ASIIN Seal
Accreditation Report

Bachelor's Degree Programmes
Civil Engineering
Construction Materials
Infrastructure Engineering
Transportation Engineering

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

Version: 27.03.2026

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]
Kỹ thuật Xây dựng	Civil Engineering	ASIIN	--	03
Công nghệ Kỹ thuật Vật liệu Xây dựng	Construction Materials	ASIIN	--	03
Kỹ thuật Cơ sở Hạ tầng	Infrastructure Engineering	ASIIN	--	03
Kỹ thuật Xây dựng Công trình Giao thông	Transportation Engineering	ASIIN	--	03
Date of the contract: 01.03.2024 **Submission of the final version of the self-assessment report:** 20.05.2024 **Date of the onsite visit:** 06.-07.11.2024 **at:** Faculty of Civil Engineering, HCMUT Campus District 10				
Expert panel: Prof. Dr.-Ing. Joaquin Diaz, University of Applied Sciences Mittelhessen Prof. Dr.-Ing. Ulrich Neuhof, University of Applied Sciences Erfurt/Turkish-German University Univ.-Prof. Dr.-Ing. Nils Goseberg, Technische Universität Braunschweig Binh Nguyen, Universal Alloy Corporation Vietnam Doan Thanh Nam, Civil Engineering student at Ton Duc Thang University				
Representative of the ASIIN headquarter: Yanna Sumkötter, Tamina Renner				

[1] ASIIN Seal for degree programmes
[2] TC: Technical Committee for the following subject areas: TC 03 - Civil Engineering, Geodesy and Architecture

Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of March 28, 2023 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
Bachelor Civil Engineering	Kỹ thuật Xây dựng / B.Eng. Civil Engineering	--	6	Full time	--	8 Semesters	131 Vietnamese credits (262 ECTS)	Annually / 1957
Bachelor Construction Materials	Công nghệ Kỹ thuật Vật liệu Xây dựng / B.Eng. Construction Materials.	--	6	Full time	--	8 Semesters	131 Vietnamese credits (262 ECTS)	Annually / 1978
Bachelor Infrastructure Engineering	Kỹ thuật Cơ sở Hạ tầng / B.Eng. Infastructure Engineering	--	6	Full time	--	8 Semesters	131 Vietnamese credits (262 ECTS)	Annually / 2014
Bachelor Transportation Engineering	Kỹ thuật Xây dựng Công trình Giao Thông/ B.Eng. Transportation Engineering	--	6	Full time	--	8 Semesters	131 Vietnamese credits (262 ECTS)	Annually / 1975

All four degree programmes under review are managed by the Faculty of Civil Engineering (FCE) which is a part of HCMUT, a member of Vietnam National University Ho Chi Minh City. During the audit discussions it becomes clear that FCE envisions becoming a leading academic institution for civil engineering in southern Vietnam, aiming to maintain and elevate its excellence through high-quality education, cutting-edge research, and community services. Its academic programmes focus on foundational knowledge and practical applications, preparing a new generation of civil engineers and architects to tackle future challenges while considering environmental impacts.

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

FCE comprises 12 departments, including Structural Design, Geotechnical Engineering, Construction and Project Management, Strength of Materials and Structural Mechanics, Transportation Engineering, Port and Coastal Engineering, Fluid Mechanics, Geomatics, Technical Drawings, Water Resources, Construction Materials, and Architecture. Additionally, it has established seven laboratories and two research centers that support undergraduate and graduate education, research, technology transfer, and consulting services.

FCE offers 8 bachelor's degree programmes: Civil Engineering, Transportation Engineering, Coastal Engineering, Infrastructure Engineering, Hydraulic Engineering, Surveying and Mapping Engineering, Construction Materials, and Architecture. It also provides 9 master's and doctoral programmes in areas such as Construction Engineering, Transportation Engineering, Hydraulic Engineering, Geotechnical Engineering, Water Resource Engineering, Construction Management, Mapping and Surveying Engineering, Remote Sensing and GIS, and Port and Coastal Engineering.

The faculty's bachelor's programmes are designed to guide students from foundational courses in their first year to advanced subjects and practical applications in subsequent years. A capstone project is included to help students synthesize and apply their knowledge. In the later stages of the programmes, students can choose specific electives, enabling them to align their studies with specific career aspirations within their field of study.

Key learning outcomes focus on providing a solid grounding in mathematics and natural sciences, supporting advanced education and professional development. Graduates acquire extensive technical expertise, equipping them to effectively address complex engineering challenges in design and construction. They also develop vital personal and professional competencies, such as strong communication and teamwork skills, essential for thriving in interdisciplinary and multicultural settings. Moreover, the programmes foster an awareness of economic, political, and social factors, encouraging graduates to contribute meaningfully to sustainable development.

For the Bachelor's degree programme Civil Engineering the institution has presented the following profile in the self-assessment report:

"The Civil Engineering Program focuses on providing comprehensive skills in mathematics, natural sciences, computer science, structural analysis, and construction materials. It emphasizes soft skills such as communication, teamwork, and problem-solving. The curriculum integrates theoretical knowledge with practical applications, and is frequently updated to reflect the latest industry trends and technologies."

For the Bachelor's degree programme Construction Materials the institution has presented the following profile in the self-assessment report:

"The Construction Materials Engineering Program offers a deep understanding of material properties and modern material sciences, with an emphasis on eco-friendly and innovative construction materials. It features robust practical experiences through laboratory work and mandatory internships, highlighting sustainability and environmental stewardship."

For the Bachelor's degree programme Infrastructure Engineering the institution has presented the following profile in the self-assessment report:

"The Infrastructure Engineering Program develops proficiency in designing, implementing, and managing infrastructure projects with a focus on sustainable development. It provides a solid foundation in core subjects and includes hands-on projects and internships that prepare students for real-world challenges."

For the Bachelor's degree programme Transportation Engineering the institution has presented the following profile in the self-assessment report:

"The Transportation Engineering Program prepares students in the design, construction, and maintenance of transportation systems, integrating advanced technological tools and software. It fosters innovation and sustainable practices and provides substantial opportunities for internships and collaborative projects with industry leaders."

C Expert 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
- Objective-module-matrices
- Module descriptions
- Webpage HCMUT
- Webpage Faculty of Civil Engineering
- Discussions during the audit

Preliminary assessment and analysis of the experts:
The experts refer to the 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 Civil Engineering, Construction Materials, Infrastructure Engineering and Transportation Engineering 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 four degree programmes under review. While the POs are defined in accordance with the guidelines set forth by the Ministry of Education and Training (MOET) and are rather general and concise, the SOs describe in greater detail the competences the students should acquire during their studies.

When comparing the different documents, the experts notice that the SOs are the same for all four study programmes under review:

❖ ***Student outcome (SO)***

The training programmes prepare graduates to achieve the following student outcomes by the time of graduation:

SO.1: An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

SO.2: An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

SO.3: An ability to communicate effectively with a range of audiences.

SO.4: An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

SO.5: An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

SO.6: An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

SO.7: An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

The programme coordinators explain that since the four programmes to be accredited are designed under the umbrella of civil engineering in general, the SOs are the same for all civil engineering disciplines. This consistency is supposed to ensure that every graduate acquires the foundation of core engineering principles and competencies. While the SOs are identical, the four programmes differ primarily in the types of projects and specialized knowledge they focus on. Each specialization is equipped with specific courses and practical experiences that have their own course learning outcomes (LOs) tailored to that field. These specialized elective courses provide students with in-depth knowledge and skills relevant to their chosen area, while collectively contributing to the overarching SOs. For example, specialized courses such as “Cementitious Material Science” (Construction Material programme), “Reinforced Concrete Building Structures” (Civil Engineering programme), “Fundamentals of Highway Design” (Transportation Engineering programme), and “Urban Hydrology” (Infrastructure Engineering program) all contribute to SO1. However, the

course learning outcomes that contribute to SO1 differ depending on the programme, as detailed in the table below:

Course ID_Course name (name of the program)	Course learning outcome contribute to SO.1
CI3243_Reinforced Concrete Building Structures (Civil Engineering program)	L.O.1 Apply the concepts and knowledge of structural analysis to civil engineering • L.O.1.1 To be able to apply conceptual principles to analyse and propose rational structural solutions • L.O.1.2 To be able to calculate loads and effects acting on structures • L.O.1.3 To be able to propose the structural schema and to apply analysis methods of internal forces of reinforced concrete structures • L.O.1.4 To be able to calculate precisely; and to construct reinforced concrete structures appropriately
CI3245_Cementitious Material Science (Construction Material program)	L.O.1 Apply the concepts and knowledge of construction materials to civil engineering • L.O.1.1 Apply the concepts and knowledge of classification, chemical compositions and mineral phases of raw materials used for cementitious materials production • L.O.1.2 Apply the concepts and knowledge of engineering properties of cementitious materials used for construction
CI3013_Urban Hydrology (Infrastructure Engineering program)	L.O.1 Apply the concepts and knowledge of fluid mechanics to civil engineering • L.O.1. Understanding about hydrological principles o L.O.1.1.1 Fully understanding about precipitation, evaporation, evapotranspiration, infiltration, streamflow, water balance equation o L.O.1.1.2 Fully understanding about hydrologic measurement and monitoring
CI3263_ Fundametals of Highway Design	L.O.1 Apply the concepts and knowledge of structural analysis to civil engineering • L.O.1.1 Apply knowledge of structural analysis in sight distance, superelevation, transition curve for road levels

(Transportation Engineering program)	• L.O.1.2 Apply knowledge of structural analysis into elevation design in vertical alignment, cross-section

The mapping between the exact LOs per module and programme and the corresponding SOs can be found in the appendix of this report.

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, a minor revision every year.

The experts note that the development of SOs and LOs 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. 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 curricula 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 Civil Engineering programme are well-prepared with comprehensive knowledge in structural analysis, construction materials, and project management, enabling them to tackle complex design and construction challenges. They are suited for roles such as civil engineers, project managers, and structural engineers across construction companies, governmental projects, or private engineering firms, with additional opportunities in urban planning and environmental consultancy.

Graduates from the Construction Materials programme possess deep expertise in material properties and sustainable construction technologies. They are primed for positions such as materials engineers, quality assurance specialists, or in research and development, serving in building materials companies, construction firms, or governmental regulatory bodies.

In the Infrastructure Engineering programme, graduates acquire skills in infrastructure planning, development, and management, with a focus on sustainable and resilient project design. They can pursue careers as infrastructure engineers, project managers, or sustainability consultants, applicable in municipal development, transportation infrastructure, water resources management, and in roles with government agencies or international organizations focusing on large-scale infrastructure projects.

The Transportation Engineering programme equips graduates with specialized skills in planning, designing, and maintaining transportation systems, emphasizing the integration of

modern technology and sustainable practices. These graduates find opportunities as transportation planners, traffic management specialists, and railway project engineers, working for municipal transportation departments, consultancy firms, or international engineering agencies.

Next to the professional skills, the students of all four 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 experts' opinion, the intended qualification profiles of the degree programmes under review 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 as the industry representatives emphasize the high quality of the graduates. During the audit discussions, students as well as graduates confirm to be satisfied with and well aware of their good job perspectives.

In summary, the experts conclude that, in formulating the intended learning outcomes for each module of the four degree programmes, the university has followed the Subject-Specific Criteria of the ASIIN Technical Committee 03 for Civil Engineering, Geodesy and Architecture. They confirm that the study aims and learning outcomes of the Bachelor's degree programmes correspond to level 6 of the European Qualifications Framework. 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
- Diploma Supplements

Preliminary assessment and analysis of the experts:

The Civil Engineering and Transportation Engineering degree programmes are taught in Vietnamese (regular programme) as well as in English (English programme), while the Construction Materials and Infrastructure Engineering degree programmes are only offered in Vietnamese (regular programmes). The Diploma Supplements are issued in Vietnamese and also include an English translation. The experts confirm that the English translation and the original Vietnamese names of all four degree programmes under review correspond

with the intended aims and learning outcomes as well as the main course language(s) (Vietnamese for the regular programmes and English for the English programmes).

