's community, and to respond promptly to any questions. They also offer general academic advice, provide suggestions regarding relevant careers and skills development and help if there are problems with other teachers. The students confirm during the discussion with the peers that they all have an academic advisor.

The academic advisors organise at least two meetings in each term for the classes they are supervising. From the third year, students will have a supervisor directly supervising them on the projects and the Bachelor's thesis. Each supervisor supervises 5 - 7 students and organises weekly meetings with them.

Students can receive assistance from the Student Activity Office and the Career Office about career guidance and consultancy, career development training, soft skill training, and job opportunities. The Offices provide information on training and job seeking to help students develop career plans and workplace understanding. The Offices are also a bridge between students, staffs, lecturers and businesses in searching for scholarships, factory visits, internships, and employment opportunities. They are also responsible for keeping in contact with alumni associations, employers, and professional organizations. In addition, HCMUT supports its graduates to find suitable jobs by annually conducting a job fair and by forwarding job vacancies to the students. Moreover, during the internship, students are

introduced to professional life and acquire additional skills that help them finding an adequate position after graduation. In summary, good job perspectives for the graduates of all three programmes arise from these activities.

The peers notice that there are enough resources available to provide individual assistance, advice and support for all students. The support system helps the students to achieve the intended learning outcomes and to complete their studies successfully and timely. The students are well informed about the services available to them. In summary, the comprehensive tutorial and support system for students is one of the strong points of the degree programmes.

Criterion 3.2 Funds and equipment

Evidence:

- Self-Assessment Reports
- On-site visit of the facilities
- Discussions during the audit

Preliminary assessment and analysis of the peers:
Basic funding of the degree programmes and the facilities is provided by HCMUT and the different faculties. The financial sources are government funding, tuition fees from students, and industry funding. The figures presented by the university show that the faculties' income is stable and the funding of the degree programmes is secured. The academic staff emphasise that from their point of view, all three programmes under review receive sufficient funding for teaching and learning activities as well as research, which results in well-equipped facilities and good access to literature, databases and modern software. The students confirm this positive impression and state their satisfaction with the available resources.

In the self-assessment report, HCMUT gives an extensive overview of the available learning spaces and libraries. Moreover, they list detailed information of all laboratories available per study programme. During the on-site visit, the peers take a look at some central facilities, relevant research and teaching facilities and, in particular, a selection of different laboratories available for the three study programmes. In addition, the peers view videos of the laboratories of Environmental Engineering and Construction Management, which are located on the second campus and therefore could not be additionally visited. Furthermore, the university has licensed Microsoft Office and other standard software and provides the students full access to this software.

The students express their satisfaction with the library and the available literature. The library offers direct access to international literature, scientific journals, and publications e.g. via Springer Online. From the students' point of view, there is sufficient access to current international literature and databases and a remote access is possible. In addition, it is possible to access all resources of all member universities of the Vietnam National University Ho Chi Minh City so that it is possible to get books from other universities if HCMUT is not able to provide them.

The peers appreciate the range of learning tools and resources available to the students and consider the university's facilities and available equipment in the labs to be of appropriate standards. In summary, the peer group judges the available funds, the technical equipment, and the infrastructure (laboratories, library, class rooms etc.) to comply with the requirements for adequately sustaining the degree programmes.

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

Criterion 3.1:

With regard to the recommendation to increase the number of associated professors in the Architecture degree programme, HCMUT explains in its response statement that in Vietnam, the appointment of a full professor or associate professor is not only under the university's authority. The academic position of each staff relies on regulations by the Vietnamese Ministry of Education that determine specific standards for reaching the next level. To be promoted to full professorship in Vietnam, it is necessary to satisfy the state-required standards and be evaluated by the State Council of Professors. The satisfaction of these standards is time-consuming and includes complex administrative procedures. Every year nationwide, only a few candidates in the field of architecture meet the standards and are granted full professor's certificates from the State Council of Professors. In 2022, only one candidate became a new associate professor in architecture. Moreover, the young Department of Architecture at HCMUT was only founded ten years ago, which is the reason for the lack of associate professors in the architecture programme. However, HCMUT underlines that they are planning to develop the quality of the staff. In detail, this means that two staff members will receive their doctoral degree in 2023, and another staff member will apply for the position of associated professor. In this way, HCMUT plans to promote scientific excellence in publications and project experience and gradually increase the ability to build the research expertise that allows Ph.D. supervision. In addition, many associate professors who are staff members of the civil engineering faculty also take part in delivering the lecture of several modules of the architecture programme. By sharing the human resource of the faculty, HCMUT wants to ensure the staff quality and develop the cooperation

of multi majors in training and research. The peers appreciate the explanations with regard to the staff development and the related amount of associate professors in the Architecture degree programme. However, as these plans haven't been fully implemented yet, the peers continue to adhere to this recommendation.

