



**ASIIN Seal**

# **Accreditation Report**

**Bachelor Degree program  
Transportation (TS)**

**Offered by**

**Shenzhen Technology University**

Version: 27/03/2026

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## A. About the Accreditation Process

| Name of the degree program (in original language)                                                                                                                                                                                                                                                                                                                | (Official) English translation of the name | Labels applied for | Previous accreditation (issuing agency, validity) | Involved Technical Committees (TC) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------|---------------------------------------------------|------------------------------------|
| 交通运输                                                                                                                                                                                                                                                                                                                                                             | Transportation (TS)                        | ASIIN              | /                                                 | 03,06                              |
| <p><b>Date of the contract:</b> 17.10.2024</p> <p><b>Submission of the final version of the SAR:</b> 09.09.2025</p> <p><b>Date of the onsite visit:</b> 05.-06.11.2025</p> <p><b>at:</b> Shenzhen Technology University, Shenzhen, China</p>                                                                                                                     |                                            |                    |                                                   |                                    |
| <p><b>Expert panel:</b></p> <p>Prof. Dr. Frank Schultmann, Karlsruhe Institute of Technology</p> <p>Prof. Dr. Haldor Jochim, University of Applied Sciences Aachen</p> <p>Dr. Yang Tang, Zhejiang University Urban and Rural Planning &amp; Design Institute C., LTD.</p> <p>Xiaomei Li, Master Student at University of Shanghai for Science and Technology</p> |                                            |                    |                                                   |                                    |
| <p><b>Representative/s of the ASIIN headquarter:</b> Yangzemiao Song</p>                                                                                                                                                                                                                                                                                         |                                            |                    |                                                   |                                    |
| <p><b>Responsible decision-making committee:</b> Accreditation Commission for Degree Programmes</p>                                                                                                                                                                                                                                                              |                                            |                    |                                                   |                                    |
| <p><b>Criteria used:</b></p> <p>European Standards and Guidelines as of May 15, 2015</p> <p>ASIIN General Criteria as of March 28, 2023</p> <p>Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy and Architecture as of June 26, 2020</p>                                                                                         |                                            |                    |                                                   |                                    |

## B. Accreditation Status

### Result Overview

The most recent decision for the ASIIN Seal was made by the ASIIN Accreditation Commission on 27.03.2026.

| Degree Programmes | ASIIN Seal                   | Validity                |
|-------------------|------------------------------|-------------------------|
| Ba Transportation | Accredited with requirements | 27.03.2026 – 22.04.2027 |

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### Fulfilment of the Accreditation Criteria

| ASIIN General Criteria / Subject-Specific Criteria                           | Ba Transportation                             |
|------------------------------------------------------------------------------|-----------------------------------------------|
| <b>1 Degree Programme: Concept, Content &amp; Implementation</b>             |                                               |
| <i>1.1 Objectives and learning outcomes (intended qualification profile)</i> | <b>Not fulfilled</b><br><b>Requirement A1</b> |
| <i>1.2 Title of the degree programme</i>                                     | Fulfilled                                     |
| <i>1.3 Curriculum</i>                                                        | Fulfilled                                     |
| <i>1.4 Admission requirements</i>                                            | Fulfilled                                     |
| <i>1.5 Workload and credits</i>                                              | <b>Not fulfilled</b><br><b>Requirement A2</b> |
| <i>1.6 Didactics and teaching methodology</i>                                | Fulfilled                                     |
| <b>2 Exams: System, Concept and Organisation</b>                             |                                               |
| <i>2 Exams: System, Concept and Organisation</i>                             | Fulfilled                                     |
| <b>3 Resources</b>                                                           |                                               |
| <i>3.1 Staff and staff development</i>                                       | Fulfilled                                     |
| <i>3.2 Student support and student services</i>                              | Fulfilled                                     |

| <b>ASIIN General Criteria / Subject-Specific Criteria</b>       | <b>Ba Transportation</b>                      |
|-----------------------------------------------------------------|-----------------------------------------------|
| <i>3.3 Funds and equipment</i>                                  | Fulfilled                                     |
| <b>4 Transparency and Documentation</b>                         |                                               |
| <i>4.1 Module descriptions</i>                                  | Fulfilled                                     |
| <i>4.2 Diploma and Diploma Supplement</i>                       | <b>Not fulfilled</b><br><b>Requirement A3</b> |
| <i>4.3 Relevant rules</i>                                       | Fulfilled                                     |
| <b>5 Quality Management: Quality Assessment and Development</b> |                                               |
| <i>5 Quality Management: Quality Assessment and Development</i> | Fulfilled                                     |

## Requirements

- A1 [ASIIN 1.1] It is required to ensure that the content of the learning outcomes is fully aligned between the Chinese and English versions.
- 5 A2 [ASIIN 1.5] It is required to ensure a balanced student workload across the semesters and to establish and implement a transparent mechanism for systematically evaluating and validating the actual student workload in order to identify and correct discrepancies between the calculated and the actual student workload in a timely manner.
- 10 A3 [ASIIN 4.2] It is required to ensure that all graduates are automatically provided with a Diploma Supplement in English shortly after graduation, including all required information.

## Accreditation History

### Ba Transportation

The programme has not been previously accredited by ASIIN.

## C. Characteristics of the Degree Program

### B-1. Numbers and facts

| a) Name        | Final degree (original/English translation) | b) Areas of Specialization | c) Corresponding level of the EQF <sup>1</sup> | d) Mode of Study | e) Double/Joint Degree | f) Duration | g) Credit points/unit | h) Intake rhythm & First time of offer              |
|----------------|---------------------------------------------|----------------------------|------------------------------------------------|------------------|------------------------|-------------|-----------------------|-----------------------------------------------------|
| Transportation | Bachelor degree                             |                            | 6                                              | Full time        |                        | 8 Semester  | 205.2 ECTS            | Annually (fall semester)/first intake Sep. 01, 2019 |

### B-2. Characteristics and features

5 **Shenzhen Technology University (SZTU)** is a public higher educational institution jointly established by Guangdong Province and Shenzhen Municipality and officially approved by the Ministry of Education in 2018. According to the university's statement, SZTU is positioned to develop as an application-oriented institution drawing on the educational models of German and Swiss universities of applied sciences. SZTU has a total construction area of 1.05 million m<sup>2</sup> and enrolls more than 14,500 undergraduate students and over 1,100 graduate students. The university employs more than 870 full-time teachers, of whom 83% hold doctoral degrees and 56% have overseas study or research experience. SZTU centers its academic education on engineering while extending to science, economics, management, art, medicine, and literature. It collaborates with over 258 enterprises and maintains partnerships with 114 international institutions.

15 **The College of Urban Transportation and Logistics (CUTL)** at SZTU organizes its discipline layout around intelligent rail transit operation, unmanned intelligent transportation systems, and intelligent new energy vehicles. CUTL offers undergraduate programs in Transportation, Vehicle Engineering, Logistics Management, and Unmanned Aerial Vehicle Systems Engineering, and master's directions in areas such as rail transit planning, new transportation systems, and vehicle–road coordination technologies. The college employs 88 faculty members, including 52 professors, associate professors, and assistant professors, with 98% holding doctoral degrees and over two-thirds having overseas experience. CUTL

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<sup>1</sup> EQF = The European Qualifications Framework for lifelong learning

maintains research platforms in intelligent operation and maintenance and intelligent terminal components and undertakes over 160 externally funded research projects.

5 The **Transportation program** originated at Shenzhen University in 2010 and was transferred to SZTU upon its establishment in 2018, with independent enrollment beginning in 2019. The program develops an interdisciplinary structure which integrates transportation engineering with intelligent technologies. It collaborates with enterprises such as Shenzhen Metro and BYD to establish industry–university–research platforms. The program has 13 full-time faculty members and 6 laboratory technicians, all holding doctoral or master’s degrees, covering fields such as transportation, mechanical and electronic engineering, control science, geographic information science, and data science. The tuition fee is RMB 10 5580 (approx. EUR 677) per year.

15 The current ASIIN accreditation procedure includes a comprehensive documentation review, on-site evaluations, and stakeholder interviews to thoroughly assess the program’s compliance with international accreditation standards. The detailed evaluation based on ASIIN criteria is provided in the subsequent sections of this report.

## D. Assessment of the Expert Panel

This accreditation report is based on the preliminary evaluation report for the degree programme(s) 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 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: representatives of the rectorate's office, program coordinators, representatives of the Quality Management Department and the International Office, teaching and lab staff, students, partners from industry and the private sector, and alumni. The focus of this stage of the evaluation lies on an assessment of the study program under review according to the criteria stipulated in the ASIIN General Criteria and the Subject-Specific Criteria (SSC) of the ASIIN Technical Committee 03 – Civil Engineering, Geodesy and Architecture (see Chapter A).

In addition to the audit meetings, the expert panel relies on the documentation about the program and the regulatory framework that Shenzhen Technology University has provided before, during and after the audit.

### C-1. Objectives and learning outcomes of the degree program [ASIIN 1.1]

#### Description of the current status:

The SAR states that the Bachelor program Transportation at SZTU aims to develop professionals capable of addressing the needs of modern urban integrated transportation systems. The program emphasizes mastery of core theoretical knowledge, interdisciplinary integration, practical skills, and personal development.

According to the program objectives, the graduates should:

- have a solid foundation in humanities, social sciences, mathematics, and natural sciences,
- systematically master core and interdisciplinary knowledge in transportation,
- be able to integrate and flexibly apply theory and expertise in engineering practice,
- demonstrate strong competence in mathematics, economic management, computer science, and foreign languages,

- be capable of conducting research, development, design, and implementation of transportation engineering solutions, with a focus on system optimization,
- be proficient in literature review, data analysis, and the use of modern information technology,
- 5 • exhibit teamwork, organizational management, and cross-cultural communication skills,
- demonstrate adaptability, innovative thinking, and a commitment to lifelong learning.

10 Upon graduation, students are expected to demonstrate the following intended learning outcomes:

- 1) **Engineering Knowledge:** Master core transportation engineering theories and apply scientific principles to solve complex problems.
- 2) **Problem Analysis:** Identify and analyze transportation issues using modeling and scientific reasoning.
- 15 3) **Design and Development of Solutions:** Design innovative and context-sensitive engineering solutions.
- 4) **Research Ability:** Conduct valid research using appropriate methodologies and data analysis.
- 5) **Modern Tool Usage:** Use modern engineering and IT tools appropriately.
- 20 6) **Engineering and Sustainable Development:** Evaluate the sustainability of engineering practices.
- 7) **Engineering Ethics and Professional Norms:** Exhibit social responsibility and professional conduct.
- 8) **Individual and Teamwork:** Work effectively in multidisciplinary teams with leadership skills.
- 25 9) **Communication and International Perspective:** Communicate technical content effectively and operate in international contexts.
- 10) **Project Management:** Apply project management principles to real-world engineering tasks.
- 30 11) **Lifelong Learning:** Recognize the need for ongoing self-improvement and adaptability.

35 Reportedly, the curriculum is designed around these learning outcomes and includes a module-outcome matrix. It aims to align with ASIIN's Subject-Specific Criteria (SSC 03) for traffic engineering. Learning outcomes are regularly reviewed and revised with input from stakeholders including faculty, students, employers, and professional bodies. Curricular changes are driven by industry needs and emerging trends, such as smart transportation and data analytics.

