



ASIIN Seal & European Labels

Accreditation Report

Bachelor's Degree Programme
Mechatronics Engineering

Provided by
Tishk International University

Version: 24 September 2024

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A About the Accreditation Process

Name of the degree program (in original language)	(Official) English translation of the names	Labels applied for ¹	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC) ²
Bachelor of Mechatronics Engineering	Bachelor of Mechatronics Engineering	ASIIN, EUR-ACE® Label	None	1 + 2
Date of the contract: 21.01.2022 Submission of the final version of the self-assessment report: 31.10.2022 Date of the audit: 29.11.2022 – 30.11.2022				
Peer panel: Prof. Dr. Christoph Rappl, Deggendorf Institute of Technology, Germany Prof. Dr. Harald Loose, Technical University of Brandenburg, Germany (participating online) Huner A. Majeed, Cihan Group, Erbil, Industry Representative (Iraq) Sufyan Muhammed Abid, University of Mossul, Student (Iraq)				
Representative of the ASIIN headquarter: Dr. Iring Wasser				
Responsible decision-making committee: Accreditation Commission				
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015				

¹ ASIIN Seal for degree programs, EUR-ACE® Label: European Label for Engineering Programmes

² TC: Technical Committee for the following subject areas: TC 1 – Mechanical/Process Engineering; TC 2 Electrical Engineering, Information Technology

B Characteristics of the Degree Programs

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF ³	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & Maximum Capacity/Actual Student Intake First time of offer
Mechatronics Engineering	B.Sc.	Mechatronics	Level 6	Full time	NA	8 Semester	240 ECTS/ 173 Tishk Credit hours	annually in fall, maximum capacity 50, actual student intake 15-20, since the academic year 2017-2018

Tishk International University (TIU); previously Ishik University, is a private, co-educational higher-education institution located in the metropolis of Erbil, Kurdistan, which has a population of around 1,500,000-inhabitants. The university disposes of a branch campus in the city of Sulaimani. It has been officially recognized by the Ministry of Higher Education in Iraq as of 24 August 2017. According to the Webometrics Rankings of 2022, TIU is first among the private universities and fourth among public and private universities in the Kurdistan Region. In world rankings, TIU has meanwhile managed to advance to the top 4000 category. Currently it enrolls around 2500 students, around 100 of them with an international background.

TIU today is divided into eight faculties offering 23 undergraduate English speaking study programs (only the law study program is offered in Arabic language). There are faculties in administrative sciences and economics, applied sciences, dentistry, education, law, nursing as well as engineering. The faculty of engineering is one of the most dynamic growth areas of the University, only last year two new departments in Aviation Engineering and Petrochemical Engineering have been established. The latter is not surprising, as Iraq is disposing of the 4th largest natural gas and oil resources globally.

The Faculty of Engineering gives home to the Mechatronics Engineering Bachelor (MECH) offered by its Department of Mechatronics. The Department, established in 2017, is the only one of its kind in Kurdistan. The program, which started enrolment of students equally in 2017, is also unique in the Kurdistan region and one of very few comparable study offers in Iraq.

³ EQF = The European Qualifications Framework for lifelong learning

The University according to its Self-Assessment Report founded the department in response to a prospective high demand for skilled mechatronics and automation engineers. It established the MECH program as an answer to the challenge of recruiting specialists disposing of an interdisciplinary combination of mechanical, electrical engineering as well as software skills in the region/country.

The program is a full-time Bachelor program with a duration of 8 semester and 240 ECTS. It has a maximum annual intake of 50 students; currently however the average enrollment amounts to 15-20 students and the annual graduation number to 11 students.

The Bachelor program *Mechatronics Engineering* is presented with the following profile in TIU's Self-Assessment Report:

"The program of Mechatronics Engineering covers a range of major fields of studies such as electronics engineering and control, mechanical engineering. computer and communication engineering. Mechatronics and automation engineers are highly sought after in the industrial countries, as they are an important pillar in the manufacturing and production technology in majorities of factories. The department plays an important role in the university's strategic plan for developing the manpower needed in localization of jobs in key development sector in the society to help achieve self-sufficiency in this regard.

As regards the mission of the Mechatronics B.Sc. degree program, "it aspires to "prepare students for diverse job potentials whether state, private or entrepreneurship, in all mechatronics related field by effective imparting of theoretical as well as practical courses throughout the years of study."

TÍU is using international accreditation as a means of self-improvement and instrument to promote its standing in the national and international HE community. It has applied not only for the German ASIIN quality seal, but in additional also for the quality label of the European Network for Engineering Education (ENAE), which has authorized ASIIN to deliver the "European Accredited Engineering"- quality seal ("EUR-ACE") on its behalf.

C Accreditation Report for the ASIIN Seal

1. The Degree Program: Concept, content & implementation

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

Evidence:

- Self-assessment report
- The webpage of TIU <https://tiu.edu.iq/>
- Homepage of the program Mechatronics engineering webpage (<https://engineering.tiu.edu.iq/mechatronics/>)
- TIU Guidelines for writing PLOs
- Matrix matching Program and Module Learning Outcomes
- Discussion during the audit

Preliminary assessment and analysis of the peers:

The Bachelor programs of Mechatronics Engineering (MECH) is organized as full-time, four-year program with a strong application-oriented profile, disposing of a high proportion of practical lessons, laboratories and internships.

Concerning the competence profile of MECH, the Department of Mechatronics in the Faculty Engineering provides a clear mission as well as a short list of objectives

Mission	The mission of the Mechatronics B.Sc. degree program is to prepare students for diverse job potentials whether; state, private or entrepreneurship, in all mechatronics related field by effective imparting of theoretical as well as practical courses throughout the years of study in the college.
Objectives	• Graduates will be competent in their field equipped with sufficient skills and abilities to handle complex engineering problems. • Graduates will be able to translate plane linguistic statements into a robust; technological and academic interconnected constructs to perform a given task.

	• Graduates will be able to communicate effectively with different members from various disciplines. • Graduates will be prepared as engineers with quality of leadership of high morals and professional ethics. • Graduates will be prepared for future careers in industry.
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In addition, an extensive list of one dozen learning outcomes, which graduates are expected to achieve by the end of their studies, is presented. The graduates of the MECH program accordingly

PLO1	Apply the knowledge as well as the ability to implement mathematics, science, and engineering fundamentals and construct solution of complex engineering problems.
PLO2	Analyze and synthesize systems and/or sub-systems that can function in coherence with a variety of initial states and boundary conditions.
PLO3	Analyze data produced by acquisition systems for both localized and/or remote applications.
PLO4	Apply the knowledge about environmental issues, which they are capable of embracing in their solution constructs coupled with public health and safety requirements.
PLO5	Identify various parameters of physical quantities such as temperature, pressure and displacement, through the use of appropriate sensors, transducers and actuators to different processors and provide suitable control for that.
PLO6	Apply the knowledge about the energy demand and the sustainability requirements, which can be addressed in any proposed engineering project to achieve and optimized solution.
PLO7	Communicate effectively and work collaboratively with other engineers and technical personnel.
PLO8	Apply the traits of good leadership, responsibility, passion and active engagement in both professional and community assignments.
PLO9	Apply personal and industrial safety at work standards.
PLO10	Draw all necessary plans and procedures to meet good satisfaction based on customer feedback.
PLO11	Apply competency-based marketing within the corporate domain that matches standards beyond local arena.

PLO12	Apply the basic organizational and project knowledge skills; and effectively manage resources, tasks and time.
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These PLOs have reportedly been developed in a broad stakeholder process including the Heads of Departments in collaboration with the academic staff as well as industrial partners. The TIU's Quality Assurance Office has subsequently reviewed them in terms of structure and coherence.

Concerning the process of modernizing the program under review, the Department minutes its awareness, that mechatronics is a very dynamic discipline rapidly evolving and in need of constant adaptations to labor market requirements. The experts learn that - apart from minor annual updates -, MECH as all other programs offered at TISH undergoes a major program revision every three years, doing benchmarking exercises with leading international universities in the process and responding to suggestions of internal and external stakeholder groups (more details are discussed under criterion 1.3.). According to the program coordinators, the graduates of the department are well suited for design and service engineering jobs, skilled customer service as well as field engineers and intermediate management personnel.

In the department's own SWOT analysis, the program coordinators however also state, that whereas mechatronics and automation engineers are highly sought after in industrial countries such as Europe, US and Japan, the story currently is different in Iraq. The country in spite of its wealth in natural resources is still a developing country with a comparatively weak industrial base. The capacity to absorb a significant number of mechatronics and automation engineers is currently thus still limited. This situation has been aggravated by the long period of sanctions imposed on the country submitted by the western world. Due to the short operational time, that the program has been offered, the department does currently not monitor the employability of its few graduates (11 per year) by systemic tracer studies.

The experts discuss the competence profile, which has been presented by the MECH department and been published on the university's website. They appreciate that the Program Learning Outcome (PLO) descriptions are accompanied by a learning module matrix matching program and module learning objectives as well as matching them to the European Dublin Descriptors. The expert team is convinced, that a much clearer definition is needed of what "mechatronics" actually means in the context of the faculty of engineering at TIU. They see a need for developing more concise program objectives and learning outcomes than the rather generic list of PLOs presented to them. This is all the more necessary,

as the program is new in Kurdistan and the country, and employers according to the faculties/department's own account are not familiar with this type of inter-disciplinary program design.

Before this background, it will be beneficial in this process clarifying more accurately the differences between the MECH program and existing programs in Mechanical and Electrical Engineering as well as classical Robotics and Automation Programs in the Iraqi education market. A clear definition of the unique selling points of this particular study program is warranted. The experts furthermore also recommend not only engaging in international benchmarking but also consulting learning outcome agreements which have been elaborated on the international level (e.g. in the framework of the European Tuning projects).

The program, according to the evidence provided, nevertheless prepares the (currently low number of) graduates for suitable positions in the Kurdish and national labor market), as the expert can infer from their discussions with representatives from the employer side, allowing the students to take up an occupation corresponding to their education. The experts however also see a need for developing concrete job descriptions for the graduates as the program expands and more students will enroll in the future. On the website of the department, a more informative description of possible career pathways is missing.

Apart from these necessary lines of actions, the experts attest that, generally speaking, the learning outcomes of the Bachelor of Mechatronics engineering program corresponds to level 6 of the European Qualification Framework and the Dublin Descriptors. They find them to be aligned to the needs of the Iraqi and regional labor market. In addition, the expert group finds evidence, that major stakeholders are regularly involved in the continuous assessment and further development of the program learning objectives. The expert team also confirms that the module/course descriptions include the learning outcomes of each individual learning unit

Criterion 1.2 Name of the degree program

Evidence:

- Self-assessment report
- Discussion during the audit
- Diploma and Diploma supplement
- The webpage of TIU <https://tiu.edu.iq/>
- Homepage of the Mechatronics engineering webpage (<https://engineering.tiu.edu.iq/mechatronics/>).

Preliminary assessment and analysis of the peers:

The program coordinators report that the “mechatronics engineering” has been consciously chosen for the program under review in order to maximize the job opportunities for graduates while benchmarking it with international standards. Most importantly, the title is supposed to reflect the proposed curriculum as well as the associated program objectives and learning outcomes. The designation is used consistently in all relevant documents.

The experts agree that the teaching and learning content and the competence profile must be in accordance with the proposed title of the degree program. Mechatronics engineering in their opinion consists of various elements of an equal footing, more specifically of an integrated combination and synergy of mechanical and electrical engineering as well as informatics. In its current form, the program covers various engineering subjects to educate a generalist on the one hand side and a specialist in robotics and automation on the other side. The program could be labelled “general engineering” or “robotics and automation”, but not Mechatronics in the understanding of the experts, as a number of critical content is missing. In order to justify the name of the program, the experts see a need to have another critical look and adjust the curriculum to fill some of the gaps, which are currently still in place (see further information below).

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Curricular overview of the study programs under review
- Module handbooks of the study programs under review
- Syllabus of the study programs under review
- The webpage of TIU <https://tiu.edu.iq/>
- Homepage of the program Mechatronics engineering webpage (<https://engineering.tiu.edu.iq/mechatronics/>).
- Questionnaire and the results of the Student Feedback Survey
- Discussion during the audit

Preliminary assessment and analysis of the peers:

The MECH program is offered as a 4-year program, upon completion of which graduates are awarded a Bachelor of Science degree (BSc). The program language is English in line with TIU’s quest to educate graduates for the national and international market.

To earn a BSc degree in MECH at TIU, students need to fulfil university, faculty, and department requirements completing 240 ECTS or 173 TIU credit hours with additional 100 hours of a summer internship program in the process. Non-technical subjects cover about 10% of the program.

