ASIIN Seal & EUR-ACE® Label

Accreditation Report

Bachelor's Degree Programme
Electrical Engineering

Master's Degree Programme
Electrical Engineering
Renewable Energy Engineering

Provided by
Qassim University

Version: 26 September 2025

Table of Content

A   About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
بكالوريوس العلوم في الهندسة الكهربائية	B.Sc. Electrical Engineering	ASIIN, EUR-ACE® Label	ABET 01.10.2022-30.09.2028 NCAAA 01.05.2023-30.04.2028	02
ماجستير العلوم في الهندسة الكهربائية	M.Sc. Electrical Engineering	ASIIN, EUR-ACE® Label	/	02
ماجستير العلوم في هندسة الطاقة المتجددة	M.Sc. Renewable Energy Engineering	ASIIN, EUR-ACE® Label	/	02, 05

Date of the contract: 16.09.2024 **Submission of the final version of the self-assessment report:** 26.02.2025 **Date of the onsite visit:** 21-22.05.2025 **at:** Qassim University	
Expert panel: Prof. Dr.-Ing. Thorsten Völker, University of Applied Sciences Bremen Prof. Dr. rer. nat. Andrea Koch, HAWK University of Applied Sciences and Arts Prof. Dr.-Ing Moustafa Nawito, IU Internationale Hochschule/Polymath Analog Hisham Al-Zuhair, Regional Director at Henkel Mosaab Al-Rutag, Student at Imam Mohammad Ibn Saud Islamic University	

[1] ASIIN Seal for degree programmes; EUR-ACE® Label: European Label for Engineering Programmes

[2] TC: Technical Committee for the following subject areas: TC 02 - Electrical Engineering/Information Technology; TC 05 - Materials Science, Physical Technologies.

Representative of the ASIIN headquarter: Paulina Petracenko	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 7, 2021 Subject-Specific Criteria Technical Committee 02 – Electrical Engineering/Information Technology as of September 23, 2022 Subject-Specific Criteria of Technical Committee 05 – Materials Science, Physical Technologies as of September 29, 2016	

B Accreditation Status

Result Overview

The most recent decision for the ASIIN Seal was made by the ASIIN Accreditation Commission on 29.09.2025.

Degree Programmes	ASIIN Seal	Validity	EUR-ACE®	Validity
B.Sc. Electrical Engineering	Accredited with requirements	29.09.2025 – 17.10.2026	Suspended	/
M.Sc. Electrical Engineering	Accredited with requirements	29.09.2025 – 17.10.2026	Suspended	/
M.Sc. Renewable Energy Engineering	Accredited with requirements	29.09.2025 – 17.10.2026	Suspended	/

Fulfilment of the Accreditation Criteria

ASIIN General Criteria / Subject-Specific Criteria	Ba Electrical Engineering	Ma Electrical Engineering	Ma Renewable Energy Engineering
1 Degree programme: Concept, Content & Implementation			
1.1 Objectives and learning outcomes (intended qualification profile)	Fulfilled	Fulfilled	Fulfilled
1.2 Title of the degree programme	Fulfilled	Fulfilled	Fulfilled
1.3 Curriculum	**Not fulfilled** **Requirement A4**	**Not fulfilled** **Requirement A5, A6**	**Not fulfilled** **Requirement A5, A6, A7, A8**
1.4 Admission requirements	Fulfilled	Fulfilled	Fulfilled