### **Analysis and assessment of the expert panel:**

The expert panel concludes that the study objectives and learning outcomes of the Bachelor's degree program in Transportation are clearly formulated and consistent with the intended qualification level of a practice-oriented engineering program EQF 6. The respective objectives adequately prepare graduates for professional employment or further academic study.

The program demonstrates a strong connection to regional and national industry needs, reflecting the university's mission as an application-oriented institution. These links ensure that the training objectives remain relevant to the evolving industrial and technological landscape.

The expert panel recognizes that the program's learning outcomes are structured according to three main dimensions — knowledge, skills, and competences — and are aligned with the relevant SSC 03 (Civil Engineering, Geodesy and Architecture). The university applies a structured objective–module matrix to map these learning outcomes to specific modules and graduation requirements. The program emphasizes not only theoretical and technical competencies but also the development of transferable skills such as teamwork, communication and innovation, which are reinforced through project-based learning and practical training.

However, the expert panel identified a discrepancy in the documentation. During the on-site visit, the experts noted that the learning outcomes in the Chinese version of the talent training plan published on the official website differ slightly from the English version provided in the SAR and in Appendix 05-1. (see <https://utl.sztu.edu.cn/info/1332/3160.htm>).

Furthermore, although the English learning outcomes are available on the university's English website (<https://utl.sztu.edu.cn/ASIIN/pyjh.htm>), the page was created primarily for ASIIN accreditation rather than for broader international communication. The experts therefore advise the university to maintain and update the English website beyond the accreditation process.

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

In response to the inconsistency of learning outcomes in Chinese and in English versions, the university states that this inconsistency is mainly due to a version mismatch: the Chinese webpage currently displays the 2024 cohort training plan, while the SAR submitted for this procedure reflects the updated 2025 version (latest revision) prepared for the accreditation documentation. To address this issue, SZTU will use the 2025 talent training

5 plan as the single reference version and will update and align the Chinese and English learning outcomes accordingly. The expert panel welcomes that the university is committed to transparency and to unify the different version. The experts examined the respective webpage and noted that the current training plan (2025) was not yet published on the official website. Though the university committed the plan, which is yet to be implemented; therefore, the experts maintain their requirement (see section F, A1).

10 With regard to the English website, although the university has created an English webpage for the ASIIN accreditation process, there is currently no official English website providing information beyond accreditation purposes. Therefore, the experts maintain their recommendation to establish general and program-specific English websites to support the internationalization of both the program and the university. (see section F, E1).

Generally, the experts assess the criterion as partially fulfilled.

## **C-2. Name of the degree program [ASIIN 1.2]**

### **Description of the current status:**

15 The official title of the degree program is “**Transportation**” (in Chinese: 交通运输). The program is classified under the standardized code 081801 as established by the Ministry of Education of the People's Republic of China. It is categorized within the general academic discipline of transportation engineering. The designation of the program title is in accordance with the national regulatory framework for higher education in China.

20 The name “Transportation” is uniformly used across all official university documents as well as online and offline communication materials, which include SAR, curriculum, module descriptions, admissions and promotional materials, official student records and graduation certificates.

25 The program title is also provided in English as “**Bachelor program in Transportation**” with the intention to achieve international comparability. This translation reflects the original Chinese title and is used in all English-language materials produced by the institution.

### **Analysis and assessment of the expert panel**

30 The expert panel acknowledges that the program title conforms with national standards and does not present any legal or formal inconsistencies. The designation (both in the original language and in English) is used consistently in all relevant documents such as internal university documents, public websites, and student records.

The experts find that the program name corresponds to the curriculum content and intended learning outcomes. It is structured to provide a bachelor education in transportation systems, emphasizing areas such as intelligent transportation, urban mobility, rail transit, and traffic management. The title aligns with the graduate profile, which enables graduates to assume professional roles in planning, design, operation, and management within the transportation sector.

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

As the university did not address this criterion in its statement, the experts confirm their previous evaluations and consider the criterion to be fully fulfilled.

### **C-3. Curriculum [ASIIN 1.3]**

#### **Description of the current status:**

##### *Content and structure*

As the SAR states, the Transportation program follows an eight-semester structure comprising 192 ECTS credits, integrating general education, foundational sciences, engineering fundamentals, professional modules, elective components, practical training, and the bachelor's thesis (Appendix 08). The curriculum is organized to develop competencies across nine areas defined in the *Basic Requirements of Transportation Major Competency Area* (Appendix 05-1).

According to the SAR, General Education and Foreign Language Courses run mainly in semesters 1–5, covering ideological and political education, humanities, physical education, English, and German.

Mathematics, Physics, and Information Technology Courses are scheduled across semesters 1–4 and include Advanced Mathematics, Linear Algebra, Probability and Statistics, Physics, programming, and database applications.

Engineering Foundation Courses, delivered in semesters 1–4, include Engineering Mechanics, Engineering Drawing and CAD, and Fundamentals of Transportation Electrotechnics Technology.

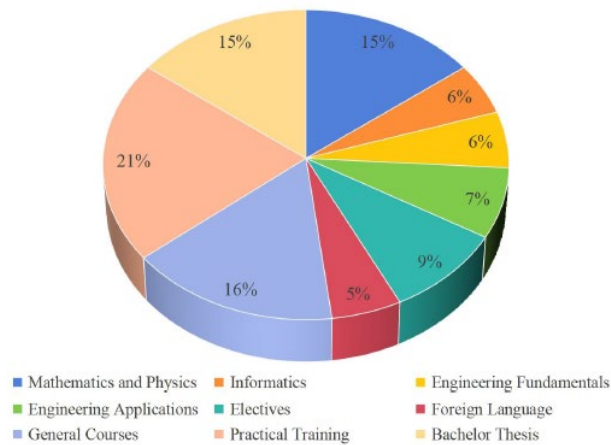
The SAR reports that Engineering Application Courses—such as Transportation Planning, Transportation Organization, Traffic Engineering, Intelligent Transportation Technologies, and Integrated Transportation Systems—are offered in semesters 3–6.

Elective Courses are available primarily in semesters 4–6. Electives address interdisciplinary and emerging areas in transportation, including intelligent systems, logistics, and safety.

According to the SAR, practice components run throughout semesters 3–8 and include industry cognition practice, engineering survey practice, innovative projects, and a dedicated internship covering the entire 7<sup>th</sup> semester (Appendix 03).

Finally, the bachelor’s thesis in semester 8 reportedly requires students to undertake analysis or design tasks, complete written documentation, and pass an oral defense. The SAR states that thesis topics may originate from faculty research, industry projects, or national innovation initiatives.

The credit distribution across in the overall program is illustrated as follows:



An objective-module matrix (appendix 07) and a module description (appendix 09) clarify how each course contributes to the program's intended learning outcomes. The matrix shows how the curriculum supports the achievement of knowledge, skills, and professional competencies expected from graduates. Each module is associated with specific learning outcomes, showing the correlation between course content and the program objectives.

### Student Mobility

The SAR states that the Transportation program promotes international exchange through structured mechanisms for participation, selection, and credit recognition. Exchange participation is open at all stages of study, and credits earned at external institutions abroad are recognized according to institutional agreements (Appendix 01-6;14-4). The SAR indicates that SZTU offers more than 30 exchange projects annually (Appendix 10-1), with information disseminated regularly by responsible faculty members.

The SAR also describes partnerships with nearly 30 international universities, including Heilbronn University of Applied Sciences and Augsburg University of Applied Sciences in

Germany. Students participate in activities such as *International Week*, winter schools, and semester exchanges. Examples include the 2019 “*Industry 4.0*” Winter School in Augsburg and exchange semesters at partner universities in Austria and Germany. During the on-site discussions, the experts learned that five English-taught courses are currently offered and that English-taught seminars are delivered by visiting professors during the university’s International Week. The college has reported that it plans to further expand bilingual teaching to support international students and to enhance students’ English proficiency. The student representatives confirmed that the university organizes overseas internships and various exchange programs in countries such as Austria, Germany, Japan, and the United States. First-year students may take introductory German, and intermediate German is offered as an elective. Students can obtain information on exchange programs and credit transfer through the university website. The university provides pre-departure training and travel subsidies of 5,000–6,000 RMB (approx.610-730 EUR)

SZTU provides the following numbers on student mobility for the Transportation program (Appendix 10-2):

**Summary of Student Mobility**

| Year <sup>1</sup> | Incoming Students (Total) | Outgoing Students (Total) |
|-------------------|---------------------------|---------------------------|
| 2020              | 0                         | 0                         |
| 2021              | 0                         | 0                         |
| 2022              | 0                         | 0                         |
| 2023              | 0                         | 2                         |
| 2024              | 0                         | 0                         |

Despite the exchange opportunities provided by SZTU, the program coordinators explained that mobility possibilities were restricted during the pandemic. After the pandemic, student interest in going abroad has declined. Over the past five years, only two students from the program have participated in SZTU’s exchange programs.

*Periodic Review of the Curriculum*

According to the SAR, regular student evaluations are conducted each semester, assessing teaching attitude, content, methods and effectiveness (Appendix 22-3). The SAR indicates that evaluator identity and evaluation content are kept confidential.

The SAR reports that colleges conduct teaching inspections each semester, including checks on lesson preparation, teaching plan execution, classroom instruction, teaching discipline, and teaching management. Peer instructors and observation teams document feedback (Appendix 22-5). Inspections also cover the implementation of professional internships, graduation thesis documentation, industry–university cooperation projects, and the functioning of internship bases.

5 The SAR states that university leaders and the Teaching Supervision Committee conduct in-class observations and communicate with instructors and students. Identified issues are addressed through annual faculty meetings. The university has established a multi-level evaluation and supervision system to ensure ongoing review and revision of the curriculum every year. The committee for teaching affairs of CUTL adjusts and optimizes the curriculum by integrating the above-mentioned evaluation and inspection results following a “evaluation–feedback–improvement” cycle.

### **Analysis and assessment of the expert panel**

#### *Content and Structure*

10 The expert panel examined the curriculum and found that its structure enables students to achieve the intended learning outcomes. The program design provides a coherent and comprehensive sequence of theoretical foundations, engineering applications, and practical training across eight semesters.

15 During the on-site visit, the experts asked about the difference between urban rail transit and railway in China. The program coordinators explained that the distinction is mainly based on industry needs and employment rather than technology, as both systems share similar technical foundations. Railway operations are more complex, but core technologies overlap. In China, transportation programs are separated from civil engineering due to expanding infrastructure needs. Urban rail transit courses also cover railway-related content.  
20 The experts acknowledged this program-specific characteristic.

Generally, the experts consider the program’s content and structure to be consistent with ASIIN’s Subject-Specific Criteria for Technical Committee 03 and to support the intended learning outcomes effectively.

#### *Student Mobility*

25 Overall, the experts find that the program supports student mobility through its existing institutional policies, international partnerships, and exchange opportunities. The panel acknowledges the measures already taken to enhance international exchanges for students. In view of the currently low student participation, the experts encourage SZTU to take further steps to motivate and enable more students to study abroad and gain international experience, thereby broadening their academic and professional perspectives.  
30

During the on-site discussions, the experts learned that five English-taught courses are currently offered and that English-taught seminars are delivered by visiting professors during the university’s International Week. CUTL plans to further expand bilingual teaching to support international students and to enhance students’ English proficiency

Furthermore, as mentioned in C-1, the experts noted that the official English website has been created specifically for the accreditation process and does not contain general information, including admission requirements and application procedures for international students. This inadequacy may undermine the university's international profile and make it less accessible to prospective students and other stakeholders.