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Strategy plan
- Academic Guidelines
- Objective-module-matrices
- Provisions for the recognition of externally acquired academic achievements
- Cooperation agreements (MoU)
- Study plans
- Programme curriculum documents
- Module descriptions
- Webpage HCMUT
- Webpage Faculty of Civil Engineering
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Structure and content

The Bachelor's degree programmes Civil Engineering, Construction Materials, Infrastructure Engineering and Transportation Engineering are managed by the Faculty of Civil Engineering (FCE). The curricula of the four study programmes under consideration are reviewed by the experts in order to identify whether the described SOs and LOs (see chapter 1.1 for more details) can be achieved by the available modules. Course descriptions as well as overviews and objective-module-matrices matching the SOs and the module contents were provided for a thorough analysis.

The four Bachelor's degree programmes are designed for 4 years and offered as full-time study programmes. To complete each programme, students must complete at least 131 Vietnamese credits (equivalent to 262 ECTS credits, see chapter 1.5 for more details about the conversion from Vietnamese credit points to ECTS credits). The students can extend

their study time if needed; the maximum time allowed for students to finish the programmes is six years.

At HCMUT, an academic year is divided into two regular semesters and a short summer term. The summer term lasts for 10 weeks and is typically reserved for internships. Still, additional courses are also offered during this period, according to the students' demand. A regular semester consists of 15 weeks for learning and teaching, 1 week for mid-term exams and 2-3 weeks for final exams. The mid-term exams are normally given in the ninth week of a semester.

The programme structure is outlined in the Self-Assessment Report. There are four blocks of knowledge in each of the four curricula:

Table 1-7 ECTS distribution of four training Programmes

Modules	Credit	Credit (%)	ECTS
General knowledge	57	44	114
Basic major/specialized major knowledge	54	41	108
Elective knowledge	12	9	24
Final thesis (Internship & Project)	8	6	16
Total	131	100	262

According to this structure, in the first year, students mainly take general courses from subject areas such as mathematics, natural sciences, social sciences, humanities, economics and foreign languages with the same content for all students in FCE. From the second year onwards, students are allocated to the individual programmes and can take part in core subjects and specialized subjects in their respective field. Furthermore, after consultation with their academic advisor, students can select electives/specialization courses according to their personal interests. During their studies, all students must spend two months to study and work in companies for their internship. After completion of their internship, final year students have to complete a project which will be linked to the capstone project. The internship, project and capstone project are part of the graduation course group. Please refer to chapter 2 for more detailed information about how these three course types are linked to each other.

In the first year of all four study programmes, students complete fundamental courses like "Linear Algebra", "Calculus 1 and 2", "General Physics 1" and "Introduction to Engineering", which are worth in total 33 Vietnamese credits. This foundation is supposed to lay the groundwork for the advanced engineering principles introduced in the second year of the programmes. In the Civil Engineering programme these include topics like "Fluid Mechanics", "Engineering Geology" and "Construction Materials" (in total 32 Vietnamese credits). In the third year, the curriculum shifts to specialized topics such as "Steel Structures", "Reinforced Concrete Structures" and "Soil Mechanics", which accumulate to 34 Vietnamese

credits. This is supposed to build students' competence in designing and analyzing various structures. In the final year, advanced design and practical courses, including “On-Site Construction Management” and the capstone project make up 32 Vietnamese credits.

The second year in the Construction Materials Engineering programme includes subjects like “Strength of Materials” and “Construction Materials” which are worth in total 32 Vietnamese credits. The third year introduces courses like “Steel Structures” and “Mechanics of Structures” to deepen students’ understanding of material strength (in total 34 Vietnamese credits). The final year emphasizes practical application through advanced topics like “Special Concretes in Construction” and a capstone project (in total 32 Vietnamese credits).

In the second year of the Infrastructure Engineering programme, students engage with specialized courses like “Fluid Mechanics” and “Engineering Geology”, providing a total of 32 Vietnamese credits. The third year introduces courses like “Mechanics of Structures”, “Water Supply and Sewerage” and “Urban Infrastructure Engineering”, accumulating 34 Vietnamese credits. In the final year, students focus on advanced topics like “Urban Hydrology and Construction Methods in Infrastructure Engineering” as well as the capstone project (in total 32 Vietnamese credits).

In the second year of the Transportation Engineering programme, students complete core courses like “Fluid Mechanics”, “Engineering Geology” and “Construction Materials” which add up to 32 Vietnamese credits. The third year focuses on advanced topics such as “Steel Structures” and “Mechanics of Structures” (in total 34 Vietnamese credits). In the final year, advanced topics in transportation engineering, like “Bridge Design” and “Infrastructure Planning” lead to a comprehensive capstone project (in total 32 Vietnamese credits).

Each programme also offers elective courses, which are divided into two categories: specific electives and free electives. Specific electives are selected from designated groups of courses, enabling students to concentrate on a particular area of study. In contrast, free electives grant students the flexibility to enrol in courses outside the programme's structured curriculum, provided these courses do not substantially overlap with the essential knowledge required for graduation or belong to the core curriculum of another major. Courses are considered to overlap if more than 50% of their content or learning outcomes are similar. Students are encouraged to discuss their choice of electives with their academic advisor. During the audit discussions, students state that they consider the electives available at the FCE to be sufficiently varied and that consultation with their academic advisors is a valuable aid.

The internship in the four Bachelor’s programmes under review is conducted in the second semester of the third year through collaboration with companies or other external institutions. Taken full-time, the internship usually lasts two months which is valued by the stu-

dents 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 the internship 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. After completing the internship at an external company, students proceed to the project course in the first semester of the final year, where they undertake smaller, hands-on tasks reflecting real-world engineering challenges. This prepares them for the capstone project in the last semester of the final year, where they focus on specialized components within a project. To what extent these three courses are part of the graduation course group and therefore linked to each other will be described in chapter 2.

Apart from the regular programmes already mentioned, the Civil Engineering as well as the Transportation Engineering degree programme are also offered as an English programme version. During the on-site visit, the programme coordinators explain that the regular and English programmes share identical curricula in terms of course content and structure. The key distinction lies in the language of instruction: the English programme is delivered entirely in English, while the regular programme is primarily taught in Vietnamese. The English programme features enriched activities such as the OISP Camp and Innovations which is a traditional camp held during the first semester and organized by the Office for International Study Programmes (OISP). It is designed to enhance students' language proficiency and provide a more global perspective. The English programme also includes mandatory skill-based elective courses to help students cultivate essential competencies.

Nonetheless, each regular programme incorporates academic English terminology and concepts through lectures and course materials which are sub-divided into four sequential courses: "English 1", "English 2", "English 3" and "English 4". Each course builds on the skills developed in the previous one, ensuring a strong foundation and progressive advancement in language abilities. By completing "English 4", students are expected to achieve the required proficiency level to meet the programme's exit criteria, equipping them for academic and professional challenges. Beyond the formal curriculum, the university offers a range of extracurricular activities to further improve language skills. Active English language clubs on campus and in dormitories create a supportive environment for students to practice their English. These clubs host regular meetings, workshops, and conversation sessions, fostering peer interaction and practical use of the language in informal settings. The students confirm to be satisfied with these offers.

When examining the project examples, the experts notice that 2D models are used in the four programmes to be accredited. However, the global construction and engineering industries increasingly mandate the use of 3D models, as 2D drawings are no longer accepted for major international construction projects. This shift reflects the industry's demand for higher precision, better visualization, and enhanced collaboration enabled by 3D modelling technologies. Industry standards, such as those related to Building Information Modelling (BIM), emphasize the integration of 3D modelling to streamline project planning, execution, and maintenance. Graduates of the Civil Engineering, Construction Materials, Infrastructure Engineering, and Transportation Engineering programmes at HCMUT are expected to be industry-ready and equipped to meet international standards. Strengthening 3D modelling skills will ensure that students possess the competencies necessary for effective participation in global projects, improving their employability and competitiveness. Moreover, the current inclusion of a BIM (Building Information Modelling) module in the curricula provides a strong starting point for technical modelling education. However, supplementing the BIM module with enhanced 3D modelling training will deepen students' understanding and practical skills, aligning the module with industry expectations for comprehensive 3D modelling capabilities. During the audit discussions, feedback from employers and alumni highlighted a need for stronger technical modelling skills, particularly in 3D modelling. Stakeholders emphasized that graduates are often required to upskill in this area upon entering the workforce, suggesting an opportunity for the programmes to bridge this gap. In summary, this means that enhanced 3D modelling skills allow students to create accurate and detailed visualizations of construction projects, perform clash detection and resolve design conflicts during planning phases, collaborate more effectively with multidisciplinary teams using industry-standard tools and adapt to emerging technologies in digital construction, such as virtual and augmented reality. Therefore, the experts recommend to strengthen the technical modelling skills of the students, for example by expanding the BIM module to include dedicated sessions on 3D modelling tools and their application to real-world projects, by integrating additional software training (e.g., Autodesk Revit, Navisworks, or Tekla Structures) into the curricula, by incorporating project-based assignments requiring students to develop and present comprehensive 3D models as well as by partnering with industry experts to provide guest lectures, workshops, or certifications in advanced 3D modelling techniques.

After reviewing the study plans and module descriptions of the four degree programmes under review, the experts conclude that the curricula enable students to achieve the intended SOs and LOs of the programmes and that they are in line with the SSC of the Technical Committee Civil Engineering, Geodesy and Architecture. They appreciate the many elective options within the programmes, which allow students to specialise according to

their interests. They also rate the introduction of the English programmes very positively, as it makes the programmes more competitive internationally. Nevertheless, they recommend that the university improve the programmes with regard to the technical modelling skills of the students.

Periodic Curriculum Review

The curricula of the degree programmes under review are designed to comply with the SOs and LOs and they are, according to HCMUT regulations, subject to constant revision processes (see also chapter 1.1 and chapter 5). As such, the curricula will be reviewed regularly and commented on by students and teachers as well as by external stakeholders such as alumni or industry partners. Major changes are made every five years, while minor revisions are made every year to ensure that the curricula are up to modern standards. Besides the learning outcomes defined by HCMUT itself, the curricula also take into account recommendations from graduates, industry, international standards of higher education and curricula from other universities worldwide. The faculty keeps in touch with former students through the faculty alumni network. Market needs are assessed through regular surveys, as well as through contacts with employers achieved through events such as the job fair.

International mobility

HCMUT offers a variety of mobility opportunities for students, including semesters abroad, short-term programmes, internships, and participation in international conferences. It has established partnerships with numerous institutions worldwide, with a particular focus on Asia (e.g., Korea and Japan), Europe, and the United States. Notable exchange programmes exist with prestigious universities such as the University of Queensland, the University of Adelaide, the Catholic University of America, Macquarie University, the University of Technology Sydney, and Griffith University.

Many of these programmes operate under the 2+2 model which is an academic arrangement that allows students to complete the first two years of their undergraduate studies at HCMUT and then transfer to a partner university abroad to finish the remaining two years. This model offers students the opportunity to gain global perspectives by immersing themselves in different educational environments and cultures during their final two years. By spending the initial two years at HCMUT, students can reduce the overall expenses associated with studying abroad. Moreover, the model enables students to benefit from the strengths and specializations of both HCMUT and the partner institution, enhancing their academic and professional development. To participate in the 2+2 programme, students must meet specific academic criteria and language proficiency requirements set by both

HCMUT and the partner university. Successful completion of the programme results in a degree awarded by the partner institution, with the initial coursework at HCMUT recognized as part of the academic credit. HCMUT submits a corresponding cooperation agreement that defines the framework conditions of this model. The experts are impressed by this opportunity as this model exemplifies HCMUT's commitment to providing flexible and globally oriented educational pathways for its students.

To support these initiatives, the university has established an international office that facilitates global mobility. This office assists students with application procedures, visa arrangements, pre-departure orientations, and credit transfer processes. Scholarships for international mobility are also provided, both directly by the university and through external sponsorships from the Vietnamese government (e.g., HCMUT Scholarships, Research Sponsorship, exchange programme scholarships). These scholarships aim to reduce financial barriers by covering tuition, living expenses, and travel costs. Students who are currently planning their stay abroad confirm during the audit discussions that the international office is very helpful and provides them with the necessary information.

The third year of study is typically the most suitable time for students to participate in exchange programmes, allowing them to apply their foundational knowledge in an international setting. Credit recognition is facilitated through a learning agreement signed before the exchange, ensuring that courses taken abroad align with the home programme and are recognized upon return. This process is regulated by the Ministry of Education and Training (MOET) and overseen by the university's Scientific Academic Committee. Consequently, the experts see that there are no significant issues with credit transfer or the organization of student mobility, thanks to the active support of the international office and academic advisors.