As part of its Self-Assessment Report, TIU presents the structure of its mechatronics engineering Bachelor program. It features modules in mechanical engineering, electronics and communication as well as computer and control. In the first year of studies, a number of compulsory subjects are presented, which are prescribed by the Kurdish Ministry of Higher Education and include courses in English language, Academic debate and Kurdish history. At the same time, the first study year also contains introductory courses of engineering fundamentals such as electrical circuits, engineering mechanics, engineering drawing, etc. In the second and third year, the modules are becoming more demanding, introducing various theories and techniques used in mechatronics and covering mostly automation technology. In the final year, the focus shifts towards the implementation and design of different components of mechatronics systems, which include case studies, system design and reverse engineering. During this final phase of their studies, students are required to conduct a final year project where they need to put the various theory they have learned into practice, conduct an in-depth study of literature review and write a dissertation. Towards the end of their study, all students are encouraged to take part in the NICE exhibition and present their graduation project. The complete structure of the curriculum can be found under <https://engineering.tiu.edu.iq/mechatronics/>) and is depicted in the following graph.

In the expert's opinion, the compulsory part of the curriculum includes a balanced number courses from Mechanical and Electrical Engineering programs, however a limited number of courses in computer technology and only 4 interdisciplinary courses (Electro-Mechanical Systems, Signal and Systems, Robotics, Design of Mechatronic systems). The curriculum provides 22 technical and 13 non-technical subjects where 6 respectively 4 of them must be taken by students. The dilemma of creating a curriculum for Mechatronics programs consists in the conflict between the wanted and possible subjects, the competition between fundamentals and advanced subjects, between compulsory and elective contents. "Sometimes less is more."

The representatives of the MECH department claim to provide a curriculum of great substance, integrating theory and practice, work in the laboratories as well as an internship. The MECH department is proud of its interlinkage with companies in the region and country. This network in its view has been instrumental in providing internship for its students as well as job opportunities for its graduates. It also minutes that the curriculum is in line with the requirements of the Bologna Process and has been benchmarked against curricula of international competitors. In line with the regular process for all programs at TIU, MECH

undergoes regular review on an annual basis whereas larger changes of the curricula are performed every three years. The scientific committee of the department defines the scope of the review and the modules with the highest need for change. For this process, TIU uses the results of the annual review by external assessors, which is described in more details under the criterion quality assurance in the final part of this report. The department claims to internal and external involve stakeholders in these review processes.

In the discussion with the rector's representatives and the program coordinators, the expert panel inquire about the motivation for the initiation of the MECH program and plans for its future development. The program coordinators explain, that the MECH program was initiated before the background of a perceived lack of manpower in an important future market. As the first prototype of its kind in the region, it aspires integrating the disciplines of mechanics/mechanical engineering, electronics (including electrical engineering) as well as control engineering and ICT. By integrating these disciplines, the department hopes to foster the development, manufacture and operation of innovative proceeds and processes and in the future contributing to an Integrated Development Environment in Iraq. The department also presents the sketch of a five-year Strategic Plan for Mechatronics Engineering (2022-2027, which according to the expert's opinion needs to be further substantiated and operationalized and should include measurable key performance indicators connected to the human resource and financial planning for the faculty (for further information see criterion 3: Resources)

Before this background, the experts see a need for rebalancing the curriculum and have a better equilibrium between fundamentals, special subjects and electives. They recommend focusing on teaching fundamentals in the first and second year, and giving special subjects and electives in the third and fourth year.

The experts suggest that the department should consider rebalancing the relationship between the courses from different physical and engineering domains, to include missing or strengthen underrepresented subjects. The experts suggest that topics such as fundamentals in physics (mechanics, electricity & magnetism, optics, thermodynamics & fluids) as well as strength of materials (steel, metals, non-metals, composites, ...) should be included. The same logic applies to subject areas such as "dynamics" (basic concepts in engineering mechanics), "dynamics of machines and mechanisms", "production technologies" (drilling, milling, assembling, ...). An "Introduction into Mechatronics" would be helpful in the first grade, "Modeling and Simulation of Mechatronic systems and their subsystems" in the third/fourth grades to strengthen the mechatronic character of the program. It could be meaningful to exchange courses between the compulsory and the elective part (e.g. "Renewable Energy" and "Instrumentation and Measurement").

Content wise, the program should be further strengthened in the area of computer programming. An advanced course addressing the concepts of object-oriented programming is missing.

The course ME221 “Thermodynamics” is not a core competency in classical Mechatronics programs and could be offered as an elective, given that a physics course, covering basic fundamentals of thermodynamics is implemented mandatorily.

The course ME314 “Signals and Systems” in semester 6 provides basic knowledge for course ME316 “Digital communication systems” given in semester 5, so the sequence of these subjects should be flipped in the curriculum.

In general, the experts consider the amount of electives within the curriculum to be too large, in semester 1-4 the fundamentals should be strengthened by removing some electives, in the last semester, there must be more emphasis on the final project, leading to a more substantial Bachelors thesis.

In summary, the experts find the curriculum to be a good basic for a general engineering program with considerable room for improvement. They recommend to revise the curriculum (PLO 01, 03, 05), to improve its mechatronic/interdisciplinary character. The quality of the Bachelor thesis needs to be strengthened. As regards the involvement of the stakeholders in the development of the curriculum and lecturing and find them to be well informed and connected to the faculty/department.

Internship

According to the information provided, the internship is of one-month duration and usually takes place during the summer vacation of their 3rd year of studies. Students are encouraged to seek industrial placements on their own, but the department will give supports and help finding a placement through the network with local businesses and companies where needed. To this regard, the MECH department and the faculty of engineering in the course of the past 5 years have developed a network with local companies and NGO's, establishing a number of Memoranda of Understanding in the process. These industrial partners provide internships for the students and after completion of studies job opportunities for graduates.

Students commonly do not receive any payment/salary for their work during the internship. Expenses however are covered, such as transportation between cities or lunches at work. Students cannot obtain credits for doing the internship.

Regarding the procedure of seeking and conducting an internship, TIU disposes of university-wide regulations in place, clearly defining the underlying processes. In accordance with

these regulations, the MECH Department conducts an orientation session prior to the start of the internship program. After securing a suitable internship opportunity, all students are provided with the “Internship Application Form” from the Department Internship Supervisor. Together they define the “Learning Objectives” of the particular Internship experience. The student obtains the Host Organization Approval on the “Internship Application Form” as well as the “Internship Job Description”, both of which are approved by the Department Internship Supervisor.

Throughout the internship, the student will hand “Internship Program Reports” on a weekly basis. The Department Internship Supervisor monitors and verifies these weekly reports, provides the student his feedback and comments and schedules meetings with the student monitoring his/her progress and assuring completion of all assignments. At the end of the process, the Host Organization Supervisor fills out the evaluation form and submits it directly to TIU Department. The Department Internship Supervisor approves the submitted Evaluation Form.

The experts in their appreciation of the internship experience at the MECH department confirm the existence of well-designed internship regulations and commend TIU on defining sound quality assurance procedures during all stages. Having said this, the expert team nevertheless identifies a number of shortcomings, which need to be addressed:

First, the experts are concerned by the short duration of the internship exercise. A four-week stay at a company in their eyes is not sufficient to profit from a deeper experience and to reap greater benefits from delving into this practical work experience. This finding is confirmed during the interviews with various stakeholder groups. In their discussions with the representatives of the employers’ side, the latter on the one hand confirm suited qualifications of the students during their internship and that on occasions they have offered jobs to students after their internship at their company. On the other hand, they uniformly are in favor of putting a longer internship in place, as 4 weeks is not enough to have a substantial experience. The students who are equally not happy with the current design of their internship echo this.

Second, the experts criticize that the Internship is not really an integral part of the curriculum and that students cannot obtain credit points for their efforts, which is a violation of the ASIIN criteria. The experts do not accept the argument, that it is only the polytechnic in the country, which have an internship of a duration of 12 months. The experts see a need to prolong and restructure the internship experience of students, making it an official part of the curriculum and giving credits for it.

Mobility

TIU already in its name underpins its claim to be an international university. This claim is further substantiated by the fact the language of instruction is almost exclusively English and that a considerable part of the teaching staff has international experience. TIU also entertains partnership with international partners. To that regard, it has signed M.O.U.s with more than 60 universities from 20 countries, including three with German higher education institutions.

As regards the specific case of the program under review, for the Mechatronics Engineering Bachelor program TIU has signed international partnership agreements with Nehru Group of Institutions, India, with the Mideast Aviation and the Royal Aviation Academy as well as the University of Science and Technology in Jordan and furthermore with the Michigan State University in the USA. This is supplemented on the national level by a M.O.U. with the University of Mosul, the Swiss Academy as well as with an organization called Field Ready Makerspace in Iraq. The latter specifically support students to participate in the National Innovation Competition in Engineering.

In terms of Student Exchange Programs, since the establishment of TIU's International relations Office (IRO), a small number of around 40 students have studied abroad. The IRO has defined university-wide conditions and processes of engaging in Student Exchange Programs (SEP) for outgoing as well as incoming students:

As regards **outgoing mobility**, TIU students can apply for a SEP, if their GPA is equal to 2.00 or more, and if they have a sufficient level of English, documented by certificates from TOEFL, IELTS or PEARSON or a confirming document from Student Affairs Office. The window of mobility in a 4-year program is open during the second or third year, for 5-year programs during the third or fourth year of study. In terms of process, the International Relations Office is announcing the contingent for every semester, student subsequently are evaluated and selected by the IRO Advisory Committee according to their GPA. The IRO Unit sends the selected student list to University Council (UC) with the signature of the director of IRO unit. The selected students then submit their transcript or records, a support letter to the host university, a copy of student's passport as well as an English language certificate. Prior to going abroad, a learning agreement (course equalization form) is approved and signed by the IRO representative, Head of Departments and Dean of the Faculty. As regards incoming mobility, the International Relation Office Staff is responsible for the placement of international students, for promoting the educational offerings, co-operation with educational agencies, and preparation of the relevant documents.

The experts find that TIU under difficult framework condition (the perceived image of Iraq in public opinion after war, the embargo as well as the security situation) and the MECH

department have successfully managed to establish an international network of higher education institutions. Process and Regulations are in place to organized student and staff mobility. With the creation of the International Relations Office, an important support structure has been institutionalized.

Having said this, the experts find that student mobility for TIU in general is low, in the MECH department in particular practically non-existent as of now. In terms of outgoing mobility, there were no examples to be found among the interviewed students of the mechatronics engineering program, though in the discussions an exchange program with a Malaysian University and some individual short-term visits to partnering HEIs were mentioned. Efforts to increase the chances of students to undergo an international learning experience should therefore be enhanced.

In terms of incoming mobility, marketing efforts need to be increased, currently the number of students is very small as is the number of the overall student body in the field of mechatronics. The expert team is aware of the difficult framework conditions but believes more can be done to attract students to study at TIU. Therefore, the expert panel recommends TIU to assess the number of outgoing and incoming students with the aim to identify barriers for interested students supporting the further internationalization of the university.

The same applies to international staff mobility. Since the creation of the program back in 2017, there have been not examples of international staff mobility recorded. In the discussions and in the self-documentation, TIU representatives announce further investing in this area, but thus far, no results have materialized.

Criterion 1.4 Admission requirements

Evidence:

- Self-assessment report
- The webpage of TIU <https://tiu.edu.iq/>
- Student handbook
- Discussion during the on-site visit

Preliminary assessment and analysis of the peers:

There are, generally speaking, two ways to qualify for the bachelor program under review. The main group of admissions has previously graduated from a scientific high school, which finishes after grade 12 in Iraq. The results of the nationally held final exams determine which university, college and specialization the student can attend.

The second group of student admissions has graduated from a two-year higher education institute that complies with one of the study programs. After two years, the program ends with an exam comparable to the final high school exam. The admission of students, which are usually 18-20 years of age, is based on a competitive system considering the average mark of the two different final exams (the score has to be higher than 75% coming from the high school, more than 72% coming from an 2 year institute).

In addition to these scores, English language proficiency is also considered in the application process. The applicants have to take a TIU English proficiency exam, which is considered together with the high school English language exam. Both scores have to exceed 50 points on the TIU scale to enable enrolling in the MECH program. If the score is below this threshold, the students are required to study English language in a Foundation English course in prep school for one year.

As regards the admission process, TIU's Students Affairs Office receives a notification about the admission deadline by the Ministry of Higher Education and Scientific Research in Kurdistan. This ministry is responsible for determining the admission policies, requirements and criteria for both public and private universities such as TIU.

Regarding enrolment numbers, the department of mechatronics has a capacity to enroll 60 mechatronics engineering students on an annual basis. The maximum number is determined by the Ministry of education. The real number of the student intake however is much smaller. In the academic year 2021-2022, the first year intake amounted to 15 students, all of which came from the general high school track, the total student number is 58. The vast majority of students are male. There are no international enrolments at this stage.