4. Transparency and documentation

Criterion 4.1 Module descriptions

Evidence:

- Self-Assessment Report
- Module descriptions
- Webpage HCMUT
- Webpage Faculty of Civil Engineering
- Webpage Faculty of Environment and Resources

Preliminary assessment and analysis of the peers:
The peers observe that the module descriptions contain the necessary information about the persons responsible for each module, the Vietnamese credit points awarded, the intended learning outcomes, the applicability, the admission and examination requirements, the forms of assessment, and details explaining how the final grade is calculated.

However, the peers note that the module descriptions do not make the calculation of the students' total workload and the conversion into ECTS points transparent. Moreover, HCMUT has to define how many hours of students' workload is required for one ECTS point. This issue is discussed in more detail under criterion 1.5.

Furthermore, the peers realise that the module descriptions of some modules, as for instance the thesis module, are missing for all three study programmes under review. For those reasons, it is necessary that HCMUT submits the complete and latest version of the corresponding module descriptions and makes them accessible for students and teaching staff.

To what extent the module handbooks for all three programmes must be accessible to the students as well as to all stakeholders will be described under criterion 4.3.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Report
- Sample Diploma for each degree programme
- Sample Diploma Supplement for each degree programme
- Sample Transcript of Records for each degree programme

Preliminary assessment and analysis of the peers:
The peers confirm that the students of all three degree programmes under review are awarded a Diploma and a Diploma Supplement after graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The Transcript of Records lists all courses that the graduate has completed, the achieved credit points, grades, and cumulative GPA. The Diploma Supplements are bilingual (Vietnamese and English). The Diploma Supplement and the Transcript of Records contain almost all necessary information about the respective degree programme. However, some pieces of information should be added. Neither the Transcript of Records nor the Diploma Supplement contains the conversion of Vietnamese credits into ECTS. HCMUT must indicate how many ECTS credits are awarded for every individual degree programme. Therefore, the peers point out that the Transcript of Records needs to list the acquired ECTS points of each course and how many ECTS points are awarded for the whole degree programme. Moreover, the Diploma Supplement needs to follow the European template and needs to include statistical data about the distribution of final grade according to the ECTS Users' Guide. This allows the reader to categorise the individual result.

Criterion 4.3 Relevant rules

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Webpage HCMUT
- Webpage Faculty of Civil Engineering
- Webpage Faculty of Environment and Resources

Preliminary assessment and analysis of the peers:
The peers confirm that the rights and duties of both HCMUT and the students are clearly defined and binding. The students receive all relevant course material in the language of the degree programme at the beginning of each semester.

However, the peers notice that the English websites of the programmes do not include sufficient information. For this reason, the peers expect HCMUT to update this version of the websites of the programmes, to align the information on the university's and the faculty's webpages, to include information about the intended learning outcomes, study plans, module descriptions, and academic guidelines of each degree programme and make them available to all relevant stakeholders.

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

Criterion 4.1:

With regard to the requirement that the module descriptions do not make the calculation of the student's total workload and the conversion into ECTS points transparent and that HCMUT has to define how many hours of students' workload is required for one ECTS point, HCMUT states in its response statement that the credits are identified based on the structure or component of each module. One credit equals 15 hours of theory study, 30 hours of assignment/practice/experiment, 45 hours of project work / major assignment/ essay/ field trip, 60 hours of thesis for graduation, or 90 hours of outdoor internship. Each module will have a modular structure that implies the type and quantity of the module component. Each component will contribute to the Vietnamese credit with a different weight. One module contains at least one component. In detail this means that the number of Vietnamese credit for each module is computed based on the module structure as follows: $no.Credits$=hours of theory study//15+hours of assignment/practice/experiment//30+hours of project work / major assignment/ essay/ field trip//45+hours of thesis

for graduation//60+hours of outdoor internships//90. HCMUT explains that they have already calculated the required time for students to complete each module and converted it into ECTS. The converted ECTS are approximately the double of the Vietnamese credits. One ECTS is equal to between 25 to 30 hours, and 1 Vietnamese credit is equal to 50 hours plus another workload. Therefore, HCMUT issued the university regulation that 1 Vietnamese credit is approximately equivalent to 2 ECTS and developed the template for all module syllabi which contain all necessary information, even ECTS (see the syllabus of English 1, 2, 3 and 4 as an example). For detailed information, HCMUT compares Vietnamese credits and ECTS to demonstrate that they have carefully referred to the ECTS framework and that their decision-making process is well-founded and reasonable. The peers appreciate the explanations and conclude that the newly submitted module descriptions make the calculation of the student's total workload and the conversion into ECTS points transparent and define how many hours of students' workload is required for one ECTS point. Therefore, the consider the requirement to be fulfilled.