#### Periodic Review of the Curriculum

The experts acknowledge that the curriculum undergoes regular review, incorporating input from faculty, industry representatives, and alumni, with minor updates made annually. The panel confirms that the university has a formal mechanism to update course syllabi and module content regularly, allowing the curriculum to keep pace with new technologies, including artificial intelligence and autonomous driving. Overall, the expert panel concludes that the university demonstrates a structured approach to curriculum development.

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

See C-1 : With regard to the English website, although the university has created an English webpage for the ASIIN accreditation process, there is currently no official English website providing information beyond accreditation purposes. Therefore, the experts maintain their recommendation to establish general and program-specific English websites to support the internationalization of both the program and the university. (see section F, E1).

Generally, the experts assess the criterion as substantially fulfilled.

## **C-4. Admission requirements [ASIIN 1.4]**

### **Description of the current status:**

As the SAR states, admission to the Transportation program follows the national and provincial regulations governing undergraduate entry, in accordance with the Education Law and Higher Education Law of the People's Republic of China. Applicants must participate in the National College Entrance Examination (NCEE, also called Gaokao) or the corresponding provincial unified examination and hold a senior high school diploma or equivalent qualification. Admission is conducted through the provincial batch system, with candidates admitted based on their Gaokao scores and major preferences.

Appendix 12 explains that university admissions in China are determined through the NCEE, with minimum admission scores and provincial rankings used to measure program selectivity. It provides five-year data across multiple provinces, including Guangdong, its primary recruitment region. As the document states, minimum scores in Guangdong consistently

exceed 550, corresponding to the top 15% of science-oriented candidates. Rankings are stated as being more reliable than scores due to annual variations in exam difficulty. On average, the program admits the top 13.7% of science candidates nationwide.

Table 1 NCEE minimum admission scores for Transportation major in different provinces in the past 5 years.

| Province  | Year | Minimum admission scores | Provincial ranking | Total students | Position |
|-----------|------|--------------------------|--------------------|----------------|----------|
| Guangdong | 2020 | 554                      | 50898              | 326000         | 15.61%   |
|           | 2021 | 561                      | 57015              | 337000         | 16.92%   |
|           | 2022 | 561                      | 56932              | 352000         | 16.17%   |
|           | 2023 | 568                      | 55210              | 400000         | 13.80%   |
|           | 2024 | 567                      | 50353              | 428000         | 11.76%   |
| Gansu     | 2020 | -                        | -                  | -              | -        |

5 The SAR indicates that applicants must pass the required academic subject examinations in accordance with provincial admission policies and meet the ideological, moral, and physical fitness requirements. According to the official admission regulations (Appendix 11), applicants with disabilities will be admitted, and all classrooms and laboratories are equipped with accessible pathways for such students. Students with physical disabilities are not required to participate in sports courses; instead, they may take alternative courses such as Chinese chess. The Transportation program does not admit candidates with complete color blindness due to the nature of the discipline, while applicants with color weakness are not affected by this requirement.

10 Students may apply for a major transfer after the first year, following formal application and review procedures. Transfers depend on capacity and academic compliance. Students may also apply for a minor or secondary degree after their first year. To earn a minor certificate, students must complete prescribed credits for both the major and minor.

### **Analysis and assessment of the expert panel**

20 The panel recognizes that the admission system is aligned with national higher education policies and ensures transparency and fairness through standardized examination procedures. The documents provided confirm that admission is well-regulated and consistently applied. The entrance examinations ensure that students possess the foundational knowledge and competencies necessary to undertake and complete the Transportation program.

25 The experts acknowledge that Shenzhen Technology University has established clear internal rules for recognizing undergraduate students' study abroad periods, as outlined in Appendix 01-6. However, these rules are currently not accessible to external stakeholders.

According to **ASIIN Criterion 1.4**, “Rules for the recognition of qualifications achieved externally [...] are clearly defined. They facilitate the transition between higher education institutions and with non-university places of learning without jeopardizing the achievement of learning outcomes at the desired level.” The current regulations focus primarily on international exchange programs and joint training schemes. They do not explicitly address the recognition of academic qualifications acquired at other domestic higher education institutions or prior learning obtained outside the higher education sector. Therefore, the experts recommend that Shenzhen Technology University broaden and formalize its procedures for the recognition of externally acquired academic achievements, including domestic credit transfers, and ensure that the corresponding regulations are clearly documented and accessible to all stakeholders.

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

The university states that rules and procedures for the recognition of externally obtained qualifications are in place. The relevant regulations and forms are provided in Annex E-2.2-1 to Annex E-2.2-4, covering, inter alia, credit recognition for exchange studies, transfer students, and other relevant cases. Recognition is carried out based on documented learning outcomes/contents and workload and is subject to an internal review and approval process in accordance with university regulations.

The experts acknowledge that the university has provided relevant regulations and associated forms (Annexes E-2.2-1 to E-2.2-4). However, the panel observes that the current recognition procedures at SZTU could be strengthened to achieve full alignment with European standards. Specifically, it is recommended to improve formal procedures for the recognition of competencies acquired outside the university setting. In light of this observation, the panel issues a recommendation (see section F, E2).

After examining the provided documents, the experts consider the criterion to be substantially fulfilled.

## **C-5. Workload and credits [ASIIN 1.5]**

### **Description of the current status:**

As the SAR states, the Transportation program is structured over eight semesters with a total of 185 Chinese credit points, which are equivalent to 192 ECTS credits based on an established conversion method. One credit corresponds to 18 contact hours for theoretical

courses. Practical training modules assign credit according to specific contact-hour requirements, which reflects the time spent on hands-on activities such as engineering practice, internships, and bachelor thesis. To align with European standards, SZTU applies the conversion rule that 30 total study hours (contact + self-study) are equivalent to 1 ECTS credit, therefore one Chinese credit is converted into one ECTS credit by combining 18 contact hours with 12 hours of self-study (Appendix 15-2). Module descriptions in Appendix 09-1 further define workload expectations, including required pre-class preparation, assignment loads, laboratory work, and project tasks.

The current method of estimating student workload is to add up contact hours and self-study hours. Below is the table of student workload per group overview in detail.

**Table 1-3 Overview of study hours of the four-year programme.**

|                                 | Contact hours | Self-study hours | Total study hours |
|---------------------------------|---------------|------------------|-------------------|
| Science and Engineering Courses | 1620          | 1080             | 2700              |
| Language Courses                | 198           | 132              | 330               |
| General Courses                 | 576           | 384              | 960               |
| Practical Training              | 702           | 468              | 1170              |
| Bachelor's Thesis               | 180           | 420              | 600               |
| Total Study Hours               | 3276          | 2484             | 5760              |
| Required Courses                | 2628          | 2052             | 4680              |
| Elective Courses                | 648           | 432              | 1080              |
| Total                           | 3276          | 2484             | 5760              |
| Professional Courses            | 2034          | 1656             | 3690              |
| Non-Professional Courses        | 1044          | 696              | 1740              |
| Language Courses                | 198           | 132              | 330               |
| Total                           | 3276          | 2484             | 5760              |

The allocation of ECTS per semester is presented as follows:

| Semester   | 1  | 2    | 3    | 4    | 5    | 6    | 7    | 8  |
|------------|----|------|------|------|------|------|------|----|
| Total ECTS | 35 | 26.2 | 28.4 | 28.3 | 21.3 | 11.5 | 21.3 | 20 |

The SAR indicates that monitoring of actual workload is carried out through evaluations by teaching faculty, academic tutors, and counsellors who assess students' study patterns, performance, and time investment. Examination results, course evaluations, and supervision records are used to verify the students' workload.

During the on-site interview with student representatives, it was confirmed that students are informed about the workload distribution through the module handbook and course syllabi.

### ***Transportation***

| <b>Cohort Year<sup>1</sup></b> | <b>Total Enrolled<sup>2</sup></b> | <b>Graduated on Time<sup>3</sup></b> | <b>Graduated Late<sup>4</sup></b> | <b>Still Enrolled<sup>5</sup></b> | <b>Dropped Out<sup>6</sup></b> |
|--------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|--------------------------------|
| 2019                           | 86                                | 79                                   | 5                                 | 1                                 | 1                              |
| 2020                           | 60                                | 53                                   | 1                                 | 6                                 | 0                              |
| 2021                           | 56                                | -                                    | -                                 | -                                 | -                              |
| 2022                           | 80                                | -                                    | -                                 | -                                 | -                              |
| 2023                           | 86                                | -                                    | -                                 | -                                 | -                              |
| 2024                           | 60                                | -                                    | -                                 | -                                 | -                              |
|                                |                                   |                                      |                                   |                                   |                                |
|                                |                                   |                                      |                                   |                                   |                                |
|                                |                                   |                                      |                                   |                                   |                                |
|                                |                                   |                                      |                                   |                                   |                                |

On average, it takes 8,28 semesters to graduate from this bachelor program. Students reported that the workload is manageable within the standard four-year study period. The graduation rate of more than 90% further reflects the feasibility of completing the program within the prescribed timeframe.

### **Analysis and assessment of the expert panel**

The experts learned from the faculty that when courses are offered in both Chinese and English, students tend to choose the Chinese-taught version because the English-taught version generally carries fewer credit points. The experts therefore recommend assigning equal credit points to English-taught professional courses to encourage student participation and strengthen English proficiency.

The expert panel understands that the workload and credit system of the Transportation program is based on the national framework for Chinese higher education, where credits are calculated from contact hours only.

The panel recognizes that the distribution of workload across semesters is not well balanced, with the heaviest 28.3 ECTS in the fourth and third years and a lowest workload of 11.5 ECTS in the sixth semester. However, students confirmed that the workload is generally manageable and allows sufficient time for self-study and extracurricular activities.

Overall, the expert panel notes that the existing Chinese credit framework ensures internal consistency and compliance with national higher education standards, enabling students to complete their studies within the prescribed duration. However, as it is primarily based on contact-hour calculation, the transparency and precision in workload evaluation and credit conversion should be further improved to meet the comparability requirements of the European Credit Transfer and Accumulation System (ECTS). For international comparability and in view of future student exchanges, it is important to establish a formal ECTS implementation framework alongside the existing Chinese credit system. Such a framework should include clear definitions of workload per ECTS, responsibilities for workload

monitoring, mechanisms for student participation in workload evaluation, and a periodic review process allowing for adjustment of credit allocations when discrepancies are identified.

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

The expert panel acknowledges the revised ECTS conversion submitted by the university together with a detailed explanation. The total workload has been increased from 192 ECTS to 205.2 ECTS, while the Chinese credit points have decreased from 185 to 160. The experts note that the documented student workload, expressed in ECTS, is unevenly distributed across the eight semesters, ranging from 11.9 ECTS in the sixth semester to 35.7 ECTS in the first semester (see the table below).

| Semester | 1     | 2     | 3     | 4     | 5    | 6    | 7     | 8     | Total  |
|----------|-------|-------|-------|-------|------|------|-------|-------|--------|
| ECTS     | 35,7  | 31,8  | 32,4  | 26    | 19   | 11,9 | 24,2  | 24,2  | 205,2  |
| (%)      | 17,4% | 15,5% | 15,8% | 12,7% | 9,3% | 5,8% | 11,8% | 11,8% | 100,0% |

However, the ECTS allocation explanation states that contact hours, self-study hours, and semester-wise distribution are proportionally estimated based on a minimum of 21 credits per semester. This statement does not reflect the actual workload distribution. To ensure a balanced student workload, the panel reformulates the requirement (see section F, A2).

