



Accreditation Report

Bachelor's degree programmes

Mechanical Design, Manufacturing and Automation

Network Engineering

Robotics Engineering

Electronic Information Engineering

Provided by

Zaozhuang University

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A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for ¹	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC) ²
机械设计制造及其自动化	Mechanical Design, Manufacturing and Automation	ASIIN	n/a	01
网络工程	Network Engineering	ASIIN	n/a	02, 04
机器人工程	Robotics Engineering	ASIIN	n/a	02, 04
电子信息工程	Electronic Information Engineering	ASIIN	n/a	02
Date of the contract: 15.09.2024 Submission of the final version of the SAR: 02.10.2025 Date of the onsite visit: 03.-04.11.2025 at: Zaozhuang University				
Expert panel: Dipl.Inform. Ernst Blank, Formerly Siemens AG; Prof. Dr. Ralph Kennel, Technical University of Munich (TUM); Yuhao Lv, Student at Shanghai Jiaotong University;				

¹ ASIIN Seal for degree programmes

² TC: Technical Committee for the following subject areas: TC 01 - Mechanical Engineering/Process Engineering; TC 02 - Electrical Engineering/Information Technology; TC 04 - Informatics/Computer Science.

Prof. Xiaoting Ma, University of Shanghai for Science and Technology (USST); Prof. Dr. Mathias Werner, HTWG Konstanz – University of Applied Sciences
Representative of the ASIIN headquarter: Dr. Siegfried Hermes
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria as of March 28, 2023 Subject-Specific Criteria of the Technical Committee 01 – Mechanical Engineering / Process Engineering as of 16 March 2021 Subject-Specific Criteria of the Technical Committee 02 – Electrical Engineering / Information Technology as of 23 September 2022 Subject-Specific-Criteria of the Technical Committee 04 – Informatics/Computer Science as of 29 March 2018

B Context of the Degree Programmes

B-1 Numbers and facts

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF ³	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) First time of offer
Mechanical Design, Manufacturing and Automation	B.Eng.	n/a	6	Full time	n/a	8 Semester	234 ECTS	09/2007
Network Engineering	B.Eng.	n/a	6	Full time	n/a	8 Semester	223 ECTS	09/2010
Robotics Engineering	B.Eng.	n/a	6	Full time	n/a	8 Semester	232 ECTS	09/2020
Electronic Information Engineering	B.Eng.	n/a	6	Full time	n/a	8 Semester	224 ECTS	09/2006

³ EQF = The European Qualifications Framework for lifelong learning

B Context of the Degree Programmes

Name	Intake rhythm	Intake Capacity per cohort	Average starting cohort size	Average number of graduates per cohort	Average time required to complete studies
Mechanical Design, Manufacturing and Automation	Annually	Max. 100 students	97 students	97 students	8 semesters / 4 years
Network Engineering	Annually	Max. 100 students	95 students	95 students	8 semesters / 4 years
Robotics Engineering	Annually	Max. 50 students	40 students	40 students	8 semesters / 4 years
Electronic Information Engineering	Annually	Max. 100 students	95 students	95 students	8 semesters / 4 years

B-2 Characteristics and features

Zaozhuang University (ZZU) is a full-time public undergraduate institution administered by the People's Government of Shandong Province. It evolved from the Zaozhuang Teacher Training School founded in 1971, became Zaozhuang Normal College in 1984, and was granted university status by the Ministry of Education in 2004. In 2024, the university received authorisation to confer master's degrees. ZZU comprises 22 schools and departments and offers 70 undergraduate programmes across ten disciplinary fields, with an enrolment of approximately 32,000 full-time students from across China and the Hong Kong, Macao, and Taiwan regions.

School of Mechanical and Electrical Engineering

This school traces its origins to the Department of Physics founded in 1978 and was restructured into its current form in 2011. It offers five undergraduate programmes and one associate degree and hosts about 2,740 students.

The *Mechanical Design, Manufacturing and Automation programme* has been offered since 2007 and has undergone several structural and curricular developments, including participation in provincial initiatives and the introduction of a school-enterprise cooperation track in smart manufacturing.

The *Robotics Engineering programme* was established in alignment with national initiatives for new engineering disciplines and began enrolling students in 2020. It produced its first cohort of graduates in 2024 and operates within the university's broader mechanical engineering discipline cluster.

School of Information Science and Engineering / School of Artificial Intelligence

This school was formed through the integration of the previously separate School of Information Science and Engineering (established in 2011) and the School of Artificial Intelligence (established in 2020). Since 2023, it has functioned as a single academic unit offering
5 six undergraduate programmes and one associate degree, hosting around 3,300 undergraduate students as well as a small number of jointly trained postgraduate students.

The *Network Engineering programme*, established in 2010, has been incorporated into several provincial and national initiatives in the fields of application-oriented engineering education and industry-education integration. It includes a set of core courses that have been
10 recognised as provincial-level top-tier courses.

School of Opto-Electronic Engineering

Established in 1978, this school is one of ZZU's earliest academic units. It offers four undergraduate programmes and one associate degree and has an enrolment of more than 2,600 students.

The *Electronic Information Engineering programme* has been offered since 2006. Over time, it has added an information security track through a school-enterprise cooperation agreement and has participated in provincial programmes in industry-education integration and application-oriented professional group development.
15

C Assessment of the Expert Panel

This accreditation report is based on the preliminary evaluation report for the degree programmes under review. As the evaluation report strictly adheres to the relevant general and subject-specific accreditation criteria, no changes have been made to the evaluative chapters. The expert panel 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: HEI leadership/management, programme directors, teaching staff, students, industry representatives. The focus of this stage of the evaluation lies on the assessment of the study programmes. In addition to the audit meetings, the expert panel relies on the documentation about the programmes, and the documentary Zaozhuang University and the involved school – School of Mechanical and Electrical Engineering, School of Information Science and Engineering (School of Artificial Intelligence), School of Optoelectronic Engineering – have provided before, during and after the audit.

C-3 Objectives and learning outcomes of the degree programmes [ASIIN 1.1]

Description of the current status

1. Cross-Programme Framework

The four Bachelor programmes – Mechanical Design, Manufacturing and Automation (MDMA), Network Engineering (NE), Robotics Engineering (RE), and Electronic Information Engineering (EIE) – form part of a broader institutional cluster in mechanical, electronic, and information engineering. The SAR describes shared overarching objectives that emphasise foundational knowledge in mathematics, natural sciences, computing, and engineering, along with discipline-specific technical capacities.

Across all programmes, intended learning outcomes (LOs) are structured in the categories (knowledge and understanding; engineering analysis and design; investigations; engineering practice; transferable competences). The SAR states that the programmes' objectives and LOs are aligned with both the ASIIN General Criteria and the relevant Subject-Specific Criteria of the technical committees.

Furthermore, the objectives and learning outcomes are reported as publicly accessible through programme websites and internal documentation. Stakeholder involvement is described through employer and graduate surveys, internship evaluations, meetings with industry partners, and regular consultation within teaching teams. These mechanisms are used for periodic updates of the objectives.

2. Programme-Specific Objectives and Learning Outcomes

Mechanical Design, Manufacturing and Automation (MDMA)

The programme aims to train graduates for engineering roles in mechanical design, manufacturing processes, and intelligent production. The stated outcomes include knowledge of mechanical engineering fundamentals, proficiency in CAD/CAE-based design and related analytical tools, skills in experimentation and data analysis, and the ability to apply engineering solutions in industrial contexts. Transferable competences such as teamwork, communication, ethics, and lifelong learning form part of the intended profile.

Network Engineering (NE)

The programme seeks to develop competencies in network planning, design, deployment, operation, and security. Intended outcomes include knowledge of network systems and technologies, the ability to apply engineering methodologies in network development and operations, and an understanding of emerging fields such as cloud computing. Interdisciplinary and professional competences – such as communication skills, ethical awareness, and an understanding of societal impacts – are specified as part of the intended graduate profile.

Robotics Engineering (RE)

The programme integrates mechanical, electrical, control, and computational disciplines. Objectives include knowledge of robotics fundamentals and skills in robot design, programming, simulation, debugging, system integration, and maintenance. The intended learning outcomes also include the use of modelling and computational tools, as well as transferable competences in teamwork, communication, and international orientation.

Electronic Information Engineering (EIE)

The programme focuses on electronic systems, signal processing, communication technologies, and embedded systems. The SAR lists outcomes such as the ability to analyse and solve engineering problems, design and integrate electronic systems, and apply relevant engineering methodologies in practice. Additional intended competences include awareness of ethical and societal aspects, teamwork, communication, and lifelong learning.

3. Publication and Review of Objectives

According to the SAR, objectives and learning outcomes are published through programme webpages and study plan materials. Periodic review of objectives is integrated into the institution's quality assurance system, which includes employer feedback mechanisms, graduate surveys, curriculum evaluations, and scheduled programme revisions. The SAR reports that updates have included strengthened practical components and the introduction of content aligned with emerging technologies.

Analysis and assessment of the expert panel

In the meetings with programme coordinators, lecturers, students, and industry representatives, as well as through analysis of the SAR and the Employment Quality Reports (cf. Annexes 08-9 to 08-12), the panel examined the formulation, communication, and suitability of the objectives and learning outcomes in the four bachelor programmes.

The university presents all four programmes as part of its strategic focus on engineering disciplines serving regional industrial development, especially in automated and intelligent production. Industry representatives confirmed that cooperation with the university is longstanding and that employer feedback is regularly exchanged. The Employment Quality Reports support this view, as they include structured surveys of employers and graduates and report high employment rates across the programmes.

While these sources demonstrate that the university actively gathers and analyses feedback regarding the adequacy of competences achieved by graduates, the panel notes that this quality assurance mechanism is not yet systematically reflected in revised or sufficiently differentiated programme objectives and learning outcomes.

Across the four programmes, the panel identifies several inconsistencies and gaps in the current LO framework:

Level-appropriateness and measurability

Certain programme objectives refer to competences that exceed what can realistically be attained at bachelor level. This is most evident in the *Mechanical Design, Manufacturing and Automation programme*, where "research" is formulated as an objective, whereas, according to both programme coordinators and lecturers, corresponding activities remain limited to small project tasks, competitions, and introductory project experience. This aligns with statements in employer surveys (cf. Annex 08-9 and 08-11) indicating that graduates mainly enter basic technical and operational roles, and that deeper research-related competences are neither expected nor required in early career stages.

Partial alignment between objectives and learning outcomes

Discussions with teaching teams and analysis of module–objective matrices show that not all intended competences are consistently mirrored in the programme-level learning outcomes. Project management competences, for example, are mentioned by coordinators as being developed through selected modules and competitions, and industry representatives confirm their relevance in professional environments. However, the learning outcomes do not explicitly articulate these competences, limiting their transparency and measurability. Correspondingly, employer feedback across the related employment reports repeatedly notes the need for clearer preparation in teamwork, project execution, and use of project management tools (cf. Annexes 08-9 to 08-12).

Alignment with emerging industry needs

The Employment Quality Reports identify competence areas of growing relevance – such as intelligent manufacturing, digital simulation, AI-related topics, cloud computing, software-defined networking, and IoT solutions – that require stronger curricular integration. Employers in both engineering clusters point to gaps between current graduate profiles and evolving technological demands. The panel observed that, in several areas, learning outcomes are formulated at a general level and do not always clarify how the acquisition of specific competences – particularly in emerging or interdisciplinary domains – is reflected in curriculum structure and assessment design. This reinforces the panel’s view that the LO framework requires revision to ensure consistency with actual market needs.

Coherence between intended and achieved competences

Graduate and employer surveys across the four programmes indicate that basic professional competences are largely achieved and valued in the labour market. At the same time, respondents point to gaps in practical application, insufficient integration of interdisciplinary and innovative teaching elements, and the need for more systematic practical and project-based learning. These findings correspond with student statements regarding variability in practical exposure and with industry statements on the need to further strengthen practical readiness and modernise competence profiles. While the university actively surveys these aspects as part of its QA system, the results are not yet fully reflected in revised objectives and learning outcomes.

Overly broad or overlapping LO statements

The panel considered that the number and formulation of learning outcomes could give rise to interpretive overlap, which may limit clarity for stakeholders. The Employment Quality Reports, which document employer requests for modernised course content and better articulation of competence development paths (e.g., in Network Engineering regarding

cloud computing, edge computing, and certification competencies), further highlight the need for a more structured and focused formulation of learning outcomes.

Taken together, these findings indicate that, despite functioning feedback mechanisms and a visible willingness to adapt curricula, the formal objectives and learning outcomes have not yet been revised to reflect these insights. The connection between educational objectives, expected competences, curricular structure, and achieved learning results remains insufficiently consistent and transparent.

The panel strongly recommends that the university comprehensively revise the programme objectives and learning outcomes across all four bachelor programmes, ensuring:

- clear differentiation of bachelor-level competences,
- explicit and measurable formulation of all intended competences, including project management and interdisciplinary skills,
- consistent mapping between objectives, learning outcomes, curriculum, and achieved competences,
- incorporation of findings from employer and graduate surveys into revised LO frameworks, and
- alignment with emerging industry requirements in mechanical and information engineering domains.

