



ASIIN Seal & EUR-ACE

Accreditation Report

Bachelor's Degree Programs -

1. Civil Engineering

2. Petroleum and Mining Engineering

Provided by

Tishk International University, Erbil, Iraq

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A About the Accreditation Process

Name of the degree Program (in original language)	(Official) English translation of the name	Labels applied for ¹	Previous accredita- tion (issu- ing agency, validity)	Involved Technical Commit- tees (TC) ²
Civil Engineering Bachelor Pro- gram	Civil Engineering Bachelor Program	ASIIN, EUR-ACE® Label	ZeVA, From 23/March/ 2017 till September/ 2022	TC 03
Petroleum and Mining Engi- neering Bachelor Program	Petroleum and Mining Engineer- ing Bachelor Pro- gram	ASIIN, EUR-ACE® Label	None	TC 01, 11
<p>Date of the contract: 21 Jan 2022</p> <p>Submission of the final version of the self-assessment report: 10 Oct 2022</p> <p>Date of the online visit: 06 and 07 March 2024</p>				
<p>Expert panel:</p> <p>Prof. Dr. Detlev Doherr, University of Applied Science, Offenburg</p> <p>Prof. Dr. Joerg Hauptmann, University of Applied Science, Biberach</p> <p>Prof. Dr. Richard Korff, University of Applied Science, Münster</p> <p>Dipl.-Ing. Christoph Schroeder, Ministry of Economics, Transport and Innovation, Ham- burg</p> <p>Anna Puttkamer, Masters Student of Environmental Geography, Köln University</p>				

¹ ASIIN Seal for degree Programs; EUR-ACE® Label: European Label for Engineering Programs;

² TC: Technical Committee for the following subject areas: TC 01 - Mechanical Engineering/Process Engineer-
ing; TC 03 - Civil Engineering, Geodesy and Architecture; TC 11 - Geosciences.

Representative of the ASIIN headquarter: Dr. Sushmita Kundu	
Responsible decision-making committee: Accreditation Commission for Degree Programs	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015 Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy and Architecture as of September 28, 2012 and Technical Committee 11 – Geosciences as of December 9, 2011	

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 & First time of offer
Program 1 - Civil Engineering Bachelor Program	B.Sc.	Civil Engineering	Level 6	Full time	Not applicable	8 semesters	240 ECTS	Annual In the academic year 2008-2009
Program 2 - Petroleum and Mining Engineering Bachelor Program	B.Sc.	Petroleum and Mining Engineering	Level 6	Full time	Not applicable	8 semesters	240 ECTS	Annual In the academic year 2017-2018

Tishk International University (TIU) offers 32 courses within the faculties of Engineering, Education, Pharmacy, Nursing, Dentistry, Applied Sciences, Law, Administration and Economics. It has 203 Full time academic staff and 122 Part time academic staff with 23 professors, 67 Assistant Professor, 92 lecturers and 143 Assistant Lecturers. TIU has 28 Bachelor's degree programs, 32 Master's programs and 2 Kurdistan Medical Board's dental programs with an enrolment of 4,800 students. According to the recent records, TIU has the first ranking among all private universities in Iraq and the Kurdistan region. It has the 19th position among all universities in Iraq. All educational programs other than Law are offered in English. In the recent years, TIU has had 68 International staff from 16 different countries. The university reports 30 international students across all programs.

For the Bachelor's degree program in **Civil Engineering (CIVIL)**, the institution has presented the following profile in the self-assessment report:

The program of Civil Engineering covers a range of major fields of studies like Structural Engineering, Geotechnical Engineering, Construction Materials, Project Management, Hydraulics, Environmental Engineering and Transportation Engineering. The history of the Civil Engineering department at TIU dates back to 2010. The department was set up as part of the university's strategic plan of developing the man-power needs in key capabilities

³ EQF = The European Qualifications Framework for lifelong learning

such as building the engineering infrastructure and improving the management of construction projects.

The Mission of the Civil Engineering B.Sc. degree program is to develop highly competent civil engineering professionals. This is achieved by providing a dynamic learning atmosphere that ensures that students can gain an educational, practical, professional, and intellectual experience which enables them to contribute to the society through teaching, research, practice, and public service.

The program of Civil Engineering requires 4 years of study in various topics in Civil Engineering. The main topics are structural aspects of steel and reinforced concrete design, deep and shallow foundation design, hydraulic structure designs, sustainability in civil engineering, construction management, structural analysis, water supply engineering, soil mechanics, and highway engineering. Furthermore, there are courses related to ethics in construction and engineering, construction site management and safety control, traffic engineering, introduction to earthquake engineering, remote sensing and GIS, sustainable RC designs, and tunnelling engineering. The program's first year typically includes the basic education, which provides the students with the fundamentals of mathematics and mechanics. These skills are needed for the second and third year courses, which mainly included design and analysis. The courses in the fourth year strongly focus on design, analysis, safety and ethics.

To earn a B.Sc. Degree in Civil Engineering from TIU, students need to complete university, faculty, and department degree requirements. They need to complete 240 ECTS or 140 TIU credit hours in addition to a Summer Internship of 40 days in related firms.

The university goes to great lengths in describing the rationale behind the launch of the Civil Engineering program in the SAR. TIU states that -

'These construction and related industries will experience a continuous growth over many years to come because of rising populations, developed technology, construction and reconstruction requirements of infrastructures, and improvements in material science and engineering. This makes civil engineering one of the top in-demand engineering jobs of the future and one of the most lucrative career options... Also, this program is so diverse. It encompasses within its fold many job roles, sectors, skills, and academicians/professionals from varied fields such as, Structural Engineering, Geotechnical Engineering, Building Materials, Project Management, Hydraulics, Environmental Engineering and Railway Engineering...CIVIL by its nature is a commander in sustainable development by protecting the environment, reducing the use of the irreplaceable resources of the planet and finding ways to avert natural disasters.'

The educational objectives of the Civil Engineering program mentioned are:

B Characteristics of the Degree Programs

- Graduates will be prepared to meet and exceed the expectations of employers.
- Graduates will be competent in urban development.
- Graduates will be prepared as designers of modern structural systems, roads, and tunnels.
- Graduates will have the ability to apply their engineering skills, exhibiting critical thinking and problem-solving skills in professional engineering practices.
- Graduates will be able to tackle social, technical and business challenges in their field.
- Graduates will be able to exhibit ethical attitudes and effective skills in communication, management, teamwork and leadership.
- Graduates will be prepared for ongoing learning and professional development through self-study, continuing education in civil engineering and in other allied fields, such as industry, environment, infrastructures and safety.

For the Bachelor's degree Program in **Petroleum and Mining Engineering (PETR)** the institution has presented the following profile in the self-assessment report:

The program of Petroleum and Mining Engineering covers a range of major fields of studies related to both branches of the department. In the department, the first and second years' modules are meant to increase the general science and engineering knowledge, followed by introductory and specialized modules for the third and fourth year.

The mission of the Petroleum and Mining Engineering degree program is to prepare students for employment and active involvement in various petroleum and mining-related areas and the pursuit of advanced degrees in petroleum and mining engineering. The university plans to achieve this by educating the students in the fundamental concepts, knowledge and laboratory/ field techniques and skills in the various related disciplines such as prospecting, reservoir development, drilling, production and mineral exploitation.

The program of Petroleum and Mining Engineering at TIU encompasses four years of study in various topics and modules, which fall under the various specializations in Petroleum and Mining Engineering. The topics covered are Introduction to Petroleum Engineering, Introduction to Mining Engineering, Petroleum Reservoir Engineering 1 and 2, Mine Transport and Material Handling, Enhanced Oil Recovery, and many other supplementary modules such as General sciences of (Geology, Chemistry, Physics and many mathematical modules) which collectively build and prepare the Petroleum and Mining students adequately. The courses in the first and partially second year typically include basic education with some specialized courses, which provide the students with the necessary fundamentals to be able to go forward to more advanced level study in this field. In part of the second,

third and fourth years, the courses are directly related to the major of Petroleum and Mining Engineering discipline. The students are also exposed to major practical sessions and field trips, which are essential for every student to graduate.

To earn a B.Sc. Degree in Petroleum and Mining Engineering from TIU, students need to complete university, faculty, and departmental degree requirements which, complete the 240 ECTS credit hours in addition to a Graduation Research Project and a Summer Internship Program in related fields.

The university goes to great lengths in describing the rationale behind the launch of the Petroleum and Mining Engineering program in the SAR. TIU states that

‘The establishment was due to the oil discoveries made during the last two decades and thus many international companies started their investments in the Kurdistan region. The university proposed that the region is in need for oil and mining engineers to fulfil the market needs. On the other hand, Iraq as a whole and Kurdistan Region specifically is rich in many natural resources other than oil and gas. There are Sulphur, Phosphate, Industrial rock material and other ore deposits. Because of that, the university decided to change the name of the program to be ‘Petroleum and Mining Engineering’. Among all petroleum departments in Iraq including Kurdistan Region, our program is the only one graduating Mining Engineers in addition to the Petroleum Engineers.’

The educational objectives of the Petroleum and Mining Engineering program are:

- Graduates will be competent in critical questioning and analysis of petroleum and mining engineering issues.
- Graduates will be able to apply engineering principles and practices for the safe and efficient exploration, development, production, transportation and management of petroleum and mineral resources.
- Graduates will have the ability to design and conduct experiments related to the petroleum and mining issues.
- Graduates will be prepared for oil and mining careers in industry.
- Graduates will have the ability to integrate key science and engineering problems and challenges in a practical environment.

C Expert Report for the ASIIN Seal⁴

1. The Degree Program: Concept, Content & Implementation

Evidences:

- Self-assessment report
- TIU Website - <https://tiu.edu.iq/>
- PLOs listed in the programs' webpages - <https://engineering.tiu.edu.iq/civil/about-department-2/> and <https://Petroleum and Mining Engineering.tiu.edu.iq/about-faculty/>
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The program learning outcomes (PLOs) as documented are developed by Heads of Departments in collaboration with the academic staff are said to have been reviewed by the Quality Assurance Office in term of structure and validity. The methodology followed in the formulation of the learning outcomes as evidenced in attachment 1.C, is very detailed and clearly stated. The PLOs as presented in the SAR are as follows:

Table (1.2): PLOs of Civil Engineering

By the end of this program, students will be able to:

PLO1	Apply principles of mathematics, science, and engineering
PLO2	Design and conduct experiments, as well as analyze and interpret data accurately.

⁴ This part of the report applies also for the assessment for the European subject-specific labels. After the conclusion of the procedure, the stated requirements and/or recommendations and the deadlines are equally valid for the ASIIN seal as well as for the sought subject-specific label.

PLO3	Design an engineering system, component, or process to meet desired industrial needs.
PLO4	Identify, formulate and solve complex engineering problems
PLO5	Apply, in design and construction, the most modern design codes, standards and specifications such as; AISC, ACI, ASCE 7, IBC, etc.
PLO6	Use the techniques, skills, and modern engineering tools, such as surveying instruments, and designing software that are necessary for engineering practices.
PLO7	Apply knowledge and skills in construction project management and recognition of international standards and methodologies
PLO8	Manage to work with multi-disciplinary teams and communicate effectively.
PLO9	Identify the moral values that ought to guide the Civil Engineering profession and resolve the moral issues in the profession.
PLO10	Apply the principles of sustainable development in their professional duties which go in line with the paramount safety, health and welfare of the public.
PLO11	Analyze the impact of engineering solutions in a global and social context
PLO12	Identify the need and have the ability to engage in lifelong learning and knowledge of contemporary issues.

Table (1.3): PLOs of Petroleum and Mining Engineering

By the end of this program, students will be able to:

PLO1	apply the principles of engineering, science, and mathematics to identify, formulate, and solve Petroleum and Mining Engineering problems.
PLO2	apply designs to produce solutions that meet specified Petroleum and Mining project needs with consideration of health, safety, and environment.
PLO3	make judgments in Petroleum and Mining Engineering situations by considering the global, economic, and environmental impacts.
PLO4	function effectively and demonstrate professionalism in both individual and group settings by creating a collaborative environment.
PLO5	develop and conduct appropriate Petroleum and Mining experiments and researches using qualitative and quantitative methods.

PLO6	analyze and interpret data of Petroleum and Mining experimentation correctly.
PLO7	make logic and reasonable engineering estimation of data to design a solution for specific Petroleum and Mining Engineering projects.
PLO8	apply advanced knowledge and modern engineering tools as needed
PLO9	design systems, components or processes to meet the needs and demands of the profession of Petroleum and Mining Engineering projects.
PLO10	apply the Petroleum and Mining Engineering concepts to other energy sectors such Geothermal.

Additionally, the matrix contained in the attachment 1.D shows the contribution of each course in the curriculum to the attainment of the programs' PLOs. The overall contribution of the courses to achievement of the PLOs is also illustrated through pie charts.

According to the experts, the PLOs were found to be well suited to the level of the programs (EQF 6) under review. The educational objectives of the program are also categorically mentioned in the SAR and have been noted in the earlier part of this report. Through the different matrices produced in the SAR and the provided appendices, compliance with the Dublin descriptors is shown. Thus, it has been logically established how the achievement of the learning outcomes within the designated duration of study has been taken care of.

The experts also found that TIU follows an elaborate study and proposal system before the introduction of a new program, which is commendable especially in terms of figuring out the learning outcomes and objectives of the program. It is explained in the SAR that the university establishes a departmental board of the new program by hiring specialized academics. This board has an essential role in designing the curriculum. TIU also consults academics from other universities and related market experts to set the mission, vision, objectives, and learning outcomes of the program.