In response to the recommendation to establish a transparent mechanism for evaluating and validating actual student workload, the university has submitted measures to periodically monitor and review students' study hours. These measures outline the principles and procedures for workload evaluation.

The experts note that the university has taken prompt action and defined concrete methods. However, the implementation of a new principle requires time, and statistical data are needed to demonstrate its effectiveness. Therefore, the experts maintain the requirement (see section F, A2).

In response to the recommendation to assign the same credit points to professional courses taught in English as to their corresponding Chinese-taught courses, the university submitted a factual clarification stating that the credit points are identical for both English- and Chinese-taught versions of the respective courses. The observed differences relate to students' performance (grades). The English-taught courses may be more challenging due to language-related factors, which can affect performance (grades). The university therefore plans to further improve teaching and assessment arrangements in English-taught courses to ensure fairness and comparability while maintaining the intended learning out-

comes and academic standards. Considering the statement of SZTU, the experts recommend the SZTU to evaluate the demands and grading of English-taught professional courses in comparison with Chinese-taught ones (see section F, E3).

After examining the provided documents, the experts consider the criterion to be partially fulfilled.

5

## C-6. Didactics and teaching methodology [ASIIN 1.6]

### Description of the current status:

As the SAR states, the Transportation program uses a combination of lectures, laboratory exercises, project-based learning, problem-based learning, case-based learning, cooperative learning, blended learning, and flipped classroom formats. Theoretical courses are delivered in regular classroom settings. Laboratory and practice-oriented courses are taught in smaller groups. Some courses are delivered in English to enhance students' English language proficiency. Appendix 09 lists the specific teaching methods assigned to each module.

10

Project-based learning is used in courses such as *Innovation Practice Project (L1–L4)*, *Traffic Engineering*, and *Artificial Intelligence Technology and Application*. Students work in teams, complete design tasks, and submit written or presentation-based outputs. Problem-based and case-based learning are applied in modules such as *Transport Economics* and *Traffic System Analysis*, where students analyse real or simulated scenarios.

15

Cooperative learning is integrated into laboratory classes and design modules. Students work in assigned groups and perform shared tasks. Blended and flipped learning are used in courses such as *Python Programming* and *College English*. Students study online material through digital platforms (e.g. Chaoxing) to prepare themselves before class. Classroom time is used for discussion and application.

20

Seminar-based teaching is used in *Technical English and Thesis Writing*, where students participate in reading tasks, peer review, and presentations. Hands-on laboratory work includes inquiry-based and design-oriented experiments in which students collect and analyse data and present results.

25

Practical training includes the multi-level *Innovation Practice Project*, which is organized from the third to the sixth semester, and the long-term internship, typically carried out in the seventh semester. Students are supervised by university instructors and enterprise mentors. Their internship work is evaluated through company assessments and written reports.

30

During the on-site discussions, teaching staff confirmed that they regularly participate in national and international training sessions and workshops to develop their didactical skills. Student representatives also confirmed that semesterly evaluations are conducted to assess teaching effectiveness and to support the continuous improvement of the program.

5 **Analysis and assessment of the expert panel**

The expert panel finds that the Transportation program engages a diverse set of teaching and learning methods that support the achievement of the intended learning outcomes. Students reported that team-based projects, presentations, and case studies are routinely used. Especially, the experts appreciate that digital learning platforms are utilized to deliver course materials and facilitate self-directed study. The cooperation with local industry provides students with exposure to real-world engineering environments.

During discussions with industry representatives, the panel received feedback indicating that graduates demonstrate strong practical abilities, while their communication and presentation skills require further strengthening. Therefore, the panel recommends enhancing students' communication competencies by incorporating more oral exams, presentations and teamwork-oriented activities into the teaching methodology.

Overall, the expert panel considers the teaching and learning methods appropriate and effective.

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

In response to the recommendation to improve the communication skills of the students, the university appreciates this expert feedback and plans to further enhance communication-related competencies. While the experts acknowledge the university's intentions, the proposed measures have not yet been fully implemented, and corresponding improvements cannot be evidenced at this stage. Therefore, the experts maintain their recommendation (see section F, E4).

Generally, the experts assess the criterion as substantially fulfilled.

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

### **Description of the current status:**

30 As the SAR states, the Transportation program uses a unified examination and assessment system defined by SZTU's institutional regulations. Examinations include closed-book writ-

ten tests, open-book tests, project reports and practical operation assessments. Examination formats are selected according to the course syllabus and intended learning outcomes. Appendix 17-1 specifies that written exams must use A/B versions and that instructors complete grading within one week. Examination paper analysis reports are required after each exam cycle.

The SAR indicates that general courses are examined through centrally organized final exams, while subject-specific courses are organized by the CUTL. Deferred examinations are allowed for approved reasons such as illness. There are also compensation mechanisms for students with special needs. For students who fail a course, make-up examinations are offered in accordance with Appendix 17-6. Makeup exam grades are recorded as “D” when passed. Course retakes follow the conditions stated in Appendix 17-4. Students must retake failed required courses, and elective courses may be replaced with other electives. Students who retake exams must complete attendance and coursework requirements once again and may not sit the final exam if more than one-third of assignments or laboratory tasks are incomplete. Final examinations are generally held during the last two weeks of each semester. The Department of Academic Affairs centrally arranges and publishes the examination schedule at least one week prior to the exam period.

The grading system uses a 100-point scale and consists of both continuous assessment and a final examination. The final examination contains basic questions and may also include advanced questions. Students must first score at least 75 points on the basic part to qualify for the advanced questions. Only if they achieve at least 18 points on the advanced part will these points be counted toward the final grade.

The table below presents the grade conversion scheme.

| Overall evaluation score | Corresponding grade points | Courses with additional questions |                           | Courses without additional questions |
|--------------------------|----------------------------|-----------------------------------|---------------------------|--------------------------------------|
|                          |                            | Combined basic score              | Additional question score | Combined basic score                 |
| A+                       | 4.5                        | 100-93                            | 30-0                      | 100-93                               |
|                          |                            | 92-85                             | 30-18                     |                                      |
|                          |                            | 84-80                             | 30-24                     |                                      |
| A                        | 4.0                        | 92-85                             | <18                       | 92-85                                |
|                          |                            | 84-80                             | 23-18                     |                                      |
| B+                       | 3.5                        | 84-80                             | <18                       | 84-80                                |
| B                        | 3                          | 79-75                             | Not Calculated            | 79-75                                |
| C+                       | 2.5                        | 74-70                             | Not Calculated            | 74-70                                |
| C                        | 2.0                        | 69-65                             | Not Calculated            | 69-65                                |
| D                        | 1.0                        | 64-60                             | Not Calculated            | 64-60                                |

According to Appendix 17-8 to 17-11, the bachelor's thesis is completed in the eighth semester over 16 weeks, with students conducting independent research under supervision. Each supervisor typically guides no more than five students. The bachelor thesis evaluation process follows a structured system involving multiple evaluators. Plagiarism detection mechanisms are in place, with a general similarity threshold set at 30%.

The scoring breakdown is as follows:

- 30% from the supervisor,
- 20% from a second reviewer,
- 50% from the oral defense, which is conducted by a panel of 5-7 evaluators

### **Analysis and assessment of the expert panel**

The expert panel reviewed samples of examination papers and final theses and confirms that an examination system is in place, incorporating transparent examination regulations and accommodations for students with specific needs. The expert panel concludes that the exams and theses are aligned with EQF Level 6.

The expert panel learned from the student representatives that they are familiar with the examination requirements. The student representatives reported that grading criteria are also communicated in each course syllabus. Procedures of make-up examinations and repeats are available. The examination formats are announced by the respective lecturers at the beginning of the semester, and a formal appeals process is in place for grade-related disputes.

#### ***Final assessment of the experts after the statement of the Higher Education Institution regarding criterion 2.0***

As the university did not address this criterion in its statement, the experts confirm their previous evaluations and consider the criterion to be fully fulfilled.

## **C-8. Resources [ASIIN 3]**

### **Description of the current status:**

#### *Staff and Staff Development [ASIIN 3.1]*

As the SAR states, the CUTL employs 19 full-time faculty staff for the Transportation program (2 professors, 7 associate professors, 3 lecturers/assistant professors, and 7 laboratory technicians). 63% of faculty hold doctoral degrees and 84% are under age 40. Faculty

expertise covers transportation engineering, mechanical and electronic engineering, control science, data science, vehicle engineering, and geographic information science. CVs are listed in Appendix 19-1. The SAR indicates that faculty members have completed 45 research projects and published over 100 papers in the past five years (Appendices 19-2 and 19-3). More than 20 invention patents have been granted (Appendix 19-4). Additionally, CUTL also engages part-time lecturers from industry and guest lecturers from German partner universities to give seminars on the latest industry trends, cutting-edge technological applications and international best practices in transportation engineering.

The SAR reports that staff development follows university measures such as mentorship for young teachers, laboratory technician training, and teaching-ability enhancement programs (Appendices 02-3 and 02-4). Enterprise practice and industry collaboration activities are documented in Appendices 19-5 to 19-7. Funding support for staff development is summarized in the table below:

| No. | Project Name                                                      | Funding Amount    | Funding Source | Expenditure                                    |
|-----|-------------------------------------------------------------------|-------------------|----------------|------------------------------------------------|
| 1   | Shenzhen Overseas High-Level Talent Project                       | ≈ 194,174 EUR     | Government     | Living allowance                               |
| 2   | Postdoctoral Researchers and Personnel Coming to Work in Shenzhen | ≈ 43,689 EUR      | Government     | Living allowance                               |
| 3   | Shenzhen Overseas High-Level Talent                               | ≈ 364,079 EUR     | Government     | Research startup fund                          |
| 4   | Runyuan Youth PI Selection Program                                | ≈ 12,270 EUR      | University     | Academic visits and exchange, living allowance |
| 5   | Young Teachers' International Conference Funding                  | Up to ≈ 2,454 EUR | University     | Overseas conference attendance funding         |

Reportedly, SZTU provides training workshops, teaching exchange programs, and mentoring. Professional development programs and opportunities for international study or industry practice are also available, intended to support continuous improvement in teaching and research. Junior faculty staff are supposed to benefit from structured mentorship by senior colleagues and are expected to participate in classroom observations to refine their instructional skills.

*Student support and student services [ASIIN 3.2]*

According to the SAR, student support is organized through several units, including the Department of Academic Affairs, the Student Affairs Department, faculty counselors, and academic mentors. Students receive academic planning, course selection guidance, internship coordination, and teaching-quality information. Support services include mental-

health counseling, career-planning assistance, scholarship and financial-aid management, and employment guidance. The SAR indicates that each class is assigned a full-time counselor responsible for daily support and communication with families.