Such revision should build on the QA data already collected through the university's employment tracking and evaluation processes and should be reflected in updated programme documentation and objective–module matrices.

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

Taking into account the statement and additional information of the university, the expert panel considered the university to *partially comply with criterion 1.1*.

The experts appreciated that, obviously, the university has revised the objectives and learning outcomes of the programmes and removed research-related objectives found to be inadequate at Bachelor's level qualifications.

However, even though comments explicitly stated that the “major of Mechanical Design, Manufacturing and Automation has removed goals related to scientific research from its objectives”, this could not be fully confirmed in the text. Objective 4 explicitly reiterates that graduates of the major “master the research methods of the latest engineering technologies, possess certain innovative thinking and skills, and through literature research and information technology channels, [are] able to timely obtain information, update and apply

knowledge to dynamically adapt to rapidly changing external environments". The experts considered this objective still to be too ambitious for Bachelor's graduates to be fully absorbed, which is visible in the corresponding learning outcome. According to this, graduates are "able to transfer new findings in engineering and natural sciences to industrial and commercial production under consideration of economic, ecologic and safety requirements as well as sustainability and environmental compatibility". Therefore, the experts found it necessary that the university reconsiders the objectives and learning outcomes of the Mechanical Design, Manufacturing and Automation programme to better align it with the Bachelor's level of qualification (see below, section F, A 2).

Apart from that, the expert panel concurred with the university's perception that the objectives and learning outcomes of the Network Engineering programme are adequately reflecting the Bachelor's level of qualification and also appropriately translated in the curriculum. The panel commended the university for adding project management competences and interdisciplinary skills, if suitable and in line with the curricula, in the remaining degree programmes.

The experts consider it necessary that the indicated revisions and adaptations of objectives and programme learning outcomes be published and made accessible to the major stakeholders (see below, section F, A 1).

C-4 Name of the degree programmes [ASIIN 1.2]

Description of the current status

The SAR explains that the names of all four bachelor programmes follow the uniform national naming system mandated by the Chinese Ministry of Education. The Ministry publishes the Catalogue of Undergraduate Programmes in Ordinary Higher Education Institutions (2020 Edition), which defines programme titles, descriptions, and programme codes. Zaozhuang University adopts these official names accordingly. For each programme, the SAR presents the title in Chinese and its English translation, which is used consistently throughout institutional documents submitted for accreditation:

Mechanical Design, Manufacturing and Automation

Programme code 080202; title reflects the combined focus on mechanical design, manufacturing processes, automation technology, and electromechanical systems.

Network Engineering

Programme code 080903; title denotes the engineering discipline concerned with the full life cycle of network systems, including planning, development, deployment, operation, and security.

Robotics Engineering

5 Programme code 080803T; title is defined nationally to represent the integration of robot design, development, testing, operation, and intelligent systems.

Electronic Information Engineering

10 Programme code 080701; title refers to the engineering field encompassing electronic system design, information processing, hardware and software integration, and system operation.

The SAR states that, as prescribed, these titles are used identically across all academic and administrative materials (study plans, programme descriptions, official webpages, and accreditation documentation). The English translations correspond directly to the official Chinese titles and are likewise said to be applied consistently.

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

The panel reviewed the designation of the four bachelor programmes and discussed the naming conventions with programme coordinators. According to the documentation and the explanations provided during the audit, the programme names follow the official nomenclature prescribed by the Chinese Ministry of Education. These designations are used consistently in all institutional documents, study plans, the university website, and the accreditation materials.

25 The panel notes that the English translations correspond directly to the nationally defined Chinese titles and reflect the respective disciplinary orientations without implying a level of qualification or content focus that would be misleading for students or the public. Students did not report concerns about the naming of the programmes. As the programme titles accurately describe the subject matter of Mechanical Design, Manufacturing and Automation, Network Engineering, Robotics Engineering, and Electronic Information Engineering, they align with the requirements for transparency and correctness.

30 Based on the documentation and discussions, the panel finds no inconsistencies or ambiguities in the designation of the degree programmes.

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

The experts considered criterion 1.2 to be *fulfilled*.

C-5 Curriculum [ASIIN 1.3]

Description of the current status

1. General Structure and Principles

Across the four Bachelor programmes, the SAR states that each curriculum is organised according to university-wide regulations for study plan development and revision. Study plans include programme objectives, graduation requirements, credit structure, teaching schedules, and lists of compulsory and elective modules. Each study plan assigns learning outcomes to modules to support the overarching programme objectives.

The curricula combine foundational coursework in mathematics, natural sciences, and general engineering with discipline-specific theoretical modules, laboratory components, project-based work, and internships. The SAR indicates that theoretical and practical elements are distributed to ensure progressive competence development. Electives are available in all programmes and are intended to allow individual academic focus areas.

The SAR states that study plans are published through the respective school websites and made available to students and staff.

2. Programme-Specific Curriculum Characteristics

MDMA programme

The curriculum includes mathematics, physics, engineering fundamentals, mechanical design, manufacturing technology, materials, automation-related courses, and specialised modules such as CAD/CAE and mechanical system design. Practical components include laboratory courses, project work, and two forms of industry exposure (short-term visiting activities and a final-year internship). A separate version of the curriculum exists for international students, with adjustments in language-related and elective components.

NE programme

The curriculum covers mathematics, programming, digital logic, operating systems, databases, communication principles, network technologies, network security, and system administration. It also includes engineering practice modules, laboratory courses, and internships. The SAR notes a broad selection of technical electives to support application-oriented specialisation, alongside general education elements.

RE programme

The curriculum is structured around mechanical foundations, electrical engineering, control theory, sensing technology, embedded systems, and robotics-specific modules such as

robot design, simulation, and motion control. Laboratory courses and engineering practice modules are included. An internship in the final year forms part of practice-oriented training.

EIE programme

5 The curriculum comprises mathematics, physics, electronic circuits, signal processing, communication technology, embedded systems, sensors, and information engineering modules. Laboratory work, design projects, and a final-year internship are included. The SAR reports that recent curriculum revisions incorporated emerging areas such as edge intelligence.

10 *3. Practical Components and Industry Integration*

Each programme includes mandatory practical training. The SAR distinguishes between:

- Visiting internships (short industry exposure, typically earlier in the programme), and
- Professional internships (extended final-year placements).

15 Laboratory courses accompany many theoretical modules. Several programmes also integrate project-based learning and participation in competitions; in some cases, achievements from such activities may receive academic recognition.

4. Electives and Individual Study Paths

20 The curricula provide elective modules to enable individual focus. While study plans list recommended combinations, electives are principally described as freely selectable within defined categories. According to the SAR, students receive academic guidance to support elective choices and the construction of coherent study trajectories.

5. Curriculum Review and Revision Processes

25 The SAR describes an institutional procedure for regular revision of study plans. This process includes:

- Annual data collection (employer feedback, graduate surveys, student input, industry developments).
- Multi-stage review involving programme leaders, school committees, and external experts.
- 30 • Approval by the university's Academic Affairs Office.

Revisions may address emerging technologies, industry needs, or structural adjustments. Examples include strengthening practical components and adding new technology-oriented modules.

Analysis and assessment of the expert panel

5 The panel analysed the curricular structures of all four bachelor programmes based on the SAR, audit discussions, as well as the Employment Quality Reports (cf. Annexes 08-09 – 08-12) and Graduate Surveys (cf. Annexes 22-09 – 22-12). Overall, the panel noted that all four programmes are well operated and demonstrate commendable integration of theoretical and practical learning formats. Nevertheless, several programme-specific and cross-pro-
10 gramme aspects require further development.

Alignment of curriculum with intended learning outcomes and industry expectations

During the audit discussions, the expert panel noted that the study plans are comprehensively documented in the SAR and corresponding annexes. Students explained that they are familiar with the study structure and obtain information through internal channels, in-
15 cluding presentations by teaching staff. At the same time, the panel observed that the current versions of the study plans are not consistently accessible on the university's or the respective schools' public websites. Industry representatives, graduates, and students indicated that transparent access to updated study plans is helpful for orientation, academic planning, and communication with external partners. Against this background, the panel
20 considered publicly available study plans as an element that can contribute to programme transparency and documentation.

The curricula follow a consistent structure encompassing general education, foundational science, major-specific modules, and practical components. According to programme co-ordinators, curriculum reviews take place annually and within a four-year cycle, drawing on
25 student feedback, employer surveys, and information on technological developments. Survey data show that graduates across all programmes largely consider the knowledge and skills acquired during their studies helpful for their early professional roles, and a substantial majority report good alignment between their major and their job tasks.

At the same time, graduate surveys and employer feedback identify areas in which the curriculum may evolve further, such as the continued integration of emerging technologies
30 and enhanced opportunities for hands-on practice. The panel considered these perspectives alongside the Employment Quality Reports, which document that the university regularly evaluates such feedback and implements updates to the curriculum where appropriate. Taken together, these sources illustrate both ongoing expectations among graduates

for enhanced practical training and evidence that the institution follows up on such feedback through its established QA mechanisms.

Programme-specific observations

Robotics Engineering

5 The panel found that the *Robotics Engineering curriculum* does not yet provide adequate coverage of Electrical Drive Technology, which is fundamental for understanding power, energy, and actuator systems in robotics. Although motion control is addressed later in the programme, key elements of drive systems appear insufficiently represented in earlier semesters. This shortcoming was also confirmed by lecturers during the audit and is relevant
10 given the competence expectations communicated by employers. The programme therefore does not entirely support the intended competence profile.

Mechanical Design, Manufacturing and Automation; Network Engineering; Electronic Information Engineering

15 For the remaining programmes, the curriculum generally enables students to acquire the intended competencies. Employer and graduate surveys indicate that graduates generally regard the knowledge acquired in their programmes as relevant for their early career roles. Nevertheless, the panel observed that continuous curriculum modernisation is needed, particularly regarding digitalisation, intelligent production, advanced networking technologies, and industry-specific standards. Students reported occasional content overlap and a
20 tight scheduling structure, and lecturers acknowledged the need for ongoing coordination across teaching teams to avoid redundancies. The panel considered regular mapping of curricular logic to be beneficial for enhancing coherence and transparency.

25 Across the programmes, the panel observed a considerable number of very small modules (1–2 credits), which contribute to fragmentation and an increased assessment burden. Streamlining the curriculum by merging or enlarging such modules could improve coherence, reduce administrative load, and strengthen the depth and quality of learning in key areas.

Internships and practical placements

30 All programmes include practical learning through laboratory sessions, practical courses, design projects, and internships. The internship structure typically includes an early familiarisation phase followed by a more extensive professional internship. Industry representatives confirmed cooperation with the university in hosting students and providing structured feedback. Students emphasised the contribution of practical training to their learning, though access to specialised laboratory facilities often requires staff supervision. Grad-

uate surveys note the value of practical modules while also expressing interest in further increasing their scope. The panel noted these expectations while also recognising, through the Employment Quality Reports, that the university routinely reviews the adequacy of practical components and makes adjustments as part of its QA processes.

Electives and individual competence development

Each programme includes electives intended to allow individual focus areas. Programme coordinators and lecturers explained that elective options are flexible, although the SAR presents only exemplary combinations. Students stated that electives can be freely chosen and that they receive guidance from teaching staff when selecting them. Survey results, particularly in Network Engineering, indicate that some graduates would welcome a broader range of elective offerings, especially in areas influenced by recent technological developments. The panel noted these indications and understood that such feedback forms part of the university's regular QA processes, which review curricular adequacy on a recurring basis. In light of these mechanisms, the panel did not draw additional conclusions for the compliance assessment.

Student mobility and internationalisation

The university presented several internationalisation initiatives, including partnership networks, exchange programmes, and participation in broader institutional strategies. The panel acknowledged these efforts; however, actual student mobility remains very limited. Students reported linguistic, financial, and cultural barriers, while coordinators noted challenges related to English-language readiness and recognition conditions abroad. The panel considered that the curricula do not yet incorporate internationalisation measures in a sufficiently systematic way. Enhancing English proficiency among staff and students, increasing the availability of English-taught modules, and inviting international lecturers would strengthen the programmes' alignment with the university's strategic goals and the expectations associated with European accreditation.

Quality assurance

The panel recognised that the university systematically surveys curriculum adequacy and competence development by gathering data from employers, graduates, and students. The Employment Quality Reports and Graduate Surveys demonstrate that the institution actively analyses job relevance, knowledge applicability, satisfaction levels, and improvement needs. These mechanisms reflect an overall functioning QA system that monitors curricular effectiveness and provides a basis for evidence-informed revision. However, the panel noted that the outcomes of these surveys are not yet consistently translated into timely or sufficiently structured curricular adjustments across all programmes.

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

Considering the statement of the university, the experts assessed the programme to be *partially compliant* with the requirements of the criterion.

Electrical Drive Technology in the RE Programme

Although the “Fundamentals of Electrical Drive Technology” course is scheduled comparatively late in the programme, introducing electrical drive technology through the following pathway was considered reasonable: Circuit Theory (semester 2) → Analog/Digital Electronics (semesters 3–4) → Sensors/Electric Drives (semester 5) → System Integration (semesters 6–7). Therefore, the panel suggested cancelling a proposed requirement in this respect. However, a detailed course description has not yet been provided. Consequently, the expert panel requires proof of the validity of this modification (e.g. a revised syllabus and study plan; see below, section F, A 3).