Regarding the requirement to submit the complete and latest version of the corresponding module descriptions also including the thesis module and make them accessible for students and teaching staff as well as to all stakeholders, HCMUT submits together with its response statement the complete and latest version of the corresponding module descriptions The Module descriptions belonging to all training programmes of HCMUT have been published online. Therefore, the peers consider this requirement to be fulfilled.

Criterion 4.2:

With regard to the requirement that either the Transcript of Records or the Diploma Supplement must contain the conversion of Vietnamese credits into ECTS and indicate how many ECTS credits are awarded for every individual degree programme, HCMUT submits together with its response statement an updated version of the Transcript of Records that displays the conversion of Vietnamese credits into ECTS. HCMUT indicates how many ECTS credits are awarded for each module of every degree programme. Moreover, the definition of the credit system is also printed on the Transcript to clarify the information to all readers. Therefore, the peers consider this requirement to be fulfilled.

Moreover, with regard to the requirement that the Diploma Supplement needs to follow the European template and include statistical data about the distribution of final grades according to the ECTS Users' Guide, because this allows the reader to categorize the individual result, HCMUT explains that in the new Transcript of Records, the final grades of each module have been displayed in both system's 10-point scale and 4-point scale with grades (from A+ to F) and points (from 4 to 0). For each semester, students will know their semester GPA and cumulative GPA on 4 point scale. The conversion between a 10-point

scale and a 4-point scale is displayed on the grading and classification table on the Transcript. This way, the reader can categorize the students' results. Besides that, HCMUT also provides the “Ranking certification” whenever required by a student. The Diploma supplements at HCMUT follows MOET’s regulations and meet the required information in the European template. The peers appreciate that HCMUT updated the Diploma Supplements and therefore consider this requirement to be fulfilled.

Criterion 4.3:

With regard to the requirement to update the current version of the websites of the programmes, to align the information on the university's and the faculty's webpages, to include information about the intended learning outcomes, study plans, module descriptions, and academic guidelines of each degree programme and make them available to all relevant stakeholders, HCMUT states that they have updated all information on the training programmes on the websites, including the required information. The peers confirm this by checking the listed websites and therefore consider this requirement to be fulfilled.

5. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The three programmes under review are managed by the Faculty of Civil Engineering and the Faculty of Environment and Resources, which are both part of the Ho Chi Minh City University of Technology (HCMUT). Ho Chi Minh City University of Technology is a member of Vietnam National University – Ho Chi Minh City (VNUHCM), which is a ministerial-level university. Each programme has a Science and Academic Committee (SAC), whose members are suggested by the Dean of the relevant faculty and approved by the Rector of HCMUT and a Quality Assurance Team (QAT) whose members are also assigned by the

Dean of the relevant faculty. The QAT analyses the data, writes reports and offers suggestions to SAC. The SAC reviews the suggestions from QAT and makes the final decisions to all academic concerns in the faculties.

The peers discuss the quality management system at HCMUT with the programme coordinators and the students. They learn that HCMUT has an extensive quality management system, which is aimed at constantly improving the quality of the degree programmes and the experience of students and faculty members. The central unit responsible for quality management is the Testing and Quality Assurance Office. Every year, HCMUT develops a quality assurance plan on the basis of regular tasks and the university's general quality policy. The individual faculties are obliged to follow these plans and carry out self-assessment tasks such as the revision of the curricula. The process of curriculum development is divided into three major steps. First, at the end of every academic year lecturers of the individual faculty meet in order to assess and discuss the courses syllabi. The lecturers hereby consider among other things the students' learning results, inspiration from other institutions, and new trends in the technical fields. The second step consists of conducting surveys and analysing the feedback from students, alumni, employers, and other stakeholders. Finally, the SAC, which receives the results of surveys and reports from other groups, suggests improvements to the individual programmes. According to HCMUT, all surveys are carried out on a regular basis. Alumni, for instance, are asked for their feedback at the time of their graduation as well as and a year after their graduation. General student feedback regarding their study experience is collected once per academic year. Teaching evaluations are conducted shortly after the middle of each semester for each module. Via an online tool, students can give their feedback anonymously on aspects such as the teaching quality, the course content and their learning progress. Afterwards, the results of the surveys are sent to the teachers for further improvement of the courses and teaching. In the audit, the peers inquire whether the results of the surveys are also shared and discussed with the students. The programme coordinators explain that students receive the survey results. 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 already mentioned constant curricular revision process that is performed under participation of students and industry partners. The peers are glad to hear that students are satisfied with the programmes and included in the feedback loop.