The main reason behind the opening of the Petroleum and Mining department is that Kurdistan is not only an oil rich region but also full of industrial rocks and metals like iron, magnesium and minerals. Great amounts of these deposits have not been exploited yet. It was also pointed out by the coordinators that Iraq still lacks in mining companies but many British and Russian companies are investing in mining activities in this region. Therefore, the need for qualified professionals can be very much expected. The program coordinators further elaborate that the program was started with coordination from experts in this field especially experts from the University of Baghdad, which had established a similar department in 1996, and the Universities of Kurdistan, Howliar, and Mosul.

In spite of this, during the discussions with the alumni and industry representatives, the experts found that there are a lot of universities in the region offering similar courses. Thus, the obvious question was regarding the justification of yet another course at TIU. The argument of the university in this regard was that TIU offers better tutelage, better quality and better facilities in terms of labs and resources, which makes TIU programs preferred in the region. The students and industrial employers corroborated this, thereby, complimenting TIU on producing better graduates.

The obvious question arising at this juncture was regarding the present employment scenario. The departmental coordinators categorically explained that out of the 20 and 25 students of the two batches who have graduated, only 10 students in both batches are employed in related petroleum and mining jobs. The others are employed but not in the exact petroleum or mining industry. Many are working in small local companies and even NGOs.

The experts therefore asked, if there is no job guarantee, why would the students like to study this program. The concern of the experts also stemmed from another remarkable fact that was revealed during the discussions: educational institutions are increasing and the jobs are decreasing every year. It was then argued that the students know that this scenario is temporary and there is a lot of promise in the future.

The participants from the industry were critical in their opinion indicating very openly that there are possibilities of good recruitment in Iraq, but the situation is very volatile. There is no guarantee whether there will be new projects or whether there will be a further depression of the economy in general. Therefore, most of the contracts are temporary and project-based. Nevertheless, they state that if all planned projects are implemented, the situation may change drastically and therefore the need for graduates will increase.

One of the points raised by the students and alumni was the inclusion of the high number of industrial visits and experts in the learning plans. When the staff and coordinators were questioned about this, they assured the experts that they have made changes like now, industry experts have to be mandatorily invited for guest lectures. They are also including industrial experts to give regular feedback on the curriculum. This has led to the recent formation of an Advisory Board from the industry that meets twice a year. Also, student visits to actual industry workshops are limited until now. Some activities are nevertheless being coordinated with industry people.

It is the task of the head of the department set the basic plans for the coming academic year by the guidance of the Dean. The plan includes the Academic Year Personnel Planning, the Statement of Lecturer Course Assignment, the Classrooms Plan, the Departmental Yearly Activity Plan, the Weekly Schedule, the Equipment-Device-Tool plan and the Annual Departmental Request. All these plans are submitted to the University Council through the

Vice-president for approval. During the audit, the experts found that the industry representatives, who often also form part of the teaching faculty, were consulted for curricular development. However, there have been very few meetings in this regard. In the opinion of the experts, a system is in place but the implementation and documentation of the records should be improved.

As stated in the earlier part of this report, there is a claim by TIU that the Petroleum and Mining Engineering degree is one of its kind in the region. However, as evident from the later part of the SAR (page 4), there are other institutions in the region with similar courses. Moreover, during the discussions with the alumni and the industry representatives, they named a few other universities having the same courses. This is not only intriguing but vital in terms of availability of students. Also, this can impact the employment opportunities for the TIU graduates.

The departmental structure and organisational set-up is evidently well formulated and the responsibilities are well defined as elaborated in the SAR. In order to assist the dean in making decisions and to promote the development and establishment of organizational policies in the faculty, four major committees are found to be in place in each of the two faculties. They are: Faculty Academic Council, Faculty Disciplinary Committee, Faculty Scientific Committee and Faculty Exam Committee.

The SAR mentions that the International Relations Office (IRO) was established at Tishk International University in 2013. The IRO is a unit which supports the exchange of students between TIU and higher education institutions of other countries. So far, 43 students from different departments have utilized the Exchange Program and the IRO unit has set up the conditions and the process of Students Exchange Program (SEP). As against what the SAR says there are very few evidences of student exchanges in the Civil and Petroleum and Mining Engineering departments at least. The system is in place but maybe not as effective till recently for these two departments.

In this regard, the university very transparently states in the last part of the SAR that 'TIU faces challenges in attracting incoming students for student exchange programs due to the presentation of Iraq's security situation in the global media. The country's media representation is mainly associated with war and conflicts. Although the Kurdistan region has a stable security situation, foreigners do not distinguish the region from other parts of Iraq and they always have doubts and fears.'

The same applies to the case of staff mobility. The importance has been realised but without many tangible outcomes so far.

Criterion 1.2 Name of the Degree Program

Evidence:

- Self-assessment report
- Discussion during the audit
- Diploma and Diploma supplement
- Website of TIU <https://tiu.edu.iq/>
- Webpage of the departments

Preliminary assessment and analysis of the experts:

Graduates of Civil Engineering Bachelor Programme and Petroleum and Mining Engineering Bachelor Program are awarded with Bachelor of Sciences (B.Sc.) degrees.

TIU explains in the SAR that in the process of naming both the Civil Engineering and Petroleum and Mining Engineering programs, they considered many factors. The most important factors were the reasoning which words can maximize the outreach of these programs especially in the local market, which words are the most popular in the Kurdistan Region and worldwide, which words give steady rise in industry-specific data, and which words reflect the proposed curriculum.

The experts on evaluating the title as against the curriculum found that the title for the Civil Engineering Program was proper and justified. However, in case of Petroleum and Mining Engineering, the units of study particularly pertaining to the Mining discipline were very few for the program graduates to be awarded a degree with Mining as a major. This was further clarified by the university by providing an updated version of the Petroleum and Mining Engineering curriculum, which shows a distribution of 51 mining-related ECTS credits spread over the 4 years. The question nevertheless remains whether in a program of 240 ECTS, 51 credits are sufficient for granting it as a major part of the degree and also, whether the modules sighted are up to the level of a EQF 6 degree in Mining Engineering, although it is part of a dual major or interdisciplinary degree. Updated documentation provided by the university after the audit showed additional mining courses in the offered curriculum, most of them, however, only as technical electives. The experts therefore

stress the need of including a higher number of specific mining courses as mandatory elements into the curriculum to justify the major “mining” component. Otherwise, the current title of the program would be misleading should be changed to “Petroleum Engineering”.

It is important to mention that during the session with the students, some of them stressed that one the reasons for their preference for the Petroleum and Mining program is the promise and possibility of being absorbed by the mining industry, if options are not available in the petroleum sector. Therefore, the dual nature of the major appears to be important. Thus, it is even more important that the curricular structure, modules, and module descriptions justify and relate to the program title.

Criterion 1.3 Curriculum

Evidences:

- Self-assessment report
- Curricular overviews of the study programs under review
- Module handbooks of the study programs under review
- Syllabus of the study programs under review
- Course descriptions, syllabus, and curricular overviews published on the department webpages
(<https://engineering.tiu.edu.iq/civil/course-description-curriculum/>, <https://engineering.tiu.edu.iq/petromining/course-description-curriculum/>)
- Matrices relating subjects and PLOs
- Graduation project examples
- Discussion during the audit

Preliminary assessment and analysis of the experts:

It is evident from the SAR, module handbook and curricular details elsewhere provided that both the programs include courses related to the majors taught through lectures and lab sessions. Additionally, there is a list of elective subjects to choose from, a Summer Training or Internship of varying length for both departments (8 weeks for the Civil Department and

2 weeks for the Petroleum and Mining Department), and a “graduation project” that can be considered equivalent to a capstone project or a bachelor thesis.

Regarding the curriculum and model handbook, the auditors appraise the contents according to their fields of expertise. In the Civil Engineering program, the experts positively note that a course on Building Information Modeling (BIM), a relatively new but increasingly popular method in Civil Engineering, is offered. However, it is currently only offered as elective course, and because of the great future importance and potential of this method, the module should be made compulsory. On the other hand, they find that computer courses are generally underrepresented and more of them should be integrated in the compulsory curriculum. Based on the example of the 3D-engineering software application “AutoCad”, which in Germany is usually taught for an entire semester, they doubt that some of the technical skills are taught in sufficient depth, since this software is only introduced in few sessions at TIU.

For the Petroleum and Mining Engineering program, the experts are highly concerned about the already mentioned insufficiency of the mining component of the program. The experts were of the opinion that only three modules of the entire program are purely mining subjects. Some subjects can also be considered common like in the 4th grade, mine transport and material handling. In some cases, the experts were not convinced by the module descriptions that even those sighted as the common subjects had direct correlation with mining. To this a revised curricular sheet was produced where approximately 40% of the courses were arguably from the mining field, including common modules. But there are still concerns and ambiguity that if it is not clear to the experts from the module descriptions, then it may not be clear to the students and future employers as well.

The experts also marked that environmental aspects are not adequately represented in the current program structure. Environmental concerns are strongly associated with eco-friendly Civil Structures. Moreover, environmental issues are key to both the production of petroleum products and extraction of mined minerals as well as their use and disposal. Therefore, this aspect should be given much more emphasis than just the option of one elective course.

According to the SAR and the opinion of the staff, TIU suggests that the offer of electives in the Civil Engineering course cover the status quo of the profession. Students are well versed in professional ethics at the graduate stage to get the capacity of ethical decision-making and fighting corruption. It was not possible for the experts to find any evidences of that during the online audit. However, the industry representatives praised the subject knowledge, soft skills and language competence of the TIU graduates and even commented

that in case of candidates from TIU, the interviewers automatically raise the standard of questions and the benchmarks for selection.

After analysis, it was found that TIU has a well developed step-wise internship and follow-up evaluation process. During the meeting with the alumni it was actually found that many of the TIU graduates work in well-known companies in the local market, and some of them have their own companies. Through these graduates, TIU has a well spread relationship with the market.

TIU has a service project program. In this program, students of 3rd and 4th grades are hired under the supervision of the department to conduct the project. This program is conducted as part of rendering service to society, once in a year.

It has been particularly mentioned in the SAR, that the TIU staff have a close connection with organisations like the Tishk Engineering Consultation Bureau and the Kurdistan Engineering Union, which results in receiving first hand feedback from the market. This was also evident from the discussions with some of the industry representatives, who were in close contact with the staff or were themselves working part-time with the university.

This networking relationship contributes to providing job vacancies for graduates, getting internship and arranging site visits for students and introducing industry-based courses into the curriculum.

The Civil Engineering department has a provision for a six-week internship. The department helps students in acquiring these internships. However, it was quite apparent that the internships were very regulated and monitored to the level of daily visit attendance and a weekly activity report. The alumni of the department defended the quality of the department and provided the feedback that most of the graduates usually get absorbed within few months of graduation. According to the students, increased interaction with industry people and exposure to practical training is undoubtedly the key to employment and should be enhanced further for the benefit of the students.

Regarding international outreach, the Civil Engineering department has MOUs with universities like Bauhaus University Weimar (Germany), Gdansk Technology University (Poland), Freiberg University of Applied Sciences (Germany), EPU (Iraq, Sapienza University (Spain), and UTM (Malaysia). Also, TIU has taken part in different DAAD programs, among which was an exchange with Bauhaus University Weimar that was highly praised by the students.

In case of the Petroleum and Mining Engineering Bachelor Program, there seems to be effective networking in place between the department and several international oil companies, which have provided international workshops, technical trainings, seminars, and opportunities for site visits and internships. One of the examples sighted was the exchanges

with the English oil training company, Entrac Petroleum Limited (EPL), which is based in London. The department made an MOU according to which EPL provided professional training to Petroleum Engineers who are working in the different oil fields in Kurdistan Region and in Iraq. TIU provides all logistics and technical support to run such training programmes. On the other hand one has to see, that compared to other universities, active cooperations seem to be rather rare.

Internship opportunities are provided for students of the Petroleum and Mining Engineering Bachelor Program after they finish their third grade and before attending the fourth grade. The internships in this case are however only for two to four weeks based on the preference of the oil companies. The SAR also mentions that since the time of Covid 19, oil companies limited the department internships to only two weeks with many other conditions. Internships are arranged not only through departmental connections with the oil and mining companies but also through the ministry of natural resources of Kurdistan Region of Iraq. Care is taken that the internships are practical and relevant to the field of the study and provided by the hosting company with official documentations. At the end of the internship, the students are required to conduct tests, presentations and write reports to be evaluated by the oil company and the university staff, in addition to a form filled by the training engineer for each student.

In the Petroleum department, all the mandatory parts of the degree programs are awarded with credits except the internship, although it is mandatory to pass it. According to the university, this is due to regulations of the Ministry of Higher Education and Scientific Affairs in Kurdistan Region. So, for the time being, it is not possible to include the internship in the credit structure and since it is not awarded credit, the internship cannot be held during the academic terms. Of course, this was a matter of discussion and criticism especially because the experts were not convinced about the learning achieved during such a short-term internship, especially in a discipline where practical knowledge and exposure is of primary importance. The experts also share this impression that an internship of such a short duration cannot fulfil its purpose of providing a deep insight into the practical operations of a company. They recommend an extended duration of at least 12 weeks for the internship. When asked about options to prolong the internship stays, the industry representatives referred to governmental obligations to provide internships to all students of the region. Owing to the large number, it appears to be difficult to prolong the duration of internships.

The university emphasizes on taking care of internationalisation of the curriculum and benchmarking of the same with global standards. The methods adopted to achieve this are highlighted in the department's annual organization of several scientific events that include

international and local workshops, symposiums, and seminars. The Civil Engineering department performs two types of scientific reviews of the curricula, the first is yearly and the second every five years. The review includes inviting those with corresponding specializations who are working in the relevant work market, as well as professors who have a long work experience that sometimes exceed twenty years, for improving the curriculum. However, all these measures professed by the university are inordinate and inconsistent with the evidences provided. The presentations of the departments give some examples and the SAR also lists many activities but most of those are focused on cultural awareness and exposure to ethnic diversity. They are primarily inter-university activities. The experts did find examples of few international trips while talking to the students and some of the faculty. They were very happy with their experiences but once again their narratives were primarily about the non-academic aspects and nothing was mentioned specifically about the academic exchange or skill enrichment from the international visits.