Sequencing of modules/courses (all programmes)

The experts noted that the university pays considerable attention to ensuring the consistency and logical sequence of courses and content across semesters. The panel commended the university for its plan to establish a “course system review panel” and organise thematic discussions among teaching teams should issues of content overlap or logical inconsistencies arise. Similarly, the idea of using charts to visualise course correlations, prerequisite and follow-up relationships, and competency achievement pathways was considered highly beneficial. Information about measures already taken or planned to avoid content overlap and ensure the logical consistency and sequence of the courses was sufficient to convince the experts that this topic is adequately addressed by the university. As a result, they dismissed a separate recommendation addressing this issue.

However, the panel also observed that student representatives would not be regularly involved in the work of the “course system review panel” and, probably, the teaching teams discussing content-related issues. As students are the main recipients of the curriculum, the experts recommended that student representatives be included in regular activities related to curriculum review (see below, section F, E 1).

Low-credit courses (all programmes)

Furthermore, the panel positively noted the university’s reflections on the relatively high number of low-credit courses and modules. Regarding the state-mandated general education courses, the focus on optimising their scheduling “to ensure compatibility with the

learning rhythm of professional courses and avoid overly tight timetables caused by concentrated offerings” is considered adequate.

In terms of students’ freedom to select from a range of low-credit elective professional courses, it appears to be highly beneficial to expand the elective catalogue thematically and create clusters of theme-based courses. The experts agreed with the university that this approach could preserve students’ choices while reducing the impact of fragmented learning.

Finally, the panel welcomed the decision to integrate low-credit specialised modules into core courses as subunits to enhance the overall coherence of the course system. The experts relied on the university’s future actions pursuant to the planned strategy and saw no need for further action on its part.

Internationalisation (all programmes)

The experts noted the university’s plans to address the issue of internationalisation from the perspectives of teaching, research, management and culture. The panel decided to retain a recommendation to assess whether the degree programmes have become more internationalised in a future external evaluation of the programmes (see below, section F, E 2).

Study plans (all programmes)

The expert panel acknowledged that the study plans had already been published on the university’s and the responsible school’s websites. As the publication is still closely tied to the ASIIN review, the panel was concerned that it does not adequately serve their purpose as a *regular source of information* for students. The experts would like to draw attention to this issue and for this reason maintains a related recommendation (see below, section F, E 3).

C-6 Admission requirements [ASIIN 1.4]

Description of the current status

1. General Admission Conditions

According to the SAR, admission to all four Bachelor programmes at Zaozhuang University follows the national regulations governing entry into undergraduate education in China. Applicants must participate in the National College Entrance Examination (Gaokao) or the relevant provincial unified entrance examination. Admission is based on examination results and provincial quota allocation procedures.

The SAR states that applicants must:

- Comply with national laws and regulations.
- Hold a senior high school diploma or an equivalent qualification.
- Meet the physical requirements specified in the national Guiding Opinions on Physical Examination Work for Enrolment in General Higher Education Institutions.
- Not be subject to discriminatory restrictions based on disability.

These requirements apply uniformly across the four programmes.

2. Admission Procedures

Admission is centrally coordinated by provincial education authorities. Universities receive student placements according to provincial allocation mechanisms, which consider candidate scores and programme choices. Zaozhuang University enrolls students according to these assigned lists and publishes relevant admission information through official channels. The SAR describes the process as transparent and regulated by national and provincial procedures rather than by locally defined selection mechanisms.

3. Recognition of External Learning and Mobility-Related Procedures

The SAR reports that recognition of coursework completed at other higher education institutions follows university regulations. Students intending to take courses externally must submit an application or learning agreement. Recognition is granted when the learning outcomes of the completed module are considered equivalent to the corresponding module within the programme. Decisions are handled by the Academic Affairs Office and respective teaching units. Students are informed about the recognition rules through the student handbook and information sessions.

4. Compensation of Missing Prerequisites

The SAR does not indicate programme-specific compensatory mechanisms for missing entry qualifications, as admission relies on national entrance examinations that already standardise prior knowledge requirements. For international students or transfer students, supplementary academic guidance or language support may be provided according to university regulations, but no separate preparatory admission track is described for these four programmes.

Analysis and assessment of the expert panel

The panel examined the admission requirements and procedures of the four bachelor programmes. Admission to the programmes follows national regulations for undergraduate entry in China and is carried out through the provincial allocation system associated with

the National College Entrance Examination. As these procedures are centrally administered, the university does not implement additional selection mechanisms.

During the audit, programme coordinators explained that recognition of learning achievements from other higher education institutions is possible. Students who intend to take external courses must submit a learning agreement in advance, and recognition is granted when equivalence of learning outcomes can be demonstrated (in line with Article 4 of the “Measures for the Recognition of Credits and Management of Academic Records of Exchange Programs of Zaozhuang University Students Going Abroad (Revised)”); cf. Annex 13 Policy Documents related to Student Mobility). Decisions are made by the Academic Affairs Office. Students reported that the relevant regulations are accessible through official university documents, the student handbook, and information sessions organised at the beginning of their studies.

The Student Source Analysis Report (cf. Annex 11-3) provides further evidence that admission practices are applied consistently. It shows, for several cohorts, that admitted students meet or exceed provincial undergraduate admission thresholds, with data indicating that admission scores in regions such as Shandong, Hebei and the Hong Kong Special Administrative Region are above the respective control lines. The report also confirms that most students are admitted through standardised provincial mechanisms, demonstrating the transparency and uniformity of the process.

Students stated that they receive adequate guidance on admission rules, recognition procedures, and academic expectations early in their studies. No concerns were raised regarding fairness, accessibility, or consistency of the admission procedures.

Based on the documentation and discussions, the panel concludes that the admission requirements and their implementation comply with the expectations of the criterion.

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

The experts considered criterion 1.4 to be *fulfilled*.

C-7 Workload and credits [ASIIN 1.5]

Description of the current status

1. Credit System and Allocation

According to the SAR, all four bachelor programmes use a credit system defined by national regulations for undergraduate education in China. Credits are awarded for all compulsory

teaching and learning activities. While the SAR adopts the terminology of ECTS for the purpose of international transparency, the underlying calculation of credits is based on the university's internal workload model rather than the ECTS Users' Guide.

Each programme comprises over 220 credits (expressed in ECTS equivalents in the SAR's comparative tables), with a standard duration of four years (eight semesters). The total credit requirement per programme is:

- MDMA programme: 234 ECTS-equivalent
- NE programme: 223 ECTS-equivalent
- RE programme: 232 ECTS-equivalent
- EIE programme: 224 ECTS-equivalent

All compulsory curriculum components – lectures, laboratory classes, practical training, projects, and internships – carry defined credit values.

The SAR describes institutional procedures for estimating student workload. Workload includes:

- Contact hours in lectures, exercises, and laboratories
- Self-study time
- Time allocated for exam preparation and assignments

The SAR outlines the following mechanisms for workload monitoring:

- Mid-semester and end-of-semester teaching evaluations, where students report on perceived workload and course difficulty.
- Digital learning analytics, which provide staff with information about students' engagement patterns.
- Instructor review of course performance indicators (e.g., examination results, course analysis reports).

According to the SAR, teaching units may adapt course content, teaching methods, or scheduling based on this feedback. Larger structural adjustments follow the study plan revision procedure used by the university.

Student statements documented during the audit indicate that the overall workload is perceived as intensive but manageable with the available support structures (mentors, online learning materials, and guidance from teaching staff). Some students report that specific semesters feel dense, while others highlight the practical components as requiring substantial time investment.

2. Transparency

Module handbooks and study plans indicate contact hours and credit values. Students are informed about workload expectations at the start of each module through course documentation and introductory sessions.

Analysis and assessment of the expert panel

The panel reviewed the workload and credit system of the four bachelor programmes based on the SAR, the audit discussions and the submitted workload-related annexes, including the Study Workload Statistical Survey (cf. Annex 14-1).

Across programmes, students described their study plans as full and, in some semesters, demanding. However, they also reported that available learning support and organisational structures – such as online platforms, teacher presentations, and consultation options – help them manage the overall workload. These perceptions indicate that workload is an important aspect of the study experience and underline the relevance of effective workload monitoring.

The university presented several mechanisms for workload monitoring. These include the digital learning platform, where learning patterns and progression can be analysed, and AI-supported tools that allow lecturers to estimate individual student engagement and time expenditure. Programme coordinators and teaching staff described how such data are used to identify potential workload imbalances, such as unusually high concentrations of assessments or heavy preparation requirements in specific modules.

The Study Workload Statistical Survey provides a first set of structured student workload data for three of the four programmes. Although the Mechanical Design, Manufacturing and Automation programme is not yet fully represented, the available surveys for Robotics Engineering, Electronic Information Engineering, and Network Engineering offer insights into student self-reported workload. Several recurring patterns emerge across years and programmes. For example:

- A substantial proportion of students report course difficulty as a main source of academic pressure (e.g., 59–75 percent across multiple cohorts).
- Time management challenges are repeatedly cited as the most frequent difficulty in extracurricular study, often by more than half of respondents.
- Weekly classroom learning time, including practical training, varies considerably between students, indicating flexibility in practical engagement but also wide disparities in perceived workload.

- Many students indicate substantial preparation, homework and review time, though ranges vary significantly between minimum and maximum values.

These data demonstrate that the university has begun to establish instruments for workload measurement. At the same time, the panel notes that several aspects remain incomplete. Most importantly, the documentation does not yet demonstrate clearly how the university analyses these survey findings to identify significant workload discrepancies or how resulting insights feed into concrete adjustments at module or programme level. While programme coordinators and teaching staff described intentions and examples of how workload information can inform teaching, the panel did not see systematic evidence of regular evaluation cycles, thresholds for identifying critical workload imbalances, or documented follow-up actions.

Students confirmed that they were not always aware of whether their workload feedback resulted in specific curricular or organisational changes. Industry representatives did not comment directly on workload but did highlight the importance of realistic and balanced teaching demands to ensure effective learning and practical readiness.

Taken together, the panel acknowledges that workload monitoring mechanisms exist and that initial data collection efforts are visible, as evidenced by the Study Workload Statistical Survey. However, the panel concluded that the effectiveness of these mechanisms, particularly in identifying and addressing significant workload discrepancies, is not yet sufficiently demonstrated across all programmes. Since structured workload monitoring is essential for ensuring an achievable and balanced study load, the panel considers the criterion only partially fulfilled.

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

The expert panel were grateful for the additional information provided by the university regarding the student workload monitoring and considered the criterion to be fulfilled.

As indicated, they were convinced that measures have been taken and instruments applied to realistically and reliably monitor the workload of students, including AI-supported data analysis tools. However, their initial analysis and first impressions indicated open feedback loops concerning adjustments resulting from identified discrepancies between anticipated and actual workload calculations.

The university's statement not only repeatedly described the multiple strategies the university follows to balance the student workload burden over the course of their studies. It also exemplary demonstrated how insights from AI monitoring data and student feedback were integrated to conduct systematic revisions of degree programmes and to further cal-

ibrate the workload design of courses, thus ensuring their alignment with students' learning capabilities and the overall training objectives.

As the experts were convinced that the implemented workload mechanism adequately addresses the rationale of student workload monitoring, they concluded to cancel a related requirement considered in their preliminary assessment.

C-8 Didactics and teaching methodology [ASIIN 1.6]

Description of the current status

1. General Approach

According to the SAR, the four Bachelor programmes apply a combination of teaching and learning formats defined by university-wide regulations. These include lectures, laboratory sessions, seminars, project-based courses, practical training elements, and guided self-study. The SAR states that these formats are selected by teaching staff within the framework of the respective study plans.

Teaching is described as combining classroom-based instruction with digital resources. Course planning commonly follows a structure that divides learning activities into pre-class preparation, in-class engagement, and post-class consolidation. Digital learning platforms are used to distribute materials, assign tasks, and track student participation.

2. Use of Practical and Application-Oriented Methods

The SAR notes that practical components are integral to the four programmes. These components include:

- Laboratory classes accompanying theoretical modules
- Design projects and course projects in later semesters
- Participation in university- or industry-organised competitions (voluntary, with possible recognition in some cases)
- Internships and industry visits, which complement the curriculum, but differ in terms of structure, timing and integration into the curriculum (for details see C-5)

The SAR describes these elements as intended to familiarise students with engineering tools, technical systems, and development environments.

3. Digital and Online Teaching Components

Digital teaching resources include:

- Learning management systems providing lecture materials, homework, and supplemental content
- Online exercises and tests
- Monitoring functions that allow instructors to observe students' access patterns and task completion

These tools are used across programmes to organise coursework and facilitate communication between students and staff.

4. Student Support in the Learning Process

The SAR outlines several support mechanisms integrated in the didactic approach:

- Consultation hours with instructors
- Academic advisors and mentors assigned to student groups
- Peer tutoring or study groups, especially in foundational courses
- Online communication channels for clarifying questions

These measures are part of the university's general teaching organisation and apply to all four programmes.