The representatives of the MECH department admit, that since its initiation, the program under review has been challenged by a low demand. In the discussions, the program coordinators point to the fact, that mechatronics engineering is comparatively nonconventional field and new to the region and country. Students in their view are more attracted to conventional engineering fields such as mechanical, electrical or civil engineering as well as to informatics. The lack of foreign students is moreover seen as a result of the negative public image of the country. Another challenge mentioned is the competition of tuition-free state universities, whereas the private TIU is dependent on tuition fees.

The University and the Faculty acknowledge the need to improve public relations and marketing efforts. In its Strategic Plan, the department announces its plan to visit final grades high schools on a regular basis to introduce the department and its potentials. Marketing drives in the big Erbil malls (Family Mall, Majdidi Mall and Smile land) are also new on the agenda. Additional marketing initiatives are connected to the department's participation in national Higher Education Fairs, increased advertisement on the national TV and radio

channels, a renewed focus of the universities branding in social media and making use of student ambassadors using the so-called “Unibuddy Platform”.

In their appreciation of the situation, the expert panel considers the admission requirements and procedures for the MECH program as binding and transparently published on the webpage. Clear rules to ensure that students are in principle able to successfully graduate from the program. This includes the additional examination in English proficiency, which is essential due to the complete organization of the programs in English. The regulations also include rules for the recognition of qualifications achieved externally (e.g. at other higher education institutions or outside the higher education sector), which are clearly defined. TIU facilitates the transition between higher education institutions and with non-university places of learning without jeopardizing the achievement of learning outcomes at the desired level.

Criterion 1.5 Workload and Credits

Evidence:

- Self-assessment report
- The webpage of TIU <https://tiu.edu.iq/>
- Module handbook of the programs under review
- TIU Credit Transfer & Equalization Policy
- The Workload calculation sheets of all the courses
- Curriculum tables: Study Plan or Curricular Overview in a table format that informs about the student workload
- Discussion during the on-site visit

Preliminary assessment and analysis of the peers:

In its Self-Assessment Report, TIU elaborates that it applies the American credit system CT for its study programs. Due to their interest in closer cooperation with European higher education institutions, the university has added the European Credit Transfer System (ECTS), which is now applied in parallel to the American credit system.

The MECH Bachelor program lasts four academic years and is awarded 240 ECT credits. The calculation from the CT to the ECTS system is guided by the following rules: (1) one theory credit hours equals one hour and (2) one lab/practical equals two hours. 60 ECTS credits are awarded within one academic year. This represents a student workload of 1500 hours per year, resulting in 25 working hours per credit.

The conversion follows these rules presented in the table below:

Classroom hours= 16 (weeks per term) * 4 (hours per week)	64
Self-study/assignments= 5 (assignments) * 2(hours for each assignment)	10
Self-study/quizzes= 2 (quizzes per term) * 5(hours per quiz)	10
Self-study/Midterm Exam = 15 (hours)	15
Self-study/Final term Exam = 20 (hours)	20
Total Hours (hours)	119
The Total ECTS Credit = Total Hours/25=119/25= 4.76 $\cong$ 5 ECTS	

The workload of each module is also formally evaluated verifying the self-study time of the average student. A table with the evaluations is presented in the SAR. In percentage terms, the workload distribution of MECH is split in class attendance (32%), practical labs (15%) and self-study time (53%). Credits at TIU and the MECH department can only be obtained upon successful completion of the work required and the assessment of the learning outcomes achieved.

In conclusion, the expert panel considers the credit system to be based on the students' workload, it includes contact hours and in most cases self-study time. Having said this, the experts find that the calculation is frequently not done correctly and different documents contain conflicting information. An example in case in the course ME114: on page 33 a value of 2.73 ECTS is computed, in the head of the module a value of 4 ECTS is shown, in the curriculum table even 6 ECTS are listed, and it is not clear, which is the correct one. In this module, not time for self-study is reserved, which makes the achievement of the learning outcomes unachievable.

Another shortcoming is connected to the fact, not all compulsory components of the study program are awarded with a representative number of credits. The MECH internship, as previously mentioned, is currently not assigned credit points. This has to be changed, as it is a mandatory part of the program and represents a strong benefit for the students in their learning process.

There is, generally speaking, a discrepancy in many module descriptions which must be eliminated doing a review of the module handbook

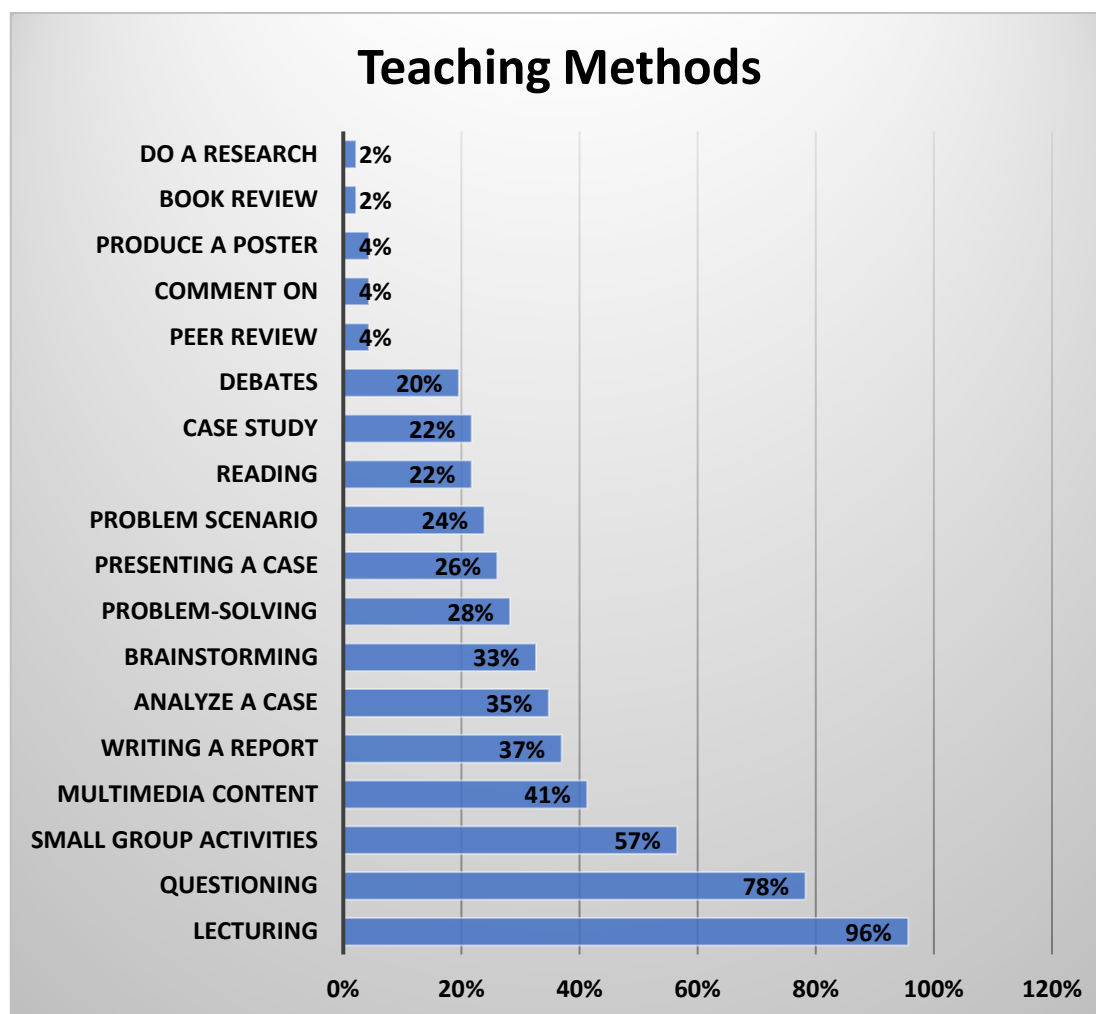
Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-assessment report
- Module handbooks of the programs under review
- Results of Staff Satisfaction
- Discussion during the audit

Preliminary assessment and analysis of the peers:

According to the Self-Assessment Report, various methods of teaching are used in the program and indicated in the Course Syllabus. The following charts show the most utilized teaching methods in MECH for the current academic year according to its own assessment:



In the MECH program, the main techniques used in the classroom involve “questioning”, “small group activities” and “multi-media content based teaching.” The lecturers report to

use active learning pedagogies to promote the learning of their students. Techniques such as small group discussion and case studies are part of a student-centered approach geared towards the development of communication and problem-solving skills. The program coordinators and the teaching staff specify in the discussion with the experts, that they integrate medical data and cases from their own research or from their stakeholders to confront the students with real life scenarios. Next to case studies, the courses regularly include reports and presentations, including oral or poster presentations.

During the pandemic, MECH introduced blended learning in the course of the academic years 2019-2020 and 2020-2021, but when the pandemic constraints were removed, the teaching came back to be face-to-face (on campus) mode.

The experts acknowledge that the teaching staff applies a variety of teaching methods and didactic means to promote achieving the learning outcomes and support student-centered learning and teaching. Both teachers and students mention to the expert panel to consider having an adequate balance of contact hours and self-study time. They students are introduced to scientific work while practical work is a central part of their curricula. The expert panel confirms, the teaching methods are regularly reviewed in the process of evaluations at the end of each semester.

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

The experts find that learning outcomes of the Bachelor of Mechatronics engineering program correspond to level 6 of the European Qualification Framework and the Dublin Descriptors. They also find them to be aligned to the needs of the Kurdish and Iraqi labor market. In addition, the experts confirm that major stakeholders are regularly involved in the continuous assessment and further development of the program. The expert team also attests that the module/course descriptions include the learning outcomes of each individual learning unit.

The expert team however requests that more concise program objectives and learning outcomes are elaborated. The experts recommend consulting international learning outcome agreements in this process. .

The experts moreover see a need to better align the teaching and learning content along the lines laid out in this report to justify the title of the degree program. In its current form, the program could however also be labelled “robotics and automation”, as a number of critical content is missing.

The experts find, that the MECH program empowers its graduates to find suitable positions in the Kurdish and national labor market and to take up an occupation corresponding to their education. The experts however request that the department develops concrete job descriptions. On the website of the department, a more informative description of possible career pathways has to be added.

The experts request that the strategic plan for the development of the MECH program is further substantiated and operationalized, including measurable key performance indicators and connecting it to the HR and financial planning.

The experts find that TIU/the MECH department under difficult framework have successfully managed to establish an international network of higher education institutions. Process and Regulations are in place to organized student and staff mobility. In practical terms, incoming mobility is non-existent and outgoing mobility very low. Marketing efforts need to be increased.

The expert panel considers the admission requirements and procedures for the MECH program as binding and transparently published on the webpage. Clear rules to ensure that students are in principle able to successfully graduate on time.

The expert panel considers the credit system to be-based on the students' workload, but see room for improvement in executing realistic and consistent workload calculations as mentioned in the text above. The modules of each programs are regularly evaluated to whether the credits awarded for each module correspond to the actual student workload and whether the distribution of the workload across all semesters enables graduation within the standard period of study. An exception to this finding is the internship as part of the MECH program, which also needs to be credited.

The experts acknowledge that the teaching staff applies a variety of teaching methods and didactic means to promote achieving the learning outcomes and support student-centered learning and teaching. The expert panel also confirms, the teaching methods are regularly reviewed in the process of evaluations at the end of each semester.

[...]

2. Exams: System, Concept and Organization

Criterion 2 Exams: System, concept and organization
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Evidence:

- Self-assessment report

- Module handbook of the MECH engineering program
- Examples of exams and final theses presented during the audit
- Section I of the Student Handbook
- TIU Examination Rules and Procedures
- The Graduation Project Evaluation Rules

Preliminary assessment and analysis of the peers:

TIU has established what the university representatives call a multi-assessment scheme. According to the universities' regulations, each lecturer is requested to apply at least three different assessment methods related to the course content and learning outcomes. It is the sovereign decision of the teaching staff, which form of examinations to choose.

The general examination policies are clearly documented in part I of the student handbook. Assessment procedures accordingly are to be fair and non-discriminatory, in-line with the LO and the teaching methods, with appropriate assessment rubrics defined. Students are to be provided with a timely and constructive feedback. The students are informed about the types and weight of assessment at the beginning of the respective course and the information is clearly presented in the in the course syllabus filed in the student platform (SIS).