HCMUT also regularly consults the industry for the assessment and development of the programmes. In extensive surveys, companies are asked among other things about changes in the labour market, expected qualifications of the graduates, and their satisfaction with

interns and graduates from HCMUT. On this basis, the Board of Deans discusses whether the curricula and the learning objectives of the individual programmes need to be revised. In the audit discussions, the industry partners report to be satisfied with the students from HCMUT, especially in terms of their work ethic. Furthermore, the industry partners confirm that their suggestions are generally adopted by HCMUT. The peers appreciate that HCMUT has a close relationship with the industry partners and regularly collects feedback from them. Thus, the peers agree that the quality management circles at HCMUT are well established and work under participation of all stakeholders.

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

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

Since HCMUT does not address this in its statement, the peers stand by their previous impression.

D Additional Documents

No additional documents needed.

E Comment of the Higher Education Institution (10.05.2023)

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

- Student workload surveys
- Module descriptions for individual courses
- Videos of conferences
- Transcript of Records
- Comparison of Vietnamese credits and ECTS
- Study plan for Ma Construction Management

F Summary: Peer recommendations (26.05.2023)

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

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditaiton
Ba Architecture	With requirements for one year	--	30.09.2028
Ba Environmental Engineering	With requirements for one year	--	30.09.2028
Ma Construction Management	With requirements	--	30.09.2028

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Ensure that the credits awarded for the thesis correspond with the actual workload of the students.

A 2. (ASIIN 1.5) Verify the students' total workload and award the ECTS points accordingly. Define how many hours of students' workload is required for one ECTS point.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to strengthen the soft skills of the students through designated coursework or integration into existing coursework, in particular debating skills.

For Bachelor's degree programme Architecture

E 2. (ASIIN 3.1) It is recommended to increase the number of Associated Professors.

G Comment of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture (12.06.2023)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accrediting 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 Environmental Engineering degree programme 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 accre-ditaiton**	**Subject-specific label**	**Maximum duration of accredita-tion**
Ba Architecture	With requirements for one year	30.09.2028	--	--
Ba Environmental Engineering	With requirements for one year	30.09.2028	EUR-ACE®	Subject to the approval of the ENAEE Administra-tive Council
Ma Construction Management	With requirements	30.09.2028	--	--

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Ensure that the credits awarded for the thesis correspond with the actual workload of the students.

A 2. (ASIIN 1.5) Verify the students' total workload and award the ECTS points accordingly. Define how many hours of students' workload is required for one ECTS point.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to strengthen the soft skills of the students through designated coursework or integration into existing coursework, in particular debating skills.

For Bachelor's degree programme Architecture

E 2. (ASIIN 3.1) It is recommended to increase the number of Associated Professors.

H Decision of the Accreditation Commission (23.06.2023)

Assessment and analysis for the award of the subject-specific ASIIN seal:

The Accreditation Commission discusses the accreditation procedure and deletes the term "associated" in recommendation E2 to extend it to all levels of professorship. For the rest, it follows the assessment of the peers and the TC 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 Environmental Engineering degree programme comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN-seal	Maximum duration of accre-ditaiton	Subject-specific label	Maximum duration of accredita-tion
Ba Architecture	With requirements for one year	30.09.2028	--	--
Ba Environmental Engineering	With requirements for one year	30.09.2028	EUR-ACE®	Subject to the approval of the ENAEE Administra-tive Council
Ma Construction Management	With requirements	30.09.2028	--	--

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Ensure that the credits awarded for the thesis correspond with the actual workload of the students.

A 2. (ASIIN 1.5) Verify the students' total workload and award the ECTS points accordingly. Define how many hours of students' workload is required for one ECTS point.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to strengthen the soft skills of the students through designated coursework or integration into existing coursework, in particular debating skills.

For Bachelor's degree programme Architecture

E 2. (ASIIN 3.1) It is recommended to increase the number of professors.

I Fulfilment of Requirements (28.06.2024)

Analysis of the experts and the Technical Committee (10.06.2024)

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Ensure that the credits awarded for the thesis correspond with the actual workload of the students.