ASIIN General Criteria / Subject-Specific Criteria	Ba Electrical Engineering	Ma Electrical Engineering	Ma Renewable Energy Engineering
1.5 Workload and credits	Fulfilled	Fulfilled	Fulfilled
1.6 Didactics and teaching methodology	Fulfilled	Fulfilled	Fulfilled
2 Exams: System, Concept and Organisation			
2 Exams: System, Concept and Organisation	Fulfilled	Fulfilled	Fulfilled
3 Resources			
3.1 Staff and staff development	Fulfilled	Fulfilled	Fulfilled
3.2 Student support and student services	Fulfilled	Fulfilled	Fulfilled
3.2 Funds and equipment	Fulfilled	Fulfilled	Fulfilled
4 Transparency and Documentation			
4.1 Module descriptions	**Not fulfilled** **Requirement A1**	**Not fulfilled** **Requirement A1, A5**	**Not fulfilled** **Requirement A1, A5**
4.2 Diploma and Diploma Supplement	**Not fulfilled** **Requirement A2**	**Not fulfilled** **Requirement A2**	**Not fulfilled** **Requirement A2**
4.3 Relevant rules	Fulfilled	Fulfilled	Fulfilled
5 Quality Management: Quality Assessment and Development			
5 Quality Management: Quality Assessment and Development	**Not fulfilled** **Requirement A3**	**Not fulfilled** **Requirement A3**	**Not fulfilled** **Requirement A3**

Requirements

For all programmes

A 1. (ASIIN 4.1) The module descriptions have to include information about the responsible person and the total workload per module.

A 2. (ASIIN 4.2) The Diploma Supplement has to include statistical data as set forth in the ECTS Users' Guide.

A 3. (ASIIN 5) Ensure that students are informed about the survey results.

For the Bachelor programme Electrical Engineering

A 4. (ASIIN 1.3) Ensure that students are taught programming skills in C++ with adequate focus.

For both Master programmes

A 5. (ASIIN 1.3, 4.1) The module descriptions have to be revised to reflect the actual content and level of the tasks carried out in each module.

A 6. (ASIIN 1.3) Ensure that all course electives adhere to EQF-level 7.

For the Master programme Renewable Energy Engineering

A 7. (ASIIN 1.3) Determine a certain percentage of the electives that must be from the field of renewable energy to ensure that the content of the programme is aligned with its title.

A 8. (ASIIN 1.3) It has to be formally defined and documented that academic advisors assist students with choosing electives.

Accreditation History

The programmes have not been previously accredited by ASIIN.

C Characteristics of the Degree Programmes

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
Electrical Engineering	B.Sc.	Electrical Power Engineering, Electronics and Communication Engineering	6	Full time	/	10 Semester	173 CR/ 288 ECTS	2004
Electrical Engineering	M.Sc.		7	Full time	/	4 Semester	30 CR/ 60.5 ECTS	2013
Renewable Energy Engineering	M.Sc.		7	Full time	/	4 semester	30 CR/ 60.5 ECTS	2015

Contextualization

Qassim University is a public university located in Qassim, Saudi Arabia, with more than 35,000 students. It was established in 2004 through the merger of several colleges affiliated with King Saud University and Imam Muhammad bin Saud Islamic University. Qassim University offers academic programmes in various disciplines, including health sciences, engineering, humanities, natural sciences, and administrative and social sciences.

The three study programmes to be accredited (Ba Electrical Engineering, Ma Electrical Engineering, and Ma Renewable Energy Engineering) are situated within the College of Engineering, which has three departments: Electrical Engineering, Mechanical Engineering, and Civil Engineering.

Qassim University has separate campuses for men and women. However, not all programmes are yet offered to both men and women. The Master's programmes in Electrical Engineering and Renewable Energy Engineering are currently offered only to male students, though the Bachelor's programme in Electrical Engineering is offered to both male and female students. Male students attend classes in the main building of the College of

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

Engineering on the Qassim University campus in Al-Melidah, Buraydah City, while female students are enrolled at the College of Engineering on the Unaizah campus in Unaizah City. The accreditation and assessment focus solely on the programmes delivered to male students, since the organisation of the programme for women is still in development.

Summary of the Experts' Assessment

The expert review of the three programmes presents an overall very positive picture. One of the main strengths is the university's welcoming and supportive environment. Students and staff members, including international students, report feeling included and well supported in their academic studies and general student life. The teaching staff are motivated and well qualified, and are supported in dedicating a significant proportion of their time to research. The university also has excellent quality management processes in place to continually improve the programmes.

The experts also point out that the university has excellent laboratories and incorporates many practical projects into its programmes of study. However, they find that the level of course content in the programmes, particularly the Master's programmes, does not correlate with the high quality of equipment and teaching staff at Qassim University. Since several modules in the two Master's programmes are barely at Master's level, the experts recommend raising the level of Master's courses, particularly in terms of scientific content, and making full use of Qassim's personal and technical resources.