The most common assessment methods in the MECH engineering program next to the obligatory two mid-term and one final examinations are quizzes, class presentation, group discussion and problem solving tasks within the class hours to evaluate the achievement of typically 3-5 learning outcomes, assigned to each course, thereby giving a continuous feedback about the learning progress to the student. The following grading system is applied:

Table (2.1): Equivalent Grades to Awarded Letters

Letter	Grade Equivalent Out of 4:00	Letter	Grade Equivalent Out of 100
AA	4:00	AA	90-100
BA	3:50	BA	85-89
BB	3:00	BB	80-84
CB	2:50	CB	75-79
CC	2:00	CC	70-74
DC	1:50	DC	60-69
DD	1:00	DD	50-59
FD	0.50	FD	40-49
FF	0:00	FF	0-39

The final grade is determined by the overall performance of the students during the semester. If students fail a module (grade FF to DC), they can take part in the final exam of the summer school as a make-up exam. Students have the possibility to ask for a clarification of the examination results. If the students object to the grading of the final exams, they can submit a petition to the directorate of Student Affairs. In this case, an examination committee will re-examine the exam before the by the relevant Faculty board will discuss the application. TIU also has in place a number of disciplinary procedures to safeguard academic integrity and to avoid the misuse of intellectual property in the conduct of examinations in various forms. Plagiarism checks are taken seriously with every student's supervisor asked to attach a certificate to student work indicating the "plagiarism" ratio.

Examinations are controlled by the faculties/department's examination committee. The lecturer has to prepare several versions of their examination with different styles of questions and forward those to the examination committee. In turn, the committee checks on the language, grammar, content, how they match the learning outcomes of the module. The exam committee prepares the examination questions without the knowledge of the lecturer and organizes the exam independently. The lecturer receives the questionnaires of each exam with the names of the students removed in order to grade the exam unbiased. The teaching staff minute that practical examinations are organized in various stations under observation. A checklist for each module shows which procedures need to be mastered in order to pass the exam. In the discussions with students, it is confirmed that exams are well organized and that they are aware of the requirements to pass each exam.

As regards the graduation project, students of the MECH program are typically involved in two types of project during their study in the department.

Firstly, in a group project, which is conducted during the third year of studies. This is a non-curriculum project; the students implement what they have learned in the classroom in a teamwork style to perform a common task under instructor's supervision. They are encouraged to take part in the engineering exhibition NICE which is held annually during late May. Secondly, the Final Year Graduation Project; this is a curriculum based project, which each student conducts individually and which automatically is included in the NICE competition. NICE Exhibition is an annual event to which all final year students contribute with their final projects in a competition in which awards are granted to distinguished projects.

Evaluating this criterion, the expert panel considers the exams to be well organized for the MECH bachelor program under review. Sound rules and transparent examination regulations are in place, they are clearly presented online and in the student handbook. At the beginning of each course, the lecturer informs the students on the grading system, which is also clearly listed in the module handbook.

The number and distribution of exams ensure an adequate workload as well as sufficient time for preparation. In the discussion with the students, no concerns or problems are recorded. The experts gain a positive impression of the exam organization ensuring an unbiased and anonymous testing. The experts note, that students have an opportunity to consult their lecturers about the results of their exams and arrange a re-assessment of the exam if considered necessary. In addition, the examination committee ensures, the exams are regularly reviewed in order to meet the learning objectives, which the expert panel considers beneficial.

As regards the quality of the final projects, the experts find that there is no formal bachelor thesis in place. The documents shown by the department have been rather „reports“ on the final year project with 25-35 pages, where the scientific level and the extent is not comparable to the international standard. The experts see an option to to cancel the 2 electives in semester 8 and establish a more substantial final project with more ECTS.

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

The experts find that sound rules and transparent examination regulations are in place, they are clearly presented online and in the student handbook.

Assessment procedures accordingly are found to be fair and non-discriminatory, in-line with the LO and the teaching methods, with appropriate assessment rubrics defined.

The MECH department disposes of disciplinary procedures safeguarding academic integrity and guarding against the misuse of intellectual property in the conduct of examination. Plagiarism checks are taken seriously with every student's supervisor asked to attach a certificate to student work indicating the "plagiarism" ratio.

The number and distribution of exams ensure an adequate workload as well as sufficient time for preparation. In the discussion with the students, no concerns or problems are recorded.

The experts gain a positive impression of the organization of the exams. It is ensured, that the exams are regularly reviewed in order to meet the learning objectives.

As regards the quality of the Bachelor thesis, the experts insist that a more substantial final year project needs to be implemented.

[...]

3. Resources

Criterion 3.1 HR Resources, Staff Development and Student Support
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Evidence:

- Self-assessment report
- Staff handbook
- Results of Staff Satisfaction
- <https://dean-of-students.tiu.edu.iq/career-center/>
- Discussion during the audit

Preliminary assessment and analysis of the peers:

As regards the general human resource policies at TIU, its staff can be divided into fulltime as well as part-time faculty members and teaching assistants. The fulltime faculty members include assistant lecturers, lecturers, assistant professors, and full professors. Depending on their qualification, they have different teaching loads to shoulder. The teaching obligations amount to 14 hours for assistant lecturers, twelve hours for lecturers, ten hours for assistant professors and eight hours for full professors. All fulltime faculty members are obliged to be part of a faculty or department committee and to reserve two hours per week answering to student queries during their office hours. Each fulltime faculty member has

to conduct research and publish a scientific article each year in an indexed journal. Furthermore, it is mandatory have to participate in academic event held at the faculty. Fulltime professors reportedly spend 60% of their time on educational activities, 20% on research and 20% on management duties according to the data presented by TIU. Part-time faculty members by contrast are hired on a contractual basis exclusively for teaching assignments.

Regarding the available staff resources of the MECH department, the number of full- and part time academic staff in the different staff categories is summarized in the table below for the past five years since the initiation of the program under review:

Faculty	2017-2018		2018-2019		2019-2020		2020-2021		2021-2022	
	Part - Time	Full – Time	Part - Time	Full – Time	Part - Time	Full – Time	Part - Time	Full – Time	Part - Time	Full – Time
Professors	0	0	0	0	0	0	1	0	0	1
Assistant Professors	3	1	4	2	2	1	1	1	1	1
Lecturers	4	0	2	2	9	5	14	2	8	2
Assistant Lecturers	4	1	1	0	3	0	5	3	0	3
Total	13		11		20		27		16	

Given the low number of student enrollment, the student staff ratio has been favorable at for the last academic year is a 3,6 students per lecturer. Most of the personnel is of Iraqi nationality, there is only for international staff member coming from India.

Regarding the qualification level of the faculties and departments teaching staff, according to ministerial regulations, a lecturer must at least hold a master's degree in the same subject as the bachelor degree, he/she is teaching in and must have undergone a formal pedagogical training as well as have sufficient English speaking capabilities documented by TOEFL or Pearson tests). Full time professors, of which the MECH department has few (1 full and 1 assistant professor), must be PhD holders and have worked for a university at least six years during his/her professional career. Considering the overall qualification level of the 16 teaching staff in the last academic year, among MECH teaching staff figure 6 PhD and 6 Master holders.

Regarding the recruitment and promotion process at MECH, it is the head of the department who is in charge of the HR planning and allocation. Before the start of each academic year, the Dean of the Faculty together with the head of the departments prepare the “Educational Year Personnel Planning” and identify the hiring needs. Suitable applicants must deliver a demonstration lesson in front of the recruitment committee. It is important to note, that it is the Ministry of HE, which has the sole authority to promote staff.

In terms of staff training, TIU and the MECH department provide special training to acclimatize new staff and prepare them for the challenges ahead. At the beginning of the academic year, professional development courses are offered. These cover a broad range of topics and offer assistance in areas such as adequately preparing course syllabi and course material, becoming familiar with Quality Assurance processes and procedures, preparing for research activities and publications. Staff is familiarized with the incentive systems, the Human Resources Procedure, the IT Services and Facilities etc. The onboarding program aspires to develop a team spirit among TIU staff.

In terms of safeguarding the quality of teaching and learning, there are a certain number of corrective actions in place to intervene when deemed necessary. When a Head of Department realizes a need of observing the Teaching Performance of a staff within his/her department, he/she can conduct a Class Observation Process. The observer(s) can be the Dean, Head of Department, Director of Quality Assurance or members of Academic Promotion Committee. The observer(s) attends at least 10 minutes of the class hour of the teaching staff under observation and provides feedback and recommendations to the teaching staff regarding his/her teaching performance privately.

Next to this external control mechanism, teachers are invited to make their own judgments about their performance and reflect on the framework conditions that have an impact on their teaching. This exercise is conducted at the end of each academic year. The responses are retained confidentially and shared merely with the head of department and director of quality assurance at the University for monitoring purposes.

TIU and the faculty/department have institutionalized a Continuous Academic Development “CAD” scheme to assist faculty members in upgrading their knowledge. Annually, the Head of Department discusses the possible activities the department can hold during the new academic year with the members of department board. The annual activity plan includes a considerable number of training courses, professional and academic workshops. Lecturers are invited to participate in a variety of scientific activities, such as seminars, workshops, training courses and conferences (presenting or attending), educational publications, reviewing articles, postgraduate supervision and evaluation, etc.

The HR policies at TIU is a combination of encouragement and promotion its teaching staff while at the same time setting threshold demands. Members of teaching staff have to satisfy a specific number of activity points (includes active and passive activities) in a single academic year based on their academic titles. A TIU professor is challenged to accumulate not less than 80, an assistant professor 70, a lecturer 55, and an assistant lecturer 50 point per year. Failure to meet the points required shows poor performance in terms of academic achievements listed in the CAD document, actions to which are required by the scientific committees per Department and Faculty.

All fulltime faculty member of MECH are requested to participate in scientific research. At the beginning of each academic year, the academic department prepares a research plan for the entire year. These plans are submitted to the TIU Research Center, which reports the plans to the University Council. TIU imposes strict guidelines to publish the results of their research and reserves the right to terminate contracts if no research was published for three consecutive years.

To find out, how satisfied teaching staff are at the MECH department, surveys are conducted on an annual basis measuring the satisfaction regarding the team working environment, the working conditions, the potential for professional development, the available resources, the management system at the department etc. This questionnaire is distributed to all the full time academic and administrative staff, its results presented to the University Council members in the annual Management Review Meeting. In the suite, the Deans transmits the departmental survey results to the relevant Head of Departments who discuss the survey results with their staff and come up with corrective actions decisions.

The quality of teaching at TIU is also monitored by conducting students' satisfaction surveys with the course and the lecturer. It is the task of the Director of Quality Assurance to prepare the Appreciation Letters as well as the Warning Letters to all of the Teaching Staff at MECHJ according to the students' satisfaction average of their courses. Continuous bad performance may cause a termination for the teaching position of the affected staff.

Concerning the resources for student support, TIU has a university-wide policy on support and advising. TIU has implemented an integrated and systematic Academic Advising service to support students in successfully completing their studies at the university. At the beginning of each academic year, the Head of Department assigns one or two full-time academicians as advisers for each grade. Every advisor has one advisory meeting with students per a term at least (having maximum 5 students in the meeting). During the advising session, the advisor describes the topics mentioned in the Academic Advising checklist. The followings are some major points that are discussed in every academic advising session:

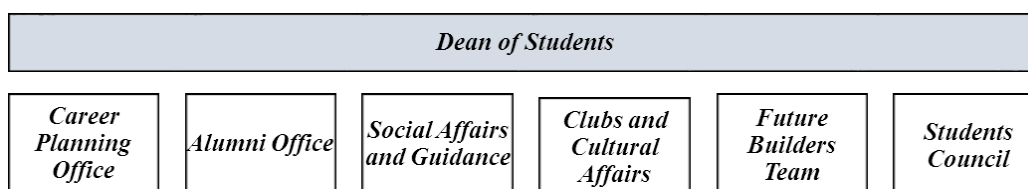
- Important policies in the *Students Handbook*

- SIS (Students Information System)
- Mission , Vision and program *learning outcomes* of the department
- Tips about “*Getting the best of the lectures*”:
 - How to be a good listener at the lecture
 - Suggestions for taking notes
 - Benefits of taking notes
- Tips about “*Studying at home*”:
 - Time planning
 - Suggestions for doing good homework and reports
 - Guidelines for reviewing the lecture materials
- Tips about “*Preparing for Exams*”:
 - How to be ready for exams
 - How to review the courses before exams
 - Tips for a good performance in answering exams questions.
- Tips about “*Self Improving of Knowledge and Skills*”
- Discussing the *Academic Difficulties* with the students
- Practices for *Better Graduation Projects*
- Referring to TIU’s International *Career Center*

Apart from these academic advisors for the various student cohorts, all Full-time/ Part-time faculty members have to offer a two-hour time slot per week during which faculty members are available to either meet personally in their offices with students.

Thirdly, TIU has established a student service center helping the students familiarize with campus life, assisting them in realizing their potentials and establishing a bridge between university administration and the students:

Regarding the institutional support structure, the following units are at the service of TIU students:



TIU’s Career Planning Office assists students in getting acquainted with the business world before graduation and to a smooth transition into profession life. The Center also aims to help students building up their career path effectively and providing qualified, self-confident and diligent individuals based on market demands. The TIU Career Centre annually organizes “Career Days” event inviting companies to meet with the TIU students and to present their job vacancies.

