ASIIN SEAL

Accreditation Report

Degree programmes

Civil Engineering
Water Supply and Drainage Science and Engineering

Provided by

Hunan City University

Version: 12.12.2025

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A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name
土木工程	Civil Engineering
给水与排水科学工程	Water Supply and Drainage Science and Engineering

Date of the contract: 09.10.2024

Submission of the final version of the SAR: 14.05.2025

Date of the onsite visit: 09.-10.-06.2025

at: College of Civil Engineering

College of Municipal and Geomatics Engineering, Hunan City University

Expert panel:

Prof. Dr.-Ing. Hans-Joachim Bargstädt, Bauhaus-Universität Weimar/Built Environment-Management-Institute

Prof. Dr.-Ing. Joaquín Diaz, Technische Hochschule Mittelhessen

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Representative of the ASIIN headquarter: Laura Luc

Criteria used:

European Standards and Guidelines as of May 2015

ASIIN General Criteria as of March 28, 2023

Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy and Architecture as of June 26th, 2020

B Context of the Degree Programmes

B-1 Numbers and facts

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[1]	d) Mode of Study	e) Double/ Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Civil Engineering	工学学士 ／ B. Eng.	Civil Engineering	6	Full time	/	8 Semester	232 ECTS/other CP	September 1, 2002
Water Supply and Drainage Science and Engineering	工学学士 ／ B. Eng.	Civil Engineering	6	Full time	/	8 Semester	230 ECTS/other CP	September 1, 2003

B-2 Characteristics and features

Hunan City University (HNCU) is a public undergraduate institution under the authority of the Hunan Provincial Government. The university has outlined its education strategy in the "1234" System for Applied Talent Education, which includes a focus on professional training, ideological and political education, and the integration of innovation and entrepreneurship education throughout the student learning process. The strong focus on urban development, municipal engineering, and applied sciences positions HNCU as a practice-oriented higher education provider with close ties to the local industry and public service sectors, particularly in the Hunan province and central China region.

The *School of Civil Engineering* currently offers seven undergraduate majors, including Civil Engineering, which has been designated as a national first-class undergraduate major construction site. The programme includes three specialization tracks: Construction Engineering, Road and Bridge Engineering, and Urban Rail Transit Engineering. According to the SAR, the programme is intended to meet regional and national workforce demands in capital

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

construction, aiming to train students who can work in design, construction, and management roles. Since 2018, the school has initiated internal evaluation procedures based on the Outcome-Based Education (OBE) model.

The *School of Municipal and Geomatics Engineering* was founded in 1984 and is responsible for the Water Supply and Drainage Science and Engineering (WSDE) programme. The WSDE programme is part of the Municipal Engineering discipline and was launched in the same year. It has received multiple recognitions, including being named a First-Class Program in Hunan Province, and was selected as a pilot for comprehensive reform under the 13th Five-Year Plan. The programme began undergraduate enrolment in 2003 and established a joint graduate training program in 2012 with Shantou University and Shenyang Jianzhu University. In 2021, the programme was accredited by the Ministry of Housing and Urban-Rural Development.

Both programmes are full-time, span eight semesters, and award over 230 credit points. They are classified at EQF Level 6. Internships and project-based learning components are embedded within the curricula. A distinctive characteristic of the programmes – according to HNCU – is their strong regional relevance. The university's strategic plan highlights a commitment to supporting regional economic and infrastructural development through practice-oriented higher education programmes. Accordingly, both programmes incorporate internships, industry engagement, and applied research components, providing students with early exposure to real-world challenges.

Furthermore, HNCU is pursuing internationalization goals, as evidenced by its application for international accreditation and exploratory efforts in developing joint research projects and exchange agreements with foreign institutions. These efforts reflect HNCU's ambition to modernize its curriculum and expand its international reach.

C Assessment of the Expert Panel

This accreditation report is based on the preliminary evaluation report for the degree programmes under review. As the evaluation report strictly adheres to the relevant general and subject-specific accreditation criteria, no changes have been made to the evaluative chapters. The expert panel has considered the statement and additional information of the HEI for its concluding remarks and recommended resolution.

The following sections of the report are based on the audit discussions the expert panel had with relevant stakeholder groups: University Leadership, Programme Directors, Students, Industry Representatives, Study Programme Faculty. In addition to the audit meetings, the expert panel relies on the documentation about the programmes, and the documentary respectively the regulatory framework Hunan City University has provided in the different stages of the procedure.

C-1 Objectives and learning outcomes of the degree programmes [ASIIN 1.1]

Description of the current status

The degree programmes in Civil Engineering and Water Supply and Drainage Science and Engineering (WSDE) at Hunan City University (HNCU) have defined intended learning outcomes in accordance with national educational guidelines and internal quality assurance structures. These outcomes are formally presented in the programme training plans (Appendix 1-1 for Civil Engineering; Appendix 1-2 for WSDE) and are stated to be mapped to Level 6 of the European Qualifications Framework (EQF).

For Civil Engineering, the training objectives emphasize foundational engineering knowledge, practical construction skills, ethical awareness, and innovation capabilities. For WSDE, the learning outcomes highlight competences in water system design, environmental sustainability, and interdisciplinary engineering skills relevant to urban infrastructure. The university asserts that the intended outcomes are derived from an analysis of regional development needs and stakeholder expectations.

The learning outcomes are reviewed and updated through a structured internal mechanism referred to as the “Rationality Evaluation of Talent Training Programmes” (Appendix 1-3). This includes internal self-assessments by programme leadership and teaching staff, as well as feedback from students, graduates, employers, and industry experts. According to the

SAR and supporting documentation, this evaluation takes place every two years and supports continuous programme improvement.

Evidence

- Appendices 1-1 and 1-2 outline 12 structured learning outcomes for each programme. For instance, CE graduates are expected to "systematically master the basic theoretical knowledge and engineering practice ability in the field of civil engineering," while WSDE graduates should be able to "design water supply and drainage systems with environmental awareness."
- Appendix 5-4 (Graduate Questionnaire Survey Analysis) presents feedback from recent graduates. For Civil Engineering, 86.8% of respondents agreed that the curriculum supported the development of professional competence, while 81.3% felt prepared for their job roles. However, only 63.2% indicated that the programme sufficiently covered emerging technologies in the field.
- Appendix 5-5 (Employment Quality Report – Civil Engineering) shows that most graduates are employed in design institutes, municipal engineering companies, and construction firms. 87.5% reported that their university education was moderately or highly relevant to their job content.
- Appendix 5-6 (WSDE Employment Situation) lists employment data from 2022–2024, showing consistent placement of WSDE graduates in municipal design firms, water conservancy units, and planning institutes. However, the report lacks disaggregated employer feedback on skill alignment.
- Detailed descriptions of learning outcomes and expected job roles can be found on the internet:
    a. Civil Engineering: https://tmgc.hncu.net/info/1258/5962.htm (in Chinese only)
    b. WSDE: https://szch.hncu.edu.cn/ASIINrz/Water_Supply_and_Drainage_Science_and_Engineering/pymb_Objectives.htm

Expert findings during on site interviews revealed that:

Students from both programmes were aware of the expected learning outcomes and described how these were communicated in the student handbook and discussed during the first-year orientation.

Teaching staff confirmed that the learning outcomes are embedded in course syllabi and are linked to module assessments. They also noted that adjustments to outcomes are made based on annual feedback from employers and course evaluations.

Industry partners emphasized that graduates demonstrate strong applied technical skills and problem-solving abilities, particularly in urban infrastructure contexts.

Programme coordinators explained the mapping of course contents to specific learning outcomes using a curriculum matrix, which is updated periodically.

Analysis and assessment of the expert panel

The expert panel finds that the objectives and intended learning outcomes for both programmes are clearly defined, publicly available, and aligned with the qualification level. The learning outcomes appropriately reflect the academic and professional expectations of undergraduate engineering programmes and show a strong focus on practical application and regional relevance.

The institutional quality assurance mechanism for evaluating learning outcomes – particularly the “rationality evaluation” system – appears systematic and inclusive, involving multiple levels of feedback and formal review by academic committees. This reflects a conscious effort toward continuous improvement and stakeholder-responsive curriculum development. The availability of graduate survey data and employment reports provides a valuable layer of empirical validation, confirming that a majority of graduates find employment in roles closely related to their academic training. Nonetheless, the panel also observes that employer input is largely anecdotal, with no structured employer satisfaction surveys or tracer studies provided directly correlating programme learning outcomes with industry needs.

Interview findings confirmed the institutional claims, with students and teaching staff demonstrating awareness of the learning outcomes and their implementation in teaching and assessment. Enterprise and industry representatives confirmed that the competences defined by the programmes correspond well with real-world requirements, particularly in areas like construction design, municipal engineering, and water system planning.

Based on the review of documents and audit discussions, the expert panel concludes that the learning outcomes are relevant, well-structured, and implemented effectively within the programmes. Apart from this, the experts find general references of feedback from stakeholders and the outline of internal review procedures, but no systematic or empirical results are presented to support alignment of learning outcomes with industry needs.

Final assessment of the experts after the statement of the Higher Education Institution regarding criterion 1.1:

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *substantially compliant* with the standard.

As the statement did not provide any further evidence concerning the HEI's feedback basis for the design and impact of the degree programme, but only a description of the process, the panel confirmed its initial recommendation (see below, chapter F, *E* 7). Exemplary evidence of the effectiveness of the process should be provided in a successive review for evaluation.