As part of the curriculum, students can choose from technical and non-technical electives. It was explained to the auditors that they have not been named in the year-wise curriculum because it depends on the choice of the students. The ministry has a rule under the Bologna process that 50 % of the courses should be electives. Besides basic subjects like Mathematics, Physics, Chemistry and Mechanics, there are mandatory courses in English language, Academic debate and “Kurdology” which are required by the Kurdish Ministry of Higher Education and have to be concluded within the first academic year.

The university deserves credit for ensuring the development of general skills namely, problem solving, team building, emotional intelligence, decision-making, leadership, communication skills, time management, critical thinking, public speaking, and presentation skills through the core and elective courses. The students were particularly happy that the university has introduced courses like Conflict Management. They also emphasized that there are social activities in the university, which exposes students to different kinds of people and this equips them with social skills. The students were particularly happy that they had to go through many group projects, seminars and workshops whereby they got to learn how to lead and also to work as a team and organize events. Another important acumen TIU students develop is the ability to use multiple languages at the same time. The courses are taught in English and the strict regulations governing the entry level competence in English ensure the capacity building of the students to perform in the international scenario for further studies or employment.

An elaborate procedure exists for the revision of the curriculum, which looks like a thorough activity. According to the SAR this process takes place every three years. However during the audit procedure, it seemed that this has now developed into a more frequent

process. New committees like those involving industry representatives have been formed and they have already met once. There is a plan to organize their meeting bi-annually.

The experts wanted to know about the most recent changes or reformative steps taken towards curriculum revision. To this, the department of Petroleum and mining informed that seven topics have been changed in the core and allied models. This has been sent to the deanery for their approval.

Criterion 1.4 Admission Requirements

Evidences:

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

Preliminary assessment and analysis of the experts:

The intakes of both departments are students who have successfully completed the High School Baccalaureate certificate normally administered by the Ministry of Education of Kurdistan. The main group of admissions are graduates from a scientific high school, which finishes after grade twelve in Iraq. The second way of qualification is the successful graduation from a two-year higher education institute that complies with the discipline of the chosen study program. These institutes can be attended after high school graduation. There is also the additional entry option of the attendance of a five-year relevant technical institute. The general requirements of student intakes for both the departments are based on a competitive average marks system. Students are accepted to the programs according to the results of the general examinations held by the Ministry of Education for 12th grade student (last year of high school).

Differentiation between the intake of new students between years is mainly based on the weighted average student achievements already directed and monitored by the Ministry

of Higher Education and Scientific Research. Students' age is in the range of eighteen to twenty years.

The application process seems highly regulated by the Ministry of Higher Education and Scientific Research of Kurdistan Region. The Council of Higher Education at the Ministry of Higher Education is responsible for determining the admission policies, requirements and criteria for both public and private universities. The ministry not only defines the application instructions, which includes the enrolment criteria for each bachelor program, but even decides the deadlines for the application process. Apparently, after the office of Students Affairs (SA) receives a notification about the deadline of admission process from the Ministry of Higher Education and Scientific research in Kurdistan Region, students approach SA to apply.

The experts were perplexed by the difference and thereby the basis of deciding the qualifying scores for both the programs and for the different qualifications. However, this, too, seems to be the decision of the ministry. In spite of this, the university is trying to improve the numbers through some measures like open days at the faculties, high school visits, the participation in National Higher Education Fairs, advertisement in the media, social media branding and the use of student ambassadors via the "Unibuddy Platform".

Another issue related to admissions that surfaced was the fall in the number of student enrolments. The university very transparently remarks that the number of projects in the region is still extremely lower than the number of graduates. Moreover, public work opportunities are very limited. This was also voiced by the industry representatives and some of the alumni that due to certain political upheavals in the region and of course as an aftermath of Covid, the number of projects have decreased and so there must have been an obvious decrease in employment opportunities and thereby a fall in the number of students. It was not clear to the experts as to how the university plans to counter this fall in enrollment. This is doubly important because the student fees are the main sources of funds for both the courses. Ironically, the data produced in page 35-36 of the SAR shows that in recent years, as compared to the earlier years, less students than applicants have been given admission. This is of course somewhat intriguing in terms of policy.

The university openly discussed further regarding the less number of admissions – 'As it is known, the current economic state of the region is discouraging students to apply for the department and the engineering faculty in general. A scholarship and discount program are under discussion, to be implemented. Another reason could be that at TIU, students are required to take a yearlong English foundation course in case they do not pass the English language test. In most of the other universities this is not required.' - But then, the obvious question that arises is what measures are being taken by the university to resolve these issues.

At this point it is important to recapitulate that the language of instruction in both the programs is English. Enrolled students with unsatisfactory level in English language can study English in the preparatory school for one year, or they should study foundational English courses during their first year of study. Very detailed regulations have been mentioned regarding the language criteria for these programs. These strict regulations regarding the English language requirements of the students at TIU therefore contribute to the language proficiency and communication skills of the students. The industry experts were particularly happy about the soft skills of the students and they even remarked that they were better than most of the other students from the region.

The recruits from TIU were found to be very professional and well-prepared by the industry recruiters. Overall, their multiple language competences were very satisfactory. Language skills were given a lot of importance because very long instruction manuals have to be read and the labor market is also diverse. Mostly the industry representatives appreciated the TIU graduates. They said that their soft skills and their problem solving capabilities were different. They were fast learners, flexible to change, good at communication and hard-working.

Some of the representatives are engaged as part-time lecturers and others are providing summer training to TIU students. Overall, the trainers were happy with the standards and balance of theoretical and practical knowledge of the TIU graduates. The industry participants generally felt that the TIU graduates have a very good chance of being absorbed by the industry. The TIU students were also complimented on their adaptability, because sometimes they have to work on projects and stay in the working areas during field operations and also work on night shifts. The other challenges they face are working with people who do not speak a common language. The representatives were of the opinion that expectations are also high from TIU because it is a private university. The main difference between public and private universities is that private universities have better facilities and resources and are more modern. However, it was also highlighted that the competence of the staff and also the vision of the university is important. TIU was also appreciated for its open-minded and ready-for-change attitude.

It was the suggestion of the industry representatives and the wish of the students that the practical training and exposure can be improved upon. When young graduates are knowing about the best practices, safety measures and industry specific requirements it is beneficial for recruiters. All these are arguments in favor of a longer internship.

Commenting on the duration of the internship, the representatives felt that this undoubtedly needs to be increased. The ministry can enforce regulations and instructions even to

the industries regarding the duration of internships. The petroleum industry therefore abstains from offering more than two weeks of internship. In this regard, the experts came to know about an interesting fact that the government or public universities allow a 12-week internship. Ironically, TIU, being a private university, apparently cannot avail a longer internship nor can it award credits to students for an internship or summer training.

This ultimately relates to the credit calculations and ECTS equivalence which is a part of the university's efforts towards internationalization. However, it is found that due to the lack of proper ECTS credit calculations and a lack of clarity in credit transfers to TIU credits, international student intake may also be affected even if collaboration and networking might promise some inflow of foreign students.

The male-female ratio of students is very unequal, as acknowledged by the university. Both the civil engineering industry and the petroleum industry are designated as male dominated. Also, the number of international students is nil till 2022. This has been attributed to the Covid issues. The total number of international students across the 32 programs in the most recent presentation during the audit was 30. Therefore, it is clearly not a significant number. However, no plan has been sighted as to the development of the situations with regard to diversity in student population.

The maximum number of students that can be admitted to the programmes are found to be determined by the university management in consultation with the Ministry of Higher Education according to the considerations specifically of number of available staff (The Ministry's allowance ratio is 1:25), capacity of infrastructure and societal demand for the specific programs. The fresher intake for CIVIL is 60 and PETR is 50.

The experts were curious whether skills are considered as an admission criterion, since only professional degrees were mentioned as the admissible criteria. It was explained that students from vocational education colleges may be considered. Therefore, the Lisbon Convention apparently cannot be entirely followed for any skill training. It was evident that the ministry only allows a few vocational training college degrees to be admitted to a degree program. The coordinators do acknowledge that the students from these colleges however if admitted, do very well and even better than high school graduates. When asked about how these regulations are communicated, the auditors were informed that the Ministry of higher education documents are provided to the students in Arabic.

As this is a serious deviation of the Lisbon Convention, the experts urge the university to increase efforts to expand their intake requirements and add compensating regulations. Also, they ask for specific documents about ministerial rules and policies that affect the rules and implementation of the programs at TIU. The provided documentation, however, did clarify the possibility or prohibition of modifying the admission criteria.

Criterion 1.5 Workload and Credits

Evidences:

- Self-assessment report
- The website of TIU <https://tiu.edu.iq/>
- Module handbook of the programs under review
- TIU Credit Policy documents (SAR Attachments)
- Workload calculation sheets of all the courses
- Discussion during the on-site visit

Preliminary assessment and analysis of the experts:

The university aspires to make the study system more learner-centred. It realises the importance of inclusion of self-study, practical work, internships and industrial exposure for the courses of study in question within the program workload. However, the hourly calculation comprising all the modes of study was not very clear and thereby could not be judged well by the experts. This is crucial because as mentioned in the SAR, 'The student workload is distributed in the curriculum as 50% to equip the students with sufficient knowledge theoretically and apply them practically as tutorials in the class as well as experiments in the provided laboratories and 50% self study.' It was found that both the courses portray more than 50% self-Study. This is appreciated in principle but the workload distribution has to be transparent and well communicated so that not only students but even applicants are aware of the expected workload and hourly commitment.

According to the SAR, the credit system used to measure the length of studies in both the programs, was stated as one theory credit hour equal to one time hour and one lab/practical hour equalling two time hours. However, different numbers of theory and practical credits were shown to be equivalent to 30 ECTS. It was pointed out during the online visit that there is some type of calculation of the TIU credits through the Personal Information System (PIS) for each course. In spite of that, apparently, there is no standard conversion for conversion of Iraqi or TIU credits to ECTS and the conversion is very intransparent which

makes it difficult for international students and stakeholders to assess the actual workload of the courses.

Moreover, it is stated on page 40 of the SAR that there are significant hours allotted to self-study but they do not appear in the credit and workload calculations.

There is a mention that 'the student workload of a study programme is 1500 hours per year and there being 60 credits per year, so one credit stands for around 25 working hours. However, the 1500 hours figure needs to be bifurcated and a proper plan needs to be in place to justify and account for these hours. It is further mentioned that there are a lot of courses with low ECTS numbers and the experts doubt that these appropriately reflect the number of workload hours required for them.

The experts were further concerned about the fact that the eight-week internship in CIVIL was not awarded with credits. This was explained as part of the ministerial regulations, but nevertheless, this ultimately has an impact on the student. During the discussions with the students however, it did not seem that they were overworked. It also appeared to be a cultural conditioning because the students seemed to be ready to put in extra effort, as a fall out of having to deal with a lot of competition in the job market.

Based on the calculation of 1500 hours of study per year and the calculation thereby, the internship aspect can be easily incorporated as ECTS credit system makes the hours flexible between 25 to 30 and TIU has kept it at the minimum threshold.

The student mobility rules are based on equivalent ECTS credits and calculations thereby. But, since the conversion of the TIU credits into ECTS credits is not found to be well defined, the application of equivalence in terms of ECTS will also be affected. (SAR pages 28-29) The policy of TIU concerning Credit Transfer & Equalization is found in the attachment number (1.F) Here, again it was noted that university courses like Kurdology and Introduction to IT etc. were not deemed to be considered while considering credit equivalence with other universities. It was also not clear to the experts that all these courses were a part of the student workload and if they were not considered during international mobility, then, the students may unnecessarily end up doing extra courses at the transfer university.

In its self-assessment report, TIU elaborates that it applies the American credit system CT for its study programs. Due to the 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. This again complicates things and raises questions because there are clear rules of equivalence between the American credit system and European Credit Transfer System. Therefore, there should not be any reasons behind the disparity then.

The sample calculation shown for the Calculus 1 course for CIVIL shows that the calculation parameters are well understood but this calculation and representation is not consistent throughout the report or the appendices and for all parts or courses of the programs. These inconsistencies pertain also in the documentation provided after the audit, as, e.g., the practical work in PETR is shown with a workload of 0. In different matrices, TIU scrupulously documents the number of hours allocated to the different kinds of contact hours and study purposes for every available module, from which the number of ECTS credits is calculated. After an explanation of the table by TIU staff, the experts appreciate the documentation. However, as the experts notice, there are some irregularities in the calculations, the numbers of credit points differ between documents, especially compared to the module handbook, and in some cases the numbers do not add up correctly. These irregularities must be eliminated, and the module handbook and descriptions revised.

Another aspect of workload assessment is related to internships or Summer training. In the Kurdistan region, no credits are awarded to these parts of the mandatory curriculum. After some prior accreditation recommendations, TIU is now awarding credits but a mere addition can be seen. How this is accommodated, which credits from which of the courses does it replace and whether this then affects these other units is not clear.

In Civil Engineering, the internship is of 8 weeks in which an intern works from 8 to 5, all 5 days and prepares a weekly report. A supervisor visits the site at the end. Both the training officer and the student submits an overall report and thereby a student is graded accordingly.