According to the SAR, teaching staff regularly collect student feedback through course evaluations and informal exchanges. The SAR describes mid-semester and end-semester evaluations as standard instruments for gathering students' views on teaching approaches, course organisation, and workload. Instructors review these results and may adjust teaching arrangements within the scope of the study plan and institutional guidelines.

Analysis and assessment of the expert panel

Across programmes, the teaching concept combines structured classroom delivery with digital learning support and practical elements. Lecturers described a framework that distinguishes between activities before class, during class, and after class. Before class, students are expected to engage with preparatory materials, including digital learning resources and introductory tasks. During class, teaching typically involves a mix of lecturer input, application-focused exercises, and opportunities for questions and interaction. After class, students are assigned follow-up tasks such as exercises, short reports or practical reflections, which aim to consolidate the material and encourage independent engagement.

Students reported that teaching is generally interactive and that lecturers encourage participation, questions, and discussion. They expressed satisfaction with the qualification and engagement of teaching staff and noted that instructors offer support when needed. Stu-

dents also highlighted the use of online learning platforms, which host lecture materials, assignments and review tools, and serve as an additional support structure outside classroom hours.

Programme coordinators and lecturers explained that teaching methods vary depending on the nature of the subject. Theoretical modules rely primarily on structured lectures complemented by exercises and digital tools, whereas practice-oriented courses integrate laboratory work, demonstrations, case-based learning and hands-on experimentation. These formats are intended to foster the acquisition of subject-specific skills as well as independent problem solving. Across programmes, students are also introduced to elements of scientific work through project assignments, laboratory documentation and, in later semesters, preparation for the bachelor thesis.

Discussions with lecturers indicated that teaching practices and materials are periodically reviewed. Such reviews take place at mid-term and at the end of each semester and can lead to adjustments in content sequencing, in-class activities or the balance between digital and face-to-face components. These processes are integrated into the programme's broader QA framework, which includes student course evaluations and informal feedback channels. Students acknowledged that some courses are demanding, but they also indicated that the combination of structured teaching, digital tools and lecturer support helps them manage the learning process effectively. No concerns were raised regarding the adequacy of teaching methods for achieving the intended learning outcomes of the programmes.

Based on the evidence and the discussions, the panel concludes that the didactic approaches and teaching methodologies are coherent, varied and appropriately aligned with the intended learning outcomes of the four programmes.

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

The experts considered the criterion to be fulfilled.

C-9 Exams: System, concept and organisation [ASIIN 2]

Description of the current status

According to the SAR, examinations in all four Bachelor programmes follow the university's general examination regulations, which apply institution-wide. Each module includes defined assessment requirements, and students are informed about the relevant examination form, schedule, and expectations at the beginning of the teaching period. The SAR indicates

that various types of examinations are used across the programmes, such as written tests, laboratory-based assessments, practical exercises, project reports, and other coursework formats, depending on the nature of the module.

The organisational framework of examinations is tied to the university's academic calendar. Examinations are set and graded by the responsible instructors in accordance with internal procedures. Examination questions are checked within the teaching unit before being used in the examination, and grading follows the marking rules issued by the institution. Results are entered into the academic management system once verified. The SAR notes that students who do not pass an examination may take one make-up examination, whereas re-taking a passed examination for the purpose of improving the grade is not permitted. Students unable to attend an examination for documented reasons follow the established procedures for postponement or make-up arrangements.

All programmes conclude with a graduation thesis, which is intended to demonstrate the student's ability to address a discipline-specific problem independently. Topics may be selected from lists provided by instructors or may arise from students' internships or project work. Supervision is provided by academic staff. In programmes with close enterprise cooperation, the SAR reports that a second supervisor from industry may be involved. Defence procedures and formal submission requirements follow the university's general rules.

The SAR further explains that instructors prepare course analysis reports after the completion of each module. These reports document examination results and reflect on how the assessed performance corresponds to the module's intended learning outcomes. Digital learning platforms are used as part of the teaching process and also record aspects of student engagement with course materials, which instructors may review when analysing performance trends.

Information about examinations is made available through module descriptions, course briefings at the start of the semester, the student handbook, and the academic management system. The formal regulations governing examinations, make-up opportunities, and special arrangements are published and apply equally to all four programmes.

Analysis and assessment of the expert panel

The panel reviewed the examination system across the four bachelor programmes based on the SAR, the audit discussions, as well as through direct inspection of examination materials and completed graduation theses during the site visit.

Across all programmes, examination procedures follow the university's central regulations as indicated in the above summary. Each module defines its assessment format – written

examinations, practical or laboratory tests, project reports, presentations, coursework assignments or combinations thereof –and students are informed of these requirements at the beginning of each term. Students confirmed that they may take one make-up examination after failing an exam, and that retaking a passed exam for grade improvement is not permitted.

Based on the documentation and audit discussions, the panel understood that examinations are intended to reflect module learning outcomes and that academic progress may be monitored through assessment results, online learning activity indicators and teaching analysis reports. Lecturers explained that digital platforms allow them to observe certain indicators of student engagement, such as access to preparatory and review materials, which they may consider when reflecting on teaching and assessment.

Students indicated that, in their experience, examination content corresponded with the material covered in class and that assessment expectations were usually communicated in advance. They stated that teaching staff provide guidance, review periods and preparatory tasks, which support the examination process.

Graduation thesis procedures

All programmes require a graduation thesis intended to demonstrate a student's ability to address a subject-specific task independently. The university reported that thesis topics typically originate from lists provided by teaching staff, from enterprise partners, or from students' internship experiences. In programmes with structured industry cooperation arrangements, a dual-supervisor model involving an academic supervisor and an industry representative is used; in others, supervision is carried out solely by teaching staff. Students may also propose their own topics, subject to approval.

During the site visit, the panel reviewed a selection of completed theses from all four programmes. While the examined theses in Mechanical Design, Manufacturing and Automation, Robotics Engineering and Electronic Information Engineering were broadly coherent with the respective programme orientations, a significant deficiency was identified in the *Network Engineering programme*. A number of theses reviewed for that programme displayed only limited alignment with core networking subjects and instead addressed peripheral or only loosely related topics. The panel acknowledges that some variation in topic selection may arise from internships or enterprise collaborations; however, the degree of divergence from programme content observed in these samples raised concerns about the overall robustness of the topic selection process.

Programme coordinators explained that Network Engineering students may choose topics originating from teaching staff, enterprises or competitions, but did not provide a clear

mechanism ensuring that all selected topics maintain a substantive connection to programme-specific learning outcomes. Industry representatives confirmed that applied and interdisciplinary projects are welcomed but also noted that competencies in areas such as network security, vulnerability assessment or network management remain centrally relevant to the field. The panel therefore concluded that the current process does not reliably safeguard alignment between thesis topics and the programme's academic profile.

General functioning of the examination system

Based on the documentation reviewed and the discussions during the audit, the panel did not identify concerns regarding the examination procedures in the three programmes other than the NE programme. Examination formats correspond to module characteristics, students understand the requirements, and the organisational system – including regulations for absence and make-up opportunities – appears well established. The panel did not identify systematic concerns in the other three programmes.

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

Considering the additional explanations and the list of recent graduation thesis topics, the panel considered that the university is *compliant* with the criterion.

Graduation theses topics / NE programme

The expert panel accepted the university's explanation regarding the apparent weak alignment between the topics of the theses and the core programme focus and objectives of the NE programme. It noted that the university's internal process for selecting graduation thesis topics is said to be rigorous and closely tied to the core objectives of the programme in question and the related competency expectations. At the same time, the university also acknowledged that the actual needs of the industry are an additional concern, which could temporarily lead to a focus on certain areas when selecting topics.

As industry partners change, it is argued that thesis topics could become more balanced across several areas, including network application development, network engineering, and network security. This has been validated by a list of the most recent graduation thesis topics. While this situation does not principally hinder a backlash in the opposite direction, experts noted the validity of the argument that "such concentrated topic selections still align with the fundamental requirements of the university's talent cultivation programme for the discipline". Quoting from the programme objectives paragraph, the university stated that graduates "will be able to engage in work such as network system planning and design, deployment and implementation, operation and management, network application

development, and security assurance in the new-generation information technology industry.”

The panel considered the university’s argument. While limitations on thesis topics may still be possible depending on predominant industry-university partnerships, the university has convincingly demonstrated its awareness of the need to align topic selection with programme design and objectives. Therefore, the panel considered a related requirement for the NE programme unnecessary.

C-10 Resources [ASIIN 3]

Description of the current status

Staff and staff development [ASIIN 3.1]

According to the SAR, each of the four Bachelor programmes has its own teaching team, staffed with full-time academic personnel and supplemented, where relevant, by part-time lecturers from industry. The SAR provides an overview of the composition of teaching staff by academic rank and qualification level.

Accordingly, there are 32 full-time teachers in the MDMA programme, including 5 professors, 2 senior engineers, 12 associate professors, 11 lecturers, and 2 experimental teachers. Among them, 20 teachers have a doctorate degree, and 10 teachers have a master’s degree. For the NE programme, the SAR lists 36 full-time teachers, including 12 teachers with a doctorate degree, 2 teachers pursuing a doctorate degree, and 24 teachers with a master’s degree; there are 7 professors and 9 associate professors. According to the SAR, the RE programme is operated by 20 full-time teachers, including 3 professors, 8 associate professors, and 9 lecturers. Among them, 13 have a doctorate degree and 7 a master’s degree. For the EIE programme, 29 full-time teachers are reported, including 4 professors, 12 associate professors, 11 lecturers, and 2 teaching assistants. Among them, 20 teachers have a doctorate degree and 9 have a master’s degree.

The SAR notes that the university conducts annual recruitment rounds through which additional teaching staff are appointed, including in areas aligned with the subject needs of the programmes.

The SAR describes that staff development is supported through access to further training opportunities, including the use of online learning platforms and professional development materials. Teaching staff may participate in curriculum development discussions, teaching reform projects and research activities. Cooperation with enterprises is presented as a

component of the academic environment, with some teachers involved in joint projects or serving as external experts.

Student support and student services [ASIIN 3.2]

5 The SAR states that student support is organised through several layers of academic and administrative structures. Students have access to academic advisors, class mentors, and course instructors for questions related to their studies. Additional support includes consultation hours, peer tutoring formats in some foundational modules, and study groups initiated within the schools (see C-8).

10 Information for students is made available through programme websites, the academic management system, and the student handbook. Administrative services, including support for module registration, recognition of external learning, and examination administration, are coordinated through the Academic Affairs Office. The SAR also notes the availability of university-level services such as library resources, counselling services, and language training opportunities. Support structures for student competitions, project work, and internship arrangements are described within the respective schools.

Funds and equipment [ASIIN 3.3]

20 According to the SAR, the financial basis of the four bachelor programmes consists of several recurrent sources that form part of the university's overall funding model. The main component across all programmes is the government financial allocation, which includes general state funding for higher education and income from student tuition fees. Additional income arises from social service activities, such as externally funded research cooperation, training services, or enterprise collaborations conducted by the respective schools.

25 The SAR provides programme-specific tables covering revenue and expenditure for the past three years. These tables list, for each programme, the annual amounts from government allocations and social service income, alongside expenditures for teaching operations, laboratory construction, and staff salaries. Teaching operational funds cover routine instructional activities, such as consumables, maintenance, and small-scale equipment needs. Laboratory construction funds are allocated for the establishment, renovation, or upgrading of laboratory facilities. Staff costs reflect expenditure for full-time academic personnel associated with each programme.

- For the MDMA programme, annual revenues from government allocation and service income fluctuate between approximately 6.7 and 15.6 million CNY, with expenditure distributed among teaching operations, laboratory investments, and staff costs.

- For the RE programme, revenue ranges between approximately 4.1 and 9.8 million CNY annually, with comparable expenditure categories.
- For the NE, revenue totals between approximately 4.7 and 15.2 million CNY per year, including substantial laboratory construction funds in 2023.
- For the EIE programme, annual revenue lies between approximately 5.4 and 8.4 million CNY, alongside multi-year laboratory renovation and construction activities.

In addition to these programme-based figures, the SAR describes large-scale capital investments at the school level. Examples include laboratory upgrades in areas such as 5G communication, big data analysis, optics, and artificial intelligence, as well as the establishment of provincial key laboratories and university–industry cooperation platforms. These expenditures are financed through a combination of university budget allocations, provincial support, enterprise contributions, and competitive funding obtained through research or development projects.

The SAR also notes that budget planning and allocation follow the university’s annual financial management procedures. Funding is channelled through both central university structures and individual schools, which manage routine teaching expenditures and maintain laboratory equipment. These financial mechanisms apply collectively to the four programmes within their respective schools.

Analysis and assessment of the expert panel

Staff and staff development

The panel examined staffing structures, staff qualifications and staff development opportunities across the four degree programmes based on the SAR, audit discussions, and on the documentation of teaching and research activities provided by the university.