In summary, the students state to be satisfied with the existing opportunities for international academic mobility. Even though the corresponding mobility statistics are quite low, the expert group recognises that the university has focused on expanding its network of partner institutions to further encourage student participation in exchange programmes. The experts appreciate the efforts to promote international mobility and encourage HCMUT to continue in this direction.

Criterion 1.4 Admission Requirements

Evidence:

- Self-Assessment Report
- Admission Regulations
- Study plans
- Webpage HCMUT
- Webpage Faculty of Civil Engineering
- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to the self-assessment report, admission for the four Bachelor's 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 the Academic Affairs Office and thus accessible for all stakeholders. In addition, HCMUT publishes its new and existing programmes in well-established newspapers. 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:

- Method 1: Direct admission. Priority is given to admission according to the enrollment regulations of the Ministry of Education and Training
- Method 2: Priority for direct admission and Priority for admission according to the regulations of VNU-HCM:
    - Priority is given to direct admission of talented high school candidates in 2022 (see details here)
    - Priority is given to admission according to the regulations of VNU-HCM 2022
- Method 3: Selection of candidates with international enrollment certificates or foreign candidates
- Method 4: Admission based on high school results combined with interviews for candidates planning to study abroad
- Method 5: General admission including academic criteria (results of the competency assessment exam of VNU-HCM, results of high school graduation exam 2022, results of high school study process), Other Competencies, Social Activities

Every summer, the Vietnamese Ministry of Education and Training will organise the National Higher Education Entrance Examination (NHEEE). 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.

In order to be admitted to the English programmes in Civil Engineering or Transportation Engineering, students must have an IELTS certificate of at least 6.0 or other equivalent international English certificates. Students may opt to transfer to the English programme after completing their first semester in the Regular programme. Eligibility for this transition is based on their academic performance during the initial year and their English proficiency at the time. Conversely, students in the English programme may switch back to the Regular programme if they wish. However, for a transfer from the English programme to the Regular programme, students must not be classified as first-year or final-year students and are required to have earned at least 15 Vietnamese credits to be eligible for the change.

For each academic year, the university's admission committee determines the ratio of students admitted to each faculty through these different ways. The admission is considered separately for each faculty, with the selection based on the results of the NHEEE from the top down to the entry benchmark so that the quota is not exceeded:

Order	Admission method	Quota (%)
1	Method 1	1% ~ 5%
2	Method 2	10% ~ 20%
3	Method 3	1% ~ 5%
4	Method 4	1% ~ 5%
5	Method 5	75% ~ 90%

According to the admission statistics, in 2021, 3.010 students applied to FCE, with only 1.006 being admitted, while in 2022, 1.311 applications resulted in 441 new enrollments. At FCE, all first-year students follow a common programme. Starting in the second year, students may submit preferences for their desired majors, ranked by priority. This process aims to align with their foundational studies. While first-year GPA is a significant factor in determining major assignments, it is not the sole criterion, as both GPA and student preferences are considered:

Table 1-9 Number of students assigned to four training programmes from the second year

Training programmes	Admission year				
	2018	2019	2020	2021	2022
Civil Engineering	221	366	250	235	140
Transportation Engineering	93	110	80	74	45
Infrastructure Engineering	70	61	45	48	40
Construction Materials	-	-	66	74	45

As can be seen from the statistical data, both the number of applicants and first and second-year admissions decreased between 2020 and 2022. The programme coordinators explain that social demand surveys have shown that students have been particularly interested in computer science/AI programmes in the last three years, while engineering programmes are less attractive. As a result, HCMUT has significantly increased its advertising measures at secondary schools and revised its entrance policy. As a result, the student numbers for 2024 are rising again. The experts understand the circumstances, as the student situation in engineering degree programmes in Europe is similar. They therefore appreciate that HCMUT's efforts appear to be showing initial success.

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. The tuition fees of the English programmes are higher than those of the regular programmes. The English programme are designed to meet international educational standards, which necessitate high-quality facilities to enhance the learning environment. Additionally, the English programme include more extracurricular activities and clubs, requiring upgraded facilities to support these comprehensive educational experiences. To fund these enhanced facilities and activities, the English programmes charge higher tuition fees than the regular programmes.

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.

Students during the interview testify that they are informed in detail about the requirements and the necessary steps to apply for admission into the four degree programmes under review.

The experts see evidence that HCMUT keeps track of its students' progress and achievements. In this way, an instrument is in place to monitor the performance records of students with various enrolment backgrounds. In their assessment, the experts find the admission rules to be binding, transparent, and based on HCMUT's written regulations. They confirm that the admission requirements support the students in achieving the intended learning outcomes. Regarding the credit transfer for students, adequate policies are in place.

Criterion 1.5 Workload and Credits

Evidence:

- Self-Assessment Report
- Study plans
- Module descriptions
- Academic Guidelines
- Statistical data about drop-outs and study duration
- Explanations about conversion from Vietnamese credits to ECTS
- Discussions during the audit

Preliminary assessment and analysis of the experts:

According to the legal requirements, the total credit load is 131 Vietnamese credits for the four Bachelor's degree programmes under review. 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. Students need to take at least 14

credits and a maximum up to 21 credits in one semester. If students achieve academic results in the excellent category and receives approval from the Faculty of Management, they are permitted to enrol in up to 25 credits.

The following table represents the number of credits that a student would typically enrol in each semester in one of the four programmes. The table shows that the allocation of credit hours in each semester is carefully structured:

Table 1-6 The number of credits of each semester

Semester	Civil Engineering	Construction Materials	Infrastructure Engineering	Transportation Engineering
Semester 1	17	17	17	17
Semester 2	16	16	16	16
Semester 3	17	17	17	17
Semester 4	15	15	15	15
Semester 5	17	17	17	17
Semester 6	17	17	17	17
Semester 7	17	17	16	17
Semester 8	18	15	16	15

As the statistical data provided by HCMUT shows, the average length of study was 4.3 years in the Bachelor's degree programme Civil Engineering between 2015 and 2018. In the same period, the average length of study was 4.4 years in the Bachelor's degree programme Construction Materials and 4.5 years in the Bachelor's degree programme Infrastructure Engineering as well as in the Bachelor's degree programme Transportation Engineering. According to the lecturers and the students, this is due to the fact that some students voluntarily extend their internship or chose to work on a specific topic in their capstone project that requires more time. Others work alongside their studies. The experts understand the circumstances and recognise that the sometimes slightly longer study time is not due to a structural problem within the study programmes, but can mostly be explained by students' personal decisions. Additionally, the experts see that almost all students complete the study programmes because, on average, there have only been 10% of the Civil Engineering students, 13% of the Construction Materials students, 16% of the Infrastructure Engineering students and 13% of the Transportation Engineering students for the batches 2015-2022 who dropped out of the degree programmes. In all four study programmes a downward trend of the drop-out rate can be observed which suggests an improvement in student retention and that the data verifies that all four programmes under review can be completed in the expected period.

In the Vietnamese system, each credit is equivalent to 15 periods of theoretical lecture in class or 30 periods of practical laboratory work. In the project work/essay/field trip, one credit is equivalent to 45 periods, whereas in the internship it is equivalent to 90 periods and for the capstone project, it is worth 60 periods. One period lasts for 50 minutes.

According to the ECTS credit system, 1 ECTS equals 25-30 hours of students' workload. HCMUT assumes that 1 ECTS is equal to 30 hours and 0,5 Vietnamese credits. Accordingly, HCMUT states in the self-assessment report that each Bachelor's programme comprises 131 Vietnamese credits and extends over 8 semesters, which should correspond to 262 ECTS credits. However, on the one hand, if one follows this calculation, students would have to complete a total of 7,860 hours in a Bachelor's programme. However, in the programmes to be accredited the cumulative workload amounts to approximately 5,567 hours. As a result, a conversion of 1 Vietnamese credit to 2 ECTS is incorrect and must be revised.

On the other hand, since the ECTS credit system includes both class hours and self-study time and HCMUT only mentions self-study time in the module descriptions (sometimes stated as 'other hours'; see chapter 4.1 for more details), but does not provide an overview of self-study time per class type, the conversion cannot be verified.

In summary, this means that the experts can recognise from the workload information in the module descriptions that the overall workload is appropriate and corresponds to the Vietnamese credits. This is also confirmed in the surveys conducted by HCMUT each semester asking the students to evaluate the amount of time they spend outside the classroom for preparing the classes and studying for the exams. 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 years. However, the conversion from Vietnamese credits to ECTS must be checked and recalculated so that the converted ECTS correspond to the students' actual workload and the total workload for 8 semesters in all degree programmes does not exceed 240 ECTS points.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-Assessment Report
- Study plans
- Evaluation/survey results
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to the self-assessment report, the FCE at HCMUT employs a structured and multi-faceted teaching methodology designed to achieve the intended learning outcomes and align with student-centered educational principles. During the audit discussions, the students confirm that the curricula integrate a balanced approach between contact hours and self-study, ensuring that they have adequate opportunities to engage with course content both collaboratively and independently. A combination of digital and face-to-face teaching methods is implemented. This dual approach ensures that the teaching infrastructure supports various learning needs while keeping pace with advancements in educational technologies.

On the one hand, most class hours consist of lectures and calculus tutorials using a combination of blackboard and PPT presentations. However, certain modules also include laboratory exercises to solve practical engineering problems from all areas of civil, infrastructure and transportation engineering as well as construction materials. 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.

On the other hand, the utilization of digital tools, such as blended learning and the MyBK e-Learning platform where students and teachers can interact, complements traditional face-to-face instruction by providing additional resources and enabling flexible learning pathways. During the tour of the facilities, the experts notice that the infrastructure supporting both digital and physical teaching modalities – despite the need for modernization (see chapter 3.3 for more details) – is regularly updated, ensuring access to essential academic resources.

During the audit discussions, the experts learn that the four degree programmes use appropriate software for teaching and research purposes. In the field of programming, Matlab and Python are used. At the Bachelor's level, Autodesk and Microsoft software suites are

used for engineering drawing. Each software is fully licensed under HCMUT's educational institution agreement with Autodesk and Microsoft. Other softwares such as Atena, enjiCAD, and Midas are also fully licensed.

Moreover, a significant component of the FCE's methodology is its focus on cultivating independent scientific research skills. This begins with the introduction of research fundamentals in earlier stages of the curricula and is reinforced through practical assignments, laboratory work, and the capstone project. The capstone project, which emphasizes the application of theoretical knowledge to practical, real-world problems, plays a central role in developing students' analytical and problem-solving capabilities. The experts appreciate that the faculty rewards the independent scientific work of the students by providing financial support from faculty institutes and partner companies.

In this context, the experts ask to what extent the students' soft skills are promoted. From the students and the lecturers they learn that students develop essential soft skills through a variety of activities and coursework. Extracurricular activities, such as participation in clubs like the Civil Engineering Club, English Club, Environmental Club, music bands, and sports clubs (e.g., tennis), provide opportunities to enhance social skills, teamwork, and communication. Creative pursuits like photography, journal writing, and music further foster interpersonal and expressive abilities. Project-based work and team assignments within the curricula help students build teamwork and presentation skills. Dedicated modules, such as "Entrepreneurship" and "Leadership and Projects," equip students with practical skills in innovation, financial management, problem-solving, and resilience. These modules teach how to create and sustain a start-up, handle finances, manage employees, navigate setbacks, and learn from challenges such as business failure. The industry representatives confirm this by stating that students from HCMUT are particularly resilient in many respects, both in terms of self-confidence and in terms of their perseverance. In spite of this, the industry representatives also underline, that specific soft skills as the ability to publicly speak and present in front of an audience could still be improved. Consequently, the experts recommend to strengthen the soft skills of the students through designated coursework or integration into existing coursework.

The faculty regularly reviews the effectiveness of its teaching and learning methods to ensure they support the achievement of programme objectives and remain aligned with external requirements. This is achieved through survey evaluations conducted after each semester to assess whether teaching staff are employing the most appropriate approaches. Additionally, systematic feedback from stakeholders, including students, alumni, and industry representatives, is gathered and incorporated into these reviews. This process allows the faculty to adapt and refine its methodologies and curricula to meet the evolving demands of the engineering field and broader societal needs.