In case of PETR however, the internship is only of two weeks. The differences in production and marketing of oil and the political issues between the governments of neighboring countries and the Kurdistan region have resulted in an allowance for only a two-week internship which is evidently not sufficient considering a practical oriented course. The companies are not willing to share much of their data and accept interns. So, they do not want to recruit students for internships for a long time. This surfaced from the discussions with the staff and industry representatives. It seems that to substitute this the university tries to organize training courses.

Ironically, two credits are awarded for internship in the CIVIL department and four credits for internship in the PETR department. Students also were of the opinion that perhaps one full semester can be reserved for internships and practical training because that helps a lot in the job sector. The students otherwise accept the workload as necessary and accept it as necessary to be fit for the job sector later on.

In relation to the correspondence of the contents of the curriculum and the workload, the experts were of the opinion that mastering modules like AutoCAD within three credits is

quite difficult. The experts corroborated this, in spite of the student's comments that they felt motivate to learn modules like AutoCad and also, the lectures are quite intensive and therefore a lot is covered in one lecture.

The experts asked the students if they understood how the workload is calculated. Students did not seem to have much of an idea. It was evident that the students were used to working very long hours and the impression was that the students were expected to be in the mind-set to work hard.

Criterion 1.6 Didactics and Teaching Methodology

Evidences:

- Self-assessment report
- Module handbooks of the programs under review
- Documentation of analysis of student feedbacks
- Discussions during the audit

Preliminary assessment and analysis of the experts:

TIU is making a concerted effort towards introducing variety in teaching methods by incorporating problem solving, questioning, and case study-based teaching and small group activities. The staff members professed that TIU follows State-of-the-art teaching methods and a student-centered, intensive teaching approach. Several lecturers of both departments report that their teaching focus is on engaging the students into active participation and discussions to promote their critical thinking and understanding. As an example, the university provides a premium account of the online quiz game software "Kahoot" which is used for direct knowledge transfer evaluation and student engagement during the classes. Further, many kinds of group assignments like debates, oral presentations, brainstorming and reviews are used on a regular basis. These active learning pedagogies are part of the student-centered approach aiming on the development of communication and problem-solving skills. Students are also made comfortable in asking questions at any time.

An interesting part of didactics mentioned at TIU was that the students are asked to create an innovative way in which any one unit of their choice can be taught and learnt. Also, teaching includes practical orientation through actual physical models. The university however has no post-covid digitalisation methods in teaching and minimal provision for hybrid

or blended learning. Relating to this, the experts recommend the re-introduction of suited e-learning modules for teaching learning as additional and complementing method for the knowledge transfer. They also advise to increase the number of practical teaching and self-study hours in the labs as well as an additional focus on field trips and visits of construction sites or mining fields to facilitate the transfer between theory and practical application. However, in general, the experts are highly pleased with the variety of teaching methods used in both programs which guarantees the achievement of the learning outcomes. They also generally affirm the balance of contact and self-study hours.

The staff also claimed that teaching is very dynamic, flexible and in almost every course project ideas are proposed from real life issues and actual social problems. Case studies and field trips are chosen from the Erbil region. More projects are being introduced with real life examples like recycling projects.

Teaching also includes skills required in the industry and courses are increasingly being structured on sustainability measures. Software modules like SAP are taught to help students in their future endeavors at the industry.

It was not very clear to the experts how technical modules like AutoCAD and Matlab are taught and whether students get the time and infrastructural help for their self-study and individual practice. Also a major part of practical training seems to be related to availability of internships and that in turn is dependent on the political scenario.

The University supports the rights of students with disability to have the same educational opportunities as other students. Both the CIVIL and PETR departments are located within buildings where special ramps, elevators and supportive staff are apparently available to support wherever applicable. The programs support students with disabilities in many ways to ensure that they can access and participate in the educational process effectively on the same basis as other students.

The students mentioned two instances when they got a scope to visit another university and even go to another country like BMU, Malaysia and Bauhaus, Germany. Students definitely liked the exposure, however, such opportunities looked very rare. The teaching staff also has international exposure, so, it can be fairly assessed that improvement measures are affected by positive inputs. The SAR also confirms that the teaching methods are regularly reviewed in the process of evaluations by students at the end of each semester.

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

The experts find that learning outcomes of both Bachelor's degree programs correspond to level 6 of the European Qualification Framework and the Dublin Descriptors. They 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.

However, the experts question whether the programs meet the demands of the Kurdish/Iraqi labour market. Both programs have comparatively low student numbers and only roughly 50% of the graduates work in fields related to the study programs. Moreover, it appears that also other universities offer very similar programs and it is not clear what makes the programs offered by TIU special in relation to the competing offers.

Regarding the naming of the programs, the experts consider Civil Engineering a concise and well-founded name to represent the program's content. However, they see clear shortcomings for the Petroleum and Mining Engineering program since the number of compulsory courses that cover the very specific mining discipline. Therefore, students are likely to miss critical content of the mining discipline. To justify this name, the number of courses of both major disciplines in the core curriculum must be balanced, otherwise the name of the program should be only "Petroleum Engineering" and mining could be offered as a minor.

Besides this main problem of content, the experts find that the internships included in both programs are too short to fulfil their purpose of giving an insight into the work practices of the industry. Nevertheless, the experts positively note that the level of soft skills and language appears exceptionally high among TIU students and graduates. A reason might be that group work is a frequently used learning format, as also the Bachelor's theses are written in groups of four. While the peers generally highlight the quality of the theses, they find that their length is relatively short for a group project and that it is now clear, how individual grades are deducted from the project for each student.

Moreover, the experts find that the crediting of the courses is not consistent. While the used TIU credit system is generally well defined, it takes also other factors than the students' workload (in hours of time) into account and therefore the conversion into ECTS is non-transparent. There are many courses with too low credit numbers which are likely to not represent the workload entirely. The same strikes for the internship and theses, so the curriculum needs to be reworked in this regard.

The experts find that TIU 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 however, incoming mobility is non-existent and outgoing mobility very low. Marketing efforts need to be increased and better opportunities for outgoing mobility created, such as a ways of accepting achievements obtained from other academic or work-practical institutions. The same yields also for the admission criteria into the programs.

Besides this deficiency regarding the flexibility of admission criteria according to the Lisbon convention, the expert panel considers the admission requirements and procedures for the programmes as binding and transparently published on the webpages. Clear rules to ensure that students are in principle able to successfully graduate on time.

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 students are very dedicated to their studies and show great satisfaction with their teachers and the learning process. The expert panel also confirms, the teaching methods are regularly reviewed in the process of evaluations at the end of each semester.

The peers consider this criterion to be partly fulfilled.

2. Exams: System, Concept and Organisation

Evidences:

- Self-assessment report
- Module handbooks
- Examples of exams and final theses
- Section I of the Student Handbook
- TIU Examination Rules, Evaluation Rules and Procedures
- Thesis guidelines
- Graduation Project Evaluation Rules

Preliminary assessment and analysis of the experts:

All students in both programs are subject to a multi-assessments scheme. According to TIU policies, the lecturers should use more than three different assessment methods in each course they deliver. The university makes efforts to ensure that assessment methods are directly related to the course learning outcomes, the teaching methods, and the course content.

The students at TIU are informed at the very beginning of the course about the types and weights of the assessments during the academic term. This information is clearly stated in the course syllabus that is available to students through their Student Information Systems (SIS) and this is also available all along the academic term.

There is a significant emphasis on the inclusion of formative elements in the assessment pattern of both CIVIL and PETR in order to have a continuous evaluation cycle. However, as against this claim it is also shown in the SAR (Page 55-56) that in case of CIVIL only 55 % of the courses have formative assessments and in case of PETR, 78 % of courses with summative assessments. The obvious question that arises is why all the courses do not follow this pattern.

The experts pointed out that in the evaluation scheme provided some of the evaluation data do not add up to 100 %. This was explained as a fault of the PIS system. The experts strongly suggest that this needs to be revised and corrected.

It is noteworthy that there is a continuous evaluation and feedback process in place and students can ask for explanations regarding the grading criteria and procedure. There is a provision for make-up exam: It was explained during the meeting with the staff members that if a student fails in less than 50% of the score, he/she can continue to the next semester but will have to clear the exams not passed within that semester.

The academic success of the departments is somewhat defined by the fact that the graduation rate of students within the stipulated duration of the course is very high. Thereby the corresponding extended period graduation rate and dropout rates are low.

Students have to present a thesis in the last year of bachelor program about the project done in the last two semesters of the four-year course. Topics are announced in the beginning of the study term and students choose a topic, they do a literature review and preparations for the project work. In the second semester, they do the lab experiments in groups

and prepare the final report. The experts are not clear if this is supposed to be a thesis or a project report, like any other capstone project report.

At TIU, it is commendable that providing a timely constructive feedback to the student is considered as one of the most important elements in the assessment procedure. Feedback is made available to students in many ways, like discussing the outcomes in the class time, giving the students a chance to review the checked answer sheets and showing the students the mark vs. criteria documents for the scored projects, presentations and exam papers.

When the students were asked about the exam regulations especially about re-sits, they opined that if it is a quiz, it is easily conducted again. But, if it is a mid-term, the reasons have to be convincing enough for a re-exam. If anyone fails the final exam, there is a provision for taking re-exams. If the students do not have a required amount of attendance, they cannot sit for the final exam. The students were positively convinced though that since these are practical oriented courses, the attendance strictness is justified.

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. In the make-up examinations, the same achievement grading system of final exams is applied and the score of make-up examination is accepted as final exam score. Make-up examination score is included in GPA of the semester the student has failed in the course. What was not understood by the experts was the rationale behind the fact that in the make-up examinations the highest score cannot be more than CC. Once again, the explanation stemmed from the fact that this was regulated by the ministry.

The students are provided with the student handbook from where they know regarding these examination rules. There are guidelines from the ministry regarding the final exam and the provisions for make-exam. If the student has 50% of the subjects which they have not passed, they can continue to the next semester but they have to pass the pending subjects. The maximum number of courses a student can take is 1.5 times the actual course load.

The experts also opined that five credits for graduate thesis are too few, especially after reviewing the length of the final theses submitted and therefore the amount of work that must have gone into it. The experts praise the high quality of the scientific work in these projects, which fulfils and, in part, even exceeds the requirements of a Bachelor's thesis. However, as the theses are prepared in groups of up to four people, the experts wonder how an individual grade for the work of each students can be deduced. However, thereby

they are perplexed how the students are able to finalize such an extensive and complex work in the relatively few working hours allocated to the project. The argument of the Heads of Departments during the discussions was that this course is complemented by a second five-credit module in the penultimate semester, called 'Supervised Independent Study & Research' in the Civil Engineering program and respectively 'Research Method' in Petroleum and Mining Engineering programme. These modules serve the students to prepare the thesis. They also defended this saying the thesis is part of the project which is a group project and the team work of three students, so thereby the workload and consequently the assessment is justified.

TIU also has implemented several 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.

Examination papers are checked and verified by the faculties/departments' examination committees. The lecturers do not prepare the exams themselves, but instead prepare several versions of their exams with different styles of questions and forward those to the examination committees. The committees check the questions on language, grammar, content, and whether they match the learning outcomes of the module. Subsequently, the exam committees prepare the examinations based on the lecturers' prepared questions, but without their knowledge. The lecturers receive the questionnaires of each exam with the names of the students removed in order to grade the exam unbiased. The suitability of the exams to reach the learning outcomes is regularly checked within the different quality assurance measures.

It is noteworthy that there is a continuous evaluation and feedback process in place and students can ask for explanations regarding the grading criteria and procedure. If students want to object to the grading of a final exam, they can submit a petition to the Directorate of Student Affairs. In this case, an examination committee will re-examine the exam and then the relevant faculty board will discuss the petition.

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

The experts find that sound rules and transparent examination regulations are in place, which are clearly presented online and in the student handbook. The regulations regarding re-sit exams for students who missed or failed an exam were less clear,

however, but explained by TIU to be mandated. The experts wonder about the harsh grading cap in re-sit exams (max. CC) which the experts, in contrast to the students and program coordinators, consider inappropriate.

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 number and variety of examinations in each course benefits the understanding of the content but poses a very high and continuous workload on the students, as the experts note. The workload and preparation time for experts is not critically raised by students though. Both formative and summative assessment methods are used and feedback is an important part of the exam process.

Regarding the Bachelor's thesis as final grade of the program, the experts urge to define its place and connection with the curriculum in a better way, ensure the appropriate individual contribution and its acknowledgement of each student and award a suitable number of credits.

The peers consider this criterion to be mostly fulfilled.

3. Resources

Criterion 3.1 Staff and Staff Development
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Evidences:

- Self-assessment report
- Staff handbook
- Results of staff satisfaction survey
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The department of Civil Engineering has eight full-time and five part-time staff for 73 enrolled students in 2023-24, including one professor, four asst. professors, three lecturers and five asst. lecturers. The Petroleum and Mining Engineering department has eight full-

time and three part-time staff for 96 enrolled students in 2023-24, including three professors, two asst. professors, two lecturers and four asst. lecturers.

To ensure the availability of sufficient teaching staff members, the Faculty Dean has to prepare the “Educational Year Personnel Planning” annually. After the approval by the university, the Heads of Departments are responsible to plan the personnel allocation and hire lecturers when necessary. Applicants undergo a formal procedure and hold a demonstration lesson in front of the recruitment committee. For new teaching staff, TIU provides an onboarding program at the beginning of each academic year in which the university itself, the procedures, facilities, IT services, staff requirements and incentives, as well as the university team are presented.