The experts also find that the focus of the programmes is not always fully aligned with the courses. Therefore, they urge that, in the Master's in Renewable Energy Engineering, a set percentage of electives should clearly relate to renewable energy, since many electives do not. They also learn that the module descriptions in the Master's programmes do not always accurately reflect the actual content and level of tasks carried out, and therefore demand that they are revised and adapted.

For the Bachelor's programme in Electrical Engineering, experts recommend that students learn C++ programming more thoroughly. Students should also be given more elective options in the curriculum, including the chance to take non-technical courses. It would also be helpful to offer a course to help students choose the right study track and modules.

More broadly, the experts demand that the Diploma Supplement include data on student groups, and students should be informed about the results of any surveys they participate in. Other suggestions for improvement include promoting student exchange, forming partnerships with universities abroad, and clearly stating that the Master's programmes are currently offered only part-time.

Brief descriptions of the study programmes

For the <u>Bachelor's degree programme Electrical Engineering</u>, the institution has presented the following profile in the self-assessment report:

"The Bachelor of Science in Electrical Engineering program at Qassim University is a reputable undergraduate program that has received full-term 6 years and 5 years accreditation from the Accreditation Board for Engineering and Technology (ABET) and the National Centre for Academic Accreditation and Evaluation (NCAAA) respectively. The program aims to provide students with a comprehensive understanding of the fundamental principles of electrical engineering, thus preparing them for careers in the disciplines of electronics, communication engineering, and electrical power engineering. Students have the opportunity to specialize in two tracks: Electrical Power Engineering (EPE) and Electronics and Communication Engineering (ECE). The curriculum is developed to satisfy the Program Learning Outcomes (PLOs) and undergoes a five-year review with input from internal and external stakeholders. A total of 139 credit hours at the program level are required for graduation, which is comprised of a combination of essential courses, electives, and practical components.

Program Structure:

- Total Credit Hours: 139 at program level and total 173 including the foundation year.
- Tracks: Electrical Power Engineering (EPE) and Electronics and Communication Engineering (ECE)."

For the <u>Master's degree programme Electrical Engineering</u>, the institution has presented the following profile in the self-assessment report:

"The Master of Science in Electrical Engineering program is a postgraduate program that is designed to offer comprehensive research opportunities and advanced knowledge in the field of electrical engineering. The NCAAA is presently conducting a review of the program for national accreditation. It is designed to provide students with the specialized skills and knowledge necessary to satisfy the needs of the industry and academia in the field of electrical engineering. The curriculum consists of 30 credit hours, including compulsory courses, electives, and a thesis. The program is structured to ensure students achieve the PLOs and is reviewed every 5 years to align with industry needs and best practices. The program prioritizes research, necessitating that students submit a thesis that advances the discipline of electrical engineering. Faculty members are actively engaged in research and work in conjunction with industry collaborators.

Program Structure:

- Total Credit Hours: 30
- Components: 9 credits of compulsory courses, 15 credits of elective courses, and 6 credits for thesis work.
- Emphasis on research and innovation."

For the Master's degree programme Renewable Energy Engineering, the institution has presented the following profile in the self-assessment report:

"The Electrical and Mechanical Engineering departments at Qassim University have collaborated to establish the Master of Science in Renewable Energy Engineering program. It is intended to satisfy the increasing demand for sustainable development and renewable energy technologies. The program emphasizes advanced studies and research in renewable energy systems, enabling graduates to contribute to Saudi Arabia's energy transition and sustainability objectives. A comprehensive education in renewable energy engineering is guaranteed by the curriculum, which encompasses compulsory and elective courses, as well as a thesis component. Compulsory courses, electives, and a thesis comprise the program's 30 credit hours. The curriculum is developed to satisfy the PLOs and is evaluated every five years to guarantee that it remains pertinent to technological advancements and industry requirements. The program prioritizes research, with a particular emphasis on sustainable development and renewable energy systems. Cutting-edge research is conducted by faculty members in collaboration with industry and other academic institutions.