C-2 Name of the degree programmes [ASIIN 1.2]

Description of the current status

The degree programmes under review are officially titled:

- Civil Engineering (土木工程)
- Water Supply and Drainage Science and Engineering (给排水科学与工程)

These names are used consistently across internal university documents, public websites, and student records. Both titles correspond to standard nomenclature within the Chinese higher education system and are listed under the Ministry of Education's official catalogue of undergraduate programmes.

The SAR states that the programme names reflect the main academic and professional domains covered by the curricula. The English translations provided by the university are literal renderings of the Chinese titles. The programme descriptions provided on the respective school websites (e.g., https://tmgc.hncu.net/info/1258/5962.htm) also reflect the same designations.

Evidence

- Programme training plans (Appendices 1-1 and 1-2): Include the official programme names in both Chinese and English.
- SAR: Confirms that the names follow national regulations and are aligned with the content and objectives of the programmes.
- University websites: Use the same titles consistently in programme descriptions and promotional materials.

Analysis and assessment of the expert panel

The expert panel finds that the degree programme names are clear, nationally consistent, and appropriate in the educational context. They reflect the central themes and occupational alignment of the respective programmes.

However, the panel also recognizes that the translated titles may not fully correspond to international expectations, particularly those expressed in ASIIN's Subject-Specific Criteria (SSC) for Civil Engineering, Geodesy and Architecture. For instance, the programme "Water Supply and Drainage Science and Engineering" aligns broadly with ASIIN's civil/environmental engineering fields but does not have a direct equivalent in the nomenclature.

Following discussions with programme coordinators, the experts confirmed that, despite differences in terminology, the learning outcomes and professional orientation are substantively aligned with the main expectations outlined in the SSC. While the content is relevant, the experts observe that the terminology might cause confusion in an international context if left unexplained.

The experts conclude that to enhance the clarity of English-language documentation and translation, concise explanations of the programme scope and professional orientation should be included, particularly in cases where programme titles—such as Water Supply and Drainage Science and Engineering—may not correspond directly to common terminology in European Higher Education systems. While the English programme names are used consistently, the documentation currently lacks contextual descriptions that would support international comparability. This clarification is particularly important for the Water Supply and Drainage Science and Engineering programme, whose title does not have a direct analogue in many European academic frameworks but covers content and competencies that align well with environmental and municipal engineering.

To support its accreditation goals, experts further encourage to explicitly reference the relevant ASIIN Subject-Specific Criteria (SSC) in future documentation. This would help demonstrate how the content and learning outcomes align with internationally recognized disciplinary expectations and support the panel's ability to evaluate comparability across systems.

Final assessment of the experts after the statement of the Higher Education Institution regarding criterion 1.2:

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *partially compliant* with the standard.

The panel was grateful for the explanatory notes regarding the titles of the programmes. However, in their view these notes did not fully address the concern raised in their assessment. While focusing primarily on the compliance of the programme contents with the SSC, the panel's observation was essentially directed at the transparency of these contents, particularly for an international audience. The standard requires that the title of the programme fully reflects its curricular contents and is plausibly aligned to the defined learning outcomes. The panel did not dispute the programmes' success in preparing graduates for high-quality employment and projects both nationally and internationally. Nevertheless, the experts were convinced that external stakeholders' understanding of the characteristics of these programmes – especially where they differ from global engineering nomenclature – could and should be improved through an explanatory note, particularly in the Diploma Supplement. The panel maintained a slightly adjusted requirement (see below, chapter F, A 1).

C-3 Curriculum [ASIIN 1.3]

Civil Engineering Programme

Description of the Current Status:

The Civil Engineering programme at HNCU is structured over eight semesters and awards more than 230 credit points. The curriculum is detailed in Appendices 1-1, 1-10, and 1-11, including hour allocations, ECTS equivalents, and module descriptions. Students can choose from three specializations: Construction Engineering, Road and Bridge Engineering, and Urban Rail Transit Engineering.

The SAR outlines alignment with national educational standards and refers to the "Implementation Method of Rationality Evaluation" (Appendix 1-3) as a formal quality mechanism. The curriculum includes foundational sciences, engineering fundamentals, specialized courses, and practice-oriented modules.

Evidence:

- Appendix 1-10: Precise breakdown of hours and credit allocations per module, showing comprehensive coverage in engineering science, practice, and specialization.
- Appendix 1-11: Module handbook with course descriptions and learning content.
- Appendix 1-4: Composition of Teaching Guidance and Degree Evaluation Committees.

- Appendix 1-3: Institutional procedures for evaluating and improving curriculum relevance.
- SAR 1.3 and Interviews: Confirmation of OBE-based reforms and specialization structure.

Analysis and Assessment of the Expert Panel:

The expert panel confirms that the curriculum is comprehensive and logically structured, providing progression from foundational sciences to advanced civil engineering practice. The availability of three specializations enhances relevance and adaptability to diverse professional fields.

However, experts also note that while highly aligned with traditional civil engineering practice, the curriculum shows limited integration of emerging topics, such as digital construction tools (e.g., BIM), life-cycle analysis, and climate-responsive infrastructure.

Industry representatives suggested increasing specialization modules that address low-carbon construction, modular design, and resilience engineering, areas where current students reportedly lack exposure.

While a general evaluation framework exists (Appendix 1-3), evidence of systematic integration of graduate/employer feedback into curricular revisions was not clearly documented (see above C-1).

<u>Water Supply and Drainage Science and Engineering (WSDE) Programme</u>

Description of the Current Status:

The WSDE programme follows a similar 8-semester, 230+ credit structure. Core components include hydraulics, water chemistry, environmental microbiology, urban pipeline systems, and computer-aided water system design. The programme's structure is detailed in Appendices 1-2, 1-12, and 1-13.

It includes practice-based elements such as lab courses, internships, and project work. The teaching and degree committees are outlined in Appendix 1-5. Quality assurance follows the same institutional mechanisms as Civil Engineering (Appendix 1-3).

Evidence:

- Appendix 1-12: Hours and credits distribution showing a strong emphasis on environmental and engineering sciences.

- Appendix 1-13: Major course syllabi with applied focus on water treatment, pipeline design, and system modeling.
- Appendix 1-5: Structure of academic and curricular oversight committees.
- SAR 1.3 and Interviews: Reports of increasing industry demand and recent accreditation by the Ministry of Housing and Urban-Rural Development.

Analysis and Assessment of the Expert Panel:

The panel found the curriculum to be well aligned with municipal infrastructure engineering needs, offering solid preparation in technical and practical skills.

However, as with Civil Engineering, the panel finds limited integration of emerging themes, such as smart water systems, water reuse and circularity, and climate adaptation. Regarding the contents, the module on Computer Applications mentions Building Information Modeling (BIM), but its actual depth and integration across the programme were not evidenced in interviews.

The lab facilities are however more than adequate considering 24 hours access for students to use the software on site. While practical training is strong, there is potential to expand cross-disciplinary content (e.g., environmental law, digital monitoring systems) to match evolving sector needs.

Both study programmes exhibit a solid foundational structure with a clear progression of learning objectives aligned to professional competencies. The curriculum structure is well documented, and the allocation of credit hours and instructional content is transparent. The laboratory facilities are well equipped and students reportedly have 24-hour access to software tools, which enhances self-directed learning and applied skill development. The university has implemented internal quality assurance procedures, such as the rationality evaluation process, which reflect a commitment to curricular development.

However, structured stakeholder feedback, particularly from industry and alumni's, is not yet fully integrated into curriculum revision cycles. While both programmes incorporate practical and applied elements, the integration of emerging topics such as digital engineering tools and sustainability is not consistent across the curriculum. For example, although the WSDE programme includes a Computer Applications module that references BIM, interviews with teaching staff and students did not confirm its systematic use or integration into the broader programme. Furthermore, the panel observes that the curriculum has grown incrementally over time – with some new courses being added in response to

emerging needs – without corresponding reductions in older or overlapping content. Interview discussions with teaching staff confirmed that this practice has led to curriculum overload and occasional redundancy.

Another weakness remains in terms of internationalisation and student mobility: the limited and inconsistent use of technical English. Students should be further encouraged to apply English technical vocabulary in their coursework and academic discussions. Instructors with international experience could also contribute by incorporating English—on a voluntary basis—into lectures, homework assignments, and related activities. In addition, guest lectures in English, particularly from industry experts, would provide students with valuable exposure to authentic professional contexts. These measures would help ensure that the language skills students acquire in high school are strengthened rather than fading during their studies.

Overall, the panel therefore sees room to further embed contemporary engineering themes and tools to align the programmes more closely with international developments and sector-specific innovations. Additionally, the curriculum review could place more focus on streamlining contents and consolidating related modules/courses. It is also considered recommendable to improve students' English professional communication skills, as this will increase their alignment with evolving international knowledge fields and, consequently, their professional mobility as graduates.

Final assessment of the experts after the statement of the Higher Education Institution regarding criterion 1.3:

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *partially compliant* with the standard.