Staff numbers have increased for both the departments, however, interestingly, the number of part-time faculty staff has increased disproportionately compared to full time ones. The experts especially noted that the number of professors for the CIVIL remains only one and the number of professors for PETR has grown over the years. (SAR – page 61) This is questionable because the CIVIL department is not only older but also the expected intake is more there than that of PETR. The experts strongly recommend the increase in the number of full-time professors in the departments. It must be ensured that the qualification and expertise of the staff members is adequate to cover the wide range of specific topics of both study programmes. It was pointed out by the university that some of the applications of existing faculty who aspire to become professors are pending at the ministry as this is regulated and the process takes time.

The experts also pointed out that there were no provisions for the case that staff members leave or are incapable of performing their duties, as the existing staff is already the bare minimum. Staff may be just up to the mark but in practice, the teaching and learning might be largely affected in case of any personnel disruption. The experts advice some preparations in advance for that. Also plans and regulations regarding recruitment of staff need to be well formulated, documented and transparently available.

Moreover, when scanning of the documents and the descriptions of expected activities, it was found that the staff duties included bureaucratic tasks. This was construed as burdensome from the experts’ point of view. But the staff seemed quite happy with the distribution of workload during their long working hours from 8:00 to 17:00. When asked about management of labs, the staff expressed gratitude that they have lab assistants and technicians to help them. The lab work for the lecturers are included in the lecture hours. Each of the labs is supported by one lab assistant.

Additionally, the lecturers and professors are using their individually devised teaching and assessment. As explained, each lecturer is obligated to use three types of assessments and

is expected to provide regular feedback of the evaluations and updating of the results on the central leaning management system. Along with this, there is a lot of research expectations from the staff, including publications in international journals with impact factor and collaboration with other journals.

It was pointed out that the submitted workload chart has been prepared only for the accreditation purposes. The experts are unsure whether their analysis will be based on the actual scenario for the students as well as the staff.

Incentives are given in terms of monetary benefits and continuous academic development is tracked as well. Scientific promotion of the staff depends on their research output. The steps include the criteria that the staff has to teach well and publish at least two papers and provide all documents. If the research is practice-based, assistants and sometimes funding are provided. The promotion from lecturer to asst. professor requires four years teaching, passing of the QA procedures, and publishing three research papers. It is taken care that there is no plagiarism between PhD and M.Phil publications and research paper outputs. In case of full professor appointments, the research work is assessed by external experts. If the staff member has not published his/her research, they are given warnings and they are even liable to be dismissed.

Each fulltime faculty member is required to produce at least one research article to be published in an indexed journal per year. It was explained during the audit that the promotion and upgradation of academic rank of the staff depends on these publications and the expectations naturally grow with the higher ranks. Additionally, the staff members are also expected to participate in the academic events held in the faculty like workshops, seminars, conferences and so on. Apparently, this adds up to a strenuous workload for the faculty but during the discussions with the faculty members it seemed that everyone was quite happy and had no complaints about their work area demands.

The minimum number of teaching hours per week depends on the academic title the member holds. It is regulated as 14 hours for Assistant Lecturers, 12 hours for Lecturers, ten hours for Assistant Professors, and eight hours for Professors. They are also required to spare two hours of their weekly schedule for each course they teach to answer the students' questions about the lectures (office hours). The SAR also specifies that fulltime faculty usually spend 60% of their time on educational activities (lecturing, preparing lecture notes, marking and evaluating assignments and exams, etc.), 20% on research, and 20% on management duties. Part-time faculty spend 100% of their time at both the departments on education activities.

It is mentioned in the SAR that all the extra hours taught by fulltime faculty members 'voluntarily' are paid and the extra hours payment is added to the monthly salary. Apart from teaching, they are expected to join the faculty and department committees, such as the Department council, Scientific committee, Exam committee, Disciplinary committee, Faculty accreditation committee, Joint master committee, Conference organizing committee and Academic advising team. Additionally, they are also expected to join some university level committees such as the Quality assurance committee, Research development committee and others. It is beneficial that the roles and duties of the part-time staff and the teaching assistants are also well defined.

From the diversity angle, the picture did not appear very promising to the reviewers. There are no female professors or asst. professors in either department. In the year 2021-2022, in the CIVIL department had only 30% female lecturers and the PETR department had only 20% lecturers and 50 % asst. lecturers as females. International faculty staff was only one for both the departments in 2021-22. Therefore, the diversity aspect requires major improvements and the university acknowledges that and some efforts are being made to promote TIU students to go for further education abroad and return to the university as teachers and lecturers.

The qualification requirements for appointments at all levels are defined in the SAR and the appendices. The selection procedure is also described in detail and entails a set methodology. There are also set regulations governing the orientation of new staff members and promotion of existing staff. Conditions and rules governing the termination of staff are also described in the SAR.

In terms of the qualification of the teaching staff, according to ministerial regulations, a lecturer must at least hold at least a master's degree in the same subject as the bachelor's degree he/she is teaching. Further, the lecturers must have undergone a formal pedagogical training as well as have a sufficient English-speaking proficiency (documented by TOEFL or Pearson tests). Full time professors must be PhD holders and have worked for a university for at least six years during their professional career. There are more criteria documenting the minimum requirements for obtaining the different academic positions in detail.

TIU specifies that they have a Continuous Academic Development 'CAD' program whereby faculty members are encouraged to upgrade their knowledge and seek improvement in their subjects and fields of academic specialty. The staff members are expected to achieve this through participation 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 appendices provide some evidences of departmental activities in which both staff and students participate and also how many points may be awarded to the staff for which kind of activities. However, no faculty-wise details of research activities and seminars or conferences attended or papers presented are evident. During the discussions with the industry experts, the idea surfaced that there is a lot of need for developmental and industry specific research especially on the recently erupting problems faced by the industry. Research on practical issues and on the field research is being encouraged.

From the latest reports submitted, it is evident that the departmental record of research and publications has been developed. Especially the CIVIL department has a well-documented history of projects and research activities, traceable via DOI links. However, the PETR department appears not to be integrated into research projects very well, as most projects in the provided list are university-internal projects without any record of publication. In general, it appears that the publications mostly stem from the same staff members of both the departments. The experts therefore point out that all the academic staff members should be obliged and encouraged to engage in research activities. The experts find it questionable how the staff are promoted to the next hierarchical level. This is based on points awarded for research activities; however, not all staff members are into research and publication.

The teaching staff is subject to regular performance assessment according to the TIU quality assurance policy. At the end of each course, students have the opportunity to evaluate the course and teaching via a feedback survey. The results are analysed by the Director of Quality Assurance who then gives feedback to the teaching staff. In case of general dissatisfaction with a lecturer, he/she is advised take part in workshops and debates to enhance their future teaching performance. In case of three warnings because of student dissatisfaction, the contract of the teaching staff may be terminated. Heads of Departments can also use the observation of classes to assess the performance and give recommendations how to improve. Lastly, each staff member should also fill out a self-assessment form at the end of each academic year, to reflect on their own performance.

The satisfaction of the staff regarding the team, the working conditions, the potential for professional development, the available resources, and the management system at the department is analyzed annually via a survey. The Deans transmits the departmental survey results to the relevant Head of Departments who discuss the survey results with their staff and implement corrective actions.

Criterion 3.2 Funds and equipment
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Evidences:

- Self-assessment report
- Discussions during the audit
- Virtual Tour of the facilities
- List of Labs and Lab equipments

Preliminary assessment and analysis of the experts:

The TIU Board of Trustees is responsible for the financial and strategic planning of the university. The university's financial planning scheme is highly centralized around the Board of Trustees which cooperates with the Financial Affairs Office and the Vice president for Administrative and Financial Affairs. All departments are financially bound by the decisions of the President and University Council. However, the university currently considers giving the departments more autonomy regarding the financial planning and use of resources to make the resource allocation and use more efficient. Most of the university's budget 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.

It is mentioned in the SAR and was also emphasized during the audit that TIU doesn't receive any public funding from the government. Students' tuition fees are considered as the major resource of the university's income. At TIU, the Board of Trustees is responsible for the financial and strategic planning. It has been elaborated in the SAR that Tishk International University's strategies are formulated by the Strategic Planning Committee, by selecting various representatives from major stakeholders across the university and communities. Strategies are developed for five years and annually reviewed by the management and members of Strategy Planning Committee. The members of Strategic Planning committee consist of the Board of Trustees and the University Council.

The SAR also highlights that TIU, through careful financial management, utilizes this income to provide a high quality learning experience to students, do research in different scientific and social fields and also contribute to the development of the society and participates in community service. It further mentions that the margin of the income over expenditure is

used in expanding the teaching spaces, providing more research facilities, and performing major maintenance of existing buildings.

During the audit, the experts discussed at length with the competent authorities involved, how all of this can be managed from the fees of students, especially when there is not only a lack of students, thereby not fulfilling the intended cohort size but also a decrease in student enrolment over the years. The decrease in the number of students is primarily attributed to the dismal situation during and after the Covid pandemic and also to the sensitive political scenario of the region, closing down of oil companies due to changes in governmental policies of the Kurdistan region. The infrastructural projects have also suffered setbacks from the activities of radicalistic and extremist groups. Thereby the coordinators explained the changing scenario of student admissions for both the departments. The university is very hopeful of the change in the situation due to the projected increasing demand of qualified professionals from gulf countries. TIU is also trying to leverage international student mobility to improve conditions.

Over and above this, TIU also claims to provide scholarships to aid the students financially during their studies. Students with a high school average of more or equivalent to 70% get a fully funded scholarship, students with high school averages less than 70% get a 80% funded scholarship and any student with a good English language level gets 20% discount on the tuition fees. The experts had specific queries regarding the funding of these scholarships but other than some funding from the alumni, no provisions were particularly clarified.

Interestingly, the CIVIL department details show a decrease in revenue. The SAR clearly states that 97% of the revenue of both the departments is dependent on the students' tuition fees. Some additional income is shown to come from courses delivered by TIU's Continuous Education Centre, and from the Dentistry Hospital. However, TIU also mentions that this income is very meagre. Some views regarding investments from oil companies and other businesses were highlighted. Ironically, no rationale behind the investments was explained so as to convince the experts of an uninterrupted flow of funds for the degree programs under review.

There is also a plan of generating funds from within campus engineering consultation bureaux. Another justification given regarding the fund adjustments was that the students fees at TIU are pooled in together for all departments and then allocated according to necessity. Therefore, some of the departments with more number of students fill the gap for departments generating less revenue and this cross-financing keeps all departments afloat.

It was pointed out that some funds are generated by lending the labs to the industries which use them for testing purposes. During the session with the industry representatives, the experts enquired regarding this and only one of them confirmed having used the labs

once; however, for free. Thereby the experts have the impression that even if there is an idea of using the labs for generating funds that is not much in operation yet.

With regard to funding it was also confessed that if ultimately a department is not found to be economically sustainable, there can be a possibility of the closing down of a department. This proposition was of particular concern for the experts because there did not seem to be any plan as to how this will be handled with regard to the existing groups of already admitted students with partial completion of their studies.

It was noted that the Civil Engineering department was successful in securing a grant in collaboration with Bauhaus Weimer University from DAAD of an amount of 181,000 EUR. So some funds are being generated through some projects, workshops and other exchanges with international agencies.

The physical resources and infrastructure at both departments have been renovated. The infrastructure seemed visibly new. A new permanent building was completed in 2015. Most of the facilities like seminars halls, meetings rooms, videoconferencing facilities, spacious staff rooms, desktop computers and printers, car parking area, cafeteria etc. were shown and the overall infrastructural provisions were found to be impressive by the audit team.

TIU also has one central library located in the main building, with a total reading space of 300 sqm. The library is managed by the Director of the Library, who works under the aegis of the Vice-President for Administrative & Financial Affairs. The annual budget of the library is 50,000 \$ per year. Among other figures, it was notable that TIU has 3,800,000 database subscriptions for books and 205 scientific and 452 other journals. The TIU coordinators explained that, based on the reports of previous quality assurance procedures, they have increased opening hours of the library and made the data base accessible to students from outside campus. The library hours are only until 17:00 and were not extended to 20:00 because the students do not stay back and they were of the opinion that they would not be interested in using the library during those hours. Such efforts of continuous improvement and upgradation are positively noted by the assessors.

As the library is still in the process of upscaling, the experts are happy about the progress in this matter and encourage a further development of the library's resources. They find the library budget relatively low and propose a higher allocation of funds to develop the library more quickly. The technical and computer resources are highly appreciated, and it is positively highlighted that students have the option of remote access to the online resources.

For CIVIL, the labs consist of geotechnical lab, concrete lab, hydraulic lab, surveying lab, and asphalt lab. The experts found necessary evidences to support the claim that the technical requirements for almost all the tests necessary for the practical sessions are fully available at the labs. However, experts were of the opinion that the labs were not equipped well enough for conducting research activities and helping the staff in furthering their own research outputs.

For PETR, the labs available are a fluid mechanics lab, thermodynamics lab, petroleum fluid properties lab, drilling fluid lab, reservoir-engineering lab, and a mining engineering laboratory. 300,000 \$ have been spent for the improvement of the lab equipment. Effort is made to purchase lab equipment from companies which have a more reasonable price. Here, the experts had important queries about details of lab equipment, for which the university has provided additional information after the audit. The experts regard the extra documentation as to unspecific and therefore doubts remain about the suitability and adequate use of the labs for teaching and research purposes.

The labs have been renovated six months ago. The instruments and labs are used twice a week. It could be clearly seen that the staff at the labs explained the equipment well. But some of the labs looked very new and unused, other than in the thermodynamics and petroleum testing lab and CIVIL's structural lab. Some of the experiments of the Civil Engineering department are also conducted directly in the field. Some labs are used only for 2-3 hours per week. Mostly, the labs are not shared by other departments. Sharing is done only in case of students choosing them as an elective. First aid boxes are present. However, no security manuals or security measures have been displayed. Students are instructed on the safety measures during the introductory lectures. In the Personal Information System (PIS), there exists an accident reporting system which can be used to document any incident and can also be shared with the health department.