Overall, the experts consider the teaching methodology employed in the four degree programmes to be diverse, interactive and to show a healthy mixture between traditional and modern/alternative methods, which is confirmed by the students. They are well adapted to the aims and conditions of the individual courses and suitable to support the students in achieving the intended learning outcomes. The regular assessment and enhancement of teaching practices ensure that graduates are well-prepared to meet the challenges of their profession, equipped with the technical knowledge, research capabilities, and adaptability required in the four engineering fields under review.

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

Criterion 1.5:

In its response statement, HCMUT states that the self-study time is included in both the syllabi and module handbooks of the four study programmes. HCMUT submits these documents together with its statement. However, since HCMUT does not provide an overview of self-study time per class type, the conversion still cannot be verified. The experts adhere to their previous assessment.

As HCMUT did not issue any response statement with regard to the other sub-chapters of criterion 1, the experts adhere to their initial assessment.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, Concept and Organisation

Evidence:

- Self-Assessment Report
- Module descriptions
- Examination Regulations
- Samples of exams, project works and capstone projects
- Evaluation/survey results
- Academic Guidelines
- Discussions during the audit

Preliminary assessment and analysis of the experts:
At HCMUT, assessment is conducted according to the regulations on training at the university level issued by the Ministry of Education and Training (MOET) and the teaching regulations of HCMUT. According to these regulations, each course has to determine learning outcomes, which support the achievement of the objectives 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 has adopted the concept of multi-component assessments to measure the achievement of the learning outcomes.

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. Laboratory work is assessed through reports and practical work exams. Based on the corresponding regulations, to be eligible to take the final exam students must attend at least 80% of the course sessions. The students are informed about mid-term and final exams via the academic calendar at least one month in advance. The form and length of each exam is mentioned in the module descriptions that are available to the students via the internal e-learning platform 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 experts as well as the students welcome the continuous learning assessment as it not only allows a close monitoring of the students' learning progress, but also encourages students' motivation throughout the semester.

The final grade of each module is calculated based on the score of these individual kinds of assessment. 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 D (equivalent to a Grade Point of 1.0) is necessary to pass a module.

1-10 points scale	1.0-4.0 points scale	Letter grade scale		GPA	Classification
9.5 - 10.0	4,0	A^+	Pass	3.6 - 4.0	Excellent
8.5 - 9.4	4,0	A		3.2 - 3.5	Very good
8.0 - 8.4	3,5	B^+		2.5 - 3.1	Good
7.0 - 7.9	3,0	B		2.0 - 2.4	Average
6.5 - 6.9	2,5	C+		1.0 - 1.9	Poor
5.5 - 6.4	2,0	C		< 1.0	Very poor
5.0 - 5.4	1,5	D^+			
4.0 - 4.9	1,0	D			
< 4.0	0,0	F	Fail		

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.

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.

The students confirm that these regulations are effective and properly managed, and experts agree that provisions for disability accommodations, illness, and other exceptional circumstances are clearly established.

In their final year of studies, Bachelor’s students have to prepare a capstone project demonstrating knowledge, skills and competences gained in the course of the preceding

semesters. From the information in the self-assessment report and in the audit discussions, the experts gain the impression that the capstone projects in the four Bachelor's degree programmes are thoroughly planned major academic works conducted in distinct stages from the first proposal to the final report. The regulations for the capstone project examination are communicated to students through the MyBK platform and the faculty's website.

During the audit, the experts ask to what extent the capstone project is equivalent to a thesis or final project and how it is structured. The programme coordinators explain that the graduation course group comprises three courses: "Internship", "Project" and "Capstone Project". To enrol in the project course, students must first complete the internship, and to undertake the capstone project, they must have completed the project course. During the internship, students gain practical industry experience by working at external companies. This is followed by the project course, where they tackle smaller, real-world engineering tasks to develop hands-on skills. Finally, the capstone project serves as the culmination of their learning, allowing students to focus on specialized components within a project while keeping the scope manageable.

The experts understand that these three courses are to be understood as a unit and are linked to each other in order to achieve the programme objectives. However, when reviewing the sample capstone projects, they notice that the capstone projects from the Civil Engineering programme are much more extensive than those in the other three programmes as they include several plans/drawings that mention the students' name in the corner. Therefore, the experts suppose that students themselves draw these plans. The programme coordinators explain that in the Civil Engineering programme, students undertaking the capstone project may choose to continue the same project from their project course. Different from what the experts initially thought, the students typically work with architectural drawings provided by supervisors or from existing plans, with the option to modify designs if desired. The primary focus is on performing structural calculations and analyses for specific components rather than the entire project. The capstone project report is capped at 75 pages to encourage clarity and focus, with additional details or drawings included as appendices if needed. To ensure students understand the progression and objectives of these three courses, the study plan lists them separately, supported by clear academic advising and detailed module descriptions. The students confirm these explanations and state that the workload of the capstone project is appropriately distributed. They explain that any more extensive documentation can be explained by the fact that some students want to work on a specific topic out of their own interest and therefore submit additional material. The experts appreciate these explanations and are convinced that this approach facilitates smooth transitions and alignment between the courses. Nevertheless,

they suggest to add a section to the graduation thesis tasks page that shows which materials are provided by the supervisors or are based on pre-existing plans (if such is the case), thus giving more clarity on the students' workload. The template for the tasks page could also be standardized and reviewed through quality management cycles.

The experts also discuss with the programme coordinators, the members of the teaching staff, and the students about the process of finding suitable topic of the capstone project. There are two possibilities: either students can propose their own ideas or they can ask their academic advisor or other teachers for suggestions. Students also have the opportunity to write their thesis as part of an exchange programme at another institution.

During the on-site visit, the university proves that they have established useful guidelines for the capstone projects of the four Bachelor's degree programmes. Moreover, the experts were provided with a selection of exams and capstone projects to check. They confirm that these represent an adequate level of knowledge as required by the EQF level 6 for the Bachelor's programmes in Civil Engineering, Construction Materials, Infrastructure Engineering as well as Transportation Engineering. The forms of exams are oriented toward the envisaged learning outcomes of the respective courses, and the workload is distributed in an acceptable way. The experts conclude that the criteria regarding the examinations system, concept, and organization are fulfilled.

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

As HCMUT did not issue any response statement with regard to criterion 2, the experts adhere to their initial assessment.

3. Resources

Criterion 3.1 Staff and Development

Evidence:

- Self-Assessment Report
- Staff Handbooks
- Overview of publications and exchange programmes
- Recruiting policy
- Study plans
- Module descriptions

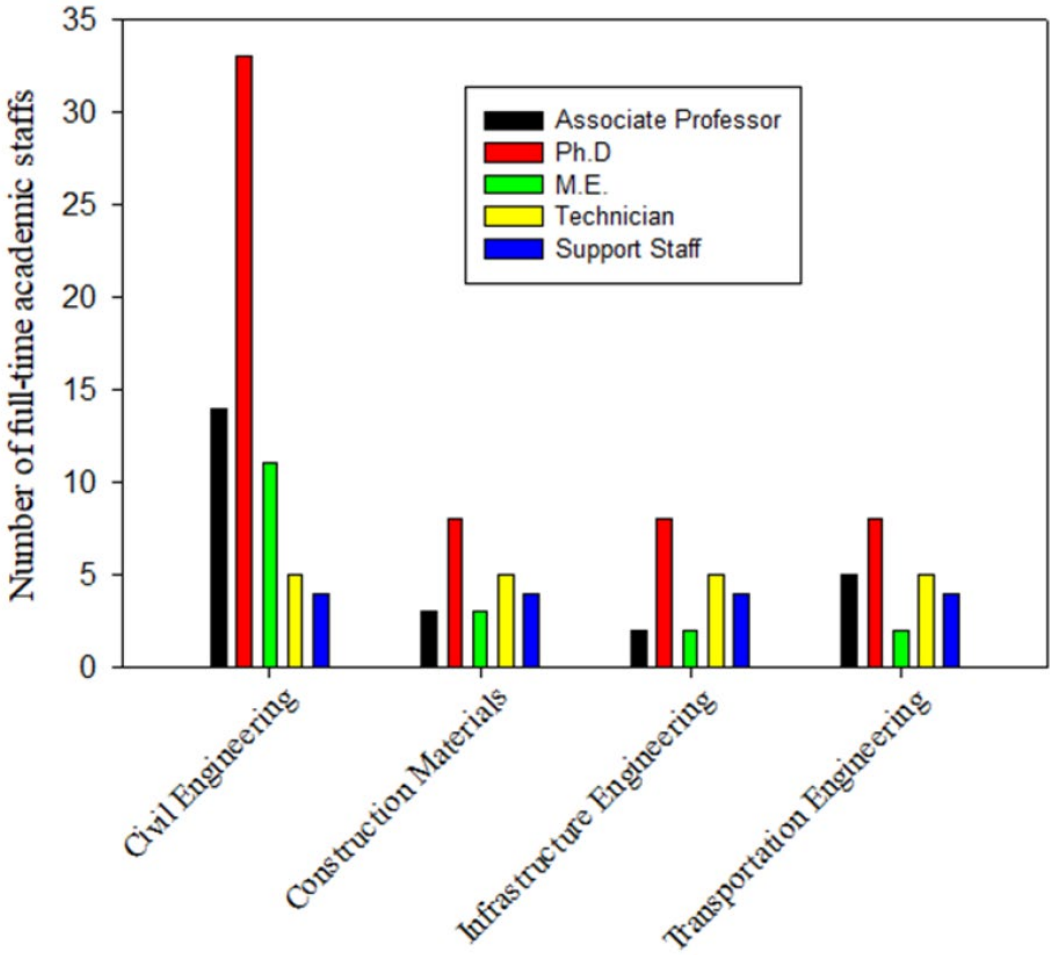
- Evaluation/survey results
- Discussions during the audit

Preliminary assessment and analysis of the experts:
In the self-assessment report as well as the staff handbook, the university presents data about the number and overall qualification of the teaching staff for the Bachelor's degree programmes in Civil Engineerning, Construction Materials, Infrastructure Engineering as well as Transportation Engineering. In accordance with the Vietnamese Law on Higher Education, the faculty's teaching staff consists of associate professors, (senior or advanced) lecturers as well as technicians and support staff.

The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities. All full-time teaching staff members are expected to be involved in teaching/advising, research, and services that are beneficial to stakeholders. However, the workload can be distributed differently between the three areas from teacher to teacher, depending on the academic position. The main difference of tasks and responsibilities based on academic staff position lies on the proportion of teaching and research activities. The higher the academic staff position is, the greater is the proportion of research activities, but the lower is the proportion of teaching activities. The latter may become professors once they have earned a certain amount of credits with regard to their academic work.

In total, there are 58 full-time academic staff members involved in the Civil Engineering degree programme, while there are 14 for the Construction Materials degree programme, 12 for the Infrastructure Engineering degree programme and 15 for the Transportation Engineering degree programme. In addition, several visiting lecturers, who are the leading experts in their respective fields of research and required to hold a higher academic qualification than the level they are teaching, are involved in the study programmes. 5 technicians support practical classes in terms of preparing computer labs and teaching experiments while 4 support staff members help the Dean in terms of administration, student work, undergraduate and postgraduate training management. These numbers imply that the ratio between academic staff and students is 1:5 throughout the faculty.

The following figure depicts the number of academic and support staff who are involved in the four degree programmes:



As regulated by the university, all lecturers involved in teaching activities in these programmes have a master's degree or higher. Lecturers who participate in teaching theory for subjects in the fundamental and specialized knowledge course/block have doctorate degrees.

The assignment of associate professors and lecturers to specific modules is guided by an assignment plan proposed by the faculty's departments for each semester. These plans form the basis for developing the module schedule for every semester, which is made available through the MyBK e-learning platform. The average workload for lecturers in each study programme is outlined in the “Regulations on working regimes for lecturers, researchers and engineers serving teaching at HCMUT” established by the university:

No.	**Title, qualifications**	**Teaching**		**Scientific research & technology transfer**	**Other tasks**
		Work hours	**Standard**	**Work hours**	**Work hours**

I	**Lecturers grade**				
1	MSc	540	270	580	640
2	PhD	540	270	630	590
3	Assoc. Prof	540	270	730	490
4	Prof	540	270	830	390
5	Trainee lecturer	270	135	315	1190
II	**Lecturers of physical education, politics, foreign languages, national defense and security**				
1	Lecturer	540	270	375	845
2	Lecturer-PhD	540	270	400	820
3	Assoc. Prof-Main lecturer	540	270	450	770
Lecturers in this system will increase their time for work of school and unit (NV3) as assigned by the school and unit					
III	**Researchers grade**				
1	Senior researcher	400	200	1000	360
2	Main researcher/ PhD	320	160	800	640
3	Researcher	280	140	600	880
4	Trainee researcher	140	70	300	1320
IV	**Educational engineers grade**				
1	Educational engineer (*)	300	150	0	1460
2	Trainee educational engineer	250	125	0	1510

This framework is intended to ensure that the faculty maintains sufficient staff resources to deliver all study programmes effectively while minimizing the risk of diminished research

and teaching quality due to excessive workload. In cases of staff shortages, which are rare, the faculty typically hires a part-time lecturer from another faculty or university.