5 The academic mentorship system assigns each student to a faculty mentor for guidance on learning strategies, research participation, and career development. Corporate mentorship accompanies the internship system; enterprise mentors and university supervisors jointly guide students (Appendix 03-1). Student feedback is collected through course evaluations at the beginning, in the middle, and at the end of each semester (Appendix 22). Policies for major transfer, minor programs, and secondary degrees are described in chapter C-4.

#### 10 Funds and equipment [ASIIN 3.3]

As the SAR states, a total of 69.32 million RMB ( $\approx$  8.41 million EUR) has been invested in teaching and practice activities over the past five years. Most of the funding comes from the government, and a smaller portion from corporate donations. Investment categories include teaching expenses, internship and practice expenditures, laboratory maintenance, 15 industry-university cooperation, and internal development. The majority of these funds are allocated to teaching activities. SZTU charges an annual tuition fee of 5,500 RMB and an annual accommodation fee of 1,200 RMB.

The SAR indicates that teaching takes place in 73 large classrooms, 14 lecture halls, and 83 smart classrooms equipped with multimedia systems and interactive technologies. The Ex- 20 perimental Center includes 43 undergraduate teaching laboratories and 5 research laboratories supporting more than 20 experimental courses. The program has 22 off-campus practice bases (Appendix 03-1), used for internships and graduation projects.

Research and teaching platforms include provincial and municipal laboratories and more than 10 joint laboratories with enterprises. Equipment assets' total value amounts to 229 25 million RMB ( $\approx$  27.79 million EUR). Approximately 6,518 instruments are listed in Appendix 19-8.

### **Analysis and assessment of the expert panel**

#### *Staff and Staff Development [ASIIN 3.1]*

30 The expert panel recognizes the faculty's solid academic credentials and dedication to both teaching and research endeavors. The teaching team features a well-balanced mix of professors, associate professors and lecturers, with a high rate of 63% of teaching staff having a doctoral degree. The panel also acknowledges that some of the faculty staff have overseas academic backgrounds or work experience in industries.

5 During the interviews, the expert panel learned that lecturers have a teaching load of 12 hours per week, while associate professors and professors teach 8 hours per week. Faculty members reported that the workload can be managed within regular working hours. Many teachers expressed that they found enjoyment in teaching and mentoring students and considered it a rewarding part of their professional work. They also reported that their schedules allow sufficient time for conducting research projects and for participating in training activities and academic conferences.

10 Overall, the panel concludes that faculty qualifications and engagement are suitable for successful program delivery. SZTU's staff development system is functional and comprehensive. Expanding international activities will further support faculty professional development and strengthen the overall quality of the program.

#### *Student Support and Student Services [ASIIN 3.2]*

15 The expert panel notes that SZTU offers well-structured student support services encompassing academic guidance, psychological counseling, and career assistance. These resources are accessible through multiple channels, including the student affairs department, department of academic affairs, and the student counselor system. Students are provided with personalized guidance on study planning, academic performance, and career development.

20 Feedback from students confirms that these support services are easily accessible, and the students expressed full satisfaction with the assistance provided by faculty and the university. The panel concludes that the student support and advisory framework is not only well-organized and effective in practice but also aligns with student expectations.

#### *Funds and Equipment [ASIIN 3.3]*

25 The expert panel confirms that the Transportation program boasts a stable, sustainably managed financial foundation. Funding comes from diverse sources—national/provincial government allocations, tuition fees, and industry partners' third-party contributions—with the program receiving university financial priority due to its strategic importance.

30 The program is also supported by modern, well-maintained teaching and research infrastructure: up-to-date equipment in laboratories, workshops and training centers, industry-joint labs enhancing practical learning, and comprehensive digital resources.

Both faculty and students expressed satisfaction with these facilities. The panel concludes that sufficient financial and material resources effectively underpin high-quality teaching and continuous program improvement.

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

As the university did not address this criterion in its statement, the experts confirm their previous evaluations and consider the criterion to be fully fulfilled.

5 **C-9. Quality management: Quality assurance and development [ASIIN 5]**

**Description of the current status:**

*Organizational Structure and Responsibilities*

10 As the SAR states, SZTU's quality management is organized through a university-level teaching quality assurance system with nine components, including objectives, standards, supervision, evaluation, and improvement. CUTL has implemented these requirements through teaching committees, academic leaders, program coordinators, and supervision groups. Responsibilities include classroom supervision, teaching evaluation, documentation review, and curriculum coordination. Student information officers and class councils support monitoring activities. Quality management procedures follow university regulations contained in Appendix 02. These regulations define teaching supervision duties, documentation requirements, and reporting structures.

*Standards and Monitoring*

20 The SAR indicates that quality monitoring uses classroom observations, mid-term inspections, student evaluations, peer reviews, and supervision records. Teaching quality is assessed by the Teaching Supervision Office, department supervisors, and university leaders. Evaluation tools include teaching observation forms, exam paper analyses, thesis review procedures, and documentation audits. Student feedback is collected at the beginning, in the middle and at the end of each semester using standardized surveys (Appendix 22). The SAR further reports that program performance is monitored through workload statistics, grade distributions, examination data, and thesis evaluations.

*Continuous Improvement*

30 As the SAR states, improvement supposedly follows a cycle of evaluation, feedback, adjustment, and re-inspection. Teaching issues identified through supervision, evaluations or inspections are communicated to instructors, who must revise course content or teaching methods. The findings are reviewed in annual meetings and curriculum elements are adjusted where needed. The SAR indicates that internship records, thesis evaluations as well

as alumni and enterprise surveys are used to guide revision of practical training modules. Documentation of improvements is archived according to the regulations in Appendix 02. Cohort progression is tracked using graduation and retention data shown in Appendix 16-1, including an average graduation time of 8.28 semesters.

5       Reportedly, the university also conducts annual teaching analyses and applies data results to refine program implementation and teaching management. The SAR indicates that the employment rate of the two graduating classes exceeded 85% (including further domestic and international further studies).

10       The CUTL has conducted an internal quality evaluation using a SWOT analysis for the Transportation Program to identify strategic measures for continuous improvement. The results of the SWOT analysis have been submitted to the expert panel.

### **Analysis and assessment of the expert panel**

15       The expert panel confirms that the program is operating a functioning quality assurance system that meets the core expectations of the ASIIN standards. The panel acknowledges that the management and faculty facilitate an open feedback culture and that it supports an attitude which allows room for trial and error. The quality culture focuses on continuous improvement. Using SWOT analyses to develop strategic measures is an effective approach.

20       The panel has seen internal assurance operating across university, faculty, and departmental levels, including teaching assessments, classroom observations, peer reviews, and course inspections. Students complete mandatory semesterly online evaluations. External validation such as employer/alumni surveys enables data-driven curriculum adjustments. The faculty uses evaluation reports to refine teaching methods, and students note tangible course improvements from their feedback.

25       However, the expert panel identifies an area for improvement: the communication of evaluation results to students is not carried out consistently. In many cases, students receive informal oral feedback from instructors, and no standardized process is in place. To ensure a complete feedback loop, the panel recommends formalizing how evaluation results are shared. This should include clear procedures for informing students about evaluation outcomes and explaining what improvement measures will be taken based on their feedback.

30

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

5 In response to the recommendation to improve the closed feedback loop, the university has stated its intention to establish a structured feedback mechanism through multiple channels to collect, analyse, and publicly disclose evaluation data.

10 The expert panel acknowledges the goodwill of establishing a closed-loop communication process involving all stakeholders, aimed at enhancing transparency and supporting continuous improvement. However, as the implementation of these quality assurance measures will require time, the panel therefore maintains a recommendation in this regard (see section F, E5).

The experts assess the criterion as substantially fulfilled.

## **C-10. Transparency and documentation [ASIIN 4]**

### **Description of the current status:**

#### *Module Descriptions [ASIIN 4.1]*

15 The Module descriptions in Appendix 09 specify the title, instructors, aims, learning outcomes, teaching and assessment methods, prerequisites, credits, and duration. Information about recommended readings, teaching support, and assessment weightings is also included.

20 The descriptions undergo continuous review to align with current academic and industry requirements. Module information is accessible through the university's internal platform and printed student handbooks.

#### *Diploma and Diploma Supplement [ASIIN 4.2]*

25 Graduates receive a Degree Certificate and Bachelor's Diploma (Appendix 21-2) together with a template of the Diploma Supplement (Appendix 21-3) as well as a Transcript record (Appendix 21-1). The supplement is provided in English and lists basic program information, including Level of the qualification and grading scheme.

During the on-site visit, the program coordinators admitted that the diploma supplement is not yet issued to all graduates or governed by a formal institutional policy.

### ***Relevant Rules [ASIIN 4.3]***

As the SAR states, the university regulates academic activities through official documents such as the Student Handbook (Appendix 01), the Quality Management Handbook (Appendix 02), and the Examination Regulations (Appendix 17). These documents define course registration, examination and grading procedures, degree requirements, student rights and responsibilities, and academic appeals. The SAR indicates that the Undergraduate Education Quality Management System (Appendix 02) governs curriculum design, teaching processes, supervision, and documentation. All regulations are published on the university's website and are accessible to students and faculty. Students receive information about these rules during orientation and may consult them throughout their studies.

### ***Analysis and assessment of the expert panel***

#### *Module descriptions*

The expert panel acknowledges that the Transportation program maintains formally structured and accessible module and course descriptions, consolidated into a unified handbook. Each module description provides key academic information, including the module title, semester placement, credit value, contact hours, learning outcomes, prerequisites, teaching and assessment methods, and workload distribution.

#### *Diploma and Diploma Supplement*

The experts recognize the template of an English-language diploma supplement as a positive step toward enhancing international transparency. However, its format and content require further development. The panel notes that the current template does not include all required Europass elements, such as the linkage to learning outcomes and ECTS correspondence. Additionally, the issuing procedure has not been formalized, and graduates have not yet received this document. The panel recommends establishing a dedicated regulation or policy to govern the supplement's structure, content, and implementation process.

#### *Relevant rules*

The expert panel acknowledges that academic and regulatory information is available in Chinese during orientation session. Freshmen receive guidance on these regulations, and feedback from current students indicates they can easily find relevant information via online platforms. *The expert panel confirms that SZTU has established a comprehensive set of regulations, which are accessible to students and faculty through the university's online*

portal. The panel concludes that these regulations are clearly documented and effectively implemented.

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

5 *Module Descriptions [ASIIN 4.1]*

In response to the request to update the module descriptions in line with the revised ECTS allocation, the university has submitted updated module descriptions. After careful examination, the experts consider the content to be complete and accurately reflect the revised ECTS allocation.

10 *Diploma and Diploma Supplement [ASIIN 4.2]*

In response to the Diploma Supplement, SZTU has prepared a Diploma Supplement template and sample (see Annex E-2.4-1). SZTU intends to provide the Diploma Supplement to graduates as a standard document shortly after graduation, in line with the ASIIN recommendation and subject to the finalisation of internal administrative procedures. The experts carefully examined the template of Diploma supplement and suggest attaching with an additional record transcript including the ECTS transfer clarification and full ECTS grade distribution. Overall, the experts acknowledge the commitment of SZTU. However, until implemented, the panel maintain the requirement (see section F, A3).

15  
20 After examining the provided documents, the experts consider the criterion to be partially fulfilled.