Initial Treatment	
Experts	Fulfilled. Justification: In its response statement, HCMUT explains that the credits are identified based on the structure or component of each module. HCMUT corrected the information from the SAR and states that one credit equals 15 hours of theory study, 30 hours of assignment/practice/experiment, 45 hours of project work / major assignment/essay/field trip, 60 hours of thesis for graduation, or 90 hours of outdoor internships. These total hours include exam/test hours. One credit hour equals 50 minutes of study. While the bachelor thesis is worth 4 Vietnamese credits, meaning 240 hours of working (4 x 60), students will spend 16 hours a week x 15 weeks a semester to complete the bachelor's thesis. It equals 8 ECTS which also requires 240 hours (8x30 hours). At the Master's level, the Master's thesis requires 12 Vietnamese credits which means that Master's students need 720 hours (12 x60 =720 hours) to complete the Master's thesis. The required period equals 24 ETCS (24 x30 =720 hours). In detail, after getting the research proposal, a master's student will spend 48 hours a week x 15 weeks focussing on completing the thesis in the last semester. Moreover, to accurately measure the time students dedicate to each course, the faculty has conducted three surveys targeting second-year, graduate, and master's students.
TC 03	Fulfilled. Vote: unanimous Justification: The TC follows the assessment of the experts without any changes.

A 2. (ASIIN 1.5) Verify the students' total workload and award the ECTS points accordingly. Define how many hours of students' workload is required for one ECTS point.

Initial Treatment	
Experts	Fulfilled. Justification: As already mentioned above, HCMUT corrected the information from the SAR and states that one credit equals 15 hours of theory study, 30 hours of assignment/practice/experiment, 45 hours of project work / major assignment/essay/field trip, 60 hours of thesis for graduation, or 90 hours of outdoor internships. These total hours include exam/test hours. One credit hour equals 50 minutes of study. Each module has a modular structure that implies the type and quantity of the module component. Each component will contribute to the Vietnamese credit with a different weight. One module contains at least one component. The number of Vietnamese credits for each module is calculated based on the module structure as follows: $$No.Credits = \frac{\text{hours of theory study}}{15} + \frac{\text{hours of assignment/practice/experiment}}{30} + \frac{\text{hours of project work / major assignment/ essay/ field trip}}{45} + \frac{\text{hours of thesis for graduation}}{60} + \frac{\text{hours of outdoor internships}}{90}$$ The faculty has conducted three surveys targeting second-year, graduate, and master's students to ensure that the calculated time for students to complete each module and its conversion to ECTS is correct. One converted ECTS has twice the value of one Vietnamese credit. One ECTS is equal to between 25 to 30 hours, and one Vietnamese credit is equal to 50 hours plus another workload. Therefore, HCMUT issued the university regulation that one Vietnamese credit is approximately equivalent to two ECTS.
TC 03	Fulfilled. Vote: unanimous Justification: The TC follows the assessment of the experts without any changes.

Decision of the Accreditation Commission (28.06.2024)

Degree programme	ASIIN-label	Subject-specific label	Accreditation until max.
Ba Environmental Engineering	All requirements fulfilled	EUR-ACE®	30.09.2028
Ba Architecture	All requirements fulfilled	-	30.09.2028
Ma Construction Management	All requirements fulfilled	-	30.09.2028

Appendix: Programme Learning Outcomes and Curricula

According to the student's handbook the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Architecture:

> The expected student outcome **(SO)** of the AP training programmes is clearly formulated to meet the stakeholders' requirements, including students, alumni, lecturers, and employers. The expected learning outcomes of the AP training programmes are:
>
> ***SO 1:*** Creative ability in architectural design to meet art requirements and technical requirements.
>
> ***SO 2:*** Have knowledge of history and theory of architecture, art, related technology and human science.
>
> ***SO 3:*** Have knowledge of experiencing standards for architectural design.
>
> ***SO 4:*** Full knowledge of urban design, urban planning, architecture and skills related to the design deployment process.
>
> ***SO 5:*** Full knowledge of human relations - works - the environment on a basis to meet the needs and consistent humanratios.
>
> ***SO 6:*** Understanding the occupation and role of bachelor of Architecture in society and social factors.
>
> ***SO 7:*** Understanding the survey methods and preparing a summary for the design project.
>
> ***SO 8:*** Understanding structural design, construction and technical issues related to construction design work.
>
> ***SO 9:*** Understanding mechanical, engineering and engineering issues to design safeguards and adaptation to regionalclimatic conditions.
>
> ***SO 10:*** Have the design skills needed to meet the requirements of users in the relationship between costs and designstandards and standards.
>
> ***SO 11:*** Have full understanding for the construction industry, related organizations, regulations and related processes toimplement the design from the idea until the project is put into operation.