During the audit discussions, the experts learn that HCMUT has established a solid recruitment process for teaching staff. The "Decree on recruitment of government officials" and the "The process of staff recruitment" ensure the quality of the teaching staff and provide the basis for their selection. Open positions are announced on HCMUT's webpage. To support the career development of its faculty, the university has implemented a structured plan aimed at promoting lecturers to associate and full professors. This plan includes balanced teaching assignments based on the Full-Time Equivalent (FTE) system to ensure adequate time for research and professional growth. Additionally, financial support is provided for research activities, particularly for publications in international journals. Publications that acknowledge the university as a contributor may qualify for additional funding.

The promotion to associate professor and full professor requires the approval from the State Professorial Council. For a candidate to be appointed as a full professor, general requirements such as ethical conduct, significant time dedicated to teaching at the undergraduate level and beyond (for exact numbers, refer to table above), foreign language proficiency, and earning a minimum number of points from scientific work need to be fulfilled. For 2024, specific requirements include serving as an associate professor for at least three years, leading educational and training programme development, publishing research findings, authoring textbooks, managing scientific and technological projects, supervising doctoral candidates, and publishing in reputable international journals. Candidates must also meet discipline-specific benchmarks for scientific output.

On inquiry with the programme coordinators, the experts learn that 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 Professorial Council. The satisfaction of these standards is time-consuming and includes complex administrative procedures. Every year nationwide, only a few candidates in the four engineering fields under review meet the standards and are granted full professor's certificates from the state. The experts understand these circumstances. However, according to the faculty's Human Resources Development Plan, the faculty's numbers of full and associate professors is supposed to grow by 2030:

Number of full-time academic staffs	Civil Engineering		Construction Materials		Infrastructure Engineering		Transportation Engineering	
	Year of 2022	Up to 2030	Year of 2022	Up to 2030	Year of 2022	Up to 2030	Year of 2022	Up to 2030
Professor	0	1	0	1	0	0	0	0
Associate Professor	14	19	3	4	2	3	5	7
Ph.D.	33	40	8	10	8	10	8	10
Master	11	11	3	11	2	11	2	11
Technician	5	5	5	5	5	5	5	5
Support Staff	4	4	4	4	4	4	4	4

According to the “regulations on responsibilities for probationary civil servants”, all newly hired staff must complete a probationary period, lasting 12 months for university graduates and 6 months for those with vocational or associate degrees. During probation, HCMUT provides orientation, mentoring, and skill development under the guidance of experienced supervisors. Probationary staff receive 85% of their starting salary during this period. At the end of probation, performance evaluations, including reports from both the probationer and their supervisor, determine their suitability for permanent employment. Teaching staff must also pass an assessment confirming their ability to teach assigned subjects during the probationary phase. Until probation is completed, they are restricted from leading major projects.

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 lecturers have graduated from international universities (for example from USA, UK, France, Germany, Australia, Japan, Korea, Thailand, and Taiwan).

During the audit discussions, the teaching staff express satisfaction with their working relationship with HCMUT. The experts observe that the faculty members are highly motivated and confident in the study programmes they offer. Consequently, they confirm that the structured onboarding process reflects the institution’s commitment to maintaining high standards of professionalism and fostering continuous development among its staff.

At the end of each semester, teaching staff in the programmes under review meet to discuss the curricula and identify training needs for various departments. Regarding staff development, the faculty actively encourages training for its academic staff to enhance their

teaching skills and methodologies. Faculty members regularly participate in training sessions on pedagogy, teaching and research methodologies, leadership, and quality assurance. With regard to enhancement of teaching skills, the BUILT-IT (Building University-Industry Learning and Development through Innovation and Technology) project aims to strengthen collaboration between universities and industries to enhance education quality, innovation, and workforce readiness in engineering and technology fields. It focuses on improving teaching methods, curriculum design, and capacity-building for educators, fostering a skilled workforce aligned with industry needs. Additionally, staff members are occasionally trained to keep them up-dated with the latest teaching technologies and methods.

The university offers partial tuition fee exemptions for staff pursuing Master's or PhD programmes at HCMUT. Research and publication activities are supported through HCMUT and VNU-HCMUT research funds and grants for hosting International Scientific Conferences. HCMUT and its faculties have established recruitment and publication policies, as well as guidelines for collaboration with national and international partners, to further support staff in developing their teaching and research capabilities. HCMUT has also introduced an annual teaching award to recognize the most valuable contribution to scientific research by its lecturers.

The experts also ask about the lecturers' English skills. The students report that they are generally satisfied with the lecturers' English skills. However, there is potential for improvement specifically with regard to the lecturers in the English programmes. The programme coordinators explain that lecturers teaching in English programmes at HCMUT are required to demonstrate proficiency in English, typically evidenced by achieving a minimum IELTS score of 6.0 or an equivalent certification. This is supposed to ensure that they have the necessary language skills to effectively deliver course content and engage with students in an English-medium learning environment. The experts consider these requirements to be appropriate. Nevertheless, the experts are convinced that the English programmes can promote the internationalisation of HCMUT. As this is one of the main goals of the university according to the strategic plan, the experts recommend to improve the lecturers' English skills in the English programmes.

In summary, the experts highlight the well-engaged staff members and confirm that the composition and scientific orientation of the teaching staff are suitable for successfully implementing and sustaining the four degree programmes under review. 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. They are convinced that the existing offers support the achievement of the Human Resources Development Plan. Nevertheless, the experts see

room for improvement with regard to the lecturers' English skills in the English programmes.

Criterion 3.2 Student Support and Student Services

Evidence:

- Self-Assessment Report
- Evaluation/survey results
- Discussions during the audit

Preliminary assessment and analysis of the experts:
During the on-site discussions with programme coordinators, lecturers, and particularly the students, the experts gain a thorough understanding of the available support services for students. HCMUT provides both subject-specific academic counselling and general non-academic guidance.

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 and to monitor their academic performance through GPA. Moreover, every class also has a homeroom teacher. During the audit discussions, the experts learn that a homeroom teacher's role is similar to an academic advisor or mentor in other educational systems, but it involves a more personalized and holistic approach. Responsibilities typically include academic advising (helping students plan their coursework, providing guidance on their academic progress, and assisting them with any difficulties in their studies) personal support (addressing personal or social issues students may face, and providing a connection to resources for counselling or other support services), professional development (offering guidance on internships, research opportunities, and career paths, and helping students build skills that align with their professional goals), administrative liaison (acting as a bridge between students and the university administration, communicating institutional policies, announcements, and important deadlines), monitoring attendance and conduct (ensuring students maintain good attendance and follow university conduct codes, and addressing any concerns about behaviour or performance). This role often extends beyond just academic guidance, fostering a supportive relationship to help students succeed both personally and academically. The academic advisors organise at least two meetings in each term for the classes they are supervising. Homeroom teachers meet with their students at least three times per semester. The students confirm during the discussion with the experts that they all have an academic advisor and a homeroom teacher.

Apart from academic advisors and homeroom teachers, students can receive assistance from the Student Activity Office and the Career Office. The office's primary function is to provide information on training and job search strategies to help students develop career plans, understand the workplace, and prepare for a smooth transition after graduation. The offices are also a bridge between students, 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.

The annual job fair provides a platform for students to connect with potential employers, explore career opportunities, and gain insights into the job market. During the discussions, the students explain that the job fair also facilitates direct interactions between students and employers, allowing students to expand their professional networks, which can lead to internships, job offers, or mentorships. The industry representatives state that it allows companies to actively recruit candidates for internships, part-time positions, and full-time roles, sometimes with on-the-spot interviews and immediate hiring. In the past few years, approximately 200 companies have presented themselves during the job fair and awarded scholarships to students, demonstrating the attractiveness of the competence profile for both domestic and international careers in the four fields under review. In summary, the experts are convinced that good job perspectives for the graduates of all four programmes arise from these activities. This impression is confirmed by the discussion with the industry representatives.

The experts observed that there are sufficient resources available to offer personalized support and guidance to all students. This support system enables students to achieve their learning goals and complete their studies successfully and on time. The students confirm that they are well-informed about the available services. Overall, the extensive tutorial and support system for students is one of the key strengths of the degree programmes under review and the university as a whole.

Criterion 3.3 Funds and equipment

Evidence:

- Self-Assessment Reports
- On-site visit of the facilities
- Laboratory list
- Cooperation agreements (MoU)
- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to the self-assessment report, as a state-owned institution, funding for the operations and degree programmes at HCMUT comes from two main sources: the Ministry of Education and Training (state budget) and other sources (revenue from student scholarships, tuition fees, and other third-party contributions). The faculty's annual operating budget is approved by the Principal, who allocates financial responsibilities for institutional expenses, specifically for the faculty's and departments' operational costs. This budget encompasses a range of expenses, including service fees for cleaning and event organization, materials and office supplies, and transportation costs such as vehicle rentals. It also covers maintenance expenses for machinery and equipment, minor repair costs, and purchases of small equipment. Additionally, the budget accounts for other operational support costs, such as those related to youth organizations, unions, training programmes, and quality assurance activities.

Prior to the on-site visit, HCMUT provides an overview of its annual income for the past few year. This data shows that the total income received from both sources in recent years has been adequate to support all planned activities and degree programmes.

During the on-site visit, the experts take a look at some central facilities, relevant research and teaching facilities and, in particular, a selection of different laboratories available for the four study programmes. While the tour of the facilities focusses on the city campus, where students attend all laboratory classes, HCMUT has another campus in Binh Duong Province where all theoretical lectures take place. A shuttle is available for students to travel back and forth between the two campuses. The Faculty of Civil Engineering utilizes various facilities including an amphitheater, lecture halls which accommodate 80 to 120 students, small classrooms which accommodate 40 students, laboratories, faculty offices, a library with several reading rooms, spaces for administration and the Dean's office.

The faculty operates 1 workshop and 8 laboratories which include:

Table 3-4 Laboratories/workshops managed by FCE

No.	Name of Lab	Modules/subjects
1	Water Resources Engineering and Management	Urban Water Testing
2	Geomatics Engineering	Basis of Surveying
3	Geotechnical Engineering	Soil Mechanics
4	Bridge and Highway Engineering	Testing of Bridge and Highway Material
5	Construction Materials	Construction Materials
6	Mechanics of Materials	Strength of Materials
7	BIM lab	Introduction to BIM in Civil Engineering
8	Fluid mechanic	Fluid Mechanics
9	BKsel	Structural Testing

A detailed overview of the faculty's facilities is given in a room and laboratory list that is submitted prior to the on-site visit.

Most of the classrooms are equipped with projectors and are connected to the university's computer network that links all classrooms and offices, a computer centre, servers, and both computer and teaching laboratories. The computer classrooms at the faculty are all installed with relevant licensed software (see criterion 1.6 for more details) and Internet access.

The faculty also provides space for student individual work and club activities (see criterion 3.2 for more details). Apart from the (computer) laboratories, the library features several reading rooms. Through the academic VNU network, faculty members and students have continuous access to numerous scientific and professional journals across various fields. The university recently spent about 1 billion VND to purchase and update books and reference materials for teaching and research activities. Furthermore, the faculty ensures that all modules of the four programmes under review are supported by appropriate textbook literature. The literature list is accessible through the module descriptions and the MyBK e-learning platform, and students are informed about the required readings at the start of each module. Sufficient copies of the literature are available in the library.

However, the students as well as the industry representatives state that the equipment in the laboratories should be modernised. This is also in line with the impression gained by the experts during the tour. While the laboratory equipment is functional and sufficient, it is noticeable that some machines are rather outdated and should be modernised. Also, the infrastructure should be improved. The programme coordinators state that the machines are calibrated once a year in order to guarantee their functionality. However, they also agree with the experts, students and industry representatives that the infrastructure and

equipment needs an update. Therefore, the experts recommend to improve and modernize the equipment and the infrastructure of the laboratories. For that, a concept should be developed first.