TIU's Alumni Office serves as a bridge between TIU and the alumni providing various academic and social opportunities. It provides graduates to continue to use university facilities such as the Career Center, library, etc. This office arranges seminars and workshops to update the alumni's field knowledge, and gives free of charge consultancy service to find suitable job according to their qualifications and skills. Another significant support is to create a link between employers and TIU graduates. The Alumni Office annually organizes a number of reunion events to gather graduates who have already started their careers in different parts of the society.

In terms of financial assistance, TIU and the government provide a certain number of full-funded scholarships for the sons and daughters of Martyrs' families). Further stipends are available for students who graduated from an English Curriculum teaching high school (20% scholarship) and high performing applicants (the best 15% will get 60%).

Looking at the current HR conditions and the quality of student services at the MECH department, the potential for staff development as well as the quality of student support services, the expert team comes to the following conclusions:

Regarding the quantity and qualification level of the staff working in the MECH department, the number of staff especially in the ranks of full time professor is comparatively small, but in the expert's eyes sufficient, given the currently limited number of student intake (10-15 students per year), which results in a favorable student-staff ratio. Currently the workload of lecturers is nevertheless high. In the discussions, the experts learn, that this is due to the fact that in the entire faculty/all departments there are no administrative assistants/secretaries available who might take over routine work and give more leeway to lecturers to focus on improving their teaching and research skills. The experts, while taken not of a considerable degree of fluctuation in the number of contracted staff, also confirm that the qualification level is sufficient for responsibly implementing the study program under review.

The expert team equally takes note of the evidence provided and attest to the fact, that all available survey results show a high level of satisfaction among the most important stakeholders. Teaching staff at MECH are generally happy with their working environment and professional development chances, during the interviews, they exhibit a strong commitment to their Alma Mater. As regards the students, they are equally happy with the teaching performance of MECH staff as well as with their learning environment.

Lecturer in the discussions with the expert team confirm that a range of options for professional development are available them. The experts nevertheless take note of the fact, that teaching staff at the department would appreciate tailor-made professional development

courses to assist them in writing adequate research papers and to place them in indexed journals.

In terms of the overall system of evaluation of teaching and research promotion as well as career advancement, the experts understand the current system is based on a institutionally implemented mix of support and control with little room for personalized development. The experts see value in institutionalizing more individual short and mid-term development plans for each individual staff member.

Concerning the ability of the teaching staff to conduct research, there is a discrepancy between the obligation of full-time and part-time staff members and research assistants regularly conducting research (at least one article has to be published during the academic year) and the resources in terms of available time and equipment to do so. This is because all staff not only have a considerable teaching load, but also a high administrative burden due to the absence of support personnel. As there are no student tutors at TIU, each lecturer in addition serves as academic advisor for a number of students. The experts acknowledge that there are incentives systems in place at TIU, providing financial rewards to staff which excels in publications.

In conclusion, the expert panel recognizes the strong identification of the teaching staff with their institution and is impressed by their commitment to teaching. The composition, professional orientation and qualification of the teaching staff are suitable for successfully delivering the degree program under review. The research capacities of the teaching staff contributes needs to be further strengthened and supported. The experts form the opinion, the teaching staff have the opportunity to further develop their professional and didactic skills and are supported by the department to continue their personal higher education. However, the expert panels identifies a high workload of the teaching staff, particularly during practical lectures. To further reduce the workload of the teaching staff and ensure adequate student support during practical lessons, the expert panel recommends considering involving experienced students as student tutors in especially laboratory courses.

Criterion 3.2 Funds and equipment
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Evidence:

- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the peers:

At TIU, the board of trustees is responsible for the Financial and Strategic Planning. Currently, TIU does not receive any public funding from the government, thus student tuition fees are practically the only major source of income of the university. Tuition fees thus account for around 97% of the total income, with 3% emanating from third party funding (essentially a small income generated from providing dentistry hospital services as well as small revenue for courses delivered by TIU Continuous Education Centre). The tuition fee for enrolment in the MECH study program amount to 3600\$ annually.

All Departments, including MECH, are financially bound by the decisions of the President and University Council. TIU disposes of a centralized financial planning scheme, with little say on the part of the faculties and departments.

A review of the financial strategy is conducted every year. The financial organization at TIU involves the University Board of Trustees, the Financial Affairs Office and the Vice president for Administrative and Financial Affairs and the deans of each faculty. Most of the funding is spent on the salary of lecturers, research activities of each department, investments in the infrastructure including library stock, software licenses, etc. as well as research-related travelling expenses.

As regards the Department of Mechatronics and its sole Bachelor study program, it currently does not generate enough income to be financial viable. It is therefore cross-subsidized by the central administration from the tuition revenue generated by more popular departments and faculties. The total amount available to the department amounts to a little over 130000\$ for the last academic year. According to the information provided in the Self-Assessment report and during the interview, there are currently no concrete departmental project envisaged to diversify the sources of income.

Some preliminary ideas regarding new marketing initiatives revolve around the idea to purchase a two/four-seater airplane to attract pupils from schools to visit. This is seen as an opportunity for dissemination of knowledge and recreational purposes as well as TIU marketing, in return nominal fees can be collected.

As regards the physical infrastructure, students at the MECH profit from comparatively new permanent teaching facilities, completed in 2015. The program claims to maintain adequate physical resources to support its mission scope. The allocation of the students' groups in the faculty of engineering/the MECH department is planned prior to the start of each academic year to ensure that the classroom accommodate all the teaching sessions adequately. Each classroom is equipped with a digital projector and a smart-board or a smart plasma screens, providing internet access to all students. The walls of the classrooms

are soundproof material and equipped with modern ventilation systems and air conditioning.

The MECH department disposes of three main laboratories that support the practical parts of the curriculum. The computer and control laboratory features around about twenty PC's with software packages. Staff members and students conduct their research and carry through their projects in this laboratory. The electro-mechanical laboratory contains pneumatic systems, where students perform experiments on using sensors and actuators for automation control. The Electronics and Micro-control Laboratory provides the possibility to conduct experiments in digital and analogue electronics and features sets of microcontrollers and microprocessors as well as Arduino kits.

Apart from the laboratories as well as seminar halls and meeting rooms, the MECH department can make use of TIU's videoconferencing facilities, campus child daycare center, an organized car parking area, a free lunch serving staff dining hall as well as library services, provided by TIU's central library located in the "Main Building".

The expert panel considers the cross-subsidized financial resources, the physical infrastructure and the available equipment a sustainable basis for delivering the degree program. At the same time, the team fully supports the findings of colleagues in recent external accreditation procedures. In its discussions with various stakeholder groups, the wish to have (even a small) budget exclusively at the disposition of the faculty/department persists and is widespread. Such a budget would be instrumental in strengthening the autonomy of the department and open new doors (taking care of issues like staff development, hiring of administrative support personnel and international guest lectures etc.). The experts also concur with previous assessments that the allocation of decentralized lump sums should go along with cost centered accounting mechanisms, based amongst others on overheads, research plans etc. By introducing subsidiary autonomy on faculty/department level and increasing self-responsibility and accountability, deans and heads of departments could make better contributions in modernizing organizational structures and enhancing the profile of TIU in terms of academic content and research. The experts support the findings of recent external evaluations, that the basic financial basis and economic governance has not become fully transparent. While financial resources seem to be overall sufficient. a more stringent alignment of strategic measures and financial governance is recommended.

The experts strongly recommend investing in the further diversification of the income sources of the faculty/department outside of tuition fees, which for the near future will not increase dramatically. The envisage as potential source of additional income the systematic application for international and national tenders and recommend hiring staff for this task, as the return of investment most likely will be much higher than the cost of salary. Another

untapped source of income is the provision of continuous education courses/short cycle programs for partners in industry and the higher education community. This could be done in close cooperation between the MECH department and the TIU Continuous Education Centre.

The labs are adequately equipped to teach the practical aspects of most fundamental courses, regarding courses in semester 5-8 (specialties), the lab situation should be improved (ME 311 “control system”, ME326 “Power Electronics and Devices” and ME413 “Robotics”); some equipment such as CNC machines, 3-D printers Depth Anmeras and micro-processor boards such as Raspberry pi should be purchased.

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

Students studying in the MECH department display an overall high appreciation regarding the quality of teaching in the program under review. Lecturer equally cum grano salis are content with their working environment.

Regarding the quantity and qualification level of the staff working in the MECH department, the experts consider them sufficient to achieve the program learning outcomes for the MECH program. The number of staff especially in the ranks of full time professor is comparatively small, but in the expert’s eyes sufficient, given the currently limited number of student intake (10-15 students per year), which results in an overall favorable student-staff ratio. The expert panel recognizes the strong identification of the teaching staff with their institution.

In terms of the overall system of evaluation of teaching and research promotion as well as career advancement, the experts understand the current system is based on a institutionally implemented mix of support and control with little room for personalized development. The experts see value in institutionalizing more individual short and mid-term career development plans for each individual staff member.

The experts concur that the teaching staff has sufficient opportunities to develop their professional and didactical skills and are supported by the department to continue their personal higher education. However, the expert panels identifies a high workload of the teaching staff, particularly during practical lectures. To further reduce the workload of the teaching staff and ensure adequate student support during practical lessons, the expert panel recommends considering hiring administrative support personnel and involving experienced students as tutors in especially laboratory courses.

Concerning the ability of the teaching staff to conduct research, there is a discrepancy between the obligation of full-time and part-time staff members and research assistants to regularly conducting research. This is due to a high teaching load and considerable administrative burdens caused by absence of support personnel. The experts acknowledge that there are incentives systems in place at TIU, providing financial rewards to staff, which excels in publications.

The expert panel considers the (cross-subsidized) financial resources and the available equipment to provide a sustainable basis for delivering the degree program. The experts recommend giving (even a small) budget exclusively at the disposition of the faculty/department, thereby strengthening the autonomy of the MECH department and opening new doors (taking care of issues like staff development, hiring of administrative support personnel and international guest lectures etc.). The experts also concur with previous assessments that the allocation of decentralized lump sums should go along with cost centered accounting mechanisms, based amongst others on overheads, research plans etc.

While financial resources seem to be overall sufficient (as indicated e.g. by an overall well-established and well-maintained infrastructure), a more stringent alignment of strategic measures and financial governance is recommended. The experts also strongly recommend investing in the further diversification of the income sources of the faculty/department outside of tuition fees, which for the near future will not increase dramatically. The envisage as potential source of additional income the systematic application for international and national tenders and recommend hiring staff for this task, as the return of investment most likely will be much higher than the cost of salary. Another untapped source of income is the provision of continuous education courses/short cycle programs for partners in industry and the higher education community. This could be done in close cooperation between the MECH department and the TIU Continuous Education Centre.

Regarding the laboratories and equipment, the department in principle has adequate laboratory equipment but still lack some important units some as CNC machines, 3-D printers Depth Anmeras and microprocessor boards such as Raspberry pi. Concerning courses in semester 5-8 (specialties), the lab situation should be improved (ME 311 “control system”, ME326 “Power Electronics and Devices” and ME413 “Robotics”);

[...]

4. Transparency and documentation

Criterion 4.1 Module descriptions
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Evidence:

- Self-assessment report
- Homepage of the program
- Module handbooks of the MECH study program
- Discussion during the audit

Preliminary assessment and analysis of the peers:

At TIU and its MECH department, it is the individual lecturer, who is in charge of supplying all information needed for the module descriptions. To do so, he/she will use the internal PIS form and fill out the Syllabus format at least two weeks prior to the start of the course. The full description of each module contains the name of the lecturer, their academic profile, contact information and office hours as well as and teaching assistant involved in this course. Additional pieces of information include the course type, language, objectives, content, intended student learning outcomes, and suggested literature. In addition, it names the contribution to the program outcomes, the requirements to attend the course, the student's obligation and teaching methodology. All information will be verified by the scientific committee of the department before it is released online.

In the discussions, the expert team finds fault with the consistency of relevant documents. The experts identify three documents provided to them with inconsistent information. First, the information contained in the curriculum description, which turns out to be the newest and most accurate information. Second, the list of courses, a number of which do not even exist anymore and finally the module descriptions. A special focus according to the experts must be directed towards the update, improvement and completion of the latter. This is particularly relevant for the group of technical electives, which are too numerous and for which no module descriptions are available at all. In this revision, the calculation of ECTS should also be looked at/rectified.