The following **curriculum** is presented:

No.	ID	Course's name (English translation)	Number of credits	ECTS
Semester 1				
1	CI1065	Introduction to Architecture	3	6
2	MI1003	Military Training	0	0
3	MT1003	Calculus 1	4	8
4	LA1003	English 1	2	4
5	PE1003	Physical Education 1	0	0
6	PH1003	General Physics 1	4	8
7	PH1007	General Physics Labs	1	2
8	MT1007	Linear Algebra	3	6
Sum of sem. 1			**17**	**34**
Semester 2				
1	CI1067	Architectural Descriptive Geometry	3	6
2	PE1005	Physical Education 2	0	0
3	LA1005	English 2	2	4
4	CH1003	General Chemistry	3	6
5	CI1069	Earth Science	4	8
6	MT1005	Calculus 2	4	8
Sum of sem. 2			**16**	**32**
Semester 3				
1	CI2097	Architectural Design Principles of Civil Buildings	4	8
2	CI2099	History of Architecture and Human Settlements	3	6
3	CI2101	Fundamental Architecture Studio	2	4
4	PE1007	Physical Education 3	0	0
5	MT2013	Probability and Statistics	4	8
6	LA1007	English 3	2	4
7	SP1007	Introduction to Vietnamese Law	2	4
Sum of sem. 3			**17**	**34**
Semester 4				
1	CI2103	Architectural Design Principles of Residential Buildings	3	6
2	CI2105	Architectural Technical Design of Civil Buildings	3	6
3	CI2107	Architectural Design I - Public Buildings	3	6
4	MT1009	Numerical Methods	3	6

No.	ID	Course's name (English translation)	Number of credits	ECTS
5	SP1031	Marxist - Leninist Philosophy	3	6
Sum of sem. 4			**15**	**30**
Semester 5				
1	CI3269	Strength of Materials	3	6
2	CI3271	Architectural and Technical Design Principles of Industrial Buildings	4	8
3	CI3273	Architectural Design II – Apartments	3	6
4	SP1033	Marxist - Leninist Political Economy	2	4
5	CI3249	Architectural Heritage Field Trip	2	4
6	**	Free Elective group A	3	6
Sum of sem. 5			**17**	**34**
Semester 6				
1	CI3275	Composition of Shapes and Forms in Archtiecture	3	6
2	CI3277	Civil Building Technologies	4	8
3	CI3279	Architectural Design III - Industrial Buildings	3	6
4	SP1035	Scientific Socialism	2	4
5	CI3485	Internship	2	4
6	**	Free Elective group B	3	6
Sum of sem. 6			**17**	**34**
Semester 7				
1	CI3163	Analysis and Design of Structures	3	6
2	CI4149	Principles of Urban Planning and Design	3	6
3	CI4177	Design Studio IV - Complex Buildings	4	8
4	CI4179	Project	2	4
5	SP1039	History of Vietnamese Communist Party	2	4
6	**	Free Elective group B	3	6
Sum of sem. 7			**17**	**34**
Semester 8				
1	CI4185	Landscape Architecture Design Studio	2	4
2	CI4487	Capstone Project	4	8
3	SP1037	Ho Chi Minh Ideology	2	4
4	EN1003	Humans and the Environment	3	6
5	CI4181	Leadership and Starup	3	6
6	CI4183	Leadership and Management in Project	3	6
Sum of sem. 8			**17**	**34**
Total			**133**	**266**

According to the student's handbook the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Environmental Engineering:

- ***SO 1:*** To be able to identify environmental problems and implement environmental engineering solutions through the application of mathematical, natural science, and specialised knowledge.
- ***SO 2:*** To be able to apply environmental engineering expertise to deploy solutions to meet environmental protection requirements according to national regulations and international conventions, serving the country's socio-economic development.
- ***SO 3:*** To be able to communicate, work and collaborate effectively in a multidisciplinary team.
- ***SO 4:*** Using learning strategies together creating a collaborative and inclusive working environment, setting goals, plans, and tasks to meet the goals of pollution control, treatment, and environmental protection.
- ***SO 5:*** To be able to gain and apply new knowledge, pursue a lifelong self-learning approach to develop and perform appropriate experiments, data analysis and interpretation for generalisation of conclusions, as well as to propose technical solutions to timely adjust the impacts of engineering solutions in terms of social, economic and environmental aspects.
- ***SO 6:*** To be able to recognise responsibility and professional ethics in the field of environmental engineering for the country's sustainable development track.