Program Structure:

- Total Credit Hours: 30
- Components: 12 credits of compulsory courses, 12 credits of elective courses, and 6 credits for thesis work.
- Focus on renewable energy systems and sustainable development."

D   Expert Report for the ASIIN Seal[4]

1. The Degree Programme: Concept, Content & Implementation

Criterion 1.1 Objectives and Learning Outcomes of a Degree Programme (Intended Qualifications Profile)

Evidence:

- Self-Assessment Report

- Study plans of the degree programmes

- Module descriptions

- Academic Guidelines per programme

- Objective-module-matrix per programme

- Websites of all study programmes

- Discussion during the audit

Preliminary assessment and analysis of the experts:

The experts refer to the Subject-Specific Criteria (SSC) of the Technical Committee 02 Electrical Engineering and the Technical Committee 05 Materials Science and Physical Technologies as a basis for judging whether the intended learning outcomes of the three programmes correspond with the competences as outlined by the SSCs.

In general, the experts note that the programme learning outcomes can be found on the websites of the three study programmes, in the Programme Specification documents, the Diploma Supplements as well as in the Self-Assessment Report. They confirm that the intended learning outcomes are transparently anchored and published and thus are available to students, lecturers and interested third parties. They also agree that the learning outcomes are described in a clear and concise manner.

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[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.

According to the Self-Assessment Report, the Bachelor's degree programme in Electrical Engineering "aims to provide students with a comprehensive understanding of the fundamental principles of electrical engineering, thus preparing them for careers in electronics, communications engineering and electrical power engineering". Depending on whether they specialise in Electrical Power Engineering or Electronics and Communications Engineering, students will acquire profound technical skills in their chosen area. Graduates of the Bachelor's programme should be qualified to work in various private-sector companies, including those in the electricity, power and construction industries, as well as in project, operational and maintenance departments in government facilities.

The Master's programme in Electrical Engineering is designed to offer comprehensive research opportunities and advanced knowledge in the field. It provides students with the specialised skills and knowledge necessary to meet the needs of industry and academia in this field. The programme prioritises research, requiring students to submit a thesis that advances the discipline of electrical engineering.

The Master's programme in Renewable Energy Engineering aims to meet the growing demand for sustainable development and renewable energy technologies. The programme emphasises advanced studies and research in renewable energy systems, equipping graduates to contribute to Saudi Arabia's energy transition and sustainability goals. The programme prioritises research, particularly in sustainable development and renewable energy systems. Graduates of the two Master's programmes are qualified for academic positions in public and private universities, and can pursue a PhD. Alternatively, they would be eligible for roles in industry or government.

The experts review the documents and confirm that the level of the objectives and intended learning outcomes of the three programmes adequately reflect EQF levels 6 and 7, respectively. The programmes also meet the ASIIN Subject Specific Criteria (SSC) of the Technical Committees for Electrical Engineering and Materials Science and Physical Technologies. Overall, the reviewers consider that the targeted skill profiles of the three programmes under review will enable graduates to find appropriate employment both in Saudi-Arabia and globally.

Since Qassim University also applied for the EUR-ACE® label for the three programmes, the experts check whether the learning outcomes are aligned with the EUR-ACE® Framework Standards and Guidelines (EAFSG) for engineering programmes. The EUR-ACE® Framework Standards and Guidelines requires that engineering programs cover the following seven competence areas: Knowledge and Understanding, Engineering Analysis, Engineering Design, Investigations, Engineering Practice, Making Judgements Communication and Teamworking, and Lifelong Learning. The self-assessment report and the module descriptions

illustrate that the degree programmes under review cover all the required competence areas such as engineering analysis, design, and practice as well as communication and team-working skills. The experts are convinced that the mentioned competences are conveyed in the respective courses. They conclude that the intended learning outcomes of all programs are aligned with the EUR-ACE® Framework Standards and Guidelines (EAFSG).