## **E. Additionally requested documents**

Before preparing their final assessment, the panel ask that the following missing or unclear information be provided together with the comment of the Higher Education Institution on the previous chapters of this report:

- 5
- revised ECTS calculation [ASIIN 1.5]
  - Explanation of the ECTS conversion logics and how the real workload of self-study time is evaluated and monitored [ASIIN 1.5]
  - Updated module descriptions reflecting revised workload in ECTS

## F. Comment of the Higher Education Institution (11.01.2026)

The following quotes the statement of the institution:

### General remarks

5 This statement provides Shenzhen Technology University's (SZTU) comments on the Evaluation Report for the Bachelor's degree programme **Transportation** (version 18/12/2025). It is primarily intended to (i) correct any factual inaccuracies, and (ii) provide clarifications and additional information where the assessment may be based on incomplete or misleading impressions. The statement is kept brief and structured according to the recommendations in **Section D-2 (R1–R8)**. In addition, SZTU submits the **additionally requested documents listed in Section D-3**, including the revised ECTS calculation, an explanation of the ECTS conversion logic and workload monitoring approach, and updated module descriptions reflecting the revised workload in ECTS. Where measures are planned, SZTU indicates the intended deliverables and the envisaged timeframe and refers to supporting annexes accordingly.

### Factual corrections

With the exception of the point reflected in **R6 [ASIIN 1.5]**, SZTU has no further factual corrections to the Evaluation Report. Regarding R6, the report appears to imply that English-taught professional courses carry different credit points than their corresponding Chinese-taught courses. SZTU would like to clarify that, according to the approved curriculum and module documentation, **the credit points are identical for English-taught and Chinese-taught versions of corresponding professional courses**. The observed differences relate to students' performance (grades) rather than credit allocation; see SZTU's detailed response under **E-3.2**.

### Response to Major recommendations (D-2)

#### R1 [ASIIN 1.1] Alignment of learning outcomes (CN vs EN)

SZTU acknowledges the expert panel's observation that the learning outcomes presented in the **Chinese version of the talent training plan published on the official website** differ slightly from the **English learning outcomes provided in the SAR/Annex 05-1**. This inconsistency is mainly due to a **version mismatch**: the Chinese webpage currently displays the **2024 cohort** training plan, while the SAR submitted for this procedure reflects the **updated 2025 version** (latest revision) prepared for the accreditation documentation.

To address this issue, SZTU will use the **2025 cohort talent training plan** as the single reference version and will **update and align the Chinese and English learning outcomes accordingly**, ensuring that both language versions are fully consistent in content and formulation. SZTU will also establish a routine internal check (responsibility at programme level) to ensure that any future revisions are synchronised across both languages and publication channels.

In addition, and in line with **R5 [ASIIN 1.3]**, SZTU will **maintain and regularly update the English-language website beyond the accreditation process** to ensure that internationally relevant programme information (including the learning outcomes) remains accurate and up to date.

### **R2 [ASIIN 1.4] Rules & procedures for recognition of externally obtained qualifications**

SZTU confirms that rules and procedures for the recognition of externally obtained qualifications are in place. The relevant regulations and forms are provided in **Annex E-2.2-1 to Annex E-2.2-4**, covering, inter alia, credit recognition for **exchange studies, transfer students**, and other relevant cases. Recognition is carried out based on documented learning outcomes/contents and workload, and is subject to an internal review and approval process in accordance with university regulations.

### **R3 [ASIIN 1.5] Transparent mechanism to evaluate and validate actual student workload**

SZTU acknowledges the panel's recommendation to establish and implement a transparent mechanism for systematically evaluating and validating the actual student workload. At present, SZTU's national credit system is primarily contact-hour based (**1 Chinese credit = 18 contact hours**). For international comparability, SZTU applies the general ECTS definition **1 ECTS = 30 total study hours (contact hours + self-study)**. We recognise that self-study time cannot be measured with full precision for each individual student; nevertheless, SZTU will implement a structured and transparent approach to **estimate, monitor and periodically review** workload assumptions at module level.

SZTU will implement the following measures:

1. **Module-level workload revision and documentation:** each course coordinator will review and, where necessary, revise the estimated self-study hours based on the course design (preparation, assignments, project work, exam preparation) and document the rationale in the module description.
2. **Benchmarking of key modules:** for selected core professional modules, workload structure, assessment formats and intended learning outcomes will be benchmarked against comparable modules at partner universities (e.g., German universities of applied sciences) to support consistency of ECTS allocation.

3. **Making continuous assessment workload explicit:** as continuous assessment already includes reports, individual assignments and project outputs, SZTU will specify the expected time investment for these components (e.g., expected hours per task) and reflect it transparently in the workload calculation.

5 4. **Student workload feedback and annual review cycle:** SZTU will introduce a semesterly workload feedback survey for students (including self-study time and perceived workload peaks). Results will be analysed at programme level and will feed into an **annual curriculum/module review**. Where feedback and academic indicators suggest a mismatch between planned workload and actual workload, the programme will initiate a review of course design (e.g., distribution and volume of assignments, assessment design) and, where justified, adjust the documented workload/ECTS allocation accordingly.

10 These measures will be documented in the revised ECTS calculation and workload monitoring concept, and reflected in the updated module descriptions submitted under **D-3**.

#### 15 **E-2.4 R4 [ASIIN 4.2] Diploma Supplement to all graduates, shortly after graduation, incl. required information**

20 SZTU has prepared a Diploma Supplement template and sample (see Annex E-2.4-1). SZTU intends to provide the Diploma Supplement to graduates as a standard document shortly after graduation, in line with the ASIIN recommendation and subject to the finalisation of internal administrative procedures.

25 In coordination with the Department of Academic Affairs, SZTU is currently establishing the workflow for generating and issuing the Diploma Supplement. The template will follow the Diploma Supplement logic and will include all required information; where necessary, the layout may be adapted to fit the specific context of Chinese higher education while ensuring completeness and clarity.

#### **Workflow for student application of Diploma Supplement**

30 **Phase 1 Student application initiation:** The student submits a copy of the "Diploma Supplement Application Form" to the teaching administration office of their college (e.g., College of Urban Transportation and Logistics). Besides, students also need to provide some personal information, such as student ID, official original Chinese and English academic transcripts, ID numbers, Chinese and English title and abstract of the graduation thesis/design.

35 **Phase 2 College review and information verification:** The college academic staff verifies the student's identity and graduation eligibility. A designated person (e.g., program director or head of academic affairs) reviews and confirms the accuracy of the thesis information (title, abstract, keywords, etc.) submitted by the student against archived records.

The college compiles and prepares the standard descriptive document for the program's "Core ASIIN Accreditation-Related Content" (e.g., program objectives, learning outcomes, curriculum structure and competency mapping). This is a fixed template and does not need to be written individually for each student, but the latest version must be used. The responsible person at the college signs and stamps the application form to confirm preliminary approval. They then bundle all the student's personal materials and forward the package to the Department of Academic Affairs in the university.

**Phase 3 Department of Academic Affairs Review:** The Academic Affairs Office verifies the student's graduation and degree conferral status. Based on the student's academic record, the office retrieves or verifies the authoritative student status information from the official "CHESICC" (Xuexin Wang) backend (e.g., admission type, program duration, institution name, program name, enrollment and graduation dates, etc.) and prepares the official English translation. Validates that the transcript submitted by the student is the official version issued by the Department of Academic Affairs.

**Phase 4 Information Integration and Draft Generation:** A staff member from the Department of Academic Affairs Office, acting as the overall coordinator, integrates materials from the four sources: CHESICC Information (provided by Academic Affairs Office); Official Transcript (provided by student, verified by Academic Affairs Office); Graduation Thesis Information (provided by student, verified by School/Faculty); Program ASIIN Accreditation Information (standard document provided by School/Faculty). Using the university's customized template, which has been pre-approved by ASIIN, the above information is compiled to generate a draft of the Diploma Supplement.

**Phase 5 Quality Check and Final Review:** Led by the Department of Academic Affairs, potentially in conjunction with the International Office or Teaching Quality Office, a cross-check review of the generated Supplement draft is conducted, focusing on: Completeness and accuracy of information; Format compliance; Professionalism of English translation. After verification, the draft is submitted to the responsible university leader or head of the Academic Affairs Office for final approval.

**Phase 6 Official Issuance and Archiving:** The Diploma Supplement is stamped with the official university seal (or a designated special seal) and the signature seal of the university president (or authorized representative). The issued official document is produced in the specified number of copies (e.g., one for the student, one for university archives). The student is notified for pickup, or the document is sent via the agreed method. Simultaneously, the student's application process is formally closed and archived within the university's system.

## Response to Minor recommendations (D-2)

### R5 [ASIIN 1.3] Maintain and update English website beyond accreditation

SZTU acknowledges the panel's observation and recommendation. The English-language programme webpages were primarily established and consolidated for the purpose of the ASIIN accreditation procedure; therefore, some contents have not yet been maintained with the same regular update cycle as the Chinese webpages.

Building on the work completed for the accreditation, SZTU intends to maintain and further improve the English website beyond the ASIIN process. In particular, the College plans to incorporate the English webpages into its regular information maintenance arrangements by **clarifying responsibilities, setting an appropriate update routine, and introducing a basic consistency check** between Chinese and English versions for key programme information (e.g., programme profile, learning outcomes, curriculum structure, module information, contact persons, and relevant regulations). Further improvements will be implemented step by step within the timeframe of the follow-up process.

### R6 [ASIIN 1.5] Equal credit points for English-taught vs Chinese taught professional courses

Following an internal verification of the approved curriculum and module documentation, SZTU confirms that the **credit points allocated to English-taught professional courses are identical to those of the corresponding Chinese-taught courses.**

Students have reported that English-taught courses may be more challenging due to language-related factors, which can affect performance. The programme therefore plans to further improve teaching and assessment arrangements in English-taught courses (e.g., clearer assessment criteria/rubrics and aligned assessment requirements) to ensure **fairness and comparability** while maintaining the intended learning outcomes and academic standards.

### R7 [ASIIN 1.6] Strengthen communication skills (oral exams, presentations, teamwork, interdisciplinary)

SZTU appreciates the recommendation to further strengthen students' communication skills. In the Transportation programme, a number of professional modules—particularly at higher study levels—have already been progressively implementing **flipped-classroom elements** in line with university-level teaching requirements. As a result, **student presentations and group-based practical reports** have been increasingly integrated into teaching and assessment, thereby providing more opportunities for oral communication, teamwork and structured argumentation.

Building on this foundation, the programme plans to further enhance communication-related competencies by (i) strengthening presentation-based assessment in practice-oriented components such as the **Innovation Practice Project**, and (ii) reinforcing the evaluation of presentation, reporting and defence performance within the **final thesis/project** process. In addition, SZTU will continue to encourage and support students' participation in relevant **discipline competitions**, which provide authentic settings for teamwork, communication and, where applicable, interdisciplinary collaboration.

#### **R8 [ASIIN 5.0] Share evaluation results with students continuously**

SZTU acknowledges the recommendation to improve transparency by continuously sharing evaluation results with students. At present, course evaluations are conducted anonymously to encourage candid feedback. The results are primarily used internally for teaching improvement and staff development; however, a systematic feedback loop towards students based on evaluation outcomes has not yet been fully established.