In terms of accessibility, the fully syllabus is only available for students in the student information systems, whereas the curriculum and a short information on each course is available online on the programs' webpages for everyone interested. The experts suggest including the entire module descriptions on the MECH department's webpage.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Self-assessment report
- Template of the TIU Diploma Supplement

- Samples of Diploma and Transcripts issued by TIU
- Discussions during the audit

Preliminary assessment and analysis of the peers:

TIU issues a diploma (degree certificate) shortly after graduation together with a diploma supplement. Both of them are provided entirely in English. In addition, a transcript of records is issued with the diploma certificate.

The presented version of the diploma supplement however is not in agreement with the criteria issued by ASIIN. The peers note, the diploma supplement needs to provide all information on the student's qualifications profile and individual performance as well as the classification of the degree program with regard to the respective education system. The grades of individual modules are required to be presented in the transcript of records. In addition to the final mark, statistical data as set forth in the ECTS Users' Guide is included to allow readers to assess the individual mark. Furthermore, a transcript of records needs to identify the name, workload (in ECTS credit points) and grade of each module completed by the student during their studies. In conclusion, the expert panels considers the diploma supplements of the MECH bachelor programs in need of modification to meet the ASIIN criteria.

Criterion 4.3 Relevant rules

Evidence:

- Self-assessment report
- Student handbook
- Staff handbook
- TIU webpage <https://tiu.edu.iq/>
- Discussion during the audit

Preliminary assessment and analysis of the peers:

A summary of relevant rules and regulation can be found in TIU's student handbook. This central document contains TIU's as well as government regulations. Prospective and current students learn about applicable criteria of enrollment, the examination and grading system, the academic schedule and the procedures for course registration. The student handbook furthermore informs about the mentoring and tutoring systems and provides background information for students holding a scholarship.

In addition, it also describes pertinent rules and regulations directed to the staff members at TUI. It contains practical information on the initial steps of establishing a university account and provides basic information on the university structure and history: It furthermore explains the system of ECTS credits and introduces rules and regulations pertaining to topics such as ethics, equal opportunity policies and quality management systems in place. Lecturers can inform themselves regarding the guidelines for establishing their courses and writing the syllabus according to the regulation issued by TIU. Both, the student and staff handbook are available on the webpage of TIU.

TIU and the MECH department have also introduced detailed Student Data Protection policies and Protection Policies for Employees. All documents are approved, reviewed, updated and controlled in accordance with the “Control of Documented Information Procedures”. TIU point to is ISO 21001:2018 ISU Certification, which attests to the transference and efficiency of its documentation policies.

After conducting the discussion with various stakeholder groups during the on-site visit, the experts can confirm that students and teaching staff are well aware of the rules and regulations in place. The interviewed students minute, that they are informed at the beginning of their studies of the rules and have access to all necessary information. Similarly, the (new) lecturers report that they receive a proper introduction to the university system by their colleagues and the university administration.

The expert panel consider the rights and duties of both the higher education institution and students to be clearly defined by guidelines and statutes. All relevant course-related information is available in the language of the degree program and accessible for anyone involved.

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

Regarding the module descriptions, the expert team find fault with the consistency of relevant documents and request that the various documents are adjusted. A special focus according to the experts must be directed towards the update, improvement and completion of the module handbook. This is particularly relevant for the group of Technical Electives, which are too numerous and for which no module descriptions are available at all. In this revision, the calculation of ECTS should also be looked at/rectified.

In terms of accessibility, the fully syllabus is only available for students in the student information systems, whereas the curriculum and a short information on each course is available online on the programs’ webpages for everyone interested. The experts suggest including the entire module descriptions on their webpage.

As regards the Diploma Supplement, the expert panels considers the diploma supplements of the MECH bachelor programs in need of modification to meet the ASIIN criteria. The diploma supplement must provide all information on the student's qualifications profile and individual performance as well as the classification of the degree program with regard to the respective education system. The grades of individual modules must be presented in the transcript of records. In addition to the final mark, statistical data as set forth in the ECTS Users' Guide is included to allow readers to assess the individual mark. Furthermore, a transcript of records needs to identify the name, workload (in ECTS credit points) and grade of each module completed by the student during their studies.

The experts confirm that students and teaching staff are well aware of the rules and regulations in place. The interviewed student representatives attest that they are informed at the beginning of their studies of the rules and have access to all necessary information. Similarly, the (new) lecturers report that they receive a proper introduction to the university system by their colleagues and the university administration.

TIU and the MECH department have introduced adequate Student Data Protection policies and Protection Policies for Employees. The experts appreciate that all documents are approved, reviewed, updated and controlled in accordance with the "Control of Documented Information Procedures". These are in line with ISO 21001:2018 ISU certification standards.

The expert panel considers the rights and duties of both the higher education institution and students to be clearly defined by guidelines and statutes. All relevant course-related information is available in the language of the degree program and accessible for anyone involved.

[...]

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-assessment report
- TIU webpage <https://tiu.edu.iq/>
- TIU Plagiarism Policy
- Quality Assurance Policy of TIU

- Questionnaire and the results of the Student Feedback Survey
- Results of Staff Satisfaction
- The questionnaire and the results of the pre-graduation survey
- Discussion during the audit

Preliminary assessment and analysis of the peers:

TIU (and in the suite the MECH department) in the course of the past years has established a comprehensive system of external and internal quality assurance measure, described in detail in its Self-Assessment Report and documented in the Quality Assurance Policy of TIU.

As regards the aspect of external quality assurance measures, the University makes use of external assessors to safeguard and improve the quality of teaching and learning at TIU. At the end of each academic year, the faculty of engineering/the MECH department select a number of teaching units/courses for external assessment. The external assessor is brought in from outside the University to assess the work of the instructors including the grading, and the students' performance. These external assessors are recruited and contracted according to a strict protocol. Their areas of external assessment will include at least an analysis of the comparative quality of the courses/programs learning outcomes, content and delivery, student assessment, academic staff qualifications, scholarly work and professional development activities. For this purpose, the external assessor will check the course syllabus, homework assignments and example files, lecture notes and presentations based on the syllabus, questions and answers of quizzes, Mid-Term and Final exams, the rubrics and results of grading etc.

TIU further commissions EQA reviews by contracting international accreditation agencies such as ASIIN to conduct program accreditation procedures in compliance with the European Standards and Guideline as well as a number of ISO Reviews.

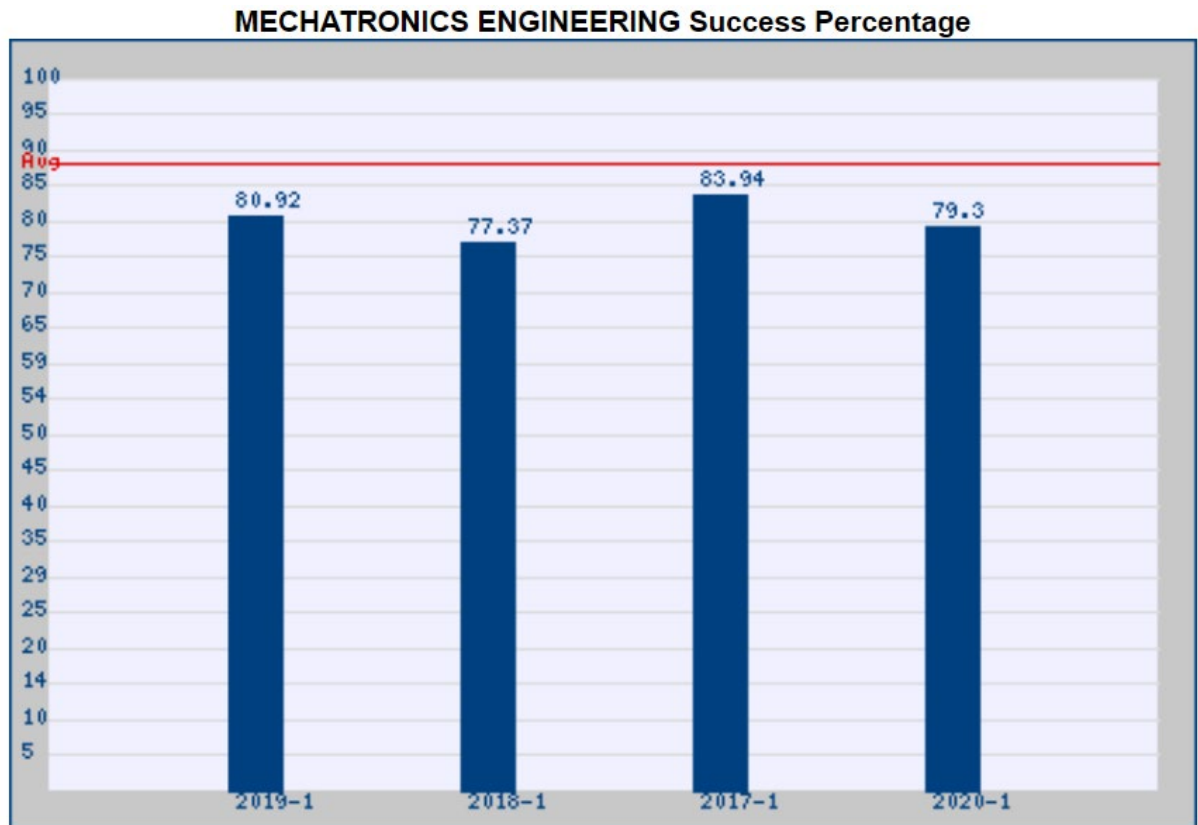
As regards internal QA measures, TIU conducts a Pre-Graduation Survey on final year students with the goal to solicit information about the students' satisfaction with their experience of education at TIU. The questions of the survey are designed according to the Program Learning Outcomes of each study program and aims at collecting students' feedback regarding the assessment methods applied, the student support, the learning resources, the most well-taught courses, the number of elective courses etc.

Another QA instruments in place is the students' satisfaction survey with the course content and delivery. The students at the end of the academic term fill out the corresponding survey for each course in the Academic Term electronically via a link on the internal SIS System. The Director of Quality Assurance subsequently compiles and analysis the survey

results, which are presented to the university council and to the head of department. The Director of Quality Assurance at the end of this process prepares the Appreciation Letters and the Warning Letters to all of the Teaching Staff at MECHJ according to the students' satisfaction average of their courses. If the survey reveals systemic problems or general dissatisfaction related to any survey item, a university-wide or a departmental workshop may be conducted and corrective action taken. If the dissatisfaction of students continue (and a third Warning Letter to the respective lecturer written), this may cause a termination for the teaching position of the affected staff.

Yet another survey targets the satisfaction of TIU's/the MECH department's staff with their working environment, the resources available, the performance of the university leadership and administration as well as the potential for professional development. Regarding the latter, the ASIIN expert team could envisage a more personal approach to short- and midterm staff development and career planning, as has been described in prior parts of the report.

Apart from surveys and questionnaires, TIU and the MECH department monitor study progress and completion at both the group and the individual student level as part of the internal QA system. For this purpose, the courses instructor for the program under review enter the assessment results into the PIS System, which are subsequently discussed on various levels of TIU's administration. The experts are provided with the following Bar Chart shows the Success Percentage of MECH bachelor degree program' students over the Academic Years from 2012-2013 till 2018-2019.



88.02: Current Fall Term University Average

The following tables show detailed data on the drop-out rates and average GPA for the degree program under review..

Table (5.1): Average GPA

	2020-2021	2019-2020	2018-2019	2017-2018
MECH	2.65	No graduates	No graduates	No graduates

Table (5.2): Average drop-out rate

	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018
MECH	0	0	2	5	5

Additional surveys are distributed among alumni to collect data of the employment of all graduates. As the MECH program has only commenced, no statistically data could be presented yet during the onsite visit.

Concerning the aspect of stakeholder participation in QA activities, students are active in the student council, which is supervised by the dean of student representatives. On invitation, the dean of student representatives is allowed to join meeting of certain committees and councils. Annually, the student council controls if the changes from the course evaluations were implemented into the new curriculum.

Another point of interest for the expert panel concerns the most important consequences of the evaluation during the last years. The program coordinators mention the example of a new module in the curriculum starting from next academic year on research methodology, research ethics and research-related topics such as plagiarism. This module was initiated based on the student evaluation, which revealed the students demand on a unified introduction to scientific working prior to their research project in the fourth academic year whereas before the information of each lecturer varied.

A second issues raised in the last evaluations, was the dissatisfaction of the students with the organization of the library. As a consequence, TIU had hired a consultant from the USA and in this process the library was moved and expanded resulting in a higher client satisfaction.

Overall, the expert panel has a very positive impression of the quality assurance system for the MECH bachelor program. They consider TIU conducts a sufficient number of evaluations to survey the opinion of students, stakeholders, and staff on a regular basis. The results of these processes are incorporated into the continuous development of the programs under review. The results and any measures derived from the various quality assurance instruments used (various survey formats, student statistics, etc.) are communicated to the students and other stakeholder, which in turn take responsibility to verify of changes were implement through their student council.