Curriculum structure review

The panel appreciated the comments provided by HNCU concerning the curriculum and its past and future development. It was noted that HNCU, in its statement, objected to the panel's observation that the curriculum had developed incrementally over time, resulting in redundancies and overlaps. However, HNCU's opposing view contradicted not only the evaluation of the experts but also what was reported during the on-site meetings, without being supported by new evidence. The panel therefore confirmed a related requirement, suggesting that HNCU should conduct a thorough curriculum review (see below, chapter F, A 2). If such a review has already been undertaken by the university, it would be helpful to provide evidence of this process at a later stage, including, for example, meeting protocols documenting the discussion of this issue.

New/advanced curriculum content

The panel noted HNCU's process of requesting feedback from alumni and employers and using it to keep the curriculum aligned with new technologies and developments in the field. The panel acknowledged the progress achieved in recent years through this approach. However, the experts also found that important technological developments—such as low-carbon technologies, sustainable construction methods, and digital planning tools—had largely gone unnoticed, despite the feedback process in place. While the feedback mechanism is an important source of innovation for the curriculum, the panel emphasized the lecturers' key responsibility to continuously monitor new research findings and technologies and to determine the extent to which they should be integrated into the existing curriculum. Overall, the panel confirmed a corresponding recommendation. (see below, section F, E 1).

English proficiency

As HNCU did not comment on this issue, the panel confirmed its recommendation to provide additional opportunities for students to improve their English language skills, particularly in the use of technical English (see below, chapter F, E 2).

C-4 Admission requirements [ASIIN 1.4]

Description of the current status

Admission to the Civil Engineering and WSDE programmes at HNCU follows the national framework governed by the Gaokao (National College Entrance Examination). As outlined in the 2024 Hunan City University Undergraduate Admissions Regulations (Appendix 1-6), subject-specific requirements, including a focus on Physics and Chemistry, are standard prerequisites. The university's Online Admission Site Management Regulations (Appendix 1-7) set clear procedures for data integrity, while medical eligibility is assessed via the Guidelines for Physical Examination in University Admissions (Appendix 1-8). Statistical data on regional enrolment trends is provided in Appendix 1-9, which shows steady enrolment across several provinces, with some variation in average entrance scores.

Evidence

- *Appendix 1-6 (Official Admissions Regulations)*: Entry subject combinations and threshold policies for majors.
- *Appendix 1-7*: Internal protocols for online application verification.
- *Appendix 1-8*: Health criteria for entry eligibility.

- *Appendix 1-9 (Enrollment Data)*: Student admission data segmented by province and year.
- SAR (Section 1.4): Describes overall process.

Analysis and assessment of the expert panel

The expert panel confirms that the admission requirements for both programmes are clearly defined and consistently implemented. The use of the "Gaokao" as the primary selection mechanism follows national regulatory practice and ensures that admitted students meet foundational academic standards appropriate for a bachelor's level qualification.

However, experts found no indication of formal mechanisms for recognising alternative qualifications or prior learning achievements (e.g., vocational pathways, international credentials, or partial credit transfers). While student mobility is not common in the Chinese context, the absence of such recognition procedures limits the university's alignment with ASIIN's expectations for transparent, equitable, and internationally comparable admission frameworks. In particular, there is no reference to frameworks such as the Lisbon Recognition Convention, which are essential for evaluating the comparability of learning outcomes and qualifications across educational systems.

HNCU has articulated internationalisation goals, including the development of joint programmes, international cooperation projects, and an interest in enhancing inbound and outbound mobility. The mentioned limitations concerning the recognition of learning at other institutions and prior learning, while not unusual in the national context in China, present a potential barrier for the university's ambitions to expand international collaboration and student mobility. Addressing this would help strengthen the institutional capacity to accommodate a broader diversity of student profiles in the future. In particular, the university is encouraged to consider referencing international recognition frameworks, such as the Lisbon Recognition Convention, in the evaluation of non-traditional or international applicant profiles.

Final assessment of the experts after the statement of the Higher Education Institution regarding criterion 1.4:

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *partially compliant* with the standard.

Recognition of learning achievements

From the panel's perspective, the university's note on the panel's concern regarding missing recognition rules and procedures was misplaced. The panel did not question the existence of admission requirements for foreign students. Instead, the experts lacked rules and procedures for recognising prior learning or learning achievements acquired at other universities, which could substitute for related modules or courses in the respective programme. The panel therefore continued to regard this as a requirement (see below, chapter F, A 3).

C-5 Workload and credits [ASIIN 1.5]

Description of the current status

HNCU applies a workload model where student learning outcomes are expressed in credit units consistent with national guidelines. The SAR (Section 1.5.2) explicitly states that the credit system is designed to align with the European Credit Transfer and Accumulation System (ECTS). Each student in the Civil Engineering programme is expected to complete approximately 870 hours of total workload per semester (equivalent to ~29 ECTS), and each Water Supply and Drainage Science and Engineering (WSDSE) student approximately 860 hours (~28.75 ECTS), based on a conversion of 30 hours = 1 ECTS.

The expert find evidence supporting that both programmes are designed to award the equivalent of approximately 230–232 ECTS over four years of study. The SAR includes disaggregated data showing the number of contact and self-study hours per module/course. These are summarized in Tables 1-3 (CE) and 1-4 (WSDSE) below and supported by detailed appendices.

Evidence

- Appendix 1-10 (The Number of Hours and Credits for Each Module in Civil Engineering): This appendix provides a breakdown of contact hours, self-study expectations, and ECTS-equivalent credit allocations per course in the Civil Engineering programme.
- Appendix 1-11 (Modules Handbook in Civil Engineering)
- Appendix 1-12 (The Number of Hours and Credits for Each Module in WSDE): Contains the corresponding workload data for the WSDE programme.
- Appendix 1-13 (Syllabus of Major Courses for WSDSE)

- SAR (Section 1.5): Describes that one credit equals 16 class hours and mentions adherence to national workload standards. However, it does not clarify how total student workload (contact + self-study) is calculated or mapped to international standards such as ECTS.

Analysis and assessment of the expert panel

Civil Engineering (CE)

The expert panel found the credit allocation to be detailed and internally consistent. Students are expected to complete a relatively uniform workload per semester. However, interviews revealed that students experienced high workload pressure, particularly in the final year due to the concurrent scheduling of the graduation design project, practical work, and the written thesis. This accumulation of workload raises concerns about peak semester intensity, despite balanced credit distribution on paper.

Additionally, during interviews several students reported that the demanding course schedules in later semesters posed challenges for those intending to prepare for postgraduate entrance examinations, as the heavy workload limited their capacity to dedicate time to independent preparation.

Although the SAR outlines estimated student workload and an ECTS-conversion model, experts found no empirical documentation (e.g., workload surveys, statistical time tracking) to validate whether the assumed workload hours reflect actual student experiences.

Water Supply and Drainage Science and Engineering (WSDSE)

The experts find that the WSDE programme presents similar documentation and structure. Based on the SAR, students are expected to complete 860 hours per semester, equivalent to 28.75 ECTS. Review of the materials and conclusions drawn during interviews shows module structures are transparent, and the credit allocations appearing balanced across semesters.

However, students and instructors noted that laboratory and field-based modules are particularly demanding, and final semester requirements again include multiple culminating tasks. The panel found no systematic evidence that actual student workload is monitored or that adjustments are made based on formal feedback mechanisms, despite informal feedback channels described in the SAR.

Summary assessment

Apart from the aforementioned programme-related concerns, the expert panel noted that, particularly in foundational subjects, theoretical content has increasingly been assigned to

self-study components with reduced classroom teaching. Students are thus expected to independently master critical material. They do not receive structured instructional support. This could jeopardise consistent learning outcomes.

Moreover, both student and faculty interviews revealed that the curriculum has grown incrementally over time. New modules reflecting technological developments have been added, but older or overlapping content has rarely been removed or revised. This practice has led to a layered accumulation of content, producing a curriculum that is at risk of bloat. Students reported that this dynamic contributes to an overloaded final year, with multiple culminating tasks – such as practical training, thesis work, and graduation design projects – converging within the same semester. Interestingly, programme leadership remarked that they "need more credits," revealing a possible internal misalignment between academic planning and operational feasibility. This apparent contradiction – between faculty perception of a need for additional credit-bearing content and expert observations of curriculum overload – underscores the need for a more coherent credit strategy, better aligned with student workload realities and pedagogical goals.

In summary, the experts recognize HNCU's extensive efforts to approximate the ECTS and applaud the efforts to provide transparency in credit allocation. However, the panel found no systematic workload validation mechanisms in place, such as structured workload surveys or empirical time-use data presented. Combined with the absence of formalized credit transfer frameworks and the observable compression of intensive academic requirements into the final semesters, the current system would benefit from greater flexibility and systematic workload validation. While the expert panel noted some positive practices – such as time log records in the exam tutoring halls that provide insight into student engagement – these remain isolated examples. A more comprehensive, structured approach to empirically monitoring student workload would enhance transparency and support the ongoing alignment of credit values with actual learning effort.

Final assessment of the experts after the statement of the Higher Education Institution regarding criterion 1.5:

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *partially compliant* with the standard.

The panel was grateful for HNCU's comments on the workload and credit issue. Regrettably, the university only emphasized that the monitoring instruments in use were functional and, to date, had not indicated structural pressures in the final year. This, however, was contradicted by what the panel heard from students during the audit. Given that the European Credit Transfer and Accumulation System (ECTS) focuses on an adequate and reason-

able calculation of student workload to optimize the learning experience – unlike the Chinese credit system, which has a somewhat different focus – the panel continued to consider the establishment and implementation of a systematic and empirical workload validation process to be a requirement (see below, chapter F,A 4).