To enhance transparency while preserving anonymity and data protection, SZTU intends to strengthen a structured feedback mechanism through **multiple channels**. First, the programme will share **aggregated evaluation insights** (overall trends and key improvement areas) with students and communicate follow-up actions in a "you said – we did" manner, without disclosing any individual-level data or identifiable information. Second, in addition to written course evaluations, the programme already organises **mid-semester teacher-student consultation meetings** each semester, where students can raise course-related issues directly with the programme director and receive timely responses. SZTU will further consolidate the outcomes of these meetings (e.g., recurring issues and agreed actions) and communicate them back to the student body to support a continuous and transparent quality improvement cycle.

#### **Additionally requested documents (to be submitted together with the statement)**

##### **Revised ECTS calculation [ASIIN 1.5]**

SZTU submits an updated curricular overview including the revised ECTS/workload calculation for the Transportation programme. The overview presents the credit allocation together with contact hours, estimated self-study hours and total workload per module, and provides the basis for transparent ECTS calculation across the curriculum.

For transparency, the following calculation rule is applied in the overview:

Electives: The subtotal (credits and workload) is calculated based on the minimum graduation requirement for elective credits. Contact hours, self-study hours and semester-wise distribution are proportionally estimated according to this minimum requirement, as documented in Annex E-4.1-1.

**Submitted as: Annex E-4.1-1 “Updated curricular overview-0111”.**

**Explanation of ECTS conversion logic & monitoring of real workload (incl. self-study time)  
[ASIIN 1.5]**

5 SZTU applies the following conversion logic for ECTS transparency: the national credit system is contact-hour based (**1 Chinese credit = 18 contact hours**), while ECTS is presented based on total student workload (**1 ECTS = 30 total hours**, including contact hours and self-study). Self-study hours are estimated at module level based on teaching and assessment design (e.g., preparation, assignments/reports, project work and exam preparation) and are documented in the updated curricular overview and module descriptions.

10 Regarding the monitoring and review of actual workload, SZTU will use student feedback and programme-level review procedures to validate workload assumptions and to refine the documented workload over time. The planned approach (including the annual review cycle and feedback channels) is described in SZTU’s response to the major recommendation **E-2.3 R3 [ASIIN 1.5]** and will be implemented step by step during the follow-up period.

15 **Updated module descriptions reflecting revised workload in ECTS**

20 SZTU submits updated module descriptions for the Transportation programme. The updated descriptions present, for each module, the **workload in hours** (total workload, contact hours and estimated self-study hours) together with the corresponding **credit points**, thereby making the workload assumptions transparent and supporting an ECTS-compatible presentation of student workload. The revised workload information is consistently reflected across the module catalogue.

**Submitted as: Annex E-4.3-1 “Updated Modules Descriptions”.**

**Closing statement**

25 SZTU thanks the ASIIN expert panel for the constructive evaluation and recommendations. SZTU will implement the planned improvements within the follow-up period and provide the requested evidence and documentation accordingly

## G. Summary: Expert recommendations (23.01.2026)

Taking into account the additional information and the statement given by Shenzhen Technology University, the experts summarize their analysis and **final assessment** for the award of the seals as follows:

| Degree Program    | ASIIN Seal                     | Maximum duration of accreditation | Subject-specific label | Maximum duration of accreditation |
|-------------------|--------------------------------|-----------------------------------|------------------------|-----------------------------------|
| Ba Transportation | With requirements for one year | 30.09.2031                        | –                      | –                                 |

### 5 Requirements

A4 [ASIIN 1.1] It is required to ensure that the content of the learning outcomes is fully aligned between the Chinese and English versions.

10 A5 [ASIIN 1.5] It is required to ensure a balanced student workload across the semesters and to establish and implement a transparent mechanism for systematically evaluating and validating the actual student workload in order to identify and correct discrepancies between the calculated and the actual student workload in a timely manner.

A6 [ASIIN 4.2] It is required to ensure that all graduates are provided a Diploma Supplement in English shortly after graduation, including all required information.

### Recommendations

15 E1 [ASIIN 1.3] It is recommended to maintain and update the English website beyond the ASIIN accreditation process.

E2 [ASIIN 1.4] It is recommended to enhance the procedures for recognizing competencies acquired outside the university setting.

20 E3 [ASIIN 1.5] It is recommended to evaluate the demands and grading of English-taught professional courses in comparison with Chinese-taught ones.

E4 [ASIIN 1.6] It is recommended to improve the communication skills of the students by applying more oral exams, presentations, teamwork tasks and interdisciplinary collaboration.

- E5 [ASIIN 5.0] It is recommended to enhance the transparency of existing quality assurance processes by establishing more effective and accessible communication channels to share evaluation outcomes with students.

## H. Comment of the Technical Committees

### Technical Committee 03 – Civil Engineering, Geodesy and Architecture (09.03.2026)

*Assessment and analysis for the award of the ASIIN seal:*

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

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

| Degree Programme  | ASIIN Seal                     | Maximum duration of accreditation | Subject-specific label | Maximum duration of accreditation |
|-------------------|--------------------------------|-----------------------------------|------------------------|-----------------------------------|
| Ba Transportation | With requirements for one year | 30.09.2031                        | –                      | –                                 |

### Technical Committee 06 – Engineering and Management, Economics (27.02.2026)

*Assessment and analysis for the award of the ASIIN seal:*

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

The Technical Committee 06 – Engineering and Management, Economics recommends the award of the seals as follows:

| Degree Programme  | ASIIN Seal                     | Maximum duration of accreditation | Subject-specific label | Maximum duration of accreditation |
|-------------------|--------------------------------|-----------------------------------|------------------------|-----------------------------------|
| Ba Transportation | With requirements for one year | 30.09.2031                        | –                      | –                                 |

# I. Decision of the Accreditation Commission (27.03.2026)

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

The AC discusses the procedure and largely concurs with the assessment of the experts and the TCs.

However, with regard to Requirement A3 on the Diploma Supplement, the AC proposes minor linguistic clarifications by adding the terms “automatically” and “with” in order to increase precision.

Furthermore, Recommendation E2 is deleted, as it primarily reflects German accreditation requirements that are not mandated by the ASIIN criteria, leaving a total of three recommendations remaining.

In all other respects, the AC follows the previous assessments of the experts and the TCs.

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 Transportation | With requirements for one year | 30.09.2031                        | –                      | –                                  |

## Requirements

A1 [ASIIN 1.1] It is required to ensure that the content of the learning outcomes is fully aligned between the Chinese and English versions.

A2 [ASIIN 1.5] It is required to ensure a balanced student workload across the semesters and to establish and implement a transparent mechanism for systematically evaluating and validating the actual student workload in order to identify and correct discrepancies between the calculated and the actual student workload in a timely manner.

A3 [ASIIN 4.2] It is required to ensure that all graduates are automatically provided with a Diploma Supplement in English shortly after graduation, including all required information.

**Recommendations**

- 5
- E1 [ASIIN 1.3] It is recommended to maintain and update the English website beyond the ASIIN accreditation process.
  - E2 [ASIIN 1.5] It is recommended to evaluate the demands and grading of English-taught professional courses in comparison with Chinese-taught ones.
  - E3 [ASIIN 1.6] It is recommended to improve the communication skills of the students by applying more oral exams, presentations, teamwork tasks and interdisciplinary collaboration.

## Appendix: Learning Outcomes and curricula

Learning outcomes based on SAR Input:

Upon graduation, students of the Transportation programme are expected to possess the following knowledge, skills, and abilities, in alignment with outcome-based education (OBE) principles and international engineering education standards:

5           1)    Engineering knowledge

Systematically master fundamental theoretical knowledge of transportation engineering and related interdisciplinary fields; apply mathematics, natural sciences, and engineering sciences to understand and solve complex engineering problems in transportation.

10          2)    Problem analysis

Identify, analyze, and articulate complex transportation problems using appropriate scientific principles and methods; conduct literature review, problem decomposition, reasoning, and modeling to develop effective solutions.

15          3)    Design and development of solutions

Integrate knowledge and skills to design innovative engineering solutions for complex transportation problems, considering social, health, safety, legal, cultural, economic, and environmental factors; validate and optimize design proposals through simulation or experimentation.

20          4)    Research ability

Conduct in-depth research on transportation engineering issues, including experiment design, data collection and analysis, and information integration, to obtain reliable and effective conclusions and explore new methods, technologies, and theories.

25          5)    Modern tool usage

Develop, select, and proficiently use appropriate engineering technologies, modern engineering tools, and information technology (such as software for data analysis, modeling, and simulation) to address transportation engineering problems, understanding their principles, scope, and limitations.

30          6)    Engineering and sustainable development

Understand the impact of transportation engineering practices on environment and social sustainable development; apply knowledge to evaluate project sustainability and propose measures for environmental protection, energy saving, and resource efficiency.

7) Engineering ethics and professional norms

Demonstrate strong humanities and social responsibility, adhere to engineering ethics and industry standards, uphold correct values, prioritize public interest, and maintain honesty, fairness, and self-discipline in professional practice.

5 8) Individual and teamwork

Exhibit teamwork spirit and communication skills; clearly express ideas, respect and collaborate effectively with team members in multidisciplinary environments, and demonstrate leadership and responsibility.

9) Communication and international perspective

10 Communicate effectively on complex engineering issues with peers and the public; write high-quality reports and design documents; demonstrate strong oral and written skills, proficiency in at least one foreign language, and cross-cultural communication abilities, enabling participation in international exchange and cooperation.

10) Project management

15 Understand and apply principles of project management and economic decision-making in transportation engineering, including planning, organization, coordination, control, and cost/quality/time management; effectively manage and implement engineering projects.

11) Lifelong learning

20 Recognize the importance of self-directed and lifelong learning; continuously update knowledge and skills, adapt to rapid developments in the field, and pursue sustainable personal and professional growth.