In summary, the experts appreciate the range of learning tools and resources available to the students and lecturers and consider the faculty's facilities and available equipment in the laboratories to be of appropriate standards – although in need of modernization. The available funds also comply with the requirements for adequately sustaining the four degree programmes.

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

As HCMUT did not issue any response statement with regard to criterion 3, the experts adhere to their initial assessment.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidence:

- Module descriptions
- Webpage HCMUT
- Webpage Faculty of Civil Engineering

Preliminary assessment and analysis of the experts:
The experts review the module descriptions for the four degree programmes and find that they provide adequate information about the following aspects: respective content, learning outcomes, examinations, credit points and workload distribution, grading, person responsible for the module, teaching methods, admission requirements and the recommended literature. The students confirm during the discussions that information about the courses is always available online through the MyBK e-learning platform and that details concerning examinations and contents are provided at the beginning of each course by the teaching staff.

However, the experts note that the module descriptions do not make the workload distribution, including class hours and self-study time, transparent. During the audit discussions,

the programme coordinators explain that the section “other hours” in the module descriptions indicate the self-study time that is required for every module. The experts advise HCMUT to name the self-study time accordingly, as the term “other hours” is not clearly understandable. In addition, module titles and module identification codes are given very differently for each module. The experts notice that some module descriptions only state the identification code, while for other modules only the module title is listed. Other module descriptions contain both. This needs to be standardised. The information on the semester in which a module is offered has also to be presented consistently and clearly. In the existing module descriptions, information such as ‘20222’ or ‘20223’ is given for individual modules, which should mean that the module takes place in the second or third semester of the academic year 2022. However, the information on this has to be formulated more generally and provide information on the semester in which the module is generally offered in the degree programme, apart from the academic year (e.g., in the second semester).

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Diplomas
- Diploma Supplements

Preliminary assessment and analysis of the experts:
The experts confirm that the students of all four degree programmes under review are awarded a Diploma Certificate and a Diploma Supplement after graduation. The Diploma Supplement lists all courses that the graduate has completed, the achieved credit points, grades, and cumulative GPA. The Diploma Supplement is bilingual (Vietnamese and English) and contains almost all necessary information about the respective degree programme. However, the experts notice that the Diploma Supplement does not mention the conversion of Vietnamese credits into ECTS. HCMUT has to indicate how many ECTS credits are awarded for every individual degree programme. Therefore, the experts point out that the Diploma Supplement needs to list the acquired ECTS points of each course and how many ECTS points are awarded for the whole degree programme. Moreover, information about the programme objectives, intended learning outcomes and the admission requirements has to be included.

Criterion 4.3 Relevant Rules

Evidence:

- Self-Assessment Report
- All relevant regulations on the studies, examination, admission and quality assurance are published on the university's website

Preliminary assessment and analysis of the experts:
The experts confirm that the rights and duties of HCMUT and the students are clearly defined and binding. They appreciate that the English and Vietnamese websites of the programmes include sufficient information about the intended learning outcomes, study plans, module descriptions and academic guidelines of the degree programmes and are made available to all relevant stakeholders. In addition, the students receive all relevant course material at the beginning of each semester.

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

Criterion 4.1:

In its response statement, HCMUT states that the self-study time is included in both the syllabi and module handbooks of the four study programmes. HCMUT submits these documents together with its statement. It appears that there has been a misunderstanding during the audit discussions as the experts confirm that both class hours as well as self-study time are mentioned in these documents. Therefore, the experts decide to cancel this part and rephrase the requirement with regard to the missing information in the module descriptions.

As HCMUT did not issue any response statement with regard to the other sub-chapters of criterion 4, the experts adhere to their initial assessment.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- Academic Guidelines

- Sample evaluation/survey questionnaires
- List of scientific councils
- Documents about the implementation of ISO 9001-2015
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The four programmes under review are managed by the Faculty of Civil Engineering, which is 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 experts 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 the e-learning platform MyBK, students can give their feedback anonymously on aspects such as the teaching quality, the course content, the workload 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 experts inquire whether the results of the surveys are also shared and discussed with the students. The programme coordinators explain that the survey results are published on MyBK and therefore accessible for the students. The students confirm this and explain that those in charge are always eager and open for feedback aside from the official evaluations. The 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 experts 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 experts appreciate that HCMUT has a close relationship with the industry partners and regularly collects feedback from them. Thus, the experts agree that the quality management circles at HCMUT are well established and work under participation of all stakeholders.

In summary, the experts 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 experts after the comment of the Higher Education Institution regarding criterion 5:

As HCMUT did not issue any response statement with regard to criterion 5, the experts adhere to their initial assessment.

D Additional Documents

No additional documents needed.

E Comment of the Higher Education Institution (07.01.2025)

The following quotes the response statement of the institution:

Dear ASIIN Expert Panel,

We, the Faculty of Civil Engineering at Ho Chi Minh City University of Technology (HCMUT-VNU), would like to express our sincere gratitude for the thorough evaluation and insightful recommendations provided by the Expert Panel during the accreditation process for our four bachelor's programs.

The feedback in your report has provided us with valuable perspectives that will support us to enhance our educational offerings. The report from the Experts has been accurate and detailed. We have only one minor clarification to address. Specifically, we would like to confirm that the self-study time is indeed explicitly stated in both our syllabus (Evidence folder 1.3.01) and module handbook (Evidence folder 1.3.02). These documents have been attached to this email for your reference. It appears there might have been some misunderstanding during the audit discussions, for which we sincerely apologize. The coordinators might have inadvertently caused confusion while addressing your queries.

We are fully committed to addressing the identified areas for improvement with the seriousness. We will initiate discussions within our faculty and propose to the university administration actionable measures to implement these recommendations effectively. These improvements will ensure that our programs align more closely with international standards and meet the needs of our stakeholders.

Once again, we are grateful to your support throughout this process.

Best regards,

Faculty of Civil Engineering

Ho Chi Minh City University of Technology (HCMUT-VNU)

F Summary: Expert recommendations (17.01.2025)

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Civil Engineering	With requirements for one year	30.09.2030	–	–
Ba Construction Materials	With requirements for one year	30.09.2030	–	–
Ba Infrastructure Engineering	With requirements for one year	30.09.2030	–	–
Ba Transportation Engineering	With requirements for one year	30.09.2030	–	–

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Ensure that the ECTS-Points awarded for the programmes correspond with the actual workload of the students.

A 2. (ASIIN 4.1) The module descriptions need to include information about the module title, identification code as well as the semester in which the module is taught.

A 3. (ASIIN 4.2) The Diploma Supplement needs to list the programme objectives and intended learning outcomes, the admission requirements, the acquired ECTS points of each course and how many ECTS points are awarded for the whole degree programmes.

Recommendations

For all degree programmes

E 1. (ASIIN 1.6) It is recommended to strengthen the soft skills of the students through designated coursework or integration into existing coursework.

E 2. (ASIIN 1.3) It is recommended to strengthen the technical modelling skills of the students.

E 3. (ASIIN 3.3) It is recommended to improve and modernize the equipment and the infrastructure of the laboratories. For that, a concept should be developed first.

For Bachelor's degree programmes Civil Engineering and Transportation Engineering

E 4. (ASIIN 3.1) It is recommended to improve the lecturers' English skills in the English programmes.

G Comment of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture (06.03.2025)

Assessment and analysis for the award of the ASIIN seal:

The TC discusses the procedure and follows the assessment of the experts without any changes.

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Civil Engineering	With requirements for one year	30.09.2030	–	–
Ba Construction Materials	With requirements for one year	30.09.2030	–	–
Ba Infrastructure Engineering	With requirements for one year	30.09.2030	–	–
Ba Transportation Engineering	With requirements for one year	30.09.2030	–	–

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Ensure that the ECTS-Points awarded for the programmes correspond with the actual workload of the students.

A 2. (ASIIN 4.1) The module descriptions need to include information about the module title, identification code as well as the semester in which the module is taught.

A 3. (ASIIN 4.2) The Diploma Supplement needs to list the programme objectives and intended learning outcomes, the admission requirements, the acquired ECTS points of each course and how many ECTS points are awarded for the whole degree programmes.

Recommendations

For all degree programmes

E 1. (ASIIN 1.6) It is recommended to strengthen the soft skills of the students through designated coursework or integration into existing coursework.

E 2. (ASIIN 1.3) It is recommended to strengthen the technical modelling skills of the students.

E 3. (ASIIN 3.3) It is recommended to improve and modernize the equipment and the infrastructure of the laboratories. For that, a concept should be developed first.

For Bachelor's degree programmes Civil Engineering and Transportation Engineering

E 4. (ASIIN 3.1) It is recommended to improve the lecturers' English skills in the English programmes.

H Decision of the Accreditation Commission (25.03.2025)

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

The AC discusses the procedure and deletes a part of the requirement A 3 as this information is already covered by the Transcript of Records. Moreover, the wording of the recommendation E 2 is sharpened by replacing "technical" with "geometrical 3D". This is to emphasise that it is about form, but not about mechanical, spatial modelling. Apart from that, the AC follows the assessment of the experts and the TC without any changes.

The Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN Seal**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
Ba Civil Engineering	With requirements for one year	30.09.2030	–	–
Ba Construction Materials	With requirements for one year	30.09.2030	–	–
Ba Infrastructure Engineering	With requirements for one year	30.09.2030	–	–
Ba Transportation Engineering	With requirements for one year	30.09.2030	–	–

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Ensure that the ECTS-Points awarded for the programmes correspond with the actual workload of the students.

A 2. (ASIIN 4.1) The module descriptions need to include information about the module title, identification code as well as the semester in which the module is taught.

A 3. (ASIIN 4.2) The Diploma Supplement needs to list the programme objectives and intended learning outcomes, the admission requirements and how many ECTS points are awarded for the whole degree programmes.

Recommendations

For all degree programmes

E 1. (ASIIN 1.6) It is recommended to strengthen the soft skills of the students through designated coursework or integration into existing coursework.

E 2. (ASIIN 1.3) It is recommended to strengthen the geometrical 3D modelling skills of the students.

E 3. (ASIIN 3.3) It is recommended to improve and modernize the equipment and the infrastructure of the laboratories. For that, a concept should be developed first.

For Bachelor's degree programmes Civil Engineering and Transportation Engineering

E 4. (ASIIN 3.1) It is recommended to improve the lecturers' English skills in the English programmes.

I Fulfilment of Requirements (27.03.2026)

Analysis of the experts and the Technical Committee (09.06.2026)

A 1. (ASIIN 1.5) Ensure that the ECTS-Points awarded for the programmes correspond with the actual workload of the students.

Initial Treatment	
Experts	fulfilled Justification: HCMUT has provided a clear explanation as to how the ECTS are converted to Vietnamese credit point system, allowing to convert appropriately.
TC 03	fulfilled Vote: unanimous Justification: The TC discusses the procedure and follows the assessment of the experts without any changes.

A 2. (ASIIN 4.1) The module descriptions need to include information about the module title, identification code as well as the semester in which the module is taught.

Initial Treatment	
Experts	fulfilled Justification: All module descriptions are supplemented with the required information (module title, indentification code, semester when course is recommended, etc.).
TC 03	fulfilled Vote: unanimous Justification: The TC discusses the procedure and follows the assessment of the experts without any changes.

A 3. (ASIIN 4.2) The Diploma Supplement needs to list the programme objectives and intended learning outcomes, the admission requirements and how many ECTS points are awarded for the whole degree programmes.

Initial Treatment	
Experts	fulfilled Justification: Diploma supplement has been adapted to the requirement A3.
TC 03	fulfilled Vote: unanimous

	Justification: The TC discusses the procedure and follows the assessment of the experts without any changes.

Decision of the Accreditation Commission (27.03.2026)

The AC follows the assessment of the experts and the TC without any changes.