There was a small concern raised with regard to the facilities by the staff. They pointed out that transportation and conveyance facilities within the university can be improved for those preferring university transportation.

Overall, as there is little transparent information about the funding and financial situation of the university, the experts stress the need for a reliable and balanced financial five-year plan to ensure the operations of both study programs for at least the duration of one study cohort. This plan must be fully transparent, sustainable and equipped to handle contingencies which should be achieved by diversifying the university's financial resources. One important measure could be an increase in the efforts to acquire external (research) funding. On the positive side, the experts support TIU's plans to give more financial autonomy to

the departments which would, in their understanding, highly benefit the individual research opportunities.

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

Regarding the quantity and quality of staff, the experts note that both are on the lower end of the capacity scale. The number of full professors is very low, especially in the PETR program, and should be necessarily increased to cover the wide range of specific topics that the programs contain. Also, the staff number should be increased to be able to handle contingencies without endangering the study programmes.

Moreover, the continuous development of the academic staff, both in academia and other skills, should be supported. While the CIVIL department is integrated reasonably well into research structures, the (published) research output of the PETR department is very low, projects are very short, and not documented well. Also, it appears that not all but only very few academic staff members actively engage into research which can be attributed mostly to the very high teaching load and time-consuming administrative and committee work. The measures and instruments of staff development should be made publicly.

The experts further notice the high number of guest lecturers from the industry, who oftentimes are also alumni of TIU. While it is generally regarded as positive to dispose of close ties to the industry, the number of guest lecturers and the management of their teaching duties appear not well defined. Also, guest lecturers should be used only in well-defined circumstances for specific courses, but cannot compensate for the shortage of the full-time academic staff.

Regarding the financial situation of TIU/ the study programmes under review, the experts are alarmed that both departments are in high shortage of income from tuition fees, the main sources of income of TIU, because of the student numbers which are below the aspired/ calculated capacity. These shortages are outbalanced with funds from different programs with higher student numbers, as TIU officials explain, and sponsors are there to cover budget gaps. However, the funding measures are not transparent and the financial situation needs to be more sustainable and equipped to handle contingencies. The experts request to design and activate a five-year financial plan and diversify the departments' income sources.

In terms of facilities, both departments are located in a recently inaugurated modern building, which disposes of sufficient and well-equipped lecture halls, workspaces, and teaching laboratories. The availability and accessibility of IT and library resources is positively stressed. However, the experts notice that the equipment of the labs is rather basic and

cannot fulfil more than fundamental teaching purposes. For research, there should be more advanced and specialized equipment. Also, both the equipment and the labs themselves appear comparatively unused. The experts recommend to use the available capacities in a better way, e.g., to create opportunities for more practical exercises.

The peers consider this criterion to be mostly fulfilled.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidences:

- Self-assessment report
- Homepage of both study programs
- Module handbooks of both study program
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The university undoubtedly follows an elaborate documentation procedure and has produced documentary evidences in support of most of their reporting in the SAR. TIU has developed a Personal Information System (PIS), which can be accessed by students, staff and administrators. The module descriptions of the courses are uploaded in the PIS by the staff responsible for the particular course within the first two weeks of the beginning of the academic session. During the audit interactions, the students seemed well versed with the PIS system. That it is a functioning and much used system was evident to the audit team as some of the answers for different questions were answered by logging in to the PIS. Therefore, the experts were happy with the transparency in documentation and records. Overall, the website and documentation of the university appear accessible to all stakeholders.

The experts had expressed particular interest regarding Alumni surveys and an analysis of such surveys have been produced. These records are however an analysis of the surveys and not the actual questionnaires. Further, it is not clear when and how the surveys are conducted and how the feedback is incorporated into changes and policies.

TIU also informs that the documentation system is maintained at various levels or in different manners. For documents which are computer based, they are available as read-only

documents, these also include standard operating procedures, work instructions and method statements and are available in electronic format. For documents or records that need authorized distribution, they are mostly in hard copy. Documented information is controlled to ensure that it is available and suitable for use whenever required and that it is adequately protected against loss of confidentiality, improper use, or loss of integrity.

It appears that the content provided in the module handbook and the curricular overview shows certain differences which is highly confusing. A reason might be that the documents stem from different semesters and some of them are outdated or incomplete. These documents must necessarily be updated and harmonized, and the module descriptions substantiated to ensure the clarity and reliability of the information given to students and stakeholders. This is important also to justify the level and title of the programs.

Additionally, the kinds of documents are also inconsistent between the versions provided to the experts and the information available on the departments' websites. In the syllabus, it is noted that the percentagewise weighting calculation of the different examination methods does oftentimes not add up to 100. Moreover, the information on the workload and the respectively awarded credit points and their conversion to ECTS is inconsistent and unclear.

Criterion 4.2 Diploma and Diploma Supplement

Evidences:

- 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 experts:

Upon completion of the study program, TIU issues a Diploma (degree certificate) shortly after graduation together with a Diploma Supplement. In addition, a Transcript of Records is issued with the Diploma Certificate. The recently developed Diploma Supplement complies with the 'Principles and Guidelines in the Diploma Supplement Explanatory Note' and

is issued by the EHEA Ministerial Conference- Paris 2018/Rome 2020. All the documents are provided entirely in English.

The experts generally approve of the grade points and letter grade system and the presentation of the Diploma Supplement in terms of TIU credits. The provided information allows to assess the student qualification profile and performance based on the provided information about the grading criteria and the Iraqi education system. The transcript contains a list of the completed modules and the respective marks. However, the point that obviously arises again as an extension of the credit equivalence with ECTS credits. The Diploma Supplement does not include any conversion scale or equivalence guidelines, which may be detrimental in case of student mobility especially for students looking forward to pursuing higher studies abroad. It is further suggested that a more detailed statistical information e.g. on the average performance of the study cohort is made to better assess the student performance also in relative terms, thereby also helping with student mobility and employment prospects.

Criterion 4.3 Relevant Rules

Evidences:

- Self-assessment report
- TIU Data Protection Policies for Students and Employees
- Student handbook
- Staff handbook
- TIU website <https://tiu.edu.iq/>
- Ministerial Rules Documents
- Discussion during the audit

Preliminary assessment and analysis of the experts:

There are extensive rules and regulations that the university has to follow and it governs several aspects of the programs, sometimes even to the minutest level as to the deadlines within the application process. Therefore, it was imminent that the experts asked for detailed documentation of the ministerial rules and regulations.

There are detailed rules regarding discipline and conduct to be followed by the students and these are detailed in the student handbook. Other rules regarding evaluation of internships, the graduation project and assessment parameters are also part of the student handbook and provided with the SAR in several attachments and appendices.

Complementarily, there is a staff handbook which describes pertinent rules and regulations directed to the staff members at TIU. 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 rules and regulations pertaining to topics such as ethics, equal opportunity policies and the quality management systems in place. Lecturers can inform themselves regarding the guidelines for establishing their courses and writing the syllabus according to the university's regulations. Both documents are available on the TIU website.

According to the regulations issued by the Kurdistan Ministry of Higher Education and Scientific Research, the number of teaching hours per week depends on the staff's academic title. On the necessary insistence of the expert committee, the university has produced a detailed list of ministerial rules and regulations that govern the annual and even sessional functioning of the university.

Furthermore, there are data protection policies both for students and staff which inform about relevant issues regarding the use and processing of data. All documents are approved, reviewed, updated and controlled in accordance with the 'Control of Documented Information Procedures'. The efficiency of the transparency of these procedures is ensured by applying the ISO 21001:2018 standard which TIU is certified to.

As both students and lecturers confirm their awareness of these rules, the expert panel considers the rights and duties of both the higher education institution and students to be transparently applied. All the regulations are clearly defined by guidelines and statutes.

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

Also with respect to the updated curriculum and module descriptions, the experts note that some inconsistencies remain between the documents, e.g., regarding the credit numbers, assessment methods and weights, as well as course descriptions. These need to be harmonized.

Otherwise, the experts consider this criterion to be fulfilled.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-assessment report
- TIU website <https://tiu.edu.iq/>
- TIU Plagiarism Policy
- TIU Quality Assurance Policy
- Questionnaire and the results of the Student Feedback Survey
- Results of Staff Satisfaction Survey
- Analysis of Alumni Survey
- Discussion during the audit

Preliminary assessment and analysis of the experts:

During the audit, the students were asked about the procedure of evaluation of courses and their involvement in it. They informed that after each semester, they have to access the Student Information System, where they can get their results. They cannot access their results without answering the questionnaire (approx. ten questions) for each course. The experts wonder about this fact, as the provided sample survey results contained only 23 responses for CIVIL and 17 for PETR. The PETR students particularly appreciated the comments section which they found very helpful. Students do not get direct verbal feedback on their comments, but they have seen certain actions being taken according to their feedback. There are academic advisory hours weekly for issues that need to be solved at short notice.

Students are very much a part of the university decision procedures as their representatives are invited to participate in the University Board of Trustees and the University Council once per academic year, in the Faculty Council, once per a month and the Quality Committee, once per an academic term.

At each academic year, the Survey Office at TIU prepares a questionnaire that measures the staff's satisfaction about different aspects of the entire academic process. The survey

questionnaire is distributed to all the full time academic and administrative staff. As stated in the SAR, the results of the survey are presented to the University Council members in the Annual Management Review meeting. Then, the Deans transmit the departmental survey results to the relevant Head of Departments who discuss the results with their staff and come up with corrective actions and decisions.

According to the survey reports attached for both departments, dissatisfaction is notable in common areas like staff salary and lack of adequate research facilities surface. It is not clear to the experts as to what remedial measures have been taken in that regard and what the general adjustment process is in case of dissatisfactions. It is important to mention in this context that the experts also opined that the laboratories did not seem equipped enough for research activities.

The evidences of the alumni survey produced in the form of an analysis show an overall satisfaction rate of students of more than 60%. According to the survey. The graduates of TIU seem to be well distributed into different sectors of employment but a significant number of around 40% of the students is found to be in their family business, self-employed or free-lancing. Considering the disciplines under consideration, this can logically be related to the fact that around 40% of the alumni opined that they work in areas other than their field of study. During the procedural discussions with the alumni and students, it was discovered that there is a shortage of employment facilities in the two faculties at least temporarily, but the stakeholders seemed very positive that there is potential for a change in the near future. According to this survey, it was found that a large number of students opt for higher education as well. It is important to note in this regard that the surveys produced for both departments are from minimal number of participants like 17 and 23. It is also not clear as to whether this analytical or summative representation of the survey pertains to any particular semester or is generally taken.

In the SAR, TIU informs that program evaluation is based on an evaluation made by external subject experts, who are in no way related to the university. There is also an ISO Office Pre-Graduation Survey conducted with the help of the 4th/5th grade students for information about the students' satisfaction with their experience of education at Tishk International. Another way of assessing the quality of a program is by monitoring the success and drop out rates of students. The university states that students are informed about the average results of their feedback for all the courses in the academic term on the university website and social media platforms. Additionally, the student representatives are invited to the 'Quality Team' meetings twice a year where they are informed about this average formally.

During the discussion sessions, the experts ask about the satisfaction with the university's quality management and the reactions to critically raised issues. Both students and staff members confirm their overall satisfaction with the processes. Students state that they

would recommend the programmes. The expert panel has a very positive impression of the quality assurance system for the programs under review. They find that 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 presented and communicated to students and stakeholders in different formats, as well as incorporated into the continuous development of the study programs.

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

The experts note the elaborate internal and external QA system of TIU and its strong ties to graduates. However, they require to document the feedback loop between students, lecturers and the administration in a better and more transparent way.

The experts consider this criterion mostly fulfilled.

D Additional Documents

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

Additional and updated documents were handed in by TIU shortly after the audit.

E Comment of the Higher Education Institution – omitted

In order to excel the procedure, the institution renounced the step of commenting the expert report.

F Summary: Expert recommendations (27.05.2024)

Taking into account the additional information and the comments, the peers summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Civil Engineering	With requirements for one year	30.09.2029	EUR-ACE®	30.09.2029
Ba Petroleum and Mining Engineering	With requirements for one year	30.09.2029	EUR-ACE®	30.09.2029

Requirements

For all degree Programs

- A 1. (ASIIN 1.3) Parts of the curricular structure like bachelor thesis, internship and summer training, must well defined in terms of duration and occurrence in the four-year study plan.
- A 2. (ASIIN 1.4) If only qualifications from high schools and vocational training institutions of Iraq are considered as admission criteria, this does not conform to student mobility conventions according to the Lisbon convention. The university needs to expand their intake requirements and also add compensating regulations.
- A 3. (ASIIN 1.5) Several parts of the curriculum like internships, summer training, and project report must to be re-calculated in terms of justifiable number of hours to correctly reflect the students' workload in the number of awarded credits.
- A 4. (ASIIN 2) The exam load and structure must be reviewed to reflect the international standard of student assessment and reduce the high number of intermediate examinations per course. This could be done, e.g., by introducing cross-module and/ or competence-orientated examinations.

- A 5. (ASIIN 3.1) Ensure that the qualification and number of teaching staff is adequate for both the programs. The staff numbers, especially on the professor level, are too low.
- A 6. (ASIIN 3.1) Records of staff development activities and promotion criteria are to be documented and transparently published to the staff themselves and external stakeholders.
- A 7. (ASIIN 3.2) Funding measures are not transparent, need to be more sustainable and equipped to handle contingencies like lower income from tuition fees due to low student numbers. A transparent five-year financial plan needs to be in place.
- A 8. (ASIIN 4.1) The module descriptions must be improved in terms of alignment of course objectives and learning outcomes, course content, capstone project, and elective offerings. Inconsistencies between the different handbooks must be harmonized. The weighting of grading components must add up to 100%.
- A 9. (ASIIN 4.2) The ministerial rules, which form a very important and highly regulative role in the university affairs, must be documented and made publicly available.
- A 10. (ASIIN 5) Evidences for some aspects of quality assurance must be provided – the evaluation feedback loop must be documented and disclosed. Students have to be included in the quality assessment scheme and receive feedback on the processing or implementation of their expressed concerns.