Appendix: Learning Outcomes and curricula

Curricula (based on Appendix E-4.1-1 Updated curricular overview):

|                                                                  |                                                            | Curriculum of Transportation Program |            |        |               |                  |    |    |    |    |    |    |    |    |    |
|------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------|------------|--------|---------------|------------------|----|----|----|----|----|----|----|----|----|
| Note: CP - Credit Point, S - Semester, L - Lecture, P - Practice |                                                            |                                      |            |        |               | Workload         |    | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 |
| Module designation                                               | Modules courses                                            | Type                                 | Chinese CP | ECT CP | Contact Hours | Self-study Hours | CP | CP | CP | CP | CP | CP | CP | CP | CP |
| Mathematics and Physics                                          | Advanced Mathematics A1                                    | L                                    | 4          | 5      | 72            | 78               | 5  |    |    |    |    |    |    |    |    |
|                                                                  | Advanced Mathematics A2                                    | L                                    | 6          | 7      | 108           | 102              |    | 7  |    |    |    |    |    |    |    |
|                                                                  | College Physics B1                                         | L&P                                  | 3          | 4      | 54            | 66               | 4  |    |    |    |    |    |    |    |    |
|                                                                  | College Physics B2                                         | L&P                                  | 3          | 4      | 54            | 66               |    | 4  |    |    |    |    |    |    |    |
|                                                                  | College Physics Experiments B1                             | P                                    | 2          | 2      | 36            | 24               | 2  |    |    |    |    |    |    |    |    |
|                                                                  | College Physics Experiments B2                             | P                                    | 2          | 2      | 36            | 24               |    | 2  |    |    |    |    |    |    |    |
|                                                                  | Linear Algebra A                                           | L                                    | 3          | 4      | 54            | 66               |    |    |    | 4  |    |    |    |    |    |
|                                                                  | Probability and Statistics A                               | L                                    | 3          | 4      | 54            | 66               |    |    |    | 4  |    |    |    |    |    |
|                                                                  | Operations Research                                        | L&P                                  | 3          | 4      | 54            | 66               |    |    |    | 4  |    |    |    |    |    |
|                                                                  | Subtotal                                                   |                                      | 29         | 36     | 522           | 558              | 11 | 13 | 12 | 0  | 0  | 0  | 0  | 0  | 0  |
| Informatics                                                      | Fundamentals of Computer and Artificial Intelligence A     | L&P                                  | 4          | 4      | 72            | 48               | 4  |    |    |    |    |    |    |    |    |
|                                                                  | Python Programming B                                       | L&P                                  | 4          | 4      | 72            | 48               |    | 4  |    |    |    |    |    |    |    |
|                                                                  | Information Systems and Database Practice                  | P                                    | 2          | 2      | 36            | 24               |    |    |    | 2  |    |    |    |    |    |
|                                                                  | Subtotal                                                   |                                      | 10         | 10     | 180           | 120              | 4  | 4  | 0  | 2  | 0  | 0  | 0  | 0  | 0  |
| Engineering Fundamentals                                         | Engineering Drawing and CAD A                              | L&P                                  | 4          | 4      | 72            | 48               | 4  |    |    |    |    |    |    |    |    |
|                                                                  | Fundamentals of Transportation Electrotechnics Technology  | L&P                                  | 3          | 3      | 54            | 36               |    |    |    | 3  |    |    |    |    |    |
|                                                                  | Fundamentals and Applications of Artificial Intelligence B | L&P                                  | 2          | 3      | 36            | 54               |    |    |    | 3  |    |    |    |    |    |
|                                                                  | Data Mining and Machine Learning B                         | L&P                                  | 2          | 3      | 36            | 54               |    |    |    |    | 3  |    |    |    |    |
|                                                                  | Subtotal                                                   |                                      | 11         | 13     | 198           | 192              | 4  | 0  | 6  | 3  | 0  | 0  | 0  | 0  | 0  |
| Engineering Applications                                         | Transportation Organization Theory                         | L&P                                  | 2          | 3      | 36            | 54               |    |    |    | 3  |    |    |    |    |    |
|                                                                  | Traffic Engineering                                        | L&P                                  | 2          | 3      | 36            | 54               |    |    |    | 3  |    |    |    |    |    |

Appendix: Learning Outcomes and curricula

|           |                                                                                          |     |   |     |     |     |   |   |   |   |   |   |     |     |
|-----------|------------------------------------------------------------------------------------------|-----|---|-----|-----|-----|---|---|---|---|---|---|-----|-----|
|           | Fundamentals and Technology of Sensors                                                   | L&P | 2 | 3   | 36  | 54  |   |   |   | 3 |   |   |     |     |
|           | Subtotal                                                                                 |     | 6 | 9   | 108 | 162 | 0 | 0 | 3 | 6 | 0 | 0 | 0   | 0   |
|           | Intelligent Transportation System                                                        | L   | 2 | 3   | 36  | 54  |   | 3 |   |   |   |   |     |     |
|           | Introduction to Rail Transit                                                             | L   | 2 | 3   | 36  | 54  |   | 3 |   |   |   |   |     |     |
|           | Engineering Mechanics B                                                                  | L&P | 4 | 4   | 72  | 48  |   |   |   |   | 4 |   |     |     |
|           | Traffic Information Detection and Processing                                             | L&P | 2 | 3   | 36  | 54  |   |   |   |   | 3 |   |     |     |
|           | Operation Organization and Management of Rail Transit                                    | L&P | 2 | 3   | 36  | 54  |   |   |   | 3 |   |   |     |     |
|           | Traffic Planning                                                                         | L&P | 2 | 3   | 36  | 54  |   |   |   | 3 |   |   |     |     |
|           | Transportation System Modeling and Simulation                                            | L&P | 2 | 3   | 36  | 54  |   |   |   |   | 3 |   |     |     |
|           | Traffic Management and Control                                                           | L&P | 2 | 3   | 36  | 54  |   |   |   |   | 3 |   |     |     |
|           | Geographic Information System and Application                                            | L&P | 2 | 3   | 36  | 54  |   |   |   |   | 3 |   |     |     |
| Electives | Deep Learning and Reinforcement Learning B                                               | L&P | 2 | 3   | 36  | 54  |   |   |   |   | 3 |   |     |     |
|           | Fundamentals of Control Engineering B                                                    | L&P | 3 | 3   | 54  | 36  |   |   |   | 3 |   |   |     |     |
|           | Communication and Signaling of Rail Transit                                              | L&P | 2 | 3   | 36  | 54  |   |   |   |   | 3 |   |     |     |
|           | Vehicle Engineering of Rail Transit                                                      | L&P | 2 | 3   | 36  | 54  |   |   |   |   | 3 |   |     |     |
|           | Large Language Models and Domain Knowledge Engineering B                                 | L&P | 2 | 3   | 36  | 54  |   |   |   |   |   | 3 |     |     |
|           | Multi Source Perception and Fusion                                                       | L&P | 3 | 3   | 54  | 36  |   |   |   |   |   | 3 |     |     |
|           | Principles of Economics                                                                  | L   | 2 | 3   | 36  | 54  |   |   |   |   |   | 3 |     |     |
|           | Low Altitude Transportation Network                                                      | L&P | 3 | 3   | 54  | 36  |   |   |   |   |   | 3 |     |     |
|           | Intelligent Transportation Vehicle Infrastructure Cooperative Technology and Application | L   | 1 | 1.5 | 18  | 27  |   |   |   |   |   |   | 1.5 |     |
|           | Rail Transit Infrastructure                                                              | L   | 1 | 1.5 | 18  | 27  |   |   |   |   |   |   |     | 1.5 |

Appendix: Learning Outcomes and curricula

|                                                       |                                                                                            |                   |     |      |     |     |      |     |      |      |      |      |      |      |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------|-----|------|-----|-----|------|-----|------|------|------|------|------|------|
| Subtotal*                                             |                                                                                            |                   | 41  | 55   | 738 | 902 | 0    | 6   | 0    | 9    | 25   | 15   | 0    | 0    |
| Foreign Language                                      | College English A1                                                                         | L                 | 4   | 4    | 72  | 48  | 4    |     |      |      |      |      |      |      |
|                                                       | College English A2                                                                         | L                 | 4   | 4    | 72  | 48  |      | 4   |      |      |      |      |      |      |
|                                                       | Subtotal                                                                                   |                   | 8   | 8    | 144 | 96  | 4    | 4   | 0    | 0    | 0    | 0    | 0    | 0    |
| General Courses                                       | Chinese Modern and Contemporary History                                                    | L&P               | 3   | 3    | 54  | 36  | 3    |     |      |      |      |      |      |      |
|                                                       | Ideology Morality and Rule under the Law                                                   | L                 | 3   | 3    | 54  | 36  | 3    |     |      |      |      |      |      |      |
|                                                       | Basic Principles of Marxism                                                                | L                 | 3   | 3    | 54  | 36  |      | 3   |      |      |      |      |      |      |
|                                                       | Introduction to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era | L                 | 3   | 3    | 54  | 36  |      |     | 3    |      |      |      |      |      |
|                                                       | Introduction to Maoism and Socialist Theoretical System with Chinese Characteristics       | L&P               | 3   | 3    | 54  | 36  |      |     |      | 3    |      |      |      |      |
|                                                       | Situation and Policy Education 1                                                           | L                 | 0.5 | 0.5  | 9   | 6   | 0.5  |     |      |      |      |      |      |      |
|                                                       | Situation and Policy Education 2                                                           | L                 | 0.5 | 0.5  | 9   | 6   |      | 0.5 |      |      |      |      |      |      |
|                                                       | Situation and Policy Education 3                                                           | L                 | 1   | 1    | 18  | 12  |      |     | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
|                                                       | Sports Club I~IV                                                                           | L&P               | 2   | 4.8  | 36  | 108 | 1.2  | 1.2 | 1.2  | 1.2  |      |      |      |      |
|                                                       | Military Theory                                                                            | L                 | 2   | 2    | 36  | 24  | 2    |     |      |      |      |      |      |      |
|                                                       | Mental Health for College Students                                                         | L                 | 2   | 2    | 36  | 24  |      | 2   |      |      |      |      |      |      |
|                                                       | National Security Education for College Students                                           | L                 | 1   | 1    | 18  | 12  | 1    |     |      |      |      |      |      |      |
|                                                       | Laboratory Safety Training                                                                 | L                 | 0   | 0    | 0   | 0   | 0    |     |      |      |      |      |      |      |
|                                                       | Subtotal                                                                                   |                   | 24  | 26.8 | 432 | 372 | 10.7 | 6.7 | 4.37 | 4.37 | 0.17 | 0.17 | 0.17 | 0.17 |
|                                                       | Practical Training                                                                         | Military Training | P   | 2    | 2   | 36  | 24   | 2   |      |      |      |      |      |      |
| Introduction to Transportation and Industry Awareness |                                                                                            | L                 | 1   | 1    | 18  | 12  |      | 1   |      |      |      |      |      |      |
| Engineering Survey Practice and Labor                 |                                                                                            | L                 | 3   | 3    | 54  | 36  |      |     | 3    |      |      |      |      |      |
| Innovate Practice Project L1                          |                                                                                            | P                 | 3   | 4    | 54  | 66  |      |     | 4    |      |      |      |      |      |
| Innovate Practice Project L2                          |                                                                                            | P                 | 3   | 4    | 54  | 66  |      |     |      | 4    |      |      |      |      |

**Appendix: Learning Outcomes and curricula**

|                   |                                                               |     |     |     |      |      |      |      |      |      |      |      |      |      |    |
|-------------------|---------------------------------------------------------------|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|----|
|                   | Innovate Practice Project L3                                  | P   | 3   | 4   | 54   | 66   |      |      |      |      |      |      |      | 4    |    |
|                   | Internship in Enterprise                                      | P   | 16  | 24  | 288  | 432  |      |      |      |      |      |      |      |      | 24 |
|                   | Reading and Writing of Transportation Professional Literature | P   | 2   | 2   | 36   | 24   |      |      |      |      |      |      |      |      | 2  |
|                   | Subtotal                                                      |     | 33  | 44  | 594  | 726  | 2    | 1    | 7    | 4    | 4    | 2    | 24   | 0    |    |
| Bachelor's Thesis | Graduation Thesis (design)                                    | L&P | 12  | 24  | 216  | 504  |      |      |      |      |      |      |      |      | 24 |
|                   | Subtotal                                                      |     | 12  | 24  | 216  | 504  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 24 |
|                   | Total                                                         |     | 160 | 205 | 2952 | 3305 | 35.7 | 31.8 | 32.4 | 26.0 | 19.0 | 11.9 | 24.2 | 24.2 |    |

\*Note: For the Electives module, the subtotal (credits and workload) is calculated based on the minimum requirement of 21 credits to be selected out of 19 available elective credits. Contact hours, self-study hours, and semester-wise distribution are proportionally estimated according to the minimum 21 credits (i.e., total × 21/41).