Similarly, the panel confirmed its recommendation to monitor the curriculum structure of the final year to prevent workload peaks during this decisive study phase. The results should be reported to successive reviewers in a potential re-accreditation procedure (see below, chapter F, E 3).

C-6 Didactics and teaching methodology [ASIIN 1.6]

Description of the current status

From a methodological perspective, teaching is carried out primarily through a combination of traditional lectures, seminars, and laboratory sessions. Elements of modern pedagogy – such as flipped classrooms and simulation-based learning – have been adopted selectively. Internships are fully embedded in the upper semesters, ensuring that all students gain relevant field experience.

Instruction is predominantly in Chinese, although some core materials are available in English. Digital tools are used primarily for distributing resources and managing assignments; however, the development and integration of blended or online instructional models remain limited.

Faculty members are actively encouraged to design original, project-based learning experiences. Many of these initiatives are showcased in demonstration laboratories, where student research groups present their outcomes through visual displays.

Significantly, HNCU has built strong links with industry, hosting enterprise partners directly on campus. These companies collaborate with students on real-world pilot projects and frequently transition them into professional roles post-training. Experts noted that laboratory raw materials are often donated by these partners, enhancing the authenticity and relevance of student experiments.

Evidence

- Appendix 1-11: Modules Handbook in Civil Engineering and Appendix 1-13 (Syllabus of Major Courses for WSDSE), – didactic structure and methods for individual modules

- Appendix 3-13: List of Main Internship and Practical Teaching Bases, documenting practical learning environments.
- Appendix 3-11: Laboratory Introduction Handbook
- Appendix 3-15: Cooperation Agreement with industry partners
- Audit: Statements from faculty, students, and industry stakeholders and notes from facilities tour

Analysis and assessment of the expert panel

The expert panel commends HNCU for its strong commitment to practice-oriented teaching, supported by extensive laboratory infrastructure, motivated faculty, and active industry engagement. The institution offers diverse, high-quality facilities – including demonstration labs, on-site enterprise-integrated workspaces, and a culture of faculty-led project development – that provide students with valuable hands-on experience throughout their studies. Faculty members are clearly dedicated to fostering student learning, as evidenced by the accessible exam-preparation support, flexible tutoring models, and involvement in research-based student projects.

However, certain limitations were also observed. Despite a strong presence of physical experimentation, interviews revealed that most stakeholders equated PBL with "practical training," rather than critical thinking or interdisciplinary scenario-based learning. Only one Civil Engineering student made a notable connection between theoretical knowledge and real-world application, referencing earthquake-resistant design considerations.

This finding suggests that while HNCU excels in applied and practice-oriented teaching, the programmes could benefit from expanding analytical and reflective elements in early-stage coursework. Increasing the use of real-world engineering scenarios, especially in the basic sciences, would support a more balanced and comprehensive didactic approach.

In addition, the panel encourages the university to generally consider how it could strengthen the interdisciplinary integration of its didactic approach – particularly within the framework of compulsory national modules such as ideological, historical, and political education. While these courses are mandated by national regulation and form a standard part of undergraduate curricula in China, the experts see potential to leverage them as platforms for reinforcing programme-relevant competencies. For example, embedding basic engineering ethics, sustainability discourse, or historical case studies in civil infrastructure could help align these courses more closely with the students' academic and professional trajectories early on.

Such adjustments would not only increase the relevance of mandatory content but also support the university's objective to promote analytical and critical thinking. This approach may serve as a constructive way to introduce discipline-specific reflection early in the curriculum and enrich the overall coherence of the educational experience.

Recommendations

Final assessment of the experts after the statement of the Higher Education Institution regarding criterion 1.6:

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *substantially compliant* with the standard.

The panel acknowledged the university's efforts to diversify and innovate its teaching methods but still saw room for further improvement in this area. Therefore, it confirmed initial recommendations regarding the integration of problem-based and case-based learning formats, as well as the contribution of the general courses to achieving the intended learning outcomes, remained unchanged (see below, chapter F, E 4 and E 5).

C-7 Exams: System, concept and organisation [ASIIN 2]

Description of the current status

HNCU outlines a comprehensive examination system that includes midterm and final exams, coursework assessments, and practical evaluations for both the Civil Engineering and WSDE programme. According to the SAR, assessment methods are closely linked to the intended learning outcomes of each module and reflect a balanced mix of theoretical and practical competencies. Exams may be in written, oral, or project-based form and are designed by course instructors, subject to review processes as per institutional policy.

Faculty maintain significant autonomy in defining assessment content and formats, which must align with the syllabus and module goals. Examination papers are subject to internal review before administration, and a formal system for test paper analysis is implemented post-examination to evaluate outcomes and inform teaching improvements.

HNCU also has documented procedures for grade inquiries and grade correction appeals (Appendix 2-8), ensuring transparency and academic integrity.

Evidence

- Appendix 2-1 (Catalog of Teaching Evaluation System Regulations): Outlines the institutional framework for evaluating teaching effectiveness and learning outcomes

- Appendix 2-2 (Measures for Course Assessment and Grade Management): Details procedures for administering, scoring, and managing examinations and coursework
- Appendix 2-3 (Course Proposition Review Form): Demonstrates internal quality control over assessment design, ensuring that proposed exams reflect module objectives
- Appendix 2-4 (Student Grade Registration Form): Provides an official record of student assessment results, underpinning transparency and integrity in grading
- Appendix 2-7 (Course Examination Paper Analysis Table): Offers concrete examples of how exam outcomes are monitored and used for quality enhancement
- Appendix 2-8 (Grade Inquiry and Review Form): Demonstrates that students have formal mechanisms for appealing and reviewing grades
- Appendix 2-9 (Graduation Comprehensive Training Task Book): Illustrates structured assessment of final-year student competencies through comprehensive projects
- Appendix 2-6 (CE Graduation Project Management Regulations): Defines clear guidelines for planning, supervision, and assessment of the final thesis/project

Analysis and assessment of the expert panel

The expert panel finds that HNCU's examination system is largely aligned with the ASIIN standards, demonstrating a coherent integration of various assessment formats tailored to learning outcomes. Written and practical exams are commonly used, supported by clear institutional guidelines for assessment design, grading, and appeals. The panel acknowledges the systematic use of instruments such as the Course Examination Paper Analysis Table (Appendix 2-7), which reflects HNCU's efforts to ensure continuous improvement in test quality and student achievement tracking.

For example, in the course "Principles of Concrete Structure Design," several semesters' worth of analysis showed evolving grade distributions, moving from high failure rates to more balanced outcomes. These findings were accompanied by reflective commentary on potential improvements to teaching and assessment practices.

The graduation project and thesis assessment processes, as documented in Appendices 2-6 and 2-9, demonstrate a structured and outcome-oriented approach. These documents specify clear expectations regarding deliverables, assessment criteria, submission timelines, and defence procedures. During the audit interviews, the expert panel confirmed that

HNCU integrates external stakeholders into the final thesis process, with industry representatives often serving as co-supervisors alongside academic staff. This practice enhances the relevance of final projects to real-world professional contexts. While some students noted competition for placements at more sought-after internship sites, faculty and university leadership affirmed that institutional mechanisms are in place to ensure that every student secures a suitable internship placement.

Stakeholder interviews provided additional positive insights. Company partners noted that student competencies, particularly in practical work, were well assessed through cumulative design and internship components. Students appreciated the availability of pre-exam tutoring and the open feedback channels for grade review and reassessment requests.

On the other hand, the expert panel notes that, aside from grade posting on the online student portal, there are no formal mechanisms for providing structured, formative feedback on assessments. However, a system of informal academic support that is deeply rooted in the culture does exist. Students and lecturers routinely use WeChat as a primary communication tool – functionally equivalent to email in other contexts – to discuss coursework and assessment feedback instantly. This platform allows for timely clarification of examination results, opportunities for re-examination, and instructor guidance, reflecting a responsive and accessible feedback culture within the institutional context.

While the documentation reviewed (e.g., Appendices 2-3 and 2-7) shows that mechanisms exist for reviewing exam content, structure, and performance (such as proposition review forms and examination paper analysis tables), the practical implementation of these quality control steps remains inconsistently visible. Interviews with academic staff confirmed that some departments follow rigorous review practices – including peer checks of exam papers and reflective evaluations of student outcomes – while others rely more informally on individual instructor judgment.

Moreover, while grade distribution analysis (Appendix 2-7) identifies trends such as high failure rates or uneven performance, it is not always clear how or whether these trends lead to concrete follow-up actions, such as redesigning assessments, offering supplemental instruction, or adjusting teaching approaches. For example, when the topic of exam questions banks came up in the interviews, it was revealed that they are updated regularly, and questions are not reused after three years. Experts observed that while there is a functioning system in place, continuous improvement could be more systematically documented and embedded procedurally.

Thus, the expert panel suggests that clearer, standardised documentation of exam quality control processes, including the actions taken in response to performance analyses, would

enhance transparency and support the university's overall quality assurance objectives. Establishing a central repository or digital tracking system for examination formats, assessment results, and improvement actions may support this aim.

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

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *fully compliant* with the standard.