For the Bachelor’s degree Program in Petroleum and Mining Engineering

- A 11. (ASIIN 1.3) The number of compulsory, specific mining courses in the curriculum must be increased to result in a balanced structure of petroleum engineering and mining engineering components. It must be clearly stated which courses belong to basic and which to specific curriculum components.
- A 12. (ASIIN 1.5) Prolong the duration of the internship to ensure that the module fulfils its objective of providing a deep insight into the practical work in the industry.

Recommendations

For all degree Programs

- E 1. (ASIIN 1.1) It is recommended to re-evaluate the programme concepts with different stakeholder groups to create the program in a way that more graduates actually take jobs in their study-related fields.

- E 2. (ASIIN 1.3) It is highly recommended to review the modularization of the curriculum to reduce the number of small-scale modules with low credit numbers and introduce more comprehensive modules with accordingly elaborate content. This relates to A 4 in terms of the examination structure and workload per module.

- E 3. (ASIIN 1.6) It is recommended to introduce e-learning modules supportive learning element.

- E 4. (ASIIN 4.1) It is recommended to review the module descriptions in terms of course contents and relevant literature.

G Comment of the Technical Committees (10.06.2024)

Technical Committee 01 – Mechanical Engineering/Process Engineering (07.06.2024)

The Technical Committee discusses the procedure intensively.

With regard to the admission requirements, it points out that the reference to the Lisbon Convention does not appear to make sense, as it has not been signed by Iraq.

Regarding the qualification of the teaching staff and the not transparent funding situation the Technical Committee discussed whether these points have to be clarified before an accreditation in order to ensure the quality and the sustainability of the study programmes. However, at the end the Committee follows the assessment of the auditors to recommend an accreditation.

The Technical Committee is surprised that the university is required to publish ministerial regulations. However, it can understand that the auditors are striving for better transparency for prospective students, but the committee would also have agreed with a recommendation.

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
Ba Petroleum and Mining Engineering	With requirements for one year	30.09.2029	EUR-ACE®	30.09.2029

Requirements

- A 1. (ASIIN 1.3) Parts of the curricular structure like bachelor thesis, internship and summer training, must well defined in terms of duration and occurrence in the four-year study plan.

- A 2. (ASIIN 1.4) If only qualifications from high schools and vocational training institutions of Iraq are considered as admission criteria, this does not conform to student mobility conventions. The university needs to expand their intake requirements and also add compensating regulations.
- A 3. (ASIIN 1.5) Several parts of the curriculum like internships, summer training, and project report must to be re-calculated in terms of justifiable number of hours to correctly reflect the students' workload in the number of awarded credits.
- A 4. (ASIIN 2) The exam load and structure must be reviewed to reflect the international standard of student assessment and reduce the high number of intermediate examinations per course. This could be done, e.g., by introducing cross-module and/ or competence-orientated examinations.
- A 5. (ASIIN 3.1) Ensure that the qualification and number of teaching staff is adequate for both the programs. The staff numbers, especially on the professor level, are too low.
- A 6. (ASIIN 3.1) Records of staff development activities and promotion criteria are to be documented and transparently published to the staff themselves and external stakeholders.
- A 7. (ASIIN 3.2) Funding measures are not transparent, need to be more sustainable and equipped to handle contingencies like lower income from tuition fees due to low student numbers. A transparent five-year financial plan needs to be in place.
- A 8. (ASIIN 4.1) The module descriptions must be improved in terms of alignment of course objectives and learning outcomes, course content, capstone project, and elective offerings. Inconsistencies between the different handbooks must be harmonized. The weighting of grading components must add up to 100%.
- A 9. (ASIIN 4.2) The ministerial rules, which form a very important and highly regulative role in the university affairs, must be documented and made publicly available.
- A 10. (ASIIN 5) Evidences for some aspects of quality assurance must be provided – the evaluation feedback loop must be documented and disclosed. Students have to be included in the quality assessment scheme and receive feedback on the processing or implementation of their expressed concerns.

- A 11. (ASIIN 1.3) The number of compulsory, specific mining courses in the curriculum must be increased to result in a balanced structure of petroleum engineering and mining engineering components. It must be clearly stated which courses belong to basic and which to specific curriculum components.
- A 12. (ASIIN 1.5) Prolong the duration of the internship to ensure that the module fulfils its objective of providing a deep insight into the practical work in the industry.

Recommendations

- E 1. (ASIIN 1.1) It is recommended to re-evaluate the programme concepts with different stakeholder groups to create the program in a way that more graduates actually take jobs in their study-related fields.
- E 2. (ASIIN 1.3) It is highly recommended to review the modularization of the curriculum to reduce the number of small-scale modules with low credit numbers and introduce more comprehensive modules with accordingly elaborate content. This relates to A 4 in terms of the examination structure and workload per module.
- E 3. (ASIIN 1.6) It is recommended to introduce e-learning modules supportive learning element.
- E 4. (ASIIN 4.1) It is recommended to review the module descriptions in terms of course contents and relevant literature.

Technical Committee 03 – Civil Engineering, Geodesy and Architecture (10.06.2024)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the main topics of the procedure and points out that ASIIN does not have a criteria basis that states that ministerial regulations must be published on the websites of the universities. The TC therefore suggests to cancel requirement A8. Apart from that, the TC follows the assessment of the experts without any changes.

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

The Technical Committee deems that the intended learning outcomes of the degree programme do comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture.

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

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Civil Engineering	With requirements for one year	30.09.2029	EUR-ACE®	30.09.2029

Requirements

- A 1. (ASIIN 1.3) Parts of the curricular structure like bachelor thesis, internship and summer training, must well defined in terms of duration and occurrence in the four-year study plan.
- A 2. (ASIIN 1.4) If only qualifications from high schools and vocational training institutions of Iraq are considered as admission criteria, this does not conform to student mobility conventions according to the Lisbon convention. The university needs to expand their intake requirements and also add compensating regulations.

- A 3. (ASIIN 1.5) Several parts of the curriculum like internships, summer training, and project report must to be re-calculated in terms of justifiable number of hours to correctly reflect the students' workload in the number of awarded credits.
- A 4. (ASIIN 2) The exam load and structure must be reviewed to reflect the international standard of student assessment and reduce the high number of intermediate examinations per course. This could be done, e.g., by introducing cross-module and/ or competence-orientated examinations.
- A 5. (ASIIN 3.1) Ensure that the qualification and number of teaching staff is adequate for both the programs. The staff numbers, especially on the professor level, are too low.
- A 6. (ASIIN 3.1) Records of staff development activities and promotion criteria are to be documented and transparently published to the staff themselves and external stakeholders.
- A 7. (ASIIN 3.2) Funding measures are not transparent, need to be more sustainable and equipped to handle contingencies like lower income from tuition fees due to low student numbers. A transparent five-year financial plan needs to be in place.
- A 8. (ASIIN 4.1) The module descriptions must be improved in terms of alignment of course objectives and learning outcomes, course content, capstone project, and elective offerings. Inconsistencies between the different handbooks must be harmonized. The weighting of grading components must add up to 100%.
- A 9. (ASIIN 5) Evidences for some aspects of quality assurance must be provided – the evaluation feedback loop must be documented and disclosed. Students have to be included in the quality assessment scheme and receive feedback on the processing or implementation of their expressed concerns.

Recommendations

- E 1. (ASIIN 1.1) It is recommended to re-evaluate the programme concepts with different stakeholder groups to create the program in a way that more graduates actually take jobs in their study-related fields.
- E 2. (ASIIN 1.3) It is highly recommended to review the modularization of the curriculum to reduce the number of small-scale modules with low credit numbers and introduce

more comprehensive modules with accordingly elaborate content. This relates to A 4 in terms of the examination structure and workload per module.

- E 3. (ASIIN 1.6) It is recommended to introduce e-learning modules supportive learning element.
- E 4. (ASIIN 4.1) It is recommended to review the module descriptions in terms of course contents and relevant literature.

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Civil Engineering	With requirements for one year	30.09.2029	EUR-ACE®	30.09.2029

Technical Committee 11 – Geosciences (07.06.2024)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and follows the opinion of the experts.

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

The Technical Committee deems that the intended learning outcomes of the degree Programs comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 11 – Geosciences.

The Technical Committee 11 – Geosciences recommends the award of the seals as follows:

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Petroleum and Mining Engineering	With requirements for one year	30.09.2029	EUR-ACE®	30.09.2029

H Decision of the Accreditation Commission (28.06.2024)

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

The Accreditation Commission discusses the procedures and follows the changes proposed by the Technical committees.

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

The Accreditation Commission deems that the intended learning outcomes of the degree Programs comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committees 01, 03, 11.

The Accreditation Commission decides to award the following seals:

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation*
Ba Civil Engineering	With requirements for one year	30.09.2029	EUR-ACE®	30.09.2029
Ba Petroleum and Mining Engineering	With requirements for one year	30.09.2029	EUR-ACE®	30.09.2029

*Subject to the approval of the ENAEE Administrative Council

Requirements

For all degree Programs

- A 1. (ASIIN 1.3) Parts of the curricular structure like bachelor thesis, internship and summer training, must well defined in terms of duration and occurrence in the four-year study plan.
- A 2. (ASIIN 1.4) If only qualifications from high schools and vocational training institutions of Iraq are considered as admission criteria, this does not conform to student mobility conventions. The university needs to expand their intake requirements and also add compensating regulations.

- A 3. (ASIIN 1.5) Several parts of the curriculum like internships, summer training, and project report must be re-calculated in terms of justifiable number of hours to correctly reflect the students' workload in the number of awarded credits.
- A 4. (ASIIN 2) The exam load and structure must be reviewed to reflect the international standard of student assessment and reduce the high number of intermediate examinations per course. This could be done, e.g., by introducing cross-module and/ or competence-orientated examinations.
- A 5. (ASIIN 3.1) Ensure that the qualification and number of teaching staff is adequate for both the programs. The staff numbers, especially on the professor level, are too low.
- A 6. (ASIIN 3.1) Records of staff development activities and promotion criteria are to be documented and transparently published to the staff themselves and external stakeholders.
- A 7. (ASIIN 3.2) Funding measures are not transparent, need to be more sustainable and equipped to handle contingencies like lower income from tuition fees due to low student numbers. A transparent five-year financial plan needs to be in place.
- A 8. (ASIIN 4.1) The module descriptions must be improved in terms of alignment of course objectives and learning outcomes, course content, capstone project, and elective offerings. Inconsistencies between the different handbooks must be harmonized. The weighting of grading components must add up to 100%.
- A 9. (ASIIN 5) Evidences for some aspects of quality assurance must be provided – the evaluation feedback loop must be documented and disclosed. Students have to be included in the quality assessment scheme and receive feedback on the processing or implementation of their expressed concerns.

For the Bachelor's degree Program in Petroleum and Mining Engineering

- A 10. (ASIIN 1.3) The number of compulsory, specific mining courses in the curriculum must be increased to result in a balanced structure of petroleum engineering and mining engineering components. It must be clearly stated which courses belong to basic and which to specific curriculum components.
- A 11. (ASIIN 1.5) Prolong the duration of the internship to ensure that the module fulfils its objective of providing a deep insight into the practical work in the industry.

Recommendations

For all degree Programs

- E 1. (ASIIN 1.1) It is recommended to re-evaluate the programme concepts with different stakeholder groups to create the program in a way that more graduates actually take jobs in their study-related fields.
- E 2. (ASIIN 1.3) It is highly recommended to review the modularization of the curriculum to reduce the number of small-scale modules with low credit numbers and introduce more comprehensive modules with accordingly elaborate content. This relates to A 4 in terms of the examination structure and workload per module.
- E 3. (ASIIN 1.6) It is recommended to introduce e-learning modules supportive learning element.
- E 4. (ASIIN 4.1) It is recommended to review the module descriptions in terms of course contents and relevant literature.

Appendix: Program Learning Outcomes and Curricula


According to the self-assessment report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree Program Civil Engineering:

PLO1	Apply principles of mathematics, science, and engineering
PLO2	Design and conduct experiments, as well as analyze and interpret data accurately.
PLO3	Design an engineering system, component, or process to meet desired industrial needs.
PLO4	Identify, formulate and solve complex engineering problems
PLO5	Apply, in design and construction, the most modern design codes, standards and specifications such as; AISC, ACI, ASCE 7, IBC, etc.
PLO6	Use the techniques, skills, and modern engineering tools, such as surveying instruments, and designing software that are necessary for engineering practices.

PLO7	Apply knowledge and skills in construction project management and recognition of international standards and methodologies
PLO8	Manage to work with multi-disciplinary teams and communicate effectively.
PLO9	Identify the moral values that ought to guide the Civil Engineering profession and resolve the moral issues in the profession.
PLO10	Apply the principles of sustainable development in their professional duties which go in line with the paramount safety, health and welfare of the public.
PLO11	Analyze the impact of engineering solutions in a global and social context
PLO12	Identify the need and have the ability to engage in lifelong learning and knowledge of contemporary issues.