Degree programme	ASIIN-label	Subject-specific label	Accreditation until max.
Ba Civil Engineering	All requirements fulfilled	–	30.09.2030
Ba Construction Materials	All requirements fulfilled	–	30.09.2030
Ba Infrastructure Engineering	All requirements fulfilled	–	30.09.2030
Ba Transportation Engineering	All requirements fulfilled	–	30.09.2030

Appendix: Programme Learning Outcomes and Curricula

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

	Course ID - Course name	Course Learning Outcomes	S.O.1	S.O.2	S.O.3	S.O.4	S.O.5	S.O.6	S.O.7
2	CI1069 - Earth Science	L.O.1 - Be able to cooperate in teamwork for exploring and associating multi-discipline knowledgeL.O.2 - Know the history, the processes inside and on the surface of the EarthL.O.3 - Be able to descibe the major spheres of the Earth	L.O.2				L.O.1		L.O.3
3	CI1001 - Introduction to Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.3 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.4 - An ability to communicate effectively with a range of audiences	L.O.1		L.O.4	L.O.2	L.O.3		
4	CI1033 - Civil Engineering Drawing	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiences	L.O.1	L.O.2	L.O.3				
5	CI2003 - Fluid Mechanics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
6	CI2095 - Engineering Geology	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
7	CI1007 - Basis of Surveying	L.O.1 - Có khả năng định nghĩa, giải thích về hình dạng trái đất và cách thể hiện bề mặt trái đất lên mặt phẳng có hệ thốngL.O.2 - Có khả năng phân tích kỹ thuật và tính toán các bài toán trắc địa cơ bản và xác định sai số đo cơ bảnL.O.3 - Có khả năng giao tiếp hiệu quả, làm việc nhóm với thái độ chuyên nghiệp trong việc áp dụng các phép đo trắc địa trên mặt đất trong phạm vi nhỏ	L.O.1		L.O.3				L.O.2
8	CI2037 - Construction Materials	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
9	CI2007 - StrengTh of Materials	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
10	CI2133 - Steel Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3

11	CI2135 - Mechanics of Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
12	CI2137 - Soil Mechanics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
13	CI2139 - Reinforced Concrete Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
14	CI2145 - Foundation Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
15	CI2147 - Structural Testing	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	L.O.1	L.O.2				L.O.3	
16	CI2151 - Construction Economics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
17	CI3243 - Reinforced Concrete Building Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
18	CI3043 - Construction Equipment and MeThod	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
19	CI4189 - On-Site Construction Management	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3

20	CI4131 - Steel Building Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
21	CI3445 - Internship	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
22	CI4133 - Project	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
23	CI4447 - Capstone Project	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
24	CI3289 - Leadership and Startup	L.O.1 - An ability to communicate effectively with a range of audiencesL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.4 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies			L.O.1		L.O.2	L.O.3	L.O.4
25	CI3291 - Leadership and Management in Project	L.O.1 - An ability to communicate effectively with a range of audiencesL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.4 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies			L.O.1		L.O.2	L.O.3	L.O.4
26	CI3061 - Finite Element MeThod	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
27	CI3241 - Water Supply and Sewerage	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
28	CI4161 - Urban Infrastructure Planning	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3

The following **curriculum** is presented:

6.1 Civil Engineering program

No.	Course ID	Course Title	Credits	Prerequisites
Semester 1 (17 credits)				
1	MT1007	Linear Algebra	3	
2	MT1003	Calculus 1	4	
3	LA1003	English 1	2	
4	...	Physical Education	0	
5	PH1003	General Physics 1	4	
6	CI1001	Introduction to Engineering	3	
7	PH1007	General Physics Labs	1	
Semester 2 (16 credits)				
1	...	Physical Education	0	
2	MT1005	Calculus 2	4	MT1003(HT)
3	LA1005	English 2	2	LA1003(TQ)
4	CH1003	General Chemistry	3	
5	CI1069	Earth Science	4	

6	CI1033	Civil Engineering Drawing	3	
7	MI1003	Military Training	0	
Semester 3 (17 credits)				
1	CI1007	Basis of Surveying	3	
2	MT2013	Probability and Statistics	4	MT1003(HT) MT1007(HT)
3	LA1007	English 3	2	LA1005(TQ)
4	SP1007	Introduction to Vietnamese Law	2	
5	CI2003	Fluid Mechanics	3	
6	CI2095	Engineering Geology	3	
Semester 4 (15 credits)				
1	MT1009	Numerical Methods	3	MT1003(HT) MT1007(HT)
2	SP1031	Marxist - Leninist Philosophy	3	
3	LA1009	English 4	2	LA1007(TQ)
4	CI2037	Construction Materials	3	
5	CI2007	Strength of Materials	4	
Semester 5 (17 credits)				
1	SP1033	Marxist - Leninist Political Economy	2	SP1031(HT)
2	CI2133	Steel Structures	3	CI2007(HT)
3	CI2135	Mechanics of Structures	3	CI2007(HT)
4	CI2137	Soil Mechanics	3	CI2095(HT)
5	CI2139	Reinforced Concrete Structures	3	CI2007(TQ)
Elective Courses:				
1	CI3289	Leadership and Startup	3	
2	CI3291	Leadership and Management in Project	3	
Semester 6 (17 credits)				
1	SP1035	Scientific Socialism	2	SP1033(HT)
2	CI2145	Foundation Engineering	4	CI2137(HT)

3	CI3243	Reinforced Concrete Building Structures	3	CI2139(HT)
4	CI3043	Construction Equipment and Method	3	
5	CI3445	Internship	2	
Elective Courses:				
1	...	Free Electives 3 credits		
Semester 7 (17 credits)				
1	SP1039	History of Vietnamese Communist Party	2	SP1035(HT)
2	CI2147	Structural Testing	1	CI2133(HT) CI2139(HT)
3	CI4189	On-Site Construction Management	3	CI1007(HT)
4	CI4131	Steel Building Structures	3	CI2133(HT)
5	CI4133	Project	2	CI2133(HT) CI2145(HT) CI3043(HT) CI3243(HT) CI3445(SH)
Elective Courses:				
1	...	Free Electives 3 credits		
2	CI3061	Finite Element Method	3	CI2135(HT)
3	CI3241	Water Supply and Sewerage	3	CI2003(HT)
4	CI4161	Urban Infrastructure Planning	3	CI1007(HT)
Semester 8 (15 credits)				
1	CI2151	Construction Economics	3	
2	SP1037	Ho Chi Minh Ideology	2	SP1039(HT)
3	EN1003	Humans and the Environment	3	
4	CI4447	Capstone Project	4	CI3445(TQ) CI4133(TQ)
Elective Courses:				
1	...	Free Electives 3 credits		

According to the programme curriculum document the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Construction Materials:

	Course ID - Course name	Course Learning Outcomes	S.O.1	S.O.2	S.O.3	S.O.4	S.O.5	S.O.6	S.O.7
2	CI1069 - Earth Science	L.O.1 - Be able to cooperate in teamwork for exploring and associating multi-discipline knowledgeL.O.2 - Know the history, the processes inside and on the surface of the EarthL.O.3 - Be able to descibe the major spheres of the Earth	L.O.2				L.O.1		L.O.3
3	CI1001 - Introduction to Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.3 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.4 - An ability to communicate effectively with a range of audiences	L.O.1		L.O.4	L.O.2	L.O.3		
4	CI1033 - Civil Engineering Drawing	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiences	L.O.1	L.O.2	L.O.3				
5	CI1007 - Basis of Surveying	L.O.1 - Có khả năng định nghĩa, giải thích về hình dạng trái đất và cách thể hiện bề mặt trái đất lên mặt phẳng có hệ thốngL.O.2 - Có khả năng phân tích kỹ thuật và tính toán các bài toán trắc địa cơ bản và xác định sai số đo cơ bảnL.O.3 - Có khả năng giao tiếp hiệu quả, làm việc nhóm với thái độ chuyên nghiệp trong việc áp dụng các phép đo trắc địa trên mặt đất trong phạm vi nhỏ	L.O.1		L.O.3				L.O.2
6	CI2037 - Construction Materials	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
7	CI2007 - StrengTh of Materials	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
8	CI2135 - Mechanics of Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
9	CI2095 - Engineering Geology	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
10	CI2133 - Steel Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3

11	CI2137 - Soil Mechanics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
12	CI2145 - Foundation Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
13	CI2139 - Reinforced Concrete Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
14	CI2147 - Structural Testing	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	L.O.1	L.O.2				L.O.3	
15	CI2003 - Fluid Mechanics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
16	CI2151 - Construction Economics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
17	CI3245 - Cementitious Material Technology	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
18	CI3057 - Concrete Technology	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
19	CI4139 - Design of Production Technology and Installation of Precast Concrete	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3

20	CI4153 - Special Concretes in Construction	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
21	CI4163 - Corrosion of Concrete and Reinforced Concrete	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
22	CI3465 - Internship	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
23	CI4167 - Project	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
24	CI4467 - Capstone Project	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
25	CI3289 - Leadership and Startup	L.O.1 - An ability to communicate effectively with a range of audiencesL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.4 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies			L.O.1		L.O.2	L.O.3	L.O.4
26	CI3291 - Leadership and Management in Project	L.O.1 - An ability to communicate effectively with a range of audiencesL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.4 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies			L.O.1		L.O.2	L.O.3	L.O.4

The following **curriculum** is presented:

6.2 Construction Materials program

No.	Course ID	Course Title	Credits	Prerequisites
Semester 1 (17 credits)				
1	MT1007	Linear Algebra	3	
2	MT1003	Calculus 1	4	
3	LA1003	English 1	2	
4	...	Physical Education	0	
5	PH1003	General Physics 1	4	
6	CI1001	Introduction to Engineering	3	
7	PH1007	General Physics Labs	1	
Semester 2 (16 credits)				
1	...	Physical Education	0	
2	MT1005	Calculus 2	4	MT1003(HT)
3	LA1005	English 2	2	LA1003(TQ)
4	CH1003	General Chemistry	3	
5	CI1069	Earth Science	4	
6	CI1033	Civil Engineering Drawing	3	
7	MI1003	Military Training	0	
Semester 3 (17 credits)				
1	CI1007	Basis of Surveying	3	
2	MT2013	Probability and Statistics	4	MT1003(HT) MT1007(HT)
3	LA1007	English 3	2	LA1005(TQ)
4	SP1007	Introduction to Vietnamese Law	2	
5	CI2003	Fluid Mechanics	3	
6	CI2095	Engineering Geology	3	
Semester 4 (15 credits)				
1	MT1009	Numerical Methods	3	MT1003(HT) MT1007(HT)
2	SP1031	Marxist - Leninist Philosophy	3	
3	LA1009	English 4	2	LA1007(TQ)
4	CI2037	Construction Materials	3	
5	CI2007	Strength of Materials	4	

Semester 5 (17 credits)				
1	SP1033	Marxist - Leninist Political Economy	2	SP1031(HT)
2	CI2133	Steel Structures	3	CI2007(HT)
3	CI2135	Mechanics of Structures	3	CI2007(HT)
4	CI2137	Soil Mechanics	3	CI2095(HT)
5	CI2139	Reinforced Concrete Structures	3	CI2007(TQ)
Elective Courses:				
1	CI3289	Leadership and Startup	3	
2	CI3291	Leadership and Management in Project	3	
Semester 6 (17 credits)				
1	SP1035	Scientific Socialism	2	SP1033(HT)
2	CI3465	Internship	2	
3	CI2145	Foundation Engineering	4	CI2137(HT)
4	CI3245	Cementitious Material Science	3	CI2037(HT)
5	CI3057	Concrete Technology	3	CI2037(HT)
Elective Courses:				
1	...	Free Electives 3 credits		
Semester 7 (17 credits)				
1	SP1039	History of Vietnamese Communist Party	2	SP1035(HT)
2	CI4167	Project	2	CI2037(HT) CI3057(HT) CI3245(HT) CI3465(SH) CI4139(SH)
3	CI2147	Structural Testing	1	CI2133(HT) CI2139(HT)
4	CI4139	Design of Production Technology and Installation of Precast Concrete	3	CI2037(HT)

5	CI4153	Special Concretes in Construction	3	CI2037(HT)
6	CI4163	Corrosion of Concrete and Reinforced Concrete	3	CI2037(HT)
Elective Courses:				
1	...	Free Electives 3 credits		
Semester 8 (15 credits)				
1	SP1037	Ho Chi Minh Ideology	2	SP1039(HT)
2	CI2151	Construction Economics	3	
3	CI4467	Capstone Project	4	CI3465(TQ) CI4167(TQ)
4	EN1003	Humans and the Environment	3	
Elective Courses:				
1	...	Free Electives 3 credits		