The panel was grateful for HNCU's explanatory notes on its examination feedback and documentation system. They noted that, according to the university's explanation, exam results are processed formally through an escalating channel including the examiners, department directors, vice dean in charge of examinations, and the University Academic Affairs Office. On the other hand, this documentation system places students in an unfavourable position to receive early feedback on their exam results and performance. This sheds new light on the WeChat communication, which was being presented as a supporting instant messaging tool to alleviate the daily teacher-student interactions, in this case in relation to examinations. Even though the experts' impression of an inconsistent implementation of the presented exam quality control mechanisms was not entirely dispelled, the panel gave HNCU's representation the benefit of the doubt. Consequently, the panel considered immediate actions of HNCU in this regard dispensable. However, the experts suggested that HNCU should work towards a more consistent implementation of the established quality assurance rules and procedures relating to examinations.

C-8 Resources [ASIIN 3]

Description of the current status

Staff and staff development [ASIIN 3.1]

According to the SAR, HNCU employs a competent and diverse academic staff for both the Civil Engineering and WSDE programmes, with an average student to teacher ratio for the academic year 2023/24, (18.4 : 1), and (11.4 : 1) respectively. The Civil Engineering programme lists 38 teaching staff (5 professors, 11 associate professors, 22 lecturers). Many hold master's degrees and a number have doctoral qualifications. Several are certified engineers or have documented industry experience. The WSDE programme lists 25 teaching staff (4 professors, 8 associate professors, 13 lecturers). Similar to the CE, multiple staff

members have experience of conducting research or working on applied projects in collaboration with regional enterprises. Most of these staff members hold either a Master's degree or a PhD.

To support continuous professional development, HNCU has implemented a formal mentorship system for early-career lecturers. New teachers verified in interviews that they are paired with experienced faculty mentors to enhance their teaching capacity and integration into academic life. There was also evidence of a teaching award scholarship at the Hunan provincial level, and several others have been acknowledged for leading provincial-level quality courses and textbook development on site at the history museum of the college on site.

The evidence of how teaching workload is calculated and distributed, including the integration of teaching achievements into performance evaluations, was substantial. Experts noted that while staff express overall satisfaction with institutional support and collegial collaboration, there were consistent remarks – in both group discussions and individual interviews – that the expanding course content has led to increased teaching responsibilities.

Both programmes boost multiple achievements in curriculum construction, including offline courses recognized at the provincial level (e.g., "Building Water Supply and Drainage Works" for WSDE). Faculty members have received awards such as the Provincial First Prize and National Second Prize for teaching excellence.

Student support and student services [ASIIN 3.2]

HNCU provides a framework for student academic and personal development. Every student is assigned an academic advisor who offers continuous guidance, including assistance with course planning, exam preparation, and the organization of internships. Communication between students and teaching staff is facilitated through digital platforms, notably WeChat, which serves as a culturally embedded and widely accepted academic tool for feedback, clarification, and ongoing dialogue.

Academic support is particularly strong during examination periods, with structured tutoring sessions running daily from 9:00 to 17:00 in the week prior to exams. These sessions offer self-directed review with lecturers available on-site for real-time support. Additionally, student representatives are assigned to individual courses to relay concerns and facilitate peer-to-peer interaction.

While structured psychological counselling and career advisory services are formally available, student feedback indicates a perceived lack of visible or accessible mental health support, particularly in response to high-pressure phases in the final semesters. The SAR confirms the existence of a Psychological Counselling Center, although this was not observed during the site visit, and its services were not prominently featured on the university's website or during the audit.

Students undertaking internships benefit from reported close enterprise-university collaboration. External supervisors from companies maintain communication with HNCU academic advisors and provide feedback on student performance and engagement. This dual-supervision model supports is supposed to target student development and often results in job offers upon graduation.

Supportive infrastructure is portrait to further enhances the student experience: motivational displays and access to modern lab spaces encourage practical learning. Computer and internet facilities are widely available, and the university maintains a campus shuttle system to ease student mobility. HNCU reports over 90% of undergraduates reside in on-campus dormitories, contributing to a cohesive and accessible support environment.

Nonetheless, information on services such as counselling, mobility, and student advocacy remains limited and is inconsistently published online in English, potentially reducing accessibility for international students and stakeholders.

Funds and equipment [ASIIN 3.3]

HNCU demonstrates consistent and targeted investment in both financial and material resources that support teaching and learning for the Civil Engineering and WSDE programmes. According to Appendix 3-16, the Civil Engineering programme received cumulative educational investment of over RMB 12.5 million across five years, with annual peaks of RMB 3.2 million, directed toward laboratory modernization, teaching innovation projects, and capacity-building initiatives. Appendix 3-17 confirms parallel funding allocations at the programme-wide level for teaching reform, instructional tools, and digital infrastructure development.

The university has developed an extensive laboratory infrastructure as detailed in Appendix 3-11, comprising more than 13 dedicated laboratories. Facilities include the Concrete Materials Testing Lab, the Structural Seismic Simulation Lab, and the Hydraulics and Fluid Mechanics Lab. These are equipped with high-capacity mixers, digital strain gauges, dynamic pressure testing machines, sedimentation tanks, and CAD-enabled design workstations.

Enterprise partnerships with industry collaborators like Changsha Engineering Group and regional water utilities, or China State Construction Railway Investment Engineering Group Co., Ltd., and the China Railway Beijing Bureau contribute funding, raw materials (cement, steel, pipes), and pilot projects hosted in the Demonstration Laboratory, which also functions as a recruitment pipeline through internship-based transitions. Funding has supported software licensing and instructional tools, though the incorporation of digital platforms – such as simulation and blended learning systems – remains modest.

Evidence

- Appendix 3-1 / 3-2: CVs of Faculty (CE/WSDE) – Confirms qualifications, teaching and research roles, and staff composition
- Appendix 3-3 to 3-6: Teaching awards, textbook publications, research projects – Provide evidence of academic achievement, curriculum contributions, and staff development
- Appendix 3-7: Workload Calculation Guidelines – Shows institutional policy on workload allocation for teaching and research activities
- Appendix 3-8 / 3-9: Mentorship Programme & List of Mentors – Details structured support for junior academic staff, promoting professional development and teaching quality
- Appendix 3-11: Laboratory Infrastructure Overview – Lists laboratory facilities, equipment, and usage relevant to practical teaching in both programmes
- Appendix 3-13 / 3-14: Internship Bases and Enterprise Partners – Confirms the existence of strong practical learning environments and active collaboration with external stakeholders
- Appendix 3-15: Cooperation Agreement (WSDE) – Demonstrates formal arrangements with companies for student training and industry engagement
- Appendix 3-16 / 3-17: Financial Overview – Offers data on programme-specific funding over five years

Analysis and assessment of the expert panel

Staff and staff development

The expert panel confirms that the Civil Engineering and WSDE programmes are staffed by academically and professionally qualified faculty, with a mixture of experienced senior professors, mid-career lecturers, and young academic staff. Many hold practical engineering

experience, and their qualifications and distribution were corroborated by evidence in Appendices 3-1 and 3-2. Moreover, the university actively supports academic growth through structured mentorship initiatives for junior faculty (Appendices 3-8 and 3-9), and participation in national and provincial research projects (Appendices 3-3 to 3-6).

However, during interviews with faculty, concerns were raised regarding the sustainability of the teaching workload. Multiple lecturers noted that the expanding curriculum, particularly with the inclusion of newer topics such as BIM, digital construction, and international content, was increasingly difficult to manage alongside their own research and professional development responsibilities. This imbalance could negatively affect the ability of staff to maintain the high quality of instruction.

The experts explicitly acknowledge the university's regular curriculum planning and faculty development activities. However, in light of the concerns raised by staff during the audit, the panel strongly recommends that HNCU reviews staff workload allocations in light of curriculum growth, and ensures that sufficient institutional support is in place. This could be achieved by hiring new staff or changing how time is used. The aim should be to enable faculty members to contribute meaningfully to both teaching and their own academic advancement, despite an overall increase in teaching responsibilities.

Student support and student services

The expert panel confirms that HNCU provides comprehensive and culturally appropriate academic support structures.

Thus, students reported that academic advisors, who are assigned from their first year, offer continuous guidance on academics, career pathways, and personal development. The dedicated tutoring halls before exams (9 am–5 pm) are staffed by lecturers and function as accessible spaces for self-directed review with on-site support; these arrangements were praised during student interviews.

WeChat is extensively used for academic mentoring – serving the role of email or digital office hours in Western contexts. Students commented that "We can ask lecturers any time on WeChat," highlighting the ease of this culturally embedded feedback channel; lecturers also confirmed many students utilize the resource and praise its ease for communication instantly.

According to the SAR (Section 3.2.2), HNCU does indeed maintain a Student Affairs Department responsible for mental health and well-being services, though the panel was not able to directly visit the office. Students raised during interviews that access to psychological counselling appeared limited or not well publicized. This perception suggests an opportunity for HNCU to clarify and actively promote mental health support services.

In addition, interviews with all stakeholder groups and the SAR reflect a robust alignment with industry through dual-mentor systems – academic advisors paired with company mentors – and frequent site-based curriculum feedback sessions, ensuring that academic advising also serves professional integration and workforce readiness.

The expected student support services are not fully reflected on the publicly accessible university website. Notably, the Student Guidance Office page (e.g., at https://www.hnie.edu.cn/xysh/xsgz.htm) is only available through the Chinese Page, and lacks detailed information, which may hinder awareness among students and external stakeholders.