The following **curriculum** is presented:

0 Appendix: Program Learning Outcomes and Curricula

					Curriculum Table					Doc Num	TIU.FA.FR.		
					Unit: Civil Engineering Department					Rev/ Issue	3-21/09/2021		
First Grade													
Fall Term/First Semester					Spring Term/Second Semester								
Code	Course Name	Theo	Practic	Cred	EC	Code	Course Name	Theo	Practi	Cred	ECTS		
IT103	Introduction to IT	1	2	2	3	CE122	Eng. Mechanics	4	0	4	5		
MAT101	Calculus 1	4	0	4	5	MATH102	Calculus 2	4	0	4	5		
PHYS10	General Physics	2	2	3	5	CHE101	General Chemistry	2	2	3	4		
CE113	Introduction to Civil Engineering	2	0	2	5	CE111	Engineering Drawing	1	4	3	4		
DBT101	Academic Debate and Critical Thinking 1	2	0	2	3	GEN122	Interpersonal Dynamics and Character Development	2	0	2	3		
ELT103	Advanced English	3	0	3	4	ELT104	Technical English	3	0	3	4		
KUR10	Kurdology 1	2	0	2	2	KUR106	Kurdology 2	2	0	2	2		
	Turkish II/English Foundation	2	0	2	3		Non-Technical Elective II/Advanced English	2	0	2	3		
Total					20	30	Total					23	30
Second Grade													
Fall Term/Third Semester					Spring Term/Fourth Semester								
Code	Course Name	Theo	Practic	Cred	EC	Code	Course Name	Theo	Practi	Cred	ECTS		
CE 211	Mechanics of Materials 1	2	2	3	5	CE 212	Mechanics of Materials 2	2	2	3	5		
CE213	Fluid Mechanics	3	2	4	6	CE 229	Concrete Technology	2	2	3	5		
CE 217	Differential Equation	3	0	3	5	CE 218	Engineering Mathematics	3	0	3	4		
CE 215	Surveying 1	2	2	3	5	CE 216	Surveying 2	2	2	3	5		
CE 227	Construction Materials	2	2	3	5		Building Construction Techniques and Equipment	4	0	4	5		
	Non-Technical Elective I	2	0	2	4	CE 224	Geology for Civil Engineering	2	0	2	3		
							Non-Technical Elective 2	2	0	2	3		
Total					18	30	Total					20	30
Third Grade													
Fall Term/Fifth Semester					Spring Term/Sixth Semester								
Code	Course Name	Theo	Practic	Cred	EC	Code	Course Name	Theo	Practi	Cred	ECTS		
CE 311	Structural Analysis 1	4	0	4	5	CE 320	Structural Analysis 2	4	0	4	5		
CE 317	Soil Mechanics 1	2	2	3	5	CE 322	Soil Mechanics 2	2	2	3	5		
CE 313	Reinforced Concrete 1	4	0	4	5	CE 326	Reinforced Concrete 2	4	0	4	5		
CE 324	Construction Management	3	0	3	4	CE 360	Sustainability for Civil Engineering	3	0	3	5		
CE 315	Engineering Hydraulics	2	2	3	4	CE 328	Water Supply Engineering	3	0	3	5		
CE 316	Summer Training	0	2	1	2	CC32N	Summer Training			0			
	Technical Elective			3	5		Technical Elective			3	5		
Total					21	30	Total					20	30
Fourth Grade													
Fall Term/Seventh Semester					Spring Term/Eighth Semester								
Code	Course Name	Theo	Practic	Cred	EC	Code	Course Name	Theo	Practi	Cred	ECTS		
CE 411	Structural Concrete Design 1	4	0	4	5	CE420	Structural Steel Design	4	0	4	5		
CE 415	Foundation Engineering	3	0	3	5	CE422	Sewage Systems Engineering	2	2	3	5		
CE 413	Estimation and Specifications	3	0	3	5	CE426	Highway Engineering	2	2	3	5		
CE 417	Supervised Independent Study & Research	1	4	3	5	CE424	Graduation Project	1	4	3	5		
	Technical Elective			3	5		Technical Elective			3	5		
	Technical Elective			3	5		Technical Elective			3	5		
Total					19	30	Total					19	30
Electives													
Technical Electives					Nontechnical Electives								
Code	Course Name	Theo	Practic	Cred	EC	Code	Course Name	Theo	Practi	Cred	ECTS		
CE330	Legal Aspects in Construction Works	3	0	3	5	CE225	Computer Programming	1	2	2	3		
CE429	Estimation and Specifications 2	3	0	3	5	CE221	Computer Aided Design	2	0	2	3		
CE340	Construction Site techniques	3	0	3	5	CE222	Computer Application II	2	0	2	3		
CE427	Construction Planning	3	0	3	5	GEN201	Ecology	2	0	2	3		
CE438	Foundation Engineering 2	3	0	3	5	BUS 221	Marketing I	2	0	2	3		
CE319	Engineering Economy	3	0	3	5	TUR 121	Turkish I	2	0	2	3		
CE386	Structural Drawing	3	0	3	5	TUR 122	Turkish II	2	0	2	3		
CE412	Structural Concrete Design 2	3	0	3	5	TUR223	Turkish III	2	0	2	3		
CE428	Concrete Bridges	3	0	3	5	CE228	Statistics and Big Data	2	0	2	3		
CE432	Prestressed Concrete	3	0	3	5	CE226	Computer Application I	2	0	2	3		
CE433	Matrix Structural Analysis	3	0	3	5								
CE435	Introduction to Earthquake Resistance	3	0	3	5								
CE430	Design of Hydraulic Structures	3	0	3	5								
CE318	Water Resources Engineering	3	0	3	5								
CE327	Ground Water Engineering	3	0	3	5								
CE 337	Blueprint reading	3	0	3	5								
CE331	Environmental Engineering	3	0	3	5								
CE321	Architecture for Civil Engineering	3	0	3	5								
CE418	Traffic Engineering	3	0	3	5								
CE434	Railway Engineering	3	0	3	5								
CE431	Airport Engineering	3	0	3	5								
CE 450	Ethics in Engineering & Construction	3	0	3	5								
CE 439	Computer Aided Design	2	2	3	5								
CE 438	Pile Foundations	3	0	3	5								
CE 342	Remote sensing and GIS Application	3	0	3	5								
CE 460	Urban Storm water management	3	0	3	5								
CE 462	Building Information Modelling (BIM)	2	2	3	5								


0 Appendix: Program Learning Outcomes and Curricula

For the Bachelor's degree Program Petroleum and Mining Engineering, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved:

PLO1	apply the principles of engineering, science, and mathematics to identify, formulate, and solve Petroleum and Mining Engineering problems.
PLO2	apply designs to produce solutions that meet specified Petroleum and Mining project needs with consideration of health, safety, and environment.
PLO3	make judgments in Petroleum and Mining Engineering situations by considering the global, economic, and environmental impacts.
PLO4	function effectively and demonstrate professionalism in both individual and group settings by creating a collaborative environment.
PLO5	develop and conduct appropriate Petroleum and Mining experiments and researches using qualitative and quantitative methods.
PLO6	analyze and interpret data of Petroleum and Mining experimentation correctly.
PLO7	make logic and reasonable engineering estimation of data to design a solution for specific Petroleum and Mining Engineering projects.
PLO8	apply advanced knowledge and modern engineering tools as needed
PLO9	design systems, components or processes to meet the needs and demands of the profession of Petroleum and Mining Engineering projects.
PLO10	apply the Petroleum and Mining Engineering concepts to other energy sectors such Geothermal.

The following **curriculum** is presented:

0 Appendix: Program Learning Outcomes and Curricula

	New Curriculum Table	Doc Num	TIU.FA.FR.
	Unit: Petroleum and Mining Engineering Department	Rev/Issue Date	3/25.6.2023

First Grade

Recommended for Fall 2023-2024					Spring Term/Second Semester								
Fall Term/First Semester					Spring Term/Second Semester								
Code	Course Name	Theory	Practice	Credit	ECTS	Code	Course Name	Theory	Practice	Credit	ECTS		
PTR 111	Engineering Drawing	2	2	3	5	CHE 101	General Chemistry	2	2	3	4		
PHYS 101	General Physics	2	2	3	5	PTR 126	Computer Application	1	2	2	4		
MATH 101	Calculus I	4	0	4	5	MATH 102	Calculus-II	4	0	4	5		
IT 103	Introduction to Information Technology	1	2	2	3	PTR 130	General Geology	2	2	3	5		
DBT 101	Academic Debate and Critical Thinking	2	0	2	3	GEN 122	Interpersonal Dynamics and Character Building	2	0	2	3		
ELT 103	Advanced English	3	0	3	4	ELT 104	Technical English	3	0	3	4		
KUR 105	Kurdology I	2	0	2	2	KUR 106	Kurdology II	2	0	2	2		
TUR 121	Nontechnical Elective	2	0	2	3	TUR 122	Nontechnical Elective	2	0	2	3		
Total					18	6	21	30	Total				

Second Grade

Fall Term/Third Semester					Spring Term/Fourth Semester								
Code	Course Name	Theory	Practice	Credit	ECTS	Code	Course Name	Theory	Practice	Credit	ECTS		
PTR 225	Fluid Mechanics I	2	2	3	5	PTR 223	Fluid Mechanics II	2	2	3	5		
PTR 215	Structural Geology	2	2	3	5	PTR 222	Petroleum Geology	2	2	3	4		
PTR 211	Introduction to Petroleum Engineering	3	0	3	4	PTR 224	Petroleum Fluid Properties	2	2	3	4		
PTR 216	Engineering Mathematics I	3	0	3	5	PTR 226	Engineering Mathematics II	3	0	3	5		
PTR 223	Thermodynamics	2	2	3	4	PTR 220	Applied Geophysics	3	2	4	5		
PTR 218	Statics and Dynamics	3	0	3	4	PTR 231	Mechanics of Materials	2	2	3	4		
PTR 237	Nontechnical Elective	2	0	2	3	PTR 236	Nontechnical Elective	2	0	2	3		
Total					17	6	20	30	Total				

Third Grade

Fall Term/Fifth Semester					Spring Term/Sixth Semester								
Code	Course Name	Theory	Practice	Credit	ECTS	Code	Course Name	Theory	Practice	Credit	ECTS		
PTR 313	Mineralogy	2	2	3	5	PTR 324	Mining Engineering	2	2	3	4		
PTR 312	Petroleum Reservoir Engineering I	2	2	3	6	PTR 322	Petroleum Reservoir Engineering II	2	2	3	5		
PTR 311	Well Logging I	3	0	3	4	PTR 321	Well Logging II	2	2	3	4		
PTR 316	Petroleum Drilling Engineering I	2	2	3	6	PTR 326	Petroleum Drilling Engineering II	2	2	3	5		
PTR 318	Introduction to Mining	2	2	3	4	PTR 328	Petroleum Engineering Economics	3	0	3	4		
PTR 333	Technical Elective	3	0	3	5	PTR 330	Summer Training	0	2	1	4		
Total					14	8	18	30	Total				

Fourth Grade

Fall Term/Seventh Semester					Spring Term/Eighth Semester								
Code	Course Name	Theory	Practice	Credit	ECTS	Code	Course Name	Theory	Practice	Credit	ECTS		
PTR 415	Reservoir Management	2	0	2	4	PTR 422	Reservoir Simulation	2	2	3	5		
PTR 417	Petroleum Production Engineering I	2	2	3	6	PTR 427	Petroleum Production Engineering II	2	2	3	6		
PTR 413	Mine Transport and Material Handling	3	0	3	5	PTR 429	Enhanced Oil Recovery	3	0	3	4		
PTR 411	Research Methodology	2	2	3	5	PTR 421	Graduation Project	1	4	3	5		
PTR 437	Technical Elective	3	0	3	5	PTR 423	Technical Elective	2	2	3	5		
PTR 440	Technical Elective	3	0	3	5	PTR 432	Technical Elective	3	0	3	5		
Total					15	4	11	30	Total				

Head of Department Dean

Electives

Technical Electives					Nontechnical Electives						
Code	Course Name	Theory	Practice	Credit	ECTS	Code	Course Name	Theory	Practice	Credit	ECTS
PTR 431	Directional Drilling and Technology	3	0	3	5	TUR 121	Turkish I	2	0	2	3
PTR 432	Well Testing	3	0	3	5	TUR 122	Turkish II	2	0	2	3
PTR 331	Geosystem Engineering Analysis & Design	2	2	3	5	PTR 234	Technical English II	2	0	2	3
PTR 332	Petrophysics	3	0	3	5	PTR 236	Academic Writing	2	0	2	3
PTR 333	Petroleum Refinery Engineering	3	0	3	5	GEN 100	Foundation English	2	0	2	3
PTR 334	Mining Surveying	2	2	3	5	GEN 201	Ecology	2	0	2	3
PTR 335	Subsurface Exploration	3	0	3	5	BUS 221	Marketing	2	0	2	3
PTR 336	Circuit & Electronics	2	2	3	5	CE 225	Computer Programming	2	0	2	3
PTR 438	Seismic Stratigraphy	3	0	3	5	PTR 125	German I	2	0	2	3
PTR 433	Underground Gas Storage	3	0	3	5	PTR 233	Engineering Statistics	2	0	2	3
PTR 340	Corrosion Engineering	3	0	3	5	PTR 135	Arabic 1	2	0	2	3
PTR 434	Well Pressure Control	3	0	3	5	PTR 136	Arabic 2	2	0	2	3
PTR 337	Mining Geology	3	0	3	5	PTR 237	History of Hydrocarbons and Mining	2	0	2	3
PTR 435	Special topics in Petroleum Engineering	3	0	3	5						
PTR 338	Organic Chemistry	2	2	3	5	PTR 235	Petroleum legislation	2	0	2	3
PTR 436	Oil and Gas transportation	3	0	3	5	KUR 101	Kurdish Language	2	0	2	3
PTR 437	Natural Gas Engineering	3	0	3	5						