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

The expert panel commends TIU and the MECH department for institutionalizing a comprehensive quality assurance system with multiple external and internal components.

The experts commend the department on its system of external assessors, which annually review the MECH program providing external input on its further improvement. The engagement of external accreditation agencies further demonstrates the high commitment of TIU leadership for continuous improvement.

This equally applies to TIU's multifaceted Internal Quality Assurance systems, which the experts find to be of high quality and suitable to providing feedback for the further development of the program and adequately monitoring student progression.

[...]

D Additional Documents

No additional documents have been requested.

E Comment of the Higher Education Institution (27.02.2023)

TIU on 27 February 2023 has provided a detailed and extensive statement, welcoming the expert's findings and committing itself to work on the further improvement on the program under review.

The experts appreciate, that faculty of engineering and the MECH department have in the interim already carried through a number of meetings, in which the sharpening of the program profile and the curricular adaptations have been discussed. The experts are looking forward to the outcome and implementation of the discussed changes.

As regards the expert's demand to upgrade the internship experience, the experts take note of the list of measures, which have been discussed in the interim by TIU. MECH has announced reaching out to its industrial partners to identify potential opportunities and negotiate internship positions for students. A strengthened involvement of the Career Center of TIU and the use of career fairs held at TIU (Career Days) where students can meet with employers and learn about potential internship opportunities, are all steps in the right direction as is the involvement of TIU's alumni networks in that matter. TIU announces its intent to expand the internship opportunities and hence elongate the duration of the internship program to 8 or 12 weeks mentioning that the TIU management and the Engineering Faculty deanery showed unlimited support for this step. The experts appreciate that the deanery will involve the Industry Advisory Board in finding new opportunities and welcome the announcement of the Vice President to accelerate this process to obtain some gains until the summer term 2023.

As regards the issue of internationalization and increasing the number of incoming and outgoing students, the experts are aware, that the starting conditions for TIU are not ideal. This is due to Iraq's recent history and the "collateral damage" of the armed conflicts in public opinion and the perceived security concerns. The experts welcome TIU's 2023-2027 Strategic Plan provisions, to start offering scholarships and financial aid to help make the experience more accessible to international students and to encourage them having a step forward. Regarding the outgoing TIU students for exchange programs, Mechatronics department is putting time and efforts to establish mutual agreements with European universities and institutions to facilitate exchange programs. In its answer, TIU mentions again the limiting factors. The MECH department stresses the financial situation of the families at Kurdistan. Another impeding factor cited is the

concern of students that due to an unfamiliar environment and a new teaching and assessment system a decline in their performance and thus their GPA might decrease, and that students in Kurdistan are not interested in the exchange programs at partner universities in the Middle East, Turkey, Iran, or any developing country. Instead, they are told to be more attracted to European and developed countries for which it is more challenging to obtain a Visa. The experts appreciate the announcement that the International Relations Office (IRO) at TIU will intensify its efforts to encourage students to enroll in student exchange programs abroad, such as:

- Organizing seminars and workshops to emphasize the personal and professional benefits of studying abroad, such as gaining a global perspective, improving language skills, and enhancing cultural competence. In such events the former exchange students share success stories.
- Addressing concerns that students may have about studying abroad, such as safety, cost, or academic challenges. IRO Office is seeking to provide information and resources to help students navigate these issues.

As regards the suggestion of the experts to improve public relations and marketing efforts, TIU emphasizes in its response that great efforts are devoted for marketing for MECH program. Accordingly, TIU gets an updated list of the active high schools (private and public) from the Ministry of Education on an annual basis. Representatives of the different programs visit the schools to deliver presentations about the University and the program and to answer the students' questions. Brochures about the university and the program are distributed as well. The visits cover the schools in Erbil and in all other Kurdistan provinces. This is additional to inviting high school students to have a tour at the campus, open days, branding the program on social media, advertising the University and the program on the national TV and radio channels. Despite all the above-mentioned initiatives and practices, TIU acknowledges that there is not much forthcoming of candidates to enroll in mechatronics program at the current time. Basically, this is due to lack of awareness about what Mechatronics Engineering is or what the program entails. Candidates may not also see a clear career path or job opportunities in Mechatronics Engineering. Additionally, candidates may perceive the program as being too difficult or challenging, which may deter them from applying. TIU has a long-term vision in this regard, the university believes that we can raise awareness about the mechatronics engineering field in Kurdistan society gradually and incrementally, and we are optimistic that the size of intake will increase considerably within 2-3 years.

In the interim, TIU has decided to form Marketing Committee within the Engineering Faculty that can develop marketing plans specific to the engineering programs. These plans shall include elements like competitor analysis, regional focal areas, unique selling points, budgetary allocation tied to specific objectives with KPIs whilst carefully

selecting the most efficient channels (e.g., social media, departmental web-pages) to send a consistent message about the programs. The experts commend TIU on these initiatives and hope that they will bear fruit.

Concerning the experts' finding that the ECTS calculation needs improvement and that different documents contain conflicting information, TIU acknowledges these shortcomings and indicates, that right after the accreditation site-visit, the item "The calculated ECTS matches with the this allocated in the current curriculum table" was added to the "Syllabus Evaluation Checklist". Regarding the identification of self-study time as part of the ECTS scheme, TIU in its response insists that it was implicitly included in the amount of time allocated for preparing for mid-term and final exams. However, to avoid any confusion, the Director of ISO and Accreditation has proposed the following structure for the "ECTS Calculation" section in the syllabus template. This structure will be implemented starting from next academic year.

SWL/ USWL	TYPE	LEARNING ACTIVITIES	Number per term	Unit	Dura- tion (hour)	Workload (hour)
Structured workload	Contact hours	Theoretical Lectures	16	Weeks	4	64
		Practical/lab lectures	16	Weeks	2	16
Unstruc- tured work- load	Self-study	Self-study for theoretical lectures	16	Weeks	2.5	40
		Self-study for practical lectures	16	Weeks	1	16
	Self-Learning Activities other than exams	Preparation for Quizzes (TH + PR)	2	Quizzes	4	8
		Doing Assignments	4	HomeWorks	2	8
		Preparing Presentation	1	Presentati- ons	5	5
		Writing reports	8	Reports	1	8
	Preparations for exams	Preparation for Theoreti- cal Mid-term exam	1	Exam	8	8
		Preparation for Practical Mid-term exam	0	Exam	0	0
		Preparation for Theoreti- cal Final-term exam	1	Exam	14	14
		Preparation for Practical Final-term exam	1	Exam	5	5
Final calculations		Total workload				192
		Total ECTS Credit = Total workload / 25				7.6

	Percentage of the Structured Workload	42%
	Percentage of the Unstructured Workload	58%

Regarding the requirement to attach credits to the mandatory internship, the University according to its comments is aware of this shortcoming in almost all of the departments curriculums. At the beginning of February 2023, the ISO & Accreditation office at TIU conducted an opinion poll for surveying the viewpoints of the program coordinators regarding awarding ECTS credits to the internship programs. As by now, almost all the coordinators voted positively for awarding credits. The results of the poll will be presented to the University Council shortly and it is highly anticipated that a policy which commits all the departments to award credit to the internship programs in their curriculums will be issued soon.

In view of the expert's finding that there is no formal bachelor thesis in place and that the documents provided by the MECH department have been rather „reports“ on the final year project with 25-35 pages, where the scientific level and the extent is not comparable to the international standard....”, TIU comments as follows:

“By applying the experts’ recommendation to cancel the 2 electives in semester 8 and establish a more substantial final project with more ECTS, the instructors of the Research Methodology course will have the sufficient amount of time to provide students with the skills and knowledge necessary to conduct high-quality research in their chosen field of study. By mastering the fundamentals of research design, data collection, and analysis, students can develop their own research projects and make meaningful contributions to their field. In the extended meeting, the program coordinator showed a strong will to review and develop the Thesis Handbook to meet the international standards.” The experts appreciate these comments and look forward to the implementation of these new initiatives.

The experts also had mentioned in their report, that teaching staff at the department would appreciate tailor-made professional development courses to assist them in writing adequate research papers and to place them in indexed journals. In its comments TIU refers to the action plan of the TIU Strategic Plan 2023 – 2027. The university accordingly is in process for establishing “Academic Excellence Center” which is a specialized body at TIU that is dedicated to promoting academic achievement and excellence among teaching staff. The center will offer a variety of services and resources to help teaching staff achieve their academic goals and improve their performance. The objectives of the center are:

- Enhance the academic knowledge and skills of faculty members.

- Support the University's quality education and research policies, standards, and regulations.
- Create opportunities for interdisciplinary research.
- Support and promote research on topics of social and cultural significance.
- Develop the potential of faculty members in conducting research and business development activities.

The experts appreciate these announcements.

The experts also had observed that there are no student tutors at TIU. the expert panel recommends considering involving experienced students as student tutors in especially laboratory courses. In its comment, TIU responds by saying: "Thank you for this recommendation. We are happy to accept it. It was decided to assign some senior staff at Education Faculty to study the recommendation and to explore the possible mechanisms for implementing it at MECH and maybe later in other departments.

Regarding the expert's recommendation to invest in the further diversification of the income sources of the faculty/department outside of tuition fees.....", TIU answers as follows:

"In the TIU Strategic Plan 2023 – 2025, the senior management of the university as well as the head of departments agreed on prioritizing the strategic goal "To diversify the university's financial resources". Accordingly, the Engineering Faculty decided to include 'Mechatronics Engineering Services' in the list of services provided by the TIU Engineering Consulting Bureau (ECB). ECB is a specialized center within TIU that provides consulting and advisory services to external organizations and companies. The ECB is staffed by faculty members, researchers, and engineering students who work together to provide technical expertise and innovative solutions to real-world engineering problems. Some sample services that 'Mechatronics Engineering' department can provide: Design and development of mechatronic systems, System integration, Control system design, Sensor and actuator selection and integration, System testing and validation, Maintenance and repair, Research and Development etc.

The experts wish TIU success in the quest of diversifying its income structure.

TIU and the MECH department had been asked to remodel the presented version of the diploma supplement as it is not in agreement with the ASIIN criteria: TIU's comments run as follows:

"We are grateful for this recommendation. 2 years ago, TIU developed the diploma supplement to comply with the "Principles and Guidelines in the Diploma Supplement Explanatory Notes" issued by the EHEA Ministerial Conference- Rome 2020. By this, the awarded supplement is accepted as one of the EUROPASS framework transparency tools. The current version of the supplement complies to a large extent with the EHEA

template. We were not aware that ASIIN has its own criteria for diploma supplement. The experts' recommendations to add the final marks, the statistical data, and the ECTS credit points to the supplement will be applied in their entirety starting from the current academic year. We hope that experts can provide us with a sample.

F Summary: Peer recommendations (02.03.2023)

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

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Mechatronic Engineering	With requirements for one year	30.09.2028	EUR-ACE®	Suspension/No accreditation is proposed until the two requirements in red are being fulfilled 30.09.2028

The peers recommend an accreditation with the ASIIN quality seal for one year with the following requirements and recommendations:

Requirements

- A 1. Substantiate and operationalize the department's Strategic Plan further, including measurable key performance indicators, connecting it to the short, mid-term and long human resource and financial planning.
- A 2. Remodel the internship and attach ECTS credits points for it.
- A 3. Extend the "final year project 2" to a project, which is more comparable to a classical bachelor's thesis of more substance.
- A 4. Restructure and balance the curriculum in line with the suggestions of this report.
- A 5. Upgrade the information in the Module Handbook and to assure consistency between different sources of information in line with the suggestions of this report.
- A 6. Issue a Diploma Supplement in line with the ASIIN requirements

As regards the “EUR-ACE” quality seal, the experts see a need to fulfill the following two central prerequisites for the label to be delivered.

A 7. Extend the “final year project 2” to a project, which is more comparable to a classical bachelor’s thesis of more substance.

A 8. Restructure and balance the curriculum in line with the suggestions of this report.

Recommendations

- E 1. It is recommended to better aligning the teaching and learning content along the lines laid out in this report to justify the title of the degree program.
- E 2. It is recommended to develop concise job descriptions and place the description of possible career pathways on the website of the department.
- E 3. It is recommended to increase and professionalize marketing efforts to attract more national as well as international students
- E 4. It is recommended to institutionalize individual short and mid-term career development plans for each individual staff member.
- E 5. It is recommended to hire administrative support personnel and to involve experienced students as tutors especially for laboratory courses.
- E 6. It is recommended to reserve budget exclusively at the disposition of the faculty/department, thereby strengthening its autonomy
- E 7. It is recommended to invest in the further diversification of the income sources of the faculty/department outside of tuition fees (third party funding, provision of paid continuous education courses/short cycle programs.
- E 8. It is recommended to invest in the upgrade for laboratory equipment along the lines described in this report.
- E 9. It is recommended to place the Module handbook on the department’s webpage.