The positive impression of the reviewers is echoed by the industry representatives involved in the audit. They indicate that the learning outcomes of the three programmes align with market needs, and that Qassim University graduates are in high demand in the labour market. They also explain that the university has various mechanisms to ensure that the study programmes meet industry demands. For instance, the HEI has a professional advisory board, and all industry partners receive a survey every semester in which they can provide feedback on the intended learning outcomes, curricula, and other aspects of the programmes. They also have the option to provide feedback in other ways, e.g. by communicating directly with the teachers of the respective programme. The experts appreciate the close connection between the university and the industry, and the fact that the intended learning outcomes consider the feedback of the industry partners. They also learn that every study programme is thoroughly revised every five years, taking into account feedback from all internal and external stakeholders, and that minor changes can also be implemented within that period.

Criterion 1.2 Name of the Degree Programme

Evidence:
- Self-Assessment Report
- Diploma Supplements

Preliminary assessment and analysis of the experts:
The experts confirm that the English translation and the original Arabic names of the three degree programmes correspond with the intended aims and learning outcomes as well as the content of the respective degree programme.

Nevertheless, the experts have found that many of the electives on the Master's programme in Renewable Energy Engineering do not match the programme's focus, i.e. they do not fall within the field of Renewable Engineering. Therefore, the experts require a minimum percentage of electives to be defined that are strictly related to renewable energy. This aspect will be discussed in more detail in the following chapter.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report

- Study plans

- Module descriptions

- Discussions during the audit

Preliminary assessment and analysis of the experts:

Content & Structure of the Programme

The <u>Bachelor's degree in Electrical Engineering</u> is a ten-semester programme. It first provides a foundation in mathematics, science and engineering principles, before transitioning into specialised knowledge. The first year is the so-called preparatory year, during which students focus on foundational subjects such as calculus, physics, chemistry, English for academic purposes and basic engineering skills. This preparatory year must be completed by all students pursuing a Bachelor's degree in engineering at Qassim University. Upon successfully completing the preparatory year, students can formally enter the College of Engineering and proceed with the core programme of study. From the second year of the Bachelor's programme in Electrical Engineering onwards, students are introduced to core electrical engineering topics, including circuit analysis, digital logic design, signals and systems, control systems and electromagnetics, complemented by hands-on laboratory work. By the fourth year, students choose one of two specialisation tracks: Electrical Power Engineering (EPE) and Electronics and Communication Engineering (ECE). The EPE track covers subjects such as power generation, transmission and distribution, power electronics and smart grid technologies, while the ECE track emphasises communication systems, antennas, microwave engineering and embedded systems. The programme culminates in a two-semester senior design project.

In addition, the Bachelor's programme includes a compulsory practical element. To complete this component, students can choose between Cooperative Training and Summer Training. Both are industry-based internships. However, they differ in terms of the duration and scope of the project that students carry out at their respective company. The Summer Internship lasts eight weeks and is usually completed during the summer break after the third academic year. The Cooperative Training, on the other hand, is a six-month internship which provides students with comprehensive insight into the professional field and the op-

portunity to carry out the final project at the company. In both cases, students are supervised by a faculty member and an industrial representative. Furthermore, at the end of the internships, students must submit a report detailing their work and deliver a presentation.

The two-year Master of Science in Electrical Engineering programme comprises 30 credit hours. It begins with compulsory modules (9 CP) in subjects such as advanced mathematics, electronics and research methodology. Students subsequently choose 15 CP of elective modules, including digital signal processing, power electronics applications, communication systems design and renewable energy integration, among other things. The programme concludes with a 6 CP thesis in the final semester, in which students are required to conduct research on a topic related to electrical engineering. The thesis demonstrates the application of theoretical knowledge to practical or academic problems.

The Master of Science in Renewable Energy Engineering is an interdisciplinary programme offered jointly by the Departments of Electrical and Mechanical Engineering. The programme extends over four semesters and consists of 30 credit hours. The curriculum contains 12 compulsory courses in areas such as Engineering Maths, Modelling and Simulation of Engineering Systems, Research Methodology, and an Introduction to Renewable Energy Engineering. A total of 12 CP credits can be earned by students choosing electives in areas such as energy storage, smart grid integration, power electronics for renewable applications, environmental impact assessment and energy policy. Students are required to write a research thesis (6 CP) focusing on topics such as the performance of photovoltaic systems in arid regions, energy-efficient infrastructure or the policy aspects of renewable energy deployment. According to the self-assessment report, the programme content reflects areas relevant to national energy strategies and sector developments.