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

1	Course ID - Course name	Course Learning Outcomes	S.O.1	S.O.2	S.O.3	S.O.4	S.O.5	S.O.6	S.O.7
2	CI1069 - Earth Science	L.O.1 - Be able to cooperate in teamwork for exploring and associating multi-discipline knowledgeL.O.2 - Know the history, the processes inside and on the surface of the EarthL.O.3 - Be able to descibe the major spheres of the Earth	L.O.2				L.O.1		L.O.3
3	CI1001 - Introduction to Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.3 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.4 - An ability to communicate effectively with a range of audiences	L.O.1		L.O.4	L.O.2	L.O.3		
4	CI2007 - StrengTh of Materials	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
5	CI2139 - Reinforced Concrete Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
6	CI1007 - Basis of Surveying	L.O.1 - Có khả năng định nghĩa, giải thích về hình dạng trái đất và cách thể hiện bề mặt trái đất lên mặt phẳng có hệ thốngL.O.2 - Có khả năng phân tích kỹ thuật và tính toán các bài toán trắc địa cơ bản và xác định sai số đo cơ bảnL.O.3 - Có khả năng giao tiếp hiệu quả, làm việc nhóm với thái độ chuyên nghiệp trong việc áp dụng các phép đo trắc địa trên mặt đất trong phạm vi nhỏ	L.O.1		L.O.3				L.O.2
7	CI2003 - Fluid Mechanics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
8	CI2095 - Engineering Geology	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3

9	CI2147 - Structural Testing	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	L.O.1	L.O.2				L.O.3	
10	CI2151 - Construction Economics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
11	CI2145 - Foundation Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
12	CI2135 - Mechanics of Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
13	CI1033 - Civil Engineering Drawing	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiences	L.O.1	L.O.2	L.O.3				
14	CI2137 - Soil Mechanics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
15	CI2037 - Construction Materials	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
16	CI2133 - Steel Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3

17	CI3241 - Water Supply and Sewerage	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
18	CI3265 - Urban Infrastructure Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
19	CI3013 - Urban Hydrology	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
20	CI4023 - Construction MeThods Ininfrastructure Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
21	CI4141 - Water Supply and Sanitation Structures and Pumping Station	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
22	CI3425 - Internship	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7

23	CI4173 - Project	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
24	CI4427 - Capstone Project	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
25	CI3289 - Leadership and Startup	L.O.1 - An ability to communicate effectively with a range of audiencesL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.4 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies			L.O.1		L.O.2	L.O.3	L.O.4
26	CI3291 - Leadership and Management in Project	L.O.1 - An ability to communicate effectively with a range of audiencesL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.4 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies			L.O.1		L.O.2	L.O.3	L.O.4

The following **curriculum** is presented:

6.3 Infrastructure Engineering program

No.	Course ID	Course Title	Credits	Prerequisites
Semester 1 (17 credits)				
1	MT1007	Linear Algebra	3	
2	MT1003	Calculus 1	4	
3	LA1003	English 1	2	
4	...	Physical Education	0	
5	PH1003	General Physics 1	4	
6	CI1001	Introduction to Engineering	3	
7	PH1007	General Physics Labs	1	
Semester 2 (16 credits)				
1	...	Physical Education	0	
2	MT1005	Calculus 2	4	MT1003(HT)
3	LA1005	English 2	2	LA1003(TQ)
4	CH1003	General Chemistry	3	
5	CI1069	Earth Science	4	
6	CI1033	Civil Engineering Drawing	3	

7	MI1003	Military Training	0	
Semester 3 (17 credits)				
1	CI1007	Basis of Surveying	3	
2	MT2013	Probability and Statistics	4	MT1003(HT) MT1007(HT)
3	LA1007	English 3	2	LA1005(TQ)
4	SP1007	Introduction to Vietnamese Law	2	
5	CI2003	Fluid Mechanics	3	
6	CI2095	Engineering Geology	3	
Semester 4 (15 credits)				
1	MT1009	Numerical Methods	3	MT1003(HT) MT1007(HT)
2	SP1031	Marxist - Leninist Philosophy	3	
3	LA1009	English 4	2	LA1007(TQ)
4	CI2037	Construction Materials	3	
5	CI2007	Strength of Materials	4	
Semester 5 (17 credits)				
1	SP1033	Marxist - Leninist Political Economy	2	SP1031(HT)
2	CI2133	Steel Structures	3	CI2007(HT)
3	CI2135	Mechanics of Structures	3	CI2007(HT)
4	CI2137	Soil Mechanics	3	CI2095(HT)
5	CI2139	Reinforced Concrete Structures	3	CI2007(TQ)
Elective Courses:				
1	CI3289	Leadership and Startup	3	
2	CI3291	Leadership and Management in Project	3	
Semester 6 (17 credits)				
1	SP1035	Scientific Socialism	2	SP1033(HT)
2	CI2145	Foundation Engineering	4	CI2137(HT)
3	CI3241	Water Supply and Sewerage	3	CI2003(HT)

4	CI3265	Urban Infrastructure Engineering	3	CI2137(HT)
5	CI3425	Internship	2	
Elective Courses:				
1	...	Free Electives 3 credits		
Semester 7 (16 credits)				
1	SP1039	History of Vietnamese Communist Party	2	SP1035(HT)
2	CI3013	Urban Hydrology	3	
3	CI4023	Construction Methods In Infrastructure Engineering	3	CI3265(HT)
4	CI4141	Water Supply and Sanitation Structures and Pumping Station	3	CI3241(HT)
5	CI4173	Project	2	CI3241(HT) CI3265(HT) CI3425(SH)
Elective Courses:				
1	...	Free Electives 3 credits		
Semester 8 (16 credits)				
1	CI2147	Structural Testing	1	CI2133(HT) CI2139(HT)
2	CI2151	Construction Economics	3	
3	SP1037	Ho Chi Minh Ideology	2	SP1039(HT)
4	EN1003	Humans and the Environment	3	
5	CI4427	Capstone Project	4	CI3425(TQ) CI4173(TQ)
Elective Courses:				
1	...	Free Electives 3 credits		

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

1	Course ID - Course name	Course Learning Outcomes	S.O.1	S.O.2	S.O.3	S.O.4	S.O.5	S.O.6	S.O.7
2	CI1069 - Earth Science	L.O.1 - Be able to cooperate in teamwork for exploring and associating multi-discipline knowledgeL.O.2 - Know the history, the processes inside and on the surface of the EarthL.O.3 - Be able to descibe the major spheres of the Earth	L.O.2				L.O.1		L.O.3
3	CI1001 - Introduction to Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.3 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.4 - An ability to communicate effectively with a range of audiences	L.O.1		L.O.4	L.O.2	L.O.3		
4	CI1033 - Civil Engineering Drawing	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiences	L.O.1	L.O.2	L.O.3				
5	CI1007 - Basis of Surveying	L.O.1 - Có khả năng định nghĩa, giải thích về hình dạng trái đất và cách thể hiện bề mặt trái đất lên mặt phẳng có hệ thốngL.O.2 - Có khả năng phân tích kỹ thuật và tính toán các bài toán trắc địa cơ bản và xác định sai số đo cơ bảnL.O.3 - Có khả năng giao tiếp hiệu quả, làm việc nhóm với thái độ chuyên nghiệp trong việc áp dụng các phép đo trắc địa trên mặt đất trong phạm vi nhỏ	L.O.1		L.O.3				L.O.2
6	CI2037 - Construction Materials	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
7	CI2007 - StrengTh of Materials	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
8	CI2135 - Mechanics of Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
9	CI2095 - Engineering Geology	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
10	CI2133 - Steel Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3

11	CI2137 - Soil Mechanics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
12	CI2145 - Foundation Engineering	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
13	CI2139 - Reinforced Concrete Structures	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
14	CI2003 - Fluid Mechanics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1				L.O.2		L.O.3
15	CI2149 - Testing of Bridge and Highway Material	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	L.O.1	L.O.2				L.O.3	
16	CI2151 - Construction Economics	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1					L.O.2	L.O.3
17	CI3261 - Fundamentals of Bridge Design	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
18	CI3263 - Fundamentals of Highway Design	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
19	CI4145 - Fundamentals of Bridge and Highway Construction	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3

20	CI4165 - Bridge and Highway Foundation	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
21	CI4197 - Transportation Infrastructure Planning	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorL.O.3 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2					L.O.3
22	CI4171 - Project	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
23	CI3415 - Internship	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audienL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
24	CI4417 - Capstone Project	L.O.1 - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematicsL.O.2 - An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factorsL.O.3 - An ability to communicate effectively with a range of audiencesL.O.4 - An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contextsL.O.5 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.6 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.7 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	L.O.1	L.O.2	L.O.3	L.O.4	L.O.5	L.O.6	L.O.7
25	CI3289 - Leadership and Startup	L.O.1 - An ability to communicate effectively with a range of audiencesL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.4 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies			L.O.1		L.O.2	L.O.3	L.O.4
26	CI3291 - Leadership and Management in Project	L.O.1 - An ability to communicate effectively with a range of audiencesL.O.2 - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectivesL.O.3 - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusionsL.O.4 - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies			L.O.1		L.O.2	L.O.3	L.O.4

The following **curriculum** is presented:

6.4 Transportation Engineering program

No.	Course ID	Course Title	Credits	Prerequisites
Semester 1 (17 credits)				
1	MT1007	Linear Algebra	3	
2	MT1003	Calculus 1	4	
3	LA1003	English 1	2	
4	...	Physical Education	0	
5	PH1003	General Physics 1	4	
6	CI1001	Introduction to Engineering	3	
7	PH1007	General Physics Labs	1	
Semester 2 (16 credits)				
1	...	Physical Education	0	
2	MT1005	Calculus 2	4	MT1003(HT)
3	LA1005	English 2	2	LA1003(TQ)
4	CH1003	General Chemistry	3	
5	CI1069	Earth Science	4	
6	CI1033	Civil Engineering Drawing	3	
7	MI1003	Military Training	0	
Semester 3 (17 credits)				
1	CI1007	Basis of Surveying	3	
2	MT2013	Probability and Statistics	4	MT1003(HT) MT1007(HT)
3	LA1007	English 3	2	LA1005(TQ)
4	SP1007	Introduction to Vietnamese Law	2	
5	CI2003	Fluid Mechanics	3	
6	CI2095	Engineering Geology	3	
Semester 4 (15 credits)				
1	MT1009	Numerical Methods	3	MT1003(HT) MT1007(HT)
2	SP1031	Marxist - Leninist Philosophy	3	
3	LA1009	English 4	2	LA1007(TQ)
4	CI2037	Construction Materials	3	
5	CI2007	Strength of Materials	4	
Semester 5 (17 credits)				
1	SP1033	Marxist - Leninist Political Economy	2	SP1031(HT)
2	CI2133	Steel Structures	3	CI2007(HT)

3	CI2135	Mechanics of Structures	3	CI2007(HT)
4	CI2137	Soil Mechanics	3	CI2095(HT)
5	CI2139	Reinforced Concrete Structures	3	CI2007(TQ)
Elective Courses:				
1	CI3289	Leadership and Startup	3	
2	CI3291	Leadership and Management in Project	3	
Semester 6 (17 credits)				
1	SP1035	Scientific Socialism	2	SP1033(HT)
2	CI2145	Foundation Engineering	4	CI2137(HT)
3	CI3261	Fundamentals of Bridge Design	3	CI2139(HT)
4	CI3263	Fundamentals of Highway Design	3	CI1007(HT) CI2137(HT)
5	CI3415	Internship	2	
Elective Courses:				
1	...	Free Electives 3 credits		
Semester 7 (17 credits)				
1	SP1039	History of Vietnamese Communist Party	2	SP1035(HT)
2	CI2149	Testing of Bridge and Highway Material	1	
3	CI4197	Transportation Infrastructure Planning	3	
4	CI4145	Fundamentals of Bridge and Highway Construction	3	CI1007(HT)
5	CI4165	Bridge and Highway Foundation	3	CI1007(HT)
6	CI4171	Project	2	CI3415(SH)
Elective Courses:				
1	...	Free Electives 3 credits		
Semester 8 (15 credits)				

1	CI2151	Construction Economics	3	
2	SP1037	Ho Chi Minh Ideology	2	SP1039(HT)
3	EN1003	Humans and the Environment	3	
4	CI4417	Capstone Project	4	CI3415(TQ) CI4171(TQ)
Elective Courses:				
1	...	Free Electives 3 credits		