Funds and equipment

The panel found HNCU's physical infrastructure and equipment base to be comprehensive and well-aligned with curricular goals. Experts toured multiple laboratories and confirmed their strong technical capacities, including the use of current industry-standard tools. The Demonstration Laboratory, in particular, serves as a best-practice model for industry-linked education. Experts confirmed via interviews that companies contribute materials and offer on-site project opportunities, enhancing both learning and recruitment pipelines. Thus, the overall availability and utilisation of facilities were found to be exemplary for both programmes.

Experts confirm that the physical resources are well integrated into didactic approaches and effectively link theoretical education with real-world applications. Students benefit from hands-on training environments that reflect current engineering practice, ensuring that facilities are not only available but also pedagogically effective.

However, the panel noted a recurring request from both students and staff during audit interviews: the need for improved climate control in teaching laboratories. Several labs lacked air conditioning and relied solely on ceiling fans, which were reported to negatively impact student concentration and the stability of certain experiments – particularly during warmer months. Experts concur that ensuring appropriate environmental conditions is vital for maintaining both student well-being and instructional quality, especially in high-use laboratories. At the same time, the experts are convinced that the university will address this limitation to further elevate the already strong teaching and learning environment at HNCU. They suggest taking steps to improve learning conditions, particularly in frequently used laboratories, such as installing air conditioning.

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

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *partially compliant* with the standard (holistic judgment on the standard 3; 3.1: substantially compliant; 3.2: partially compliant; 3.3: fully compliant).

Staff resources and staff development (ASIIN 3.1)

The panel appreciated HNCU's additional comment on the university's teaching load reduction policy. However, the provisions of the cited formal regulation (Document No. Xiang chengyuan fa [2023] 35) do not fully address the concerns raised by the panel and faculty staff. The panel found it difficult to see how the university intends to address the situation described by faculty, namely the increasing demands arising from the integration of new courses, additional preparatory tasks, and extended student support services. At the same time, the panel acknowledged that staff concerns were primarily directed at potential future bottlenecks, as there are currently no clear indicators suggesting that the university would not respond appropriately. Therefore, no immediate action is required. Consequently, the panel decided to omit its initial requirement on this matter. Nevertheless, HNCU is encouraged to closely monitor lecturers' teaching load to ensure a balanced distribution, allowing sufficient time for professional development and research activities. This aspect of institutional governance directly affects the quality of teaching and learning.

Transparency and public visibility of student support services (ASIIN 3.2)

The expert panel positively noted HNCU's sustained efforts to make information about its support services accessible to all students. However, the additional presentation provided to the experts did not include the most obvious source of information for stakeholders: the HNCU websites on student support services. WeChat communication was again highlighted as one of the three pillars of the university's publicity strategy, alongside several offline instruments. Since improving the related website information could easily enhance the accessibility and visibility of the student support services – which the panel regards as highly commendable – the panel decided to maintain an initial requirement to this end (see below, chapter F, A 5).

C-9 Transparency and documentation [ASIIN 4]

Description of the current status

Module descriptions [ASIIN 4.1]

Module descriptions for both degree programmes are available in English and included as part of the SAR in Appendices 1-11 (Civil Engineering) and 1-13 (Water Supply and Drainage Science and Engineering). These documents provide structured information on intended learning outcomes, teaching and assessment formats, workload distribution, and allocated credit points.

Diploma and Diploma Supplement [ASIIN 4.2]

The Diploma Supplement (Appendix 4-2) follows the formal structure of the European template and includes references to ECTS equivalence. However, experts observed inconsistencies in naming and content (e.g., references to “Chemical Engineering” in Civil Engineering documentation), suggesting that a generic template may have been used. Furthermore, the document lacks student-specific transcript information and does not provide module-level details or practical work records that would facilitate international comparability.

Relevant rules [ASIIN 4.3]

According to the SAR and university website, the rights and obligations of students are outlined through links to official programme objectives and documentation. However, experts note that access to these materials, especially in English, is inconsistent or restricted outside of China (e.g., some links redirect to WeChat-based platforms). Key documents such as examination regulations, appeal procedures, and quality assurance policies are available and accessible online solely under the ASIIN Accreditation homepage section.

Evidence

- Appendix 1-11 – Modules Handbook in Civil Engineering: Provides structured module descriptions including credit hours, learning outcomes, teaching forms, and assessment methods
- Appendix 1-13 – Syllabus of Major Courses for WSDE: Details of major modules similar in structure and content to Appendix 1-11
- Appendix 4-1 – Diploma and Bachelor’s Degree Certificates: Samples of final diploma documents awarded to graduates

- Appendix 4-2 – Diploma Supplement: Template document aligning with the European format, includes general ECTS credit equivalence and programme content summary
- Appendix 2-1 – Catalogue of Teaching Evaluation System Regulations: Overview of institutional rules on academic evaluation, student rights, and responsibilities
- University Programme Webpages:
    a. Civil Engineering: https://tmgc.hncu.edu.cn/ASIINrz/Civil_Engineering/pymb_Objectives.htm
    b. WSDSE: https://szch.hncu.edu.cn/ASIINrz/Water_Supply_and_Drainage_Science_and_Engineering/pymb_Objectives.htm

Analysis and assessment of the expert panel

The expert panel concludes that the programmes demonstrate a generally transparent documentation system in line with the standard, particularly regarding the presentation of curriculum structure and course content.

Module descriptions

Module descriptions for both programmes, as presented in Appendices 1-11 (Civil Engineering) and 1-13 (WSDE), are detailed and well-structured. They include core elements such as learning outcomes, credit points, teaching formats, assessment modes, and prerequisite knowledge. This documentation provides a solid foundation for academic planning and comparability.

The panel confirmed through interviews with students and faculty that these module handbooks are used actively for curricular orientation, and students were aware of their academic obligations and module content. However, experts also noted that these materials are not always easily accessible online, in particular in an English version, limiting transparency for external audiences and potential international stakeholders.

Diploma Supplement

Regarding the diploma documents, the submitted Appendix 4-2 Diploma Supplement follows the European template format and provides general credit equivalence to ECTS (e.g., 219–230 ECTS). However, as previously noted, experts found that this document appears to be a newly created template, rather than one routinely issued to graduates. It lacks per-

sonalized transcript information and includes inconsistencies – such as mismatched programme titles (e.g., references to Chemical Engineering) – indicating that further refinement is needed for alignment with the standard.

Relevant rules

Furthermore, the Diploma Certificate (Appendix 4-1) and institutional rules (Appendix 2-1) provide necessary information on completion standards and student rights. Yet, the panel found that key student governance policies, support services, and academic regulations are only available in Chinese and not fully visible on the university's English websites. Experts agree that providing official documentation in English would increase institutional transparency, particularly for potential international students, and accordingly suggest doing so.

In conclusion, the expert panel acknowledges that the programmes meet the formal expectations. Nevertheless, HNCU may consider supplementing its WeChat-based communication with platforms that are more accessible internationally. Given that much quality-related information and student guidance is disseminated via WeChat (a region-restricted application), the university could explore parallel communication channels (e.g., public university websites or bilingual reports) to strenghen transparency and accessibility for international stakeholders in line with the ASIIN standards.

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

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *partially compliant* with the standard (Holistic judgment on standard 4; 4.1 fully compliant; 4.2 partially compliant; 4.3: substantially compliant).

Diploma Supplement (ASIIN 4.2)

As HNCU did not comment on the panel's suggestion on the Diploma Supplement highlighting personalised transcript information and consistent terminology aligned with programme-specific details, the panel reinforced a related requirement (see below, chapter F, A 6).

Platform Communication (ASIIN 4.3)

As HNCU did not comment on the panel's recommendation to consider supplementing its WeChat-based communication with more internationally accessible platforms, the panel confirmed a related recommendation (see below, chapter F, E 6).

C-10 Quality management: Quality assurance and development [ASIIN 5]

Description of the current status

HNCU has implemented a formal quality assurance system that encompasses both administrative and academic levels. Internal processes for planning, implementation, and review are documented in the SAR and supported by process manuals, such as Appendix 5-1, which outlines structured quality assurance mechanisms across the course lifecycle, including course design, delivery, and review.

Student evaluations play a central role in the internal quality assurance cycle. As documented in Appendix 5-2, HNCU employs a standardized form to collect student feedback on teaching effectiveness and course quality. These evaluations are conducted regularly and results are reviewed at the departmental level for follow-up.

Graduate and employer feedback is also collected through surveys (Appendices 5-4 to 5-6). These instruments assess programme relevance, employment outcomes, and graduate preparedness. The SAR and interviews confirm that this feedback is periodically analyzed, though the link between data and curriculum action varies in formality.

Evidence also shows that faculty-led revisions, such as the addition of modules related to evolving environmental regulations in water management, have been made in response to changing industry demands. Interviewees indicated that regular feedback is solicited from company stakeholders (e.g., every semester or annually), contributing to curriculum updates and the formation of internship partnerships.