The experts review the curricula and conclude that the three programmes provide solid technical training in their respective fields, corresponding to their respective EQF levels. They are also convinced that the programmes are well organised and structured, with each module representing a coherent unit of teaching and learning.

However, the experts also identify a number of areas for improvement. Overall, they find that the curricula enable students to achieve the intended learning outcomes. However, the curricula do reveal some missing elements that are essential for the respective programme. For instance, the experts note the absence of programming training in the Bachelor's programme in Electrical Engineering. The programme coordinators explain that they used to teach Java and are now switching to Python. The experts welcome the usage of Python in the programme. However, they find that this is not sufficient. They believe that a Bachelor training in Electrical Engineering must also include other programming skills. They consider C++ to be particularly essential in the field of Electrical Engineering as it is

needed to program embedded systems, microcontrollers as well as other hardware modules in addition to the fact that C++ teaches the students the required object-oriented programming skills. The experts therefore require that students are taught C++ and in the Bachelor programme.

The experts also appreciate that all three programmes offer a certain degree of flexibility and electives, enabling students to specialise in specific areas of study. However, in the Bachelor's programme in Electrical Engineering, they feel that more space could be given to electives, since currently only 9 CP out of 139 CP are allocated to them, i.e. the courses of the two tracks. The students echo this sentiment in the audit, expressing their wish for more electives and more opportunities to gain specialised knowledge. The experts thus recommend allocating more space to electives in the Bachelor's programme. They also suggest offering students the opportunity to take electives from other disciplines, in order to widen and diversify their knowledge and skills.

In the audit, the experts inquire how students are supported in selecting the appropriate track and electives in the Bachelor's programme. They learn that every student at Qassim University is assigned an academic advisor at the beginning of their studies, regardless of programme. The academic advisor's role is to monitor the student's performance by providing an academic advising report after the first and second mid-terms, and to assist students with selecting appropriate electives or dropping courses if they are at risk of failing. The experts welcome the personal assistance and guidance offered to all students. However, they still recommend integrating a course into the Bachelor programme in which students are introduced to the different tracks and their topics, and guided in selecting the most suitable electives for their personal interests.

The experts also appreciate the extensive scope for electives and individual focus in the two Master's programmes. However, they find that the Renewable Energy Engineering programme offers only limited electives in the field of renewable energy. Since 40% of the curriculum consists of electives, the experts are concerned that, depending on their choices, some students may graduate having studied little content related to renewable energy. While the experts do not object to students expanding their knowledge into other areas of electrical engineering or even beyond, they insist that the main part of the curriculum, or rather the content studied by students, should correlate to renewable energy, thereby adequately reflecting the programme title. The programme coordinators explain that the academic advisors support students in selecting suitable electives according to their previous specialisation and personal interests. Therefore, students are prevented from studying large components unrelated to their field of study. While the experts appreciate the guidance of the supervisors, they note that this is neither officially defined nor documented, and that it does not guarantee that students will study sufficient subjects in

the field of Renewable Energy. This is essential in order to align the graduate's skills and competences with their degree title in Renewable Energy Engineering. They therefore require a certain percentage of electives to be defined as having to be taken in the field of renewable energy. Secondly, it must be formally documented that academic advisors assist students in choosing electives.

Furthermore, upon reviewing the documents and module descriptions, the experts found that the scientific level of the two Master's programmes was not as advanced as expected, with many module descriptions indicating that the courses were more suited to Bachelor's level than Master's level. The experts are surprised by this, given that the resources, including the highly qualified teaching staff and the modern laboratory equipment, indicate that all the necessary resources are available to teach highly advanced subjects. They wonder why this potential is not being fully utilised in the Master's programmes. The programme coordinators explain that they are currently improving the Master's programmes, including the study content. Furthermore, during the conversation with the programme coordinators about the individual modules, it emerges that some of the Master's programme courses appear more advanced than the module descriptions suggest. The experts are glad to hear that the level of content covered in the modules appears to be more advanced than indicated in the descriptions. However, in order to verify this, they require revised module descriptions that clearly and transparently document the scope of the subjects addressed in the modules thereby reflecting the content actually taught in the modules and provide more detail on the tasks that students carry out. Overall, the two Master's programmes must demonstrate a more advanced scientific scope for the courses, particularly the electives, than is currently evident.