Across all programmes, teaching staff consist primarily of full-time faculty members. Programme coordinators stated that professors and associate professors are required to teach in undergraduate programmes and typically deliver one to two courses each. Teaching staff explained that foundational and basic courses are taught by teams serving multiple programmes, an arrangement that is intended to support coherent delivery across disciplines. For more specialised programme components, lecturers with specific disciplinary backgrounds are assigned. Students confirmed that courses generally have two to three teachers involved, which supports teaching continuity and availability.

The university also involves external industry personnel in certain teaching and internship-related activities, particularly within programmes with strong enterprise cooperation. Industry representatives described their involvement in teaching, internships and the preparation of practice-related components as part of a structured cooperation mechanism be-

tween the university and local companies. According to the statements during the audit, this cooperation is supported by a standing committee composed of university and enterprise representatives, which reviews training needs, discusses curricular adjustments and facilitates the involvement of external experts.

5 The panel also reviewed documentation on professional achievements of teaching staff. The provided materials include evidence of provincial and national teaching awards, successful curricula reform projects, publications, textbooks, patents, and participation in Ministry of Education collaborative education projects. For example, a large number of teaching innovation and curriculum development achievements listed in the university's documentation (cf. Annexes 19-5 on Teaching Achievements of programmes MDMA and RE) illustrate that staff are actively engaged in continuous teaching improvement and in the development of instructional resources.

15 Similarly, extensive research outputs across engineering and information technology areas – visible in the compiled lists of papers, patents and funded scientific projects – demonstrate an active scholarly environment that teaching staff bring into their instructional practice. Taken together, these materials indicate that staff are academically and professionally engaged across the relevant disciplines.

20 Concerning staff development, teaching staff explained that they have access to various forms of training. These include internal workshops, participation in provincial teacher training initiatives, engagement in Ministry of Education “collaborative education” projects, and professional development courses provided through online MOOC platforms. Many lecturers highlighted the value of access to national teaching and research materials from leading universities, as well as opportunities for industry cooperation, which allow them to follow developments in engineering practice. Staff also described the existence of research groups within schools, which support both staff research activities and the involvement of students in applied and fundamental research topics.

30 Programme coordinators reported that staffing needs are reviewed in connection with programme adjustments. They indicated that newly hired staff often possess backgrounds aligned with emerging needs – such as artificial intelligence or automation – because these competencies are increasingly relevant across the programmes. The panel took note of this information but did not verify the underlying processes in detail.

35 Based on the information provided in the SAR and during the audit, the panel did not receive indications of staffing shortages. There was no indication of bottlenecks regarding the delivery of scheduled courses. Teaching staff also stated that team-based approaches help distribute workload appropriately.

Consequently, based on the available information, the panel considers the staffing and staff development structures to meet the requirements.

Student support and student services

Students reported having access to a variety of support services, including academic counselling, guidance on course selection, help with changing majors and introductory information sessions. In addition, students stated that lecturers are approachable and provide additional support when needed, including through online platforms and in-class or after-class consultation opportunities. They also emphasised the usefulness of digital learning environments that host lecture materials, assignments, laboratory guidance and review resources. These tools form part of the university's broader student learning support system.

Furthermore, the panel noted that the university provides career services, internship coordination support and guidance on graduation thesis preparation. Students described receiving structured preparation for internships, and programme coordinators explained that enterprise partners contribute to student supervision and feedback processes. Students also reported that administrative support for mobility exists, including financial support for international exchange activities, although actual participation is currently low.

No concerns were raised about the availability or accessibility of student services, and students expressed overall satisfaction with the responsiveness of staff and support structures. Based on the information provided, the panel concluded that student support and student services comply with the requirements.

Funds and equipment

The panel reviewed the financial and material resources available for the degree programmes, including access to laboratories, equipment, computing facilities and specialist infrastructure. According to the documentation and audit discussions, the university provides dedicated budgetary support for laboratory maintenance, upgrading of teaching equipment and procurement of new devices. Programme coordinators stated that funds are allocated on an annual basis and that laboratories are maintained through a combination of university funding, external project support and industry cooperation.

During the site visit, the panel inspected laboratories and training facilities used by the programmes. These included laboratories for mechanical engineering, electrical engineering, robotics and information technology. Based on the site visit, the panel observed that the facilities appeared functional, well-maintained and suited to the subject areas. The documentation on professional laboratories confirms the availability of specialised equipment aligned with programme requirements. Industry representatives reported that the equipment used at the university reflects current technological standards in regional industries,

and lecturers noted that ongoing teaching reform and research projects also support equipment acquisition. Students confirmed that they have access to laboratory spaces for scheduled courses, practical training and additional project work. They reported no difficulties in accessing equipment or resources necessary for their studies.

5 In reviewing the financial and strategic framework that supports the programmes, the panel also considered the university's internationalisation activities. The agreements with partner institutions in Europe and Asia, as documented in the submitted cooperation agreements (e.g., Adam Mickiewicz University, SEGi University, Deggendorf Institute of Technology, and others), and the mobility data provided for the four programmes, indicate
10 that initial structures for international cooperation exist. At the same time, actual student mobility numbers remain low across the programmes, as shown in the mobility statistics. During the audit, programme coordinators described several initiatives intended to expand international cooperation and mobility, although the long-term goals and priorities of the internationalisation strategy were not yet clearly articulated. Given that international co-
15 operation and mobility can have implications for staffing, funding and future programme development, the panel considered it advisable that the university clarify and further focus its internationalisation strategy to ensure that resource planning aligns with intended international developments.

20 Based on the evidence, the panel concluded that the financial and material resources available for the four programmes are appropriate and sufficient to support their implementation.

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

25 Taking note of the statement of the university, the panel considered it to be *substantially compliant* with the requirements of the criterion and sub-criteria.

Resource base and internationalisation strategy (ASIIN 3.1, 3.3; all programmes)

30 The expert panel positively noted the planned activities aimed at the strategic internationalisation of its programmes and the subsequent allocation of resources. However, they pointed out that the planned actions in this regard still appear to be widespread and non-specific, and do not clearly indicate how the existing resource base could be aligned with a focused internationalisation strategy. The panel therefore recommended reconsidering the issue in the medium term and decided to maintain a recommendation emphasising this point (see below, section F, E 4).

C-11 Quality management: Quality assurance and development [ASIIN 5]

Description of the current status

5 According to the SAR, the Bachelor programmes under review are integrated into the university's internal quality assurance (QA) system. This system is coordinated primarily through the Academic Affairs Office and the Teaching Quality Supervision and Evaluation Centre, which oversee procedures for course evaluation, curriculum review, teaching supervision, and documentation.

10 The SAR explains that the QA system includes regular collection of feedback from multiple stakeholder groups. Students provide input through mid-semester and end-of-semester evaluations, which address aspects such as course organisation, teaching methods, and perceived workload. Additional feedback is gathered through student forums, class meetings, and informal exchanges with instructors and advisors. Teaching staff report on course implementation through course analysis reports, which summarise assessment results and reflect on learning progress in relation to the module description.

15 External stakeholder feedback is collected through graduate surveys and employer surveys conducted at intervals determined by the university. The SAR notes that these surveys include questions regarding employment relevance and satisfaction with graduates' competences. Some industry representatives indicate that they are invited to participate in review meetings, particularly during study plan revisions.

20 Curriculum review processes operate at several levels. Annual reviews consider student feedback, examination results and data from digital learning platforms, while more comprehensive revisions are conducted on a four-year cycle. When adjustments to study plans are approved, the university publishes the updated versions online, and students follow the version associated with their year of admission.

25 Teaching activities are subject to classroom supervision carried out by the Teaching Quality Supervision and Evaluation Centre. Supervisors observe teaching sessions based on predefined criteria and prepare reports that are shared with the respective schools. Alongside this, the SAR mentions that schools conduct internal discussions among teaching teams to coordinate course content, especially in foundational and cross-programme modules.

30 The QA system also encompasses monitoring of student progress through indicators such as enrolment, retention, pass rates, and graduation rates. These data are reviewed by programme leaders and academic offices as part of routine academic management. Records

of QA activities, including evaluations, analyses and reports, are maintained by the responsible offices.

In addition, the SAR states that the university uses various meetings – such as school council meetings, teaching committee meetings, and meetings with class teachers and counsellors – to identify issues and discuss potential adjustments in teaching and study organisation.

Analysis and Assessment

The panel reviewed the university's internal QA structures and their application to the four bachelor programmes based on the SAR, the audit discussions, and the qualitative and quantitative data provided, including grade distribution data and academic success statistics.

Quality assurance structures and procedures

The panel observed that the university uses a range of QA instruments relevant to monitoring teaching and learning. Students complete course evaluations at the end of each semester, and teaching staff receive structured feedback on the results. Students confirmed that course evaluations are conducted regularly and that they sometimes receive feedback regarding planned adjustments. Lecturers described a multi-component evaluation approach coordinated by the Office of Teacher Evaluation, which incorporates student evaluations, supervisor assessments, college-level documentation and evaluations by school leadership. The panel understood that the evaluation system draws on multiple sources of information about teaching performance.

Informal channels complement these formal tools. Students reported regular opportunities to provide direct feedback to teaching staff, for example through weekly tutor sessions or open consultation hours. Communication through digital platforms and messaging tools also plays a role in day-to-day feedback exchange. Teaching staff described how such interactions allow them to identify difficulties early and integrate adjustments into their instructional planning.

Monitoring of student performance, progression and study success

The panel examined the grade distribution statistics across the programmes. These show a concentration of grades in the higher categories for the datasets provided. For example, in the MDMA programme, most students across several graduating classes are classified in the B and A ranges; in the NE programme, the distribution shows a similar pattern, albeit with a somewhat broader spread across mid-range categories. The RE and EIE programmes also show stable and concentrated distributions within the A and B categories.

The academic success statistics, as provided in the annex, show very high on-time graduation rates across all programmes. For MDMA, the majority of cohorts graduate fully on time, with only isolated late completions or single dropouts. NE, RE and EIE programmes demonstrate similar stability, with most cohorts graduating entirely on schedule and negligible dropout numbers. Students confirmed that dropout is uncommon, which could be attributed, amongst others, to the support structures described by the university that are intended to promote student progression.

The panel recognised that high graduation rates and concentrated grade distributions may both reflect effective student support and well-structured teaching. However, such results also require careful monitoring to ensure that grading practices remain consistent and that no systematic imbalances are overlooked. The documentation includes examples of performance analyses, such as grade distributions and course analysis reports, which the panel understood as a means of reflecting on student progression. Nevertheless, the panel noted that the documentation does not always clarify how aggregated performance indicators, such as grade trends or progression statistics, are systematically interpreted and whether concrete follow-up measures are derived where needed.

Use of employer and graduate feedback

Employer and graduate surveys provide an additional dimension of QA. The Employment Quality Reports and Graduate Surveys show that graduates generally regard their programmes as relevant and beneficial for their later employment, while also identifying areas where curricula or teaching practice may require updating. Industry representatives described their participation in regular consultation mechanisms with the university, including participation in committees and discussions about curriculum updates. Examples mentioned during the audit included adjustments in mechanical design modules, the introduction of additional practical elements in the EIE programme, and updates in NE following employer feedback.

The panel acknowledged that the university collects a wide range of feedback, and several examples indicate that this feedback informs curricular development. However, the panel could not assess how systematically such information is incorporated into curricular decisions.

Evaluation of teaching and institutional self-assessment

Teaching staff and programme coordinators described additional QA measures, including mid-semester teaching reviews, digital monitoring of student learning activities, and supervisory observation of classes. The panel noted that the university underwent a provincial evaluation in 2024, which reportedly identified two institutional improvement needs re-

lated to teaching investment and staffing capacity. Programme coordinators explained that the university has taken steps to address these areas, including an increase in teaching investment and ongoing recruitment efforts. The university's response to the provincial evaluation suggests that institutional reflection processes are in place, although the panel did not review these mechanisms in detail.

Overall assessment of QA system effectiveness

The QA system of the university encompasses a broad range of instruments. Course evaluations, performance monitoring, audit discussions with students and teaching staff, and the supporting statistical data demonstrate that the university has established several mechanisms relevant to ensuring teaching quality. Students did not raise concerns regarding the accessibility of feedback channels or support mechanisms.

At the same time, the panel identified room for improvement in documenting and communicating how feedback loops are regularly closed. While survey results, grade distributions, academic success data and employer input are collected, it was not always evident how these results lead to defined action steps, nor how systematic impact evaluation is carried out.

For this reason, the panel concluded that the programmes substantially comply with the requirements for quality assurance, with the expectation that further development of feedback integration processes will strengthen the overall system.

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

Considering the statement of the university, the panel concluded that the university is *substantially compliant* with the criterion.

The experts acknowledged the university's commitment to ensuring the quality of its degree programmes. They were convinced that the existing quality culture would help improve feedback processes further and found evidence for this in the university's demonstrated plans for further development. Nevertheless, the panel was keen to support this process and made a recommendation to this effect (see below, section F, E 5).

C-12 Transparency and documentation [ASIIN 4]

Description of the current status

Module descriptions [ASIIN 4.1]

According to the SAR, module descriptions for the study programmes under consideration are available through the university's digital teaching information platform. These descriptions contain the elements prescribed by institutional regulations, including module titles, responsible instructors, teaching methods, credit values, workload indications, intended learning outcomes, content summaries, examination requirements, and recommended reading.