Evidence

- Appendix 5-1: Process Quality Management and Assurance Methods – Describes quality assurance cycles including course planning, implementation, and evaluation
- Appendix 5-2: Student Teaching Evaluation Forms – Demonstrates standardized evaluation of teaching and feedback structures
- Appendix 5-3: Course Objectives Questionnaire (e.g., Road Survey and Design) – Shows course-specific evaluations used to refine objectives
- Appendices 5-4 to 5-6: Graduate and Employment Surveys – Provide quantitative and qualitative insights into post-graduation outcomes and employer satisfaction

Analysis and Assessment

The expert panel finds that HNCU has established a formal and cyclic approach to quality management, particularly in relation to course delivery and teaching evaluations. The structured tools – such as standardized student evaluation forms and course feedback mechanisms – reflect a conscious effort to implement a data-informed quality culture. Course-level reviews (e.g., the Road Survey and Design feedback in Appendix 5-3) illustrate targeted responsiveness, and the presence of recent revisions to course content – particularly in water resource management – demonstrates curricular agility.

Faculty interviews confirmed that feedback is routinely gathered and discussed at departmental meetings. However, the expert panel noted that the translation of feedback into action – especially at the structural or programme-wide level –appears informal and dependent on individual initiative. While graduate and employer surveys are conducted, a systematic process for closing the feedback loop is not always apparent. For example, although surveys revealed interest in enhancing digital competencies and expanding interdisciplinary content, experts could not identify curriculum changes tied directly to such findings. Similarly, while teaching evaluations are used for performance reviews, students reported uncertainty about how their feedback leads to visible improvements.

Moreover, while internal evaluations exist, there is limited evidence of comprehensive quality assurance at the institutional level that includes benchmarking against national or international standards. External stakeholders, such as industry partners, are consulted regularly, but their role in formal review panels or curriculum governance could be further institutionalized and documented. Building on the solid foundation of employer engagement, HNCU is encouraged to more formally involve alumni and international academic partners in its quality assurance procedures. This would support broader (international) benchmarking and enhance responsiveness to evolving academic and professional standards.

To conclude, the panel notes that while data collection practices are embedded, data utilization for strategic planning, long-term development, and policy refinement remains underdeveloped. HNCU has an opportunity to document and showcase more effectively how quality data leads to measurable improvements and to make this information publicly available to stakeholders.

Final assessment of the experts after the statement of the Higher Education Institution regarding criterion 5:

Based on the preliminary assessment and considering the statement of the university, the panel concluded HNCU to be *substantially compliant* with the standard.

The panel acknowledged the processes HNCU has established and implemented, as well as the instruments already in use for the quality assurance of the university's degree programmes. While HNCU's additional presentation demonstrated that these processes are valuable and appropriate, it did not provide new evidence to address the shortcomings in the practical implementation of the quality assurance system that the experts identified in their initial assessment.

The panel therefore strongly supports the university's further efforts to strengthen its quality assurance system and confirms related medium-term recommendations (see below, chapter F, E 8 and E 8).

D Additional Documents

No additional documents needed.

E Statement of the Higher Education Institution (22.09.2029)

The university provided a detailed statement, which is referred to in the final assessment of the experts at the end of each chapter (grey boxes).

F Summary: Expert recommendations (20.10.2025)

Taking into account the statement given by HEI, 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	30.09.2031	–	–
Ba Water Supply and Drainage Science and Engineering	With requirements for one year	30.09.2031	–	–

Requirements

For both degree programmes

A 1. (ASIIN 1.2, 4.2) Include a clarifying explanatory note in all English-language documentation, particularly in the Diploma Supplement, to help international stakeholders interpret the programme name considering global engineering nomenclature.

A 2. (ASIIN 1.3, 1.5) Conduct a curriculum review aimed at streamlining content, especially regarding later semesters. This should include reviewing and potentially consolidating modules where there is overlap in content, and optimising the scheduling of final academic tasks to reduce workload compression.

A 3. (ASIIN 1.4) Develop formal procedures for the recognition of prior learning achievements and qualifications acquired at other universities, in particular universities abroad.

A 4. (ASIIN 1.5) Establish a systematic, empirical workload validation process (e.g., structured student surveys, time-use tracking) to ensure assigned credits accurately reflect actual student workload.

A 5. (ASIIN 3.2) Increase visibility and accessibility of student support and counselling services, particularly in the subject area of mental health.

A 6. (ASIIN 4.2) Revise the Diploma Supplement to include personalised transcript information and consistent terminology aligned with programme-specific details.

Recommendations

For both degree programmes

E 1. (ASIIN 1.3) It is recommended that the university further refine the curriculum structures of both degree programmes by integrating current developments in civil and municipal engineering more systematically (e.g., low-carbon technologies, sustainable construction methods, and digital planning tools).

E 2. (ASIIN 1.3) It is recommended that the institution adopt a continuous improvement approach to technical English proficiency, thus systematically creating opportunities for students to practice their language skills and to expand their access to international discipline-related knowledge domains.

E 3. (ASIIN 1.5) It is recommended to review the final semester structure to better distribute intensive academic tasks such as the thesis and internship, thus preventing workload peaks.

E 4. (ASIIN 1.6) It is recommended to expand the integration of problem-based and case-based learning formats to strengthen students' analytical and theoretical reasoning skills.

E 5. (ASIIN 1.6) It is recommended that the university better integrate the contribution of the nationally required general courses into the intended learning outcomes and competencies of the study programme.

E 6. (ASIIN 4.1, 4.3) It is recommended that the university consider supplementing its WeChat-based communication with platforms that are more accessible internationally. In this context, English-language versions of module handbooks should be easily accessible, fully updated, and consistent with current teaching practices.

E 7. (ASIIN 1.1, 5) It is recommended that the university strengthen its evidence base through the implementation of structured employer and alumni surveys and tracer studies.

E 8. (ASIIN 5) It is recommended to more systematically utilize evaluation outcomes and make them publicly available. Clear documentation on how feedback informs concrete curricular or process adjustments would further support evidence-based quality enhancement.

E 9. (ASIIN 5) It is recommended that the university harmonize and document quality assurance standards and responsibilities across units to ensure consistency and broaden compatibility with international standards.

G Comment of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture (27.11.2025)

Assessment and analysis for the award of the ASIIN seal:

The TC discusses the procedure and largely follows the assessment of the experts. Some concern is expressed regarding E8, which recommends publishing evaluation outcomes. As this is not common practice even in Germany, the TC decides to adjust the wording of the recommendation. The TC emphasizes that closing the feedback loop is essential; however, it is deemed sufficient that evalu ation results are communicated to the relevant stakeholders, particularly the students, without requiring public dissemination. The TC agrees with the remaining requirements and recommendations.

Degree Programme	**ASIIN Seal**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
Ba Civil Engineering	With requirements for one year	30.09.2031	–	–
Ba Water Supply and Drainage Science and Engineering	With requirements for one year	30.09.2031	–	–

Proposed change of recommendation 8:

E 8. (ASIIN 5) It is recommended to more systematically utilize evaluation outcomes and ~~make them publicly available~~ to close the feedback loop (e.g., by discussing the results with the students). Clear documentation on how feedback informs concrete curricular or process adjustments would further support evidence-based quality enhancement.

H Decision of the Accreditation Commission (12.12.2025)

Assessment and analysis for the award of the ASIIN seal:

The Accreditation Commission discusses the procedure.

According to expert assessment provided in the accreditation report, the Commission considered that the former requirement 1 relating to the internationally unusual denomination and subject areas should be restricted to the "Water Supply and Drainage Science and Engineering" degree programme (now requirement 6). Furthermore, it agrees to the editorial modification of recommendation 8 ("closing of feedback loop") suggested by the Technical Committee for the purpose of clarification. Otherwise, the Commission agrees with the assessment and judgment of the experts and the Technical Committee.

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	30.09.2031	–	–
Ba Water Supply and Drainage Science and Engineering	With requirements for one year	30.09.2031	–	–

Requirements

For both degree programmes

A 1. (ASIIN 1.3, 1.5) Conduct a curriculum review aimed at streamlining content, especially regarding later semesters. This should include reviewing and potentially consolidating modules where there is overlap in content, and optimising the scheduling of final academic tasks to reduce workload compression.

A 2. (ASIIN 1.4) Develop formal procedures for the recognition of prior learning achievements and qualifications acquired at other universities, in particular universities abroad.

A 3. (ASIIN 1.5) Establish a systematic, empirical workload validation process (e.g., structured student surveys, time-use tracking) to ensure assigned credits accurately reflect actual student workload.

A 4. (ASIIN 3.2) Increase visibility and accessibility of student support and counselling services, particularly in the subject area of mental health.

A 5. (ASIIN 4.2) Revise the Diploma Supplement to include personalised transcript information and consistent terminology aligned with programme-specific details.

For the Water Supply and Drainage Science and Engineering programme

A 6. (ASIIN 1.2, 4.2) Include a clarifying explanatory note in all English-language documentation, particularly in the Diploma Supplement, to help international stakeholders interpret the programme name considering global engineering nomenclature.

Recommendations

For both degree programmes

E 1. (ASIIN 1.3) It is recommended that the university further refine the curriculum structures of both degree programmes by integrating current developments in civil and municipal engineering more systematically (e.g., low-carbon technologies, sustainable construction methods, and digital planning tools).

E 2. (ASIIN 1.3) It is recommended that the institution adopt a continuous improvement approach to technical English proficiency, thus systematically creating opportunities for students to practice their language skills and to expand their access to international discipline-related knowledge domains.

E 3. (ASIIN 1.5) It is recommended to review the final semester structure to better distribute intensive academic tasks such as the thesis and internship, thus preventing workload peaks.