Student Mobility

According to the self-assessment report, student mobility is not officially intended in any of the three programmes at Qassim University. As such, there are no cooperation partners or mobility offers in the programmes. Consequently, there are also no specific service units in place to systematically support students in their mobility endeavours. The experts are surprised by this and ask in the audit what the reason is for the complete absence of student mobility. They learn that it is uncommon in Saudi Arabia for students to spend a period abroad while actually completing their study programme in Saudi Arabia, since the education of every Saudi Arabian citizen is funded by the Ministry. Therefore, there are no units explicitly fostering students going abroad. Nevertheless, Qassim's management explains that it is technically possible for students to spend a semester or undertake an internship abroad, since they have regulations in place to recognise external qualifications. They also state that students have previously gone abroad and that in those cases a learning agree-

ment has been signed between Qassim University and another university. The management emphasises that they do not oppose mobility and will support any student who wishes to study or undertake an internship abroad. Nonetheless, the main responsibility for finding an adequate university or company abroad and organising the mobility lies with the student.

While the experts are glad to know that students are supported in pursuing international mobility, e.g. by their academic advisors, they strongly recommend that Qassim University changes its policy and actively promotes student mobility. To this end, they suggest establishing adequate partnerships with institutions abroad in order to create a portfolio of mobility opportunities and administration units offering systematic support to interested students.

The importance of student mobility is also emphasised by industry partners and students in the audit. Industry representatives state that they value employees with experience of an international context, given the many international contacts in everyday working life. Students confirm their interest in going abroad if adequate mobility opportunities existed.

The experts also learn that, although there is no systematic outgoing mobility, Qassim University welcomes many international students onto its Master's programmes. In the audit, these students emphasise the support they receive from all members of the university community, and the friendliness of everyone, both teachers and students, which makes them feel welcome and integrated at the university. The experts appreciate the open and friendly atmosphere, as well as the efforts made to welcome international students, and describe this as a strength of Qassim University.

Periodic Review of the Curriculum

At Qassim University, each curriculum undergoes a structured and periodic review to ensure its alignment with the programme's educational objectives, as well as its responsiveness to evolving academic and industry demands. This review takes place every five years, or sooner if significant internal or external developments occur. The primary purpose of this process is to evaluate whether the curriculum continues to support the intended Programme Learning Outcomes (PLOs) and the broader aims of the academic programmes.

The review process is overseen by Programme Committees, which are composed of senior faculty members from various subject areas, and is supported by the College's Quality Assurance Unit. These committees assess the effectiveness of the curriculum through internal evaluations and extensive consultation with stakeholders. Input is gathered from internal stakeholders, such as students, faculty, and administrative staff, as well as from external

stakeholders, including alumni, employers, and industry representatives. This feedback is collected through surveys, workshops, focus groups and advisory board meetings.

A review cycle begins with data collection and analysis, followed by discussion and formulation of recommendations, culminating in the approval and implementation of any necessary curriculum adjustments. The revised curriculum must then be approved by the relevant departmental and college councils.

The experts are pleased to hear that Qassim University considers the feedback of various stakeholders when reviewing its programmes, and that it maintains close links with industry. Overall, the experts conclude that there is a systematic process in place for the regular review and improvement of programmes. However, they suggest that Qassim University could be more proactive in identifying state-of-the-art topics and integrating them into the curricula. They opine that the academic staff currently rely heavily on industry partners for feedback on cutting-edge technology and modern topics. While the experts welcome the fact that the university consults industry partners for feedback on technological innovations and the latest market trends, they also believe that it would be beneficial if members of Qassim University took the initiative and identified future relevant topics from an academic perspective. They therefore encourage academic staff to take a proactive approach by creating