The SAR states that the module descriptions are accessible to students and teaching staff in both Chinese and English, and that updates are published online. During the audit, it was established that students frequently use the online platform to check module information, schedules, and updates to course arrangements.

Diploma and Diploma Supplement [ASIIN 4.2]

The SAR reports that all graduates receive a diploma and accompanying diploma supplement. The diploma is issued in Chinese, while the diploma supplement is provided in English. The supplement contains information on the programme structure, the graduate's academic achievements, and the classification of the degree within the national higher education system. It also includes module marks and an explanation of the grading scale. This documentation follows the university's standardised template for all undergraduate programmes.

Relevant rules [ASIIN 4.3]

The SAR describes a set of institutional regulations governing teaching, examinations, internships, graduation requirements, quality assurance, and other academic processes. These rules are publicly available on the university website and through the academic management system. Students are informed about relevant regulations during orientation activities and through the student handbook, which contains an overview of rights and responsibilities, procedures for examination-related matters, recognition of external study achievements, and rules on academic conduct.

The SAR also notes that administrative offices, including the Academic Affairs Office and the Teaching Quality Supervision and Evaluation Centre, maintain documentation related to course scheduling, examinations, evaluation processes, and supervisory arrangements. Updates to study plans and module descriptions are published online so that students can refer to the version applicable to their cohort of enrolment.

Analysis and assessment of the expert panel

Module descriptions

The panel examined the module descriptions made available through the SAR and discussed with students and teaching staff how these descriptions are accessed and used in practice. The module descriptions include information on intended learning outcomes, content, workload, teaching and learning formats and examination modalities, and thus provide a structured overview of each module.

Students explained that they receive module-related information through several channels, including the university's digital platform, introductory presentations by lecturers at the beginning of each semester and the student handbook. They reported that they can obtain the information necessary for planning and preparing their studies and that lecturers clarify requirements at the start of courses. On this basis, the panel considered that the arrangements in place are suitable for ensuring transparency of module-level expectations for students.

Diploma and Diploma Supplement

The panel reviewed the diploma supplement template provided by the university. The document contains an English-language description of the degree programme, an explanation of the grading system, the student's academic record and an outline of the qualification's place within the national higher education system. According to the programme coordinators, the diploma supplement is issued to all graduates.

In view of this documentation, the panel concluded that the form and content of the diploma supplement are appropriate for supporting the transparent description of the awarded degree.

Relevant rules

The panel also considered how relevant rules and regulations are documented and communicated. Programme coordinators explained that key documents such as examination regulations, internship requirements, graduation procedures and the student handbook are published and updated as necessary. Students confirmed that they use the student handbook and official online information to orient themselves regarding procedural and academic matters. They described a combination of formal information channels and direct communication with lecturers and school counsellors and noted that communication tools such as WeChat are also used in practice to address questions and provide feedback.

While internal information provision appears well established and students did not report difficulties in obtaining guidance, the panel observed during its review of publicly accessible

information that some programme-related documents, particularly complete and up-to-date study plans and certain regulations, were not consistently available on the university's or the schools' websites in both Chinese and English. Improving the systematic publication and regular updating of these materials would enhance transparency for current and prospective students as well as external stakeholders.

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

Taking into consideration the statement of the university, the panel considered that it is *substantially compliant* with the requirements of the criterion.

The panel recognised the university's constructive approach to publishing key information on the degree programmes in both Chinese and English. Given the actions already taken in this respect, the panel trusted that the university would continue along this path. Therefore, a recommendation supporting this approach was removed from the original recommendations list.

D Additional Documents

No additional information needed.

E Statement of the Higher Education Institution (26.12.2025)

The university provided a detailed statement on the report commenting the key findings of the experts. In addition, it submitted a range of supplementary files including the following documents:

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-  R1-05-1 Objectives of The Programmes.docx
-  R1-05-2 Learning Outcomes of The Programmes.docx
-  R1-07-1 Objective-Module Matrix.docx
-  R3-08-5 Study Plan of Programme C.docx
-  R3-08-6 Curriculum list of Programme C.docx
-  R4-1 2026 Graduation Double Selection English Version.xlsx
-  R4-2 Study Plan of Programme B.pdf

F Summary: Expert recommendations (08.06.2026)

Considering the additional information and the statement given by Zhaozhuang University, the experts summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Mechanical Design, Manufacturing and Automation	With requirements for one year	30.09.2031	–	–
Ba Network Engineering	With requirements for one year	30.09.2031	–	–
Ba Robotics Engineering	With requirements for one year	30.09.2031	–	–
Ba Electronic Information Engineering	With requirements for one year	30.09.2031	–	–

5

Requirements

For all Degree programmes

- A 1. [ASIIN 1.1] Communicate the indicated revisions and adaptations of objectives and programme learning outcomes transparently and make them accessible to the major stakeholders.

10

For the Degree programme Mechanical Design, Manufacturing and Automation

- A 2. [ASIIN 1.1] Revise the objectives and learning outcomes with regard to the “research” objective and related competences considering the Bachelor’s level of qualification and the consistent alignment between both.

15

For Degree programme Robotics Engineering

- A 3. [ASIIN 1.3] Provide evidence of the validity of the indicated curriculum change regarding Electrical Drive Technology.

Recommendations

For all degree programmes

- 5 E 1. [ASIIN 1.3] It is recommended that student representatives be included in regular curriculum review activities, be it institutionally, e.g. through involvement in the planned “course system review panel,” or informally.
- E 2. [ASIIN 1.3] It is recommended deepening the internationalisation through adequate measures (e.g., English proficiency of teaching staff and students, English-speaking visiting lecturers, implementation of the English taught courses).
- 10 E 3. [ASIIN 1.3, 4.3] It is recommended providing the study plans presented in the SAR on the regular website of the university and/or responsible school.
- E 4. [ASIIN 3.1, 3.3] With respect to the long-term development of the resource base of the programmes, it is recommended to clarify and focus the internationalization strategy of the university.
- 15 E 5. [ASIIN 5] It is recommended to further develop and implement the QA system, progressing in closing feedback cycles.

G Comment of the Technical Committees

Technical Committee 01 – Mechanical Engineering/Process Engineering (Circulation Procedure June 2026)

Assessment and analysis for the award of the ASIIN seal:

5 The Technical Committee follows the experts' assessment without any changes.

The Technical Committee 01 – Mechanical Engineering/Process Engineering recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Mechanical Design, Manufacturing and Automation	With requirements for one year	30.09.2031	–	–

Technical Committee 02 – Electrical Engineering/Information Technology (17.06.2026)

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

The Technical Committee discusses the procedure, with a particular focus on the recommendation "E5: It is recommended to further develop and implement the QA system, progressing in closing feedback cycles". They refer back to the report, which states that the experts found no clear evidence that the feed-back loop is closed, nor did they receive any clear feedback from members of the university indicating this. As this issue has always been a standard requirement in procedures, they suggest converting this aspect into a requirement (new A2). They vote to keep the remaining aspects of the former recommendation regarding the improvement of the quality management system, but to complement it by adding a reference to how it should be improved (i.e. the documentation of how survey results and cohort data are used to establish and implement concrete improvement steps), in order to narrow down the recommendation and make it more precise.

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The Technical Committee 02 – Electrical Engineering/Information Technology recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Mechanical Design, Manufacturing and Automation	With requirements for one year	30.09.2031	–	–
Ba Network Engineering	With requirements for one year	30.09.2031	–	–
Ba Robotics Engineering	With requirements for one year	30.09.2031	–	–
Ba Electronic Information Engineering	With requirements for one year	30.09.2031	–	–

Changes proposed by the Technical Committee:

5 *Additional requirement A 2, derived from E 5:*

A 2. [ASIIN 5] Ensure that students are informed about the evaluation results.

Specification of E 5:

10 E 5. [ASIIN 5] It is recommended to further develop and implement the QA system, ~~progressing in closing feedback cycles~~ particularly by documenting how survey results and collected data lead to defined action steps.

Technical Committee 04 – Informatics/Computer Science (18.06.2026)

Assessment and analysis for the award of the ASIIN seal:

15 The Technical Committee discusses the procedure and follows the experts' assessment without any changes.

The Technical Committee 04 – Informatics/Computer Science recommends the award of the seals as follows:

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

H Decision of the Accreditation Commission (26.06.2026)

Assessment and analysis for the award of the ASIIN seal:

The Accreditation Commission discusses the procedure. It follows the argument of Technical Committee 02 – Electrical Engineering and Information Technology suggesting to partly modify a recommendation on the further development of the university's Quality Assurance system (below E 5). Providing students with feedback about the results derived from the quality assurance data gathered is considered an important part of the feedback cycles within the university's quality assurance system. The Accreditation Commission agrees with the TC's argument that closing this feedback loop cannot be left to the further development of the QA system and has therefore changed this part of the final recommendation to an additional requirement (below A 2). Furthermore, the Accreditation Commission approves of the recommended resolution of the experts and Technical Committees.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN Seal	Subject-specific label	Maximum duration of accreditation
Ba Mechanical Design, Manufacturing and Automation	With requirements for one year	–	30.09.2031
Ba Network Engineering	With requirements for one year	–	30.09.2031
Ba Robotics Engineering	With requirements for one year	–	30.09.2031
Ba Electronic Information Engineering	With requirements for one year	–	30.09.2031

Requirements

For all Degree programmes

- 5 A 1. [ASIIN 1.1] Communicate the indicated revisions and adaptations of objectives and programme learning outcomes transparently and make them accessible to the major stakeholders.
- A 2. [ASIIN 5] Ensure that students are informed about the evaluation results.

For the Degree programme Mechanical Design, Manufacturing and Automation

- 10 A 3. [ASIIN 1.1] Revise the objectives and learning outcomes with regard to the “research” objective and related competences considering the Bachelor’s level of qualification and the consistent alignment between both.

For Degree programme Robotics Engineering

- A 4. [ASIIN 1.3] Provide evidence of the validity of the indicated curriculum change regarding Electrical Drive Technology.

Recommendations

For all degree programmes

- 15 E 1. [ASIIN 1.3] It is recommended that student representatives be included in regular curriculum review activities, be it institutionally, e.g. through involvement in the planned “course system review panel,” or informally.
- 20 E 2. [ASIIN 1.3] It is recommended deepening the internationalisation through adequate measures (e.g., English proficiency of teaching staff and students, English-speaking visiting lecturers, implementation of the English taught courses).
- E 3. [ASIIN 1.3, 4.3] It is recommended providing the study plans presented in the SAR on the regular website of the university and/or responsible school.
- 25 E 4. [ASIIN 3.1, 3.3] With respect to the long-term development of the resource base of the programmes, it is recommended to clarify and focus the internationalization strategy of the university.
- 30 E 5. [ASIIN 5] It is recommended to further develop and implement the QA system, particularly by documenting how survey results and collected data lead to defined action steps.

Appendix: Learning objectives and curricula

According to the Student Handbook (Appendix 01), the following learning outcomes are set for the BA programme Mechanical Design, Manufacturing and Automation:

Learning outcomes of the programmes

● Programme A: Mechanical Design, Manufacturing and Automation

(1) Knowledge and Understanding

- 1) Gained extensive technical knowledge as to engineering, mathematics and natural science with a view to mechanical engineering enabling them to carry out scientifically substantiated work and act responsibly in their professional activities.
- 2) Gained an understanding of the multi-disciplinary context of Engineering Sciences.

(2) Engineering Analysis

- 1) Identify, formulate and solve problems peculiar to mechanical engineering based on the application of established scientific methods.
- 2) Analyse and assess products, processes and methods used in their discipline based on scientific facts.
- 3) Choose suitable methods of analysing, modelling, simulating and optimising and apply them with a high degree of competence.

(3) Engineering Design

- 1) The ability to conceive designs for machinery, devices or processes correspondent to the status of their knowledge and to develop them according to specified requirements.
- 2) A practically orientated understanding of design methods and the ability to apply them in a competent manner.

(4) Investigations and Assessment

- 1) Carry out literature research in accordance with the status of their knowledge and understanding and to use data bases and other sources of information for their work.
- 2) Plan and carry out suitable experiments' correspondent to the status of their knowledge and understanding, to interpret the data and draw suitable conclusions.

(5) Engineering Practice

- 1) Able to transfer new findings in engineering and natural sciences to industrial and commercial production under consideration of economic, ecologic and safety requirements as well as sustainability and environmental compatibility.
- 2) Able to plan, control and monitor processes and to develop and operate systems and equipment.
- 3) Able to independently consolidate the knowledge gained.
- 4) Aware of the non-technical effects of engineering activities.

(6) Transferable Skills

0 Appendix: Learning objectives and curricula

- 1) Function effectively as an individual and as a member of a team, including where relevant coordination of the team.
- 2) Use diverse methods to communicate effectively with the engineering community and with society at large.
- 3) Demonstrate awareness of the health, safety and legal issues and responsibilities of engineering practice, the impact of engineering solutions in a societal and environmental context, and commit to professional ethics, responsibilities and norms of engineering practice.
- 4) Demonstrate an awareness of project management and business practices, such as risk and change management, and understand their limitations.
- 5) Recognise the need for, and can engage in independent, life-long learning.
- 6) Work and communicate in national and international contexts.