E 4. (ASIIN 1.6) It is recommended to expand the integration of problem-based and case-based learning formats to strengthen students' analytical and theoretical reasoning skills.

E 5. (ASIIN 1.6) It is recommended that the university better integrate the contribution of the nationally required general courses into the intended learning outcomes and competencies of the study programme.

E 6. (ASIIN 4.1, 4.3) It is recommended that the university consider supplementing its WeChat-based communication with platforms that are more accessible internationally. In this context, English-language versions of module handbooks should be easily accessible, fully updated, and consistent with current teaching practices.

E 7. (ASIIN 1.1, 5) It is recommended that the university strengthen its evidence base through the implementation of structured employer and alumni surveys and tracer studies.

E 8. (ASIIN 5) It is recommended to more systematically utilize evaluation outcomes and to more systematically close the feedback loop (e.g., by discussing the results with the students). Clear documentation on how feedback informs concrete curricular or process adjustments would further support evidence-based quality enhancement.

E 9. (ASIIN 5) It is recommended that the university harmonize and document quality assurance standards and responsibilities across units to ensure consistency and broaden compatibility with international standards.

Appendix: Learning objectives and curricula

Table 1-1 Civil Engineering Major Objective Matrix

Objective	Expected Learning Outcomes of the Curriculum (Knowledge/Skills/Abilities)	Corresponding modules
Master foundational knowledge in mathematics, natural sciences, and information technology to establish a solid foundation for subsequent coursework and apply this knowledge to solve engineering problems.	**Knowledge**: Master the fundamentals of mathematics, natural sciences, information technology, and computer basics. **Skills**: Be able to apply mathematical and natural science language to formally present complex civil engineering problems. **Abilities**: Be able to observe, analyze, and solve technical problems using mathematical and informational viewpoints and methods of thinking. Based on the characteristics of mathematics and information technology, conduct continuous analysis, synthesis, computation, judgment, and reasoning on engineering phenomena, possessing the fundamental abilities to solve engineering problems.	**Mathematics and Physics** **Information Technology**
Master the fundamental knowledge of civil engineering, apply the learned knowledge to identify and analyze complex civil engineering problems, and lay a solid foundation for further solving complex civil engineering problems.	**Knowledge**: Master fundamental engineering knowledge such as engineering mechanics, engineering materials, as well as specialized knowledge in steel structures and concrete structures. **Skills**: Apply basic principles of engineering science to identify complex civil engineering problems, analyze these problems, and determine the key aspects for solving the issues.	**Engineering Fundamentals** **Professional Foundation**

	Abilities: Use engineering principles to analyze the influencing factors in the problem-solving process from multiple angles, effectively express the analysis process and conclusions, and use them to guide the formulation of solutions.	
Master professional knowledge in civil engineering, enabling the investigation, design, and analysis of complex engineering problems in related fields, and the development of solutions to meet the specific needs of complex civil engineering issues.	**Knowledge**: Master specialized knowledge related to building, road and bridge, and rail engineering design, construction, management, and other aspects in civil engineering. **Skills**: Able to complete the design of structures and components (nodes) that meet specific civil engineering needs, and able to develop construction plans for specific complex engineering problems. Familiar with modern tools related to civil engineering, understanding their limitations, and possessing the ability to select and use appropriate tools. **Abilities**: In design and construction planning, able to fully consider constraints such as social, health, safety, legal, cultural, and environmental factors. Able to use modern tools to model and calculate complex civil engineering problems, and analyze the validity and limitations of the results. Master the operation of basic software required for the development of informatization in the construction industry, and possess the ability to build and apply information models.	**Professional Application** **Professional Practice**
Possess awareness of autonomous learning and lifelong learning, with the ability to track the development trends in the related fields of the major and	**Knowledge**: Master methods for tracking and learning the latest developments and knowledge in the forefront and emerging fields of civil engineering. **Skills**: Recognize the importance of lifelong learning, actively track developments in the major and related fields, and possess the ability for self-directed learning.	**Professional Development** **Integrated Application**

complete further self-development.	**Abilities**: Apply acquired professional knowledge widely, combining it with cutting-edge developments. Possess the ability to adapt to new developments in the civil engineering industry.	
Master cross-cultural and international cooperation and communication skills to adapt to social development and globalization.	**Knowledge**: Master one foreign language. **Skills**: Read professional literature in English and perform mutual translation between Chinese and English. **Abilities**: Have a basic understanding of the international status of civil engineering disciplines and related industries, and possess initial communication and exchange abilities in a cross-cultural context.	**Foreign Language**
Understand the current social model and social norms in China, demonstrate good social behavior, teamwork spirit, and humanistic care awareness. Develop comprehensively in moral, intellectual, physical, and psychological aspects.	**Knowledge**: Master knowledge of modern Chinese history, basic principles of Marxism, military theory, etc., and engage in patriotism education, physical education, and military training. **Skills**: Understand social phenomena, stay informed about and adapt to social development, possess communication and collaboration abilities, demonstrate strong teamwork spirit, and promote physical and mental well-being and self-improvement. **Abilities**: Possess sound character and good psychological qualities. Understand China's national conditions, have humanistic and social science literacy, and social responsibility, enabling adherence to professional ethics and conduct in engineering	**Humanities and Social Sciences**

Table 1-2 Water Supply and Drainage Science and Engineering major Objective Matrix

Objectives	Expected Learning Outcomes of the Curriculum (Knowledge/Skills/Abilities)	Corresponding modules
Understand China's current social patterns and norms, possessing good social behavior, team spirit, and awareness of humanistic care. To develop comprehensively in moral, intellectual, physical, and psychological aspects.	**Knowledge**: Master knowledge of modern Chinese history, basic principles of Marxism, military theory, implement patriotic education, physical education, and military training, and master a foreign language. **Skills**: Understand social phenomena, pay attention to and adapt to social development, possess the ability to communicate and collaborate with others, have a good team spirit, and promote personal physical and mental health and self-improvement. **Abilities:** Possess a well-rounded personality and good psychological quality. Understand China's national conditions, have literacy in humanities and social sciences, and a sense of social responsibility, able to understand and abide by professional ethics and behavioral norms in engineering practice, take responsibility, contribute to the nation, serve the society, and possess a certain international perspective.	**Humanities and Social Sciences General Education Courses**
Master foundational knowledge in mathematics and natural sciences to establish a solid foundation for subsequent course studies and apply this knowledge to solve engineering problems.	**Knowledge**: Master foundational knowledge in mathematics and natural sciences. **Skills:** Utilize knowledge of mathematics and natural sciences to understand and accurately articulate real engineering problems, and develop basic models to solve various practical issues in technology and engineering applications. **Ability**: Capable of observing, analyzing, and solving technical problems using the perspectives and thinking methods of mathematics and natural sciences. Continuously analyze, synthesize, calculate, judge, and reason about engineering phenomena based on the characteristics of mathematics and natural sciences to solve engineering problems.	**Mathematics and Natural Science Courses**

Master the foundational knowledge of Water Supply and Drainage Science and Engineering, apply this knowledge to identify and analyze complex engineering problems within the field, and lay a solid foundation for further resolving complex engineering issues in Water Supply and Drainage Science and Engineering.	**Knowledge**: Master foundational engineering knowledge such as AutoCAD basics and computer applications in water supply and drainage engineering, as well as fundamental expertise in hydraulics and water chemistry analysis. **Skills:** Able to apply basic engineering science principles to identify complex engineering problems in water supply and drainage science and engineering, and capable of analyzing these problems to determine the critical elements needed for resolution. **Ability:** Capable of using engineering principles to analyze the factors affecting the problem-solving process from multiple angles, effectively express the analysis process and conclusions, and use these to guide the development of solutions.	**Fundamental Professional Courses**
Master a broad range of foundational engineering and professional knowledge to lay the groundwork for future specialized course studies.	**Knowledge:** Master foundational knowledge in information technology, computer science, and related engineering basics such as engineering drawing and engineering mechanics. **Skills:** Capable of applying knowledge in mechanics and engineering to engineering planning, design, construction, and operational management. Master the use of modern engineering tools, information technology tools, engineering techniques, and resources, and able to reasonably select modern tools for complex engineering problems; understand the basic methods for developing engineering techniques and modern engineering tools. **Ability:** Consider the impacts of social, health, safety, legal, cultural, and environmental factors on solutions, and possess a certain level of innovative thinking.	**Basic Engineering Courses**

Master professional knowledge in Water Supply and Drainage Science and Engineering, capable of investigating, designing, and analyzing complex engineering issues in related fields, and proposing solutions that meet the	**Knowledge:** Master the professional knowledge involved in the design, construction, and management of water supply, drainage, and building water supply and drainage engineering. **Skills:** Capable of designing units (components) or process flows that meet specific needs of water supply and drainage science and engineering, and can develop	**Core Professional Courses** **Engineering Practice Courses**
Possesses awareness of self-directed and lifelong learning, and the ability to continuously learn and adapt to personal development needs.	**Knowledge:** Master methods for tracking and learning about the latest developments and knowledge in the frontiers and new areas of water supply and drainage science and engineering. **Skills:** Recognize the importance of lifelong learning, able to proactively follow developments in the profession and related fields, possessing the ability to learn independently. **Ability:** Capable of broadly applying acquired professional knowledge, combined with cutting-edge advancements. Equipped with the ability to adapt to new developments in the water supply and drainage science and engineering industry.	**Engineering Practice Courses**