The following **curriculum** is presented:

No.	ID	Course's name (English translation)	Number of credits	ECTS
Semester 1				
1	LA1003	*English 1*	2	4
2	EN1001	*Introduction to Engineering Profession*	3	6
3	PE1003	*Physical Education 1*	0	0
4	MI1003	*Military Training*	0	0
5	MT1003	*Calculus 1*	4	8
6	MT1007	*Linear Algebra*	3	6
7	PH1003	*General Physics 1*	4	8
8	PH1007	*General Physics Labs*	1	2
Sum of sem. 1			**17**	**34**
Semester 2				
1	LA1005	*English 2*	2	4
2	PE1005	*Physical Education 2*	0	0
3	MT1005	*Calculus 2*	4	8
4	CH1003	*General Chemistry*	3	6
5	EN1015	*Microbiology and Experiment*	4	8
6	CI1003	*Engineering Drawing*	3	6
Sum of sem. 2			**16**	**32**
Semester 3				
1	LA1007	*English 3*	2	4
2	SP1007	*Introduction to Vietnamese Law*	2	4
3	PE1007	*Physical Education 3*	0	0
4	EN1005	*Ecology*	3	6
5	CH2009	*Analytical Chemistry*	3	6
6	EN2005	*Chemistry for Environmental Engineering1*	3	6
7	MT2013	*Probability and Statistics*	4	8
Sum of sem. 3			**17**	**34**

Semester 4				
1	LA1009	*English 4*	2	4
2	SP1031	*Marxist - Leninist Philosophy*	3	6
3	EN2041	*Chemistry for Environmental Engineering and Science 2*	4	8
4	EN2043	*Physico-Chemical Processes in Environment*	4	8
5	CI2003	*Fluid Mechanics*	3	6
Sum of sem. 4			**16**	**32**
Semester 5				
1	SP1033	*Marxist - Leninist Political Economy*	2	4
2	EN3013	*Wastewater Treament Engineering*	4	8
3	EN3005	*Water Treatment Engineering*	4	8
4	EN2003	*Biological Processes in Environmental Engineering*	3	6
5	EN3055	*Study Trips Workshop*	1	2
6	---	*Elective subjects of group A*	3	6
Sum of sem. 5			**17**	**34**
Semester 6				
1	SP1035	*Scientific Socialism*	2	4
2	EN3027	*Solid Waste Treatment Engineering*	4	8
3	EN3001	*Air Pollution Control Engineering*	4	8
4	EN3077	*Project - Water Treatment Engineering*	2	4
5	EN3345	*Internship*	2	4
6	---	*Free Elective*	3	6
Sum of sem. 6			**17**	**34**
Semester 7				
1	SP1039	*History of Vietnamese Communist Party*	2	4
2	EN3115	*Water Supply Distribution and Sewerage Systems*	3	6
3	EN4027	*Project - Air Pollution Control and Solid Waste Treatment Engineering*	2	4

4	---	*Free Elective*	3	6
5	---	*Elective subjects of group B*	6	12
Sum of sem. 7			**16**	**32**
Semester 8				
1	SP1037	*Ho Chi Minh Ideology*	2	4
2	EN3087	*Climate Change*	3	6
3	EN4347	*Capstone Project*	4	8
4	---	*Free Elective*	3	6
5	---	*Elective subjects of group B*	3	6
Sum of sem. 8			**15**	**30**
Total			**131**	**262**

**** Elective subjects of EE**

No.	ID	Course's name	Number of credits	ECTS
Group A				
1	IM1027	*Engineering Economics*	3	6
2	IM1025	*Project Management for Engineers*	3	6
3	IM1021	*Entrepreneurship*	3	6
Group B				
1	CI2001	*Strength of Materials*	3	6
2	CI3281	*Analysis and Design of Structures for Enviromental Engineers*	3	6
4	EN3023	*Ecological Engineering*	3	6
5	EN3117	*Unit Operations in Environmental Engineering*	3	6
6	EN3111	*Mechanical Process in Environmental Engineering*	3	6
7	EN3043	*Waste Incinerator Engineering*	3	6
8	EN2017	*Environmental Modelling*	3	6
9	EN3073	*Industrial Safety and Environemental Hygiene*	3	6
10	EN2033	*Environmental Law and Policy*	3	6