Zaozhuang University presented the following curriculum for the programme:

0 Appendix: Learning objectives and curricula

Semester	Course	Contact Hour	Self-study Hour	Total Hour	ECTS
1	Comprehensive College English (1)	48	42	90	3
	Advanced Mathematics B(1)	96	84	180	6
	C-Programming	48	12	60	2
	Mechanical Drawing I	48	72	120	4
	Outline of Modern Chinese History	64	26	90	3
	Military Theory and Security Education	48	12	60	2
	Ideological Morality and Rule of Law	64	26	90	3
	Military Skill Training	40	50	90	3
	College Physical Education I	30	0	30	1
	National Security Education	24	6	30	1
	Applied Writing	16	14	30	1
	Situation and Policy	32	28	60	2
	Total 1 st semester			930	31
2	Comprehensive College English (2)	48	42	90	3
	Advanced Mathematics B(2)	64	56	120	4
	Mechanical Drawing II	48	72	120	4
	College Physics	48	42	90	3
	Theoretical Mechanics	56	64	120	4
	Mental Health Education	32	28	60	2
	Introduction to the Basic Principles of Marxism	64	26	90	3
	Introduction to Mechanical Design, Manufacturing and Automation	16	14	30	1
	College Physical Education 2	30	0	30	1
	Cognitive Practice of Mechanical Manufacturing Process	40	20	60	2
	Mechanical Drawing Surveying and Mapping	40	50	90	3
	Total 2 nd semester			900	30
3	Comprehensive College English (3)	48	42	90	3
	Linear Algebra B	48	42	90	3
	Programming with Python	48	12	60	2
	Big Data and Artificial Intelligence	16	14	30	1
	Mechanics of Materials	64	56	120	4
	Electrotechnical	56	64	120	4
	Mechanical Principle	64	56	120	4
	Industrial Robot Technology and Application	32	28	60	2

0 Appendix: Learning objectives and curricula

	Automation Engineering Design and Application	32	28	60	2
	Course Design of Mechanical Principle	40	50	90	3
	College Physical Education 3	30	0	30	1
	Basic Manufacturing Technology Training	60	30	90	3
	Total 3rd semester			960	32
4	Comprehensive College English (4)	48	42	90	3
	Probability Statistics	48	42	90	3
	Electronic Technology	56	64	120	4
	Mechanical Design	64	56	120	4
	Machine Vision Inspection	48	12	60	2
	Manufacturing Execution System Application Development	32	28	60	2
	Sensing Technology and Application	40	20	60	2
	Advanced Manufacturing Technology Training	60	30	90	3
	Introduction to Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era	48	42	90	3
	Labor Education	30	0	30	1
	College Physical Education 4	30	0	30	1
	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	64	26	90	3
	Total 4th semester			930	31
5	Fundamentals of Engineering Materials and Machinery Manufacturing	56	64	120	4
	Programmable Controller and Frequency Converter System	48	42	90	3
	CAD/CAM Mechanical	48	42	90	3
	Automatic Control Principle	48	42	90	3
	Hydraulic and Pneumatic Transmission	48	42	90	3
	Principle and Application of Single Chip Microcomputer	48	12	60	2
	Industrial Robot Field Programming	48	42	90	3
	Industrial Robot Programming and Simulation	48	42	90	3
	Course Design of Hydraulic and Pneumatic TransmissionMeter	40	50	90	3
	Quasi-Professional Oriented Training 1: Basic Quality of Professional	16	14	30	1
	Career Orientation and Development 1: Establishing Career Radar	16	14	30	1
	Total 5th semester			870	29
6	Literature Retrieval and Scientific Paper Writing	8	22	30	1

0 Appendix: Learning objectives and curricula

	Integrated Design of Industrial Robot System	48	42	90	3
	Plant Data Acquisition and Supervisory Control System	48	42	90	3
	DCS Control System	32	28	60	2
	Course Design of Programmable Logic Controller and Inverter System	40	50	90	3
	Quasi- Professional Oriented Training 2: Basic Professional	16	14	30	1
	Career Orientation and Development 2: Improving Comprehensive	16	14	30	1
	Special Lecture on Intelligent Manufacturing	16	14	30	1
	Practice and Innovation of Mechanical Manufacturing	32	28	60	2
	Introduction to Industrial Sociology	8	22	30	1
	Entrepreneurial Planning Practice	32	28	60	2
	Course Design of Mechanical Design	40	50	90	3
	Course Design of Principle and Application of Single Chip Microcomputer	40	50	90	3
	Control System Design of DCS	40	50	90	3
	Total 6th semester		870	29	
7	Mechanical and Electrical Integrated Technical Training	50	40	90	3
	Industrial Robot Comprehensive Technical Training	30	60	90	3
	Advanced Manufacturing Technology	32	28	60	2
	Robot Operating System	48	42	90	3
	Robot Control Technology	40	20	60	2
	Innovative Design of Mechatronics Products	32	28	60	2
	Discipline Competition	0	60	60	2
	Manufacturing Enterprise Production Management	16	14	30	1
	Vocational Qualification Certificate		30	30	1
	Factory Data Acquisition and Monitoring Control System Training	60	30	90	3
	Manufacturing Execution System Technology Application Training	30	60	90	3
	Industrial Robot Comprehensive Technical Training	30	60	90	3
	Total 7th semester		840	28	
8	Graduation Education	20	40	60	2
	Graduation Cractice	0	180	180	6
	Graduation Design (Thesis)	0	480	480	16
	Total 8th semester		720	24	

According to the Student Handbook (Appendix 01), the following learning outcomes are set for the BA programme Network Engineering:

● Programme B: Network Engineering

(1) Basic Scientific Literacy and Engineering Competence

Knowledge: Understanding and applying mathematical and natural science knowledge to solve practical engineering problems in network engineering is the foundation of professional competence.

Skills: The ability to understand and participate in general industry processes, meeting the requirements of potential positions and technologies.

Abilities: The ability to track the development trends and application prospects of modern science and technology.

(2) Interdisciplinary competences

Knowledge: Comprehend fundamental knowledge across disciplines relevant to network engineering and their intersections. Understand the linkages between engineering, society, environment and ethics.

Skills: Develop cross-cultural communication skills, enabling effective communication with professionals from different cultural backgrounds in international engineering projects. Master techniques for gathering and analyzing multi-disciplinary information.

Abilities: Integrate knowledge from diverse disciplines to resolve complex network engineering challenges. Collaborate effectively in international teams, adapting to diverse cultures. Make informed decisions considering technological, social and ethical factors.

(3) Engineering methodology

Knowledge: The ability to acquire and apply professional knowledge of network engineering.

Skills: Strong practical skills and professional capabilities in network engineering.

Abilities: The ability for further in-depth study, postgraduate study, and scientific research.

(4) Engineering development

Knowledge: Mastering the theories and methods of network system design, being able to organize and process data reasonably, and design functional modules that meet specific requirements.

Skills: Being able to design solutions to complex engineering problems in the field of network engineering, and design or develop network application systems that meet specific requirements and constraints.

Abilities: During the process of designing/developing solutions, having an attitude and awareness of pursuing innovation, and considering factors such as society, health, safety, law, culture, and environment related to complex engineering problems in the field of network engineering.

(5) Engineering practice and product development

Knowledge: Master theories on network system deployment, operation, network application development, and product development principles. Understand software engineering and project management concepts. Comprehend industry standards and regulations relevant to network engineering, covering security, quality and compliance.

Skills: Establish practical expertise in network system deployment. Execute installation, configuration, and fault-debugging of network infrastructure devices. Develop programming acumen for network-centric applications. In addition, cultivate the ability to conduct network system surveillance, carry out proactive maintenance, and resolve network-related issues. Master tools used for network performance benchmarking and security auditing.

Abilities: Cultivate comprehensive practical expertise in network system deployment. Conduct meticulous installation, configuration, and diagnostic fault-debugging of network infrastructure devices. Develop a high-level programming acumen specifically for network centric applications.

Zaozhuang University presented the following curriculum for the programme:

Semester	Course	Contact Hour	Self-study Hour	Total Hour	ECTS
1	College English 1	48	42	90	3
	Advanced Mathematics A (1)	96	84	180	6
	C programming Language	64	56	120	4
	Digital Electronics	48	42	90	3
	Introduction to the Profession	32	28	60	2
	Ethics and the rule of law	48	42	90	3
	Outline of Modern Chinese History	48	42	90	3
	Situation and policy	32	28	60	2
	Military Skill Training	32	28	60	2
	College Physical Education 1	30	0	30	1
	National Security Education	16	14	30	1
	Applied writing	16	14	30	1
	Total 1 st Semester			930	31
2	College English 2	48	42	90	3
	Advanced Mathematics A (2)	96	84	180	6
	Discrete mathematics	48	42	90	3
	College physics	48	42	90	3
	Java Programming	64	56	120	4
	Introduction to the Fundamental Principles of Marxism	48	42	90	3
	College Physical Education 2	30	0	30	1
	Mental health education	32	28	60	2
	Professional Practicum	32	28	60	2
	Career and Development Planning	32	28	60	2
	Total 2 nd Semester			870	29
3	College English 3	48	42	90	3
	Linear Algebra B	48	42	90	3
	Big Data and Artificial Intelligence	16	14	30	1
	Data structure	80	70	150	5
	Computer Network	64	56	120	4
	Principles of Computer Composition	64	56	120	4
	Communications Technology	48	42	90	3
	Java Web Programming	48	42	90	3
	College Physical Education 3	30	0	30	1

0 Appendix: Learning objectives and curricula

	Military Theory and Security Education	32	28	60	2
	Total 3rd Semester			870	29
4	College English 4	48	42	90	3
	Probability statistics	48	42	90	3
	Principles and Applications of Database Systems	64	56	120	4
	Operating System	64	56	120	4
	Linux Operating System	32	28	60	2
	Routing and Switching Technology	48	42	90	3
	Network protocol Analysis and Implementation	48	42	90	3
	Introduction to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era	48	42	90	3
	An Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	48	42	90	3
	College Physical Education 4	30	0	30	1
	Labor Education	16	14	30	1
	Total 4th Semester			900	30
5	Network Security Technology	48	42	90	3
	Wireless Network Technology	48	42	90	3
	Optical Transport Technology	32	28	60	2
	Modern Switching Technology	48	42	90	3
	Network Engineering Design and Project Management	48	42	90	3
	Broadband access technology	48	42	90	3
	Second classroom	32	28	60	2
	Employment guidance	32	28	60	2
	Network Planning and Optimization	48	42	90	3
	National Computer Rank Examination (NCRE)	32	28	60	2
	Certificate of Professional Level of Communication Professionals and Technicians (Junior)	32	28	60	2
	Total 5th Semester			840	28
6	Technical English and Writing	32	28	60	2
	Data Center Network Design	48	42	90	3
	Network System Integration	32	28	60	2
	Software-defined networking technology	48	42	90	3
	Topics in new Network Technologies	48	42	90	3
	Comprehensive Training in Network Engineering	48	42	90	3
	Professional Lectures	48	42	90	3
	Second classroom	32	28	60	2
	HCIA Certification	32	28	60	2

	Communication Network Deployment and Optimization Design Competition	32	28	60	2
	Network engineering project management	32	28	60	2
	China University Computer Competition (C4) Network Challenge	32	28	60	2
	Total 6th Semester			870	29
7	The Basics of Entrepreneurship	64	56	120	4
	Second classroom	32	28	60	2
	Graduation education	16	14	30	1
	Professional Internships	0	180	180	6
	Python Programming Project Hands-on Training	0	30	30	1
	Docker container technology project hands-on training	0	30	30	1
	Integrated Practice in Network Engineering Deployment and Implementation	0	30	30	1
	Integrated Practice in Network Planning and Design	0	30	30	1
	Network Engineering Innovation Skill Development	0	30	30	1
	Comprehensive Practical training in network engineering	0	30	30	1
	Soft Exam Programmer Practical Training	32	28	60	2
	National Student Communication Network Deployment Competition	32	28	60	2
	National Student Information Security Competition	32	28	60	2
	Innovation and Entrepreneurship Training Program	32	28	60	2
	Zaozhuang College Banmo Science and Technology Culture	32	28	60	2
	Total 7th Semester			870	29
8	Graduation Education	32	28	60	2
	Graduation Thesis	0	480	480	16
	Total 8th Semester			540	18

According to the Student Handbook (Appendix 01), the following learning outcomes are set for the BA programme Robotics Engineering:

● Programme C: Robotics Engineering

(1) Knowledge, understanding and application

1) acquired a broad and well-founded basic knowledge of mathematics, natural sciences and robotics engineering, which enables students to understand and analyze complex phenomena occurring in robotics engineering and to independently develop and apply practice-oriented solutions.

2) acquired an understanding of the broader ethical and multidisciplinary context of robotics engineering.

(2) Interdisciplinary competences

1) be able to analyse and present technical contexts from robotics engineering and related fields in a comprehensible way.

- 2) be able to work on technical tasks in a team and, if necessary, take over the coordination of the team.
- 3) know and understand the methods of robotic project management and economic methods such as risk and change management as well as their limits.
- 4) recognise the need for independent, lifelong learning and can pursue it.
- 5) have knowledge of foreign languages relevant to professional practice.
- 6) identify problems and solve them using various research and working techniques.
- 7) work in an interdisciplinary environment.
- 8) possess social and professional ethical competences and can shape social processes critically, reflectively and with a sense of responsibility and in a democratic spirit.

(3) Robotics Engineering methodology

- 1) be able to select and apply the current modelling, calculation, design and test methods for the robotics engineering field.
- 2) research technical literature and other sources of information on problems posed.
- 3) design and conduct experiments and computer simulations and interpret the data obtained.
- 4) use databases, standards, codes of good practice and safety regulations.

(4) Robotics Engineering development

- 1) have special skills in the development of analogue and digital, electrical and electronic circuits, systems and products.
- 2) be proficient in the use of the process elements modelling, simulation and testing in a problem-oriented way as well as their integration during development.
- 3) be capable of developing saleable products of robotics engineering for the global market.

(5) Robotics Engineering practice and product development

- 1) be able to apply their knowledge and understanding to gain practical skills for solving robotics engineering problems, carrying out investigations and developing systems and processes.
- 2) be able to draw on experience of the possibilities and limitations of the application of materials, computer-aided model designs, systems, processes and tools when solving complex robotics engineering problems.
- 3) know the practice and requirements in robotic production operations.
- 4) be able to research technical literature and other sources of information.
- 5) demonstrate an understanding of the health, safety and legal implications of robotic engineering practice and the impact of robotic engineering solutions in a social and environmental context.
- 6) undertake to act in accordance with the professional principles and standards of robotics engineering practice.
- 7) transfer new results of robotic engineering and natural sciences into industrial and commercial robotic production, considering sustainability, environmental compatibility as well as economic and safety requirements.
- 8) deepen the acquired knowledge independently.
- 9) be aware of the non-technical implications of robotic engineering.
- 10) be capable of developing saleable products of robotic engineering for the global market.

Zaozhuang University presented the following curriculum for the programme:

Semester	Course	Contact Hour	Self-study Hour	Total Hour	ECTS
1	College English 1	48	42	90	3
	Advanced Mathematics B1	96	84	180	6
	C Programming	48	42	90	3
	Engineering Drawing I	64	56	120	4
	Outline of Modern Chinese History	64	26	90	3
	Military Theory and Security Education	32	28	60	2
	Ideological Morality and the Rule of Law	64	26	90	3
	Situation and Policy	32	28	60	2
	Mental health education	32	28	60	2
	College Physical Education 1	30	0	30	1
	National Security Education	24	6	30	1
	Applied Writing	16	14	30	1
	Total 1 st semester			930	31
2	College English 2	48	42	90	3
	Advanced Mathematics B2	64	56	120	4
	Linear Algebra	48	42	90	3
	College Physics	48	42	90	3
	Python Programming	48	42	90	3
	Circuit Theory	64	56	120	4
	Introduction to the Basic Principles of Marxism	64	26	90	3
	General Education Elective	16	14	30	1
	College Physical Education 2	30	0	30	1
	Basic manufacturing technology training	60	30	90	3
	Military skills training	30	30	60	2
	Total 2 nd semester			900	30
3	College English 3	48	42	90	3
	Probability and Statistics	48	42	90	3
	Complex Function and Integral Transformation	32	28	60	2
	Big Data and Artificial Intelligence	16	14	30	1
	Analog Electronics Technology	56	64	120	4
	Engineering Mechanics	64	56	120	4
	Fundamentals of Mechanical Design	64	56	120	4
	Machine Vision Inspection Technology	48	42	90	3
	Introduction to Intelligent Robots	16	44	60	2

	General Education Elective	16	14	30	1
	College Physical Education 3	30	0	30	1
	Engineering Drawing Surveying and Mapping	40	20	60	2
	Total 3 rd semester			900	30
4	College English 4	48	42	90	3
	Digital Electronics Technology	48	42	90	3
	Principles of Automatic Control	64	56	120	4
	Principle and Application of Single-Chip Microcomputer	48	42	90	3
	SOLIDWORKS 3D Design	32	28	60	2
	Robot Operating System	48	42	90	3
	Career and development planning	16	14	30	1
	Vocational skills training	48	12	60	2
	General Education Elective	16	14	30	1
	Introduction to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era	48	42	90	3
	Labor Education	16	14	30	1
	College Physical Education 4	30	0	30	1
	An Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	64	26	90	3
	Total 4 th semester			900	30
5	Fundamentals of Robotic Technology	64	56	120	4
	Robot Programming and Simulation	48	42	90	3
	Hydraulic and pneumatic transmission	40	50	90	3
	Sensor technology and applications	40	50	90	3
	Programmable logic controller and inverter system	48	42	90	3
	Matlab and control system simulation	48	42	90	3
	Mechanical CAD/CAM	48	42	90	3
	Introduction to Industrial Engineering	16	44	60	2
	General Education Elective	32	28	60	2
	Course Design of Principle and Application of Single-Chip Microcomputer	40	20	60	2
	Course Design in Fundamentals of Mechanical Design	40	20	60	2
	Total 5 th semester			900	30
6	Professional English on Robot Engineering	16	14	30	1

0 Appendix: Learning objectives and curricula

	Motion Control Systems	48	42	90	3
	Mobile Robot Localization and Navigation Technology	32	28	60	2
	Industrial robot fault diagnosis and maintenance	40	50	90	3
	Robotics Comprehensive Practice and Innovation	48	12	60	2
	Signals and Systems	48	42	90	3
	CNC Technology	64	26	90	3
	Introduction to Intelligent Manufacturing	16	14	30	1
	Innovative Robotics Design	32	28	60	2
	Career Guidance	16	14	30	1
	General Education Elective	48	42	90	3
	Course Design of Programmable Logic Controller and Frequency Converter System	40	20	60	2
	Course design of Hydraulic and pneumatic transmission	40	20	60	2
	Robot on-site programming training	40	20	60	2
	Total 6 th semester			900	30
7	Literature search and scientific paper writing	8	22	30	1
	Industrial Robot System Integration Design	48	42	90	3
	Introduction to Robotics Engineering	16	14	30	1
	Advanced Manufacturing Technology	32	28	60	2
	Standardized management	24	36	60	2
	Industrial Automation Practice and Innovation	32	28	60	2
	Frontier Topics in Robotics	16	14	30	1
	Academic Competitions	32	28	60	2
	Professional Quality of Engineers	16	44	60	2
	Manufacturing Enterprise Production Management	32	28	60	2
	Fundamentals of Generative Artificial Intelligence	48	12	60	2
	Entrepreneurship Foundation	32	28	60	2
	General Education Elective	32	28	60	2
	Graduate Education	16	14	30	1
	Engineering Cognition Internship	40	20	60	2
	Graduation Internship1	60	30	90	3
	Total 7 th semester			900	30
8	Graduation Internship2	60	30	90	3
	Industrial Robot Comprehensive Technology Training	40	20	60	2
	Graduation Design (Thesis)	0	480	480	16
	Total 8 th semester			630	21

According to the Student Handbook (Appendix 01), the following learning outcomes are set for the BA programme Electronic Information Engineering:

● Programme D: Electronic Information Engineering

(1) Knowledge, understanding and application

Master the fundamental knowledge in mathematics, natural sciences, information technology, and computer-related subjects. The ability to use mathematical knowledge to understand and appropriately express real-world engineering problems, observe, analyze, and solve technical problems from mathematical and informational perspectives. Perform continuous analysis, integration, calculation, judgment, and reasoning of engineering phenomena according to the characteristics of mathematics and information technology to solve engineering problems.

(2) Engineering methodology

Master the general knowledge, methods, and skills required for engineering practice, and be able to evaluate their relevance and effectiveness. Master the basic principles and concepts in electronics, communication, and information processing. Based on the characteristics of Electronic Information Engineering, use continuous analysis, induction, judgment, and reasoning of engineering phenomena to understand engineering problems. Establish basic models to evaluate various practical problems in technology and engineering applications.

(3) Engineering development

Master the specialized knowledge of Electronic Information Engineering, especially in the areas of embedded systems and information processing. Design systems by integrating individual devices or processes, and compare integrated system design schemes. Use scientific principles and methods to study complex engineering problems in the electronic information field, including designing experiments, obtaining and analyzing data, and synthesizing information to reach reasonable conclusions.

(4) Engineering practice and product development

Possess specialized knowledge to analyze and solve practical problems in Electronic Information Engineering. Design solutions to complex engineering problems, including designing unit circuits and information systems that meet specific needs, with an emphasis on innovation in the design process. By integrating multidisciplinary knowledge, this enhances professional skills and cultivates comprehensive problem-solving capabilities for real-world engineering applications.

(5) Interdisciplinary competences

Master knowledge of Chinese modern history, basic principles of Marxism, patriotism, humanistic spirit, physical education, and military training. Understand social phenomena, stay aware of and adapt to social development, communicate and collaborate effectively, foster teamwork, and promote physical and mental health and self-improvement. Capable of leading teams to navigate complex and dynamic work environments while assuming responsibility for advancing scientific knowledge and practical applications in the field of electronic and information engineering.

The LOs of the programmes are easily accessible to the students and lecturers on the school website: <https://zyrz.uz.z.edu.cn/ASIIINrz.htm>

Zaozhuang University presented the following curriculum for the programme:

Semester	Course	Contact Hour	Self-study Hour	Total Hour	ECTS
1	College English 1	48	42	90	3
	Advanced Mathematics B1	96	84	180	6
	Linear Algebra	32	58	90	3
	AutoCAD and Engineering Drawings	32	28	60	2
	Ethics and Rule of Law	32	58	90	3
	Physical Education 1	32	0	60	1
	Introduction to China's Modern and Contemporary History	32	58	90	3
	National Security Education	8	22	30	1
	Practical Writing	16	14	30	1
	Social Situation and Policy	32	28	60	2
	Military Skill Training	32	28	60	2
	Labor Education	16	14	30	1
	Total 1st Semester		870	28	
2	College English 2	48	42	90	3
	Advanced Mathematics B2	64	56	120	4
	College Physics	64	86	150	5
	C Language Programming	64	56	120	4
	Circuit Analysis	72	48	120	4
	Career and Development Planning	16	14	30	1
	Introduction to Basic Principle of Marxism	32	58	90	3
	Physical Health Education	32	28	60	2
	Military Theory	32	28	60	2
	C Language Curriculum Design	32	28	60	2
	Total 2nd Semester		900	30	
3	College English 3	48	42	90	3
	Complex Function	32	58	90	3
	Big Data and Artificial Intelligence	16	14	30	1
	Fundamentals of Analog Electronics Technology	72	78	150	5
	Python Language Programming	48	42	90	3
	Data Structure	48	72	120	4
	Lectures on Latest Development in Electronic Information Engineering	16	44	60	2
	The foundation of Innovation and Entrepreneurship for college students	16	44	60	2
	Physical Education 3	32	0	32	1
	Professional Internship	32	58	90	3
	Elective Public Course(Discipline-related)	32	28	60	2

0 Appendix: Learning objectives and curricula

		Total 3rd Semester		872	29
4	College English 4	48	42	90	3
	Probability Theory & Mathematical Statistics	56	94	150	5
	Discrete Mathematics	32	58	90	3
	Java Language Programming	48	72	120	4
	Digital Electronic Technology	64	56	120	4
	Signals and Systems	72	78	150	5
	Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era	48	42	90	3
	Introduction to Mao Zedong Thoughts and the Theoretical System of Socialism with Chinese Characteristics	32	58	90	3
	Physical Education 4	32	0	32	1
	Total 4th Semester			932	30
5	Principles of SCM	64	56	120	4
	Digital Signal Processing	56	64	120	4
	High Frequency Electronic Circuits	48	72	120	4
	Linux OS	48	42	90	3
	Computer Networks	48	72	120	4
	Careers Guidance of University Students	16	14	30	1
	Elective Public Course(Cross-disciplinary)	64	56	120	4
	Elective Public Course(Discipline-related)	64	56	120	4
	Total 5th Semester			840	28
6	Communication Principles	72	78	150	5
	Embedded System	64	86	150	5
	Digital Imaging Processing	48	72	120	4
	EDA technology	48	72	120	4
	Sensor and Detection Technology	48	42	90	3
	Edge Intelligence Technology	48	72	120	4
	Java Web Application Technology	48	72	120	4
	Total 6th Semester			870	29
7	Graduation Labor Practice 1	96	84	180	6
	Practice of Second Class	32	0	32	1
	Applications of Embedded System	32	58	90	3
	EDA Course Design	32	28	60	2
	Electromagnetic Field and Electromagnetic Waves	56	64	120	4
	Electronic Product Mounting and Testing	24	66	90	3
	Microcomputer Principle and Interface Technology	48	72	120	4
	SCM course design	32	58	90	3
	Total 7th Semester			782	26
8	Graduate Education	32	0	32	1
	Graduation Labor Practice 2	96	84	180	6
	Bachelor Thesis	480	0	480	16
	Total 8th Semester			692	24
		OFFERED		6758	224