G Comment of the Technical Committee - 01 (06.03.2023)

Technical Committee 01 – Mechanical Engineering/Process Engineering (06.03.2023)

The Technical Committee discusses in particular the content of the programme. It agrees with the experts that core areas of mechatronics are missing from the programme. At the same time, it notes that core areas of mechanical engineering are also not included. Therefore, like the experts, the committee is of the opinion that renaming the programme alone would not ensure the consistency of the programme title, objectives and content, but that a revision of the curriculum is necessary. Currently, the requirements neither for a mechanical engineering degree programme nor for a mechatronics programme are met. The Committee assesses the deficits as so serious that it considers a corresponding revision to be necessary before the accreditation should be given.

He therefore pleads for equal treatment of the two labels applied for with regard to the curriculum. Furthermore, he considers equal treatment of the two labels to be necessary for formal reasons, as the subject-specific supplementary information must be fulfilled for both the ASIIN and the EUR-ACE label.

The Technical Committee deems that the intended learning outcomes of the degree programmes do not comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 01 – Mechanical Engineering/Process Engineering.

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

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Mechatronic Engineering	Suspension		EUR-ACE®	

Prerequisites

For both labels

- V 1. V 1 Restructure and balance the curriculum in line with the suggestions of this report.
- V 2. V 2 Extend the “final year project 2” to a project, which is more comparable to a classical bachelor’s thesis of more substance.

Possible Requirements

- A 1. Substantiate and operationalize the department’s Strategic Plan further, including measurable key performance indicators, connecting it to the short, mid-term and long human resource and financial planning.
- A 2. Remodel the internship and attach ECTS credits points for it.
- A 3. Upgrade the information in the Module Handbook and to assure consistency between different sources of information in line with the suggestions of this report.
- A 4. Issue a Diploma Supplement in line with the ASIIN requirements

Possible Recommendations

- E 1. It is recommended to better aligning the teaching and learning content along the lines laid out in this report to justify the title of the degree program.
- E 2. It is recommended to develop concise job descriptions and place the description of possible career pathways on the website of the department.
- E 3. It is recommended to increase and professionalize marketing efforts to attract more national as well as international students
- E 4. It is recommended to institutionalize individual short and mid-term career development plans for each individual staff member.
- E 5. It is recommended to hire administrative support personnel and to involve experienced students as tutors especially for laboratory courses.
- E 6. It is recommended to reserve budget exclusively at the disposition of the faculty/department, thereby strengthening its autonomy
- E 7. It is recommended to invest in the further diversification of the income sources of the faculty/department outside of tuition fees (third party funding, provision of paid continuous education courses/short cycle programs.
- E 8. It is recommended to invest in the upgrade for laboratory equipment along the lines described in this report.

E 9. It is recommended to place the Module handbook on the department's webpage.

H Comment of the Technical Committee - 02 (06.03.2023)

Technical Committee 02 – Electrical Engineering/Information Technology (06.03.2023)

Assessment and analysis for the award of the ASIIN seal:

The committee members discuss the case and follow the assessment of the peers. They recommend marking the two requirements for the provision of the EUR-ACE label as pre-requisites.

Assessment and analysis for the award of the EUR-ACE® Label:

The Technical Committee deems that the intended learning outcomes of the degree programme does not comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 02 – Electrical Engineering/Information Technology as long as the two prerequisites are not fulfilled.

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

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Mechatronic Engineering	With requirements for one year	30.09.2028	EUR-ACE®	Suspension/No accreditation is proposed until the two requirements in red are being fulfilled 30.09.2028

I Decision of the Accreditation Commission (23.03.2023)

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

The accreditation commission discusses the accreditation case and follows the assessment of the experts. In the context of the ASIIN seal and criteria, they do not consider the deficiencies in the study programme to be so serious that the accreditation process needs to be suspended and believe that Tishk International University will be able to meet all requirements within one year.

Assessment and analysis for the award of the EUR-ACE® Label:

In light of the EUR-ACE seal and criteria, they agree with the experts that the curricular deficiencies do not currently allow the EUR-ACE seal to be awarded and therefore state that the award can only be made once the two requirements highlighted in red have been met.

The Accreditation Commission decides to award the following seals:

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Mechatronic Engineering	With requirements for one year	30.09.2028	EUR-ACE®	Suspension/No accreditation is proposed until the two requirements in red are being fulfilled 30.09.2028

Requirements

- A 1. (ASIIN 2) Extend the “final year project 2” to a project, which is more comparable to a classical bachelor’s thesis of more substance.

- A 2. (ASIIN 1.3) Restructure and balance the curriculum in line with the suggestions of this report.
- A 3. (ASIIN 5) Substantiate and operationalize the department's Strategic Plan further, including measurable key performance indicators, connecting it to the short, mid-term and long human resource and financial planning.
- A 4. (ASIIN 1.3, 1.5) Remodel the internship and attach ECTS credits points for it.
- A 5. (ASIIN 4.1) Upgrade the information in the Module Handbook and to assure consistency between different sources of information in line with the suggestions of this report.
- A 6. (ASIIN 4.2) Issue a Diploma Supplement in line with the ASIIN requirements

Recommendations

- E 1. (ASIIN 1.3) It is recommended to better aligning the teaching and learning content along the lines laid out in this report to justify the title of the degree program.
- E 2. (ASIIN 1.1, 1.3) It is recommended to develop concise job descriptions and place the description of possible career pathways on the website of the department.
- E 3. (ASIIN 1.1, 3) It is recommended to increase and professionalize marketing efforts to attract more national as well as international students
- E 4. (ASIN 3.1) It is recommended to institutionalize individual short and mid-term career development plans for each individual staff member.
- E 5. (ASIIN 3.1) It is recommended to hire administrative support personnel and to involve experienced students as tutors especially for laboratory courses.
- E 6. (ASIIN 3.2) It is recommended to reserve budget exclusively at the disposition of the faculty/department, thereby strengthening its autonomy
- E 7. (ASIIN 3.2) It is recommended to invest in the further diversification of the income sources of the faculty/department outside of tuition fees (third party funding, provision of paid continuous education courses/short cycle programs.
- E 8. (ASIIN 3.2) It is recommended to invest in the upgrade for laboratory equipment along the lines described in this report.
- E 9. (ASIIN 4.3) It is recommended to place the Module handbook on the department's webpage.

J Fulfilment of Requirements (24.09.2024)

Analysis of the experts and the Technical Committees (11.09.2024)

Requirements

- A 1. (ASIIN 2) Extend the “final year project 2” to a project, which is more comparable to a classical bachelor’s thesis of more substance.

Initial Treatment	
Peers	fulfilled Justification: The HEI demonstrates that several measures have been taken to improve the scientific level of the Graduation Project Theses. For example, they have established a Graduation Project Manual Committee, which will be responsible for optimising the current versions of the Graduation Project Manuals and Thesis Handbooks. The manuals and handbooks determine, among other things, the scope and level of the dissertation. In addition, the committee has consulted on different methodologies for the different aspects of the dissertation. In addition, the HEI has increased the ECTS points of the thesis from 12 to 18 ECTS points. The experts appreciate the efforts of Tishk University and find that the modified final year project now resembles a classic bachelor's thesis with more substance.
TC 01	fulfilled Vote: unanimous Justification: The TC 01 follows the vote of the experts.
TC 02	fulfilled Vote: unanimous Justification: The TC 02 follows the vote of the experts.
AC	fulfilled Vote: unanimous Justification: The commission follows the vote of the experts.

- A 2. (ASIIN 1.3) Restructure and balance the curriculum in line with the suggestions of this report.

Initial Treatment	
Peers	Fulfilled

	Justification: Tishk University provides evidence that all the proposed changes to the curriculum have been implemented: A number of courses have been added, including Fundamentals of Physics, Strength of Materials, Dynamics, Production Technologies, Modelling and Simulation of Mechatronic Systems and their Subsystems, and an advanced course on the concepts of Object-Oriented Programming. The experts welcome the changes and see all of their suggestions incorporated into the curriculum.
TC 01	fulfilled Vote: unanimous Justification: The TC 01 follows the vote of the experts.
TC 02	fulfilled Vote: unanimous Justification: The TC 02 follows the vote of the experts.
AC	fulfilled Vote: unanimous Justification: The commission follows the vote of the experts.

- A 3. (ASIIN 5) Substantiate and operationalize the department's Strategic Plan further, including measurable key performance indicators, connecting it to the short, mid-term and long human resource and financial planning.

Initial Treatment	
Peers	not completely fulfilled Justification: The institution presents a strategic plan for the next five years. However, the experts note that the strategic plan does not include key performance indicators or human and financial resources planning. Therefore, the essential aspects mentioned in the requirement are missing.
TC 01	Not fulfilled Vote: unanimous Justification: The TC 01 follows the vote of the experts.
TC 02	Not fulfilled Vote: unanimous Justification: The TC 02 follows the vote of the experts.
AC	Not fulfilled Vote: unanimous Justification: The commission follows the vote of the experts.
Secondary Treatment	
Peers	fulfilled Justification:

	Tishk presents a revised strategic plan for the next five years. Both the demanded narrative conclusions keys and performance indicators of human and financial resources planning are provided now. The experts consider the fulfilment to be fully met.
TC 01	fulfilled Vote: unanimous Justification: The TC 01 follows the vote of the experts.
TC 02	fulfilled Vote: unanimous Justification: The TC 02 follows the vote of the experts.
AC	fulfilled Vote: unanimous Justification: The commission follows the vote of the experts.

A 4. (ASIIN 1.3, 1.5) Remodel the internship and attach ECTS credits points for it.

Initial Treatment	
Peers	fulfilled Justification: Tishk International University reports that it has adopted a new policy outlining the allocation of European Credit Transfer to internships, ensuring that internships are quantified as part of the overall learning experience. In this policy, one ECTS credit is awarded for 25 hours of learning activity during the internship. The Department of Mechatronics Engineering has implemented the policy and awarded ECTS credits to its internship programmes. As a result, the internship in the Mechatronics Engineering programme is now awarded 4 ECTS.
TC 01	fulfilled Vote: unanimous Justification: The TC 01 follows the vote of the experts.
TC 02	fulfilled Vote: unanimous Justification: The TC 02 follows the vote of the experts.
AC	fulfilled Vote: unanimous Justification: The commission follows the vote of the experts.
Secondary Treatment	
Peers	Fulfilled Justification: The Module handbook has been updated thoroughly. The missing module descriptions and ECTS calculations are provided now. The experts view the requirement to be fully met.
TC 01	fulfilled

	Vote: unanimous Justification: The TC 01 follows the vote of the experts.
TC 02	fulfilled Vote: unanimous Justification: The TC 02 follows the vote of the experts.
AC	fulfilled Vote: unanimous Justification: The commission follows the vote of the experts.

- A 5. (ASIIN 4.1) Upgrade the information in the Module Handbook and to assure consistency between different sources of information in line with the suggestions of this report.

Initial Treatment	
Peers	not fulfilled Justification: The HEI provides a module handbook. However, a number of modules are missing. For example, in the first academic year alone, 10 modules are not listed in the handbook. In addition, the information provided in the module description is also incomplete. For example, information on ECTS and workload calculation is missing for several modules. In the Control Systems module, half of the topics in the course description do not appear in the table of contents. In the module Design of Machine Elements, the prerequisites incomprehensibly include skills from the module Machine Learning. The intended learning outcomes of the module Engineering Drawing are similarly confusing as they refer to avionics. Furthermore, there is no description of the internship. Finally, the experts consider that the module handbook is incomplete and contains some inconsistent information.
TC 01	Not fulfilled Vote: unanimous Justification: The TC 01 follows the vote of the experts.
TC 02	Not fulfilled Vote: unanimous Justification: The TC 02 follows the vote of the experts.
AC	Not fulfilled Vote: unanimous Justification: The commission follows the vote of the experts.

- A 6. (ASIIN 4.2) Issue a Diploma Supplement in line with the ASIIN requirements

Initial Treatment	
Peers	Fulfilled Justification: The HEI submits an edited Diploma Supplement. The experts confirm that the document contains all the information required by the ASIIN requirements.
TC 01	fulfilled Vote: unanimous Justification: The TC 01 follows the vote of the experts.
TC 02	fulfilled Vote: unanimous Justification: The TC 02 follows the vote of the experts.
AC	fulfilled Vote: unanimous Justification: The commission follows the vote of the experts.

Decision of the Accreditation Commission (24.09.2024)

Since all requirements have been fulfilled (including the prerequisites for the EUR-ACE® label), the Commission declares that the EUR-ACE® label can be awarded alongside the ASIIN label for the remaining accreditation period.

Degree programme	ASIIN-label	Subject-specific label	Accreditation until max.
Ba Mechatronic Engineering	All Requirements fulfilled	EUR-ACE®	30.09.2028