11	EN2035	*Environmental Hydrology*	3	6
12	ME3381	*Engineering Thermodynamics*	3	6
13	EN3011	*Environmental Toxicology*	3	6
14	EN3113	*Contaminated Soil Remediation Engineering and Management*	3	6
15	EN4029	*Data Analysis of GIS and Remote Sensing for Natural Resources and Environmental*	3	6
16	EN3079	*Environmental Management Systems*	3	6
17	EN3071	*Environmental Systems Analysis*	3	6
18	EN3083	*Environmental Monitoring*	3	6
19	EN3037	*Environmental Management In Urban & Industrial Park*	3	6

According to student's handbook the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master's degree programme Construction Management:

Code	Student outcomes	PO1	PO2	PO3	PO4
a	An ability to apply fundamental knowledge of mathematics, science and civil engineering, and management	x			
b	An ability to design and conduct experiments (directly or indirectly via models) for Construction Management systems and analyse and interpret experimental results.		x		
c	An ability to design a system (or parts of a system) or a technological process to meet desired criteria, including economic, environmental, societal, ethical constraints, and technical feasibility and sustainability.		x		
d	An ability to successfully function as a team member on multi-disciplinary issues requires collaboration with management engineering experts, etc.			x	
e	An ability to identify, formulate, and solve well-defined and open-ended problems in the Construction Management field			x	
f	An ability to understand and practice professional and ethical responsibilities.			x	
g	An ability to communicate effectively with a minimum level of English			x	
h	An ability to recognize and apply knowledge to solve construction management issues in a global, economic, environmental, and societal context.				x
i	An ability to recognise the needs and motivation to engage in life-long learning			x	
j	Knowledge of contemporary issues, understanding the country's policies, economic and legal issues.				x

Code	Student outcomes	PO1	PO2	PO3	PO4
k	An ability to use modern techniques and engineering tools and software necessary for CM practice.		x		

The following **curriculum** is presented:

No.	Course Title	Study hours					Semester
		Credits	Lecture Hours	Lab Hours	Tutorials Hours	Assignments Hours	
A	General subjects	9					
	General mandatory courses	3					
1	Philosophy	3	30	0	0	45	2
	General elective courses	6					
2	Methodology of Scientific Research	3	30	0	0	45	2
3	Innovation and Entrepreneurship	3	30	0	0	45	2
4	Management and Leadership	3	30	0	0	45	2
5	Business Ethics and Corporate Social Responsibility	3	30	0	0	45	2
6	Service Management	3	30	0	0	45	2
7	Project Management	3	30	0	6	36	2
8	Analysing, Writing, Publishing Scientific Papers	3	30	0	0	45	2
9	Multivariate Analysis	3	30	0	0	45	2
B	Pre-requisite courses (Basic knowledge of majors / majors will be considered by the Industry Council for each student based on the student's transcript of university subjects.)	12					
10	Construction Equipment and Method	3	30	0	0	45	1

No.	Course Title	Study hours					Semester
		Credits	Lecture	Lab	Tutorials	Assignments	
			Hours	Hours	Hours	Hours	
11	On-Site Construction Management	3	30	0	0	45	1
12	Construction Economics	3	30	0	0	45	1
13	Leadership and Management in Project	3	30	0	0	45	1
C	Mandatory core courses	12					
14	Advanced Construction Project Management	3	33	0	0	36	1
15	Risk Management in Construction	3	30	12	0	27	1
16	Applied Statistics in Construction Management	3	30	12	0	27	1
17	Legal Regulations and Laws in Construction in Vietnam	3	33	0	0	36	1
D	Elective courses	15					
18	Applied Soft Computing in Construction Management	3	33	0	0	36	2
19	Construction management	2	21	0	0	27	2
20	Research topics and methods in construction management	3	33	0	0	36	2
21	Quantitative Analysis in Construction Management	2	21	0	0	27	2
22	Construction Business Management	2	21	0	0	27	2
23	BIM and applied information in construction management	3	30	12	0	27	2
24	Labor Organisation and Labor Productivity in Construction	2	21	10	0	12	2

No.	Course Title	Study hours					Semester
		Credits	Lecture	Lab	Tutorials	Assignments	
			Hours	Hours	Hours	Hours	
25	Scheduling method for construction projects	2	21	0	0	27	2
26	Financial Management in Construction	2	21	0	0	27	2
27	Construction equipment management	2	21	0	0	27	2
28	Quantity Surveyor in Construction	2	21	0	0	27	2
29	Quality Assurance and Quality Control of Construction Materials	2	21	0	0	27	2
30	Sustainable Construction Development	3	30	12	0	27	2
	Students can choose 6 elective subjects outside the training program with the consent of the instructor and the Faculty of Construction Management.	<=6					3
E	Mandatory master's thesis	12					
31	Thesis	12	0	0	0	0	4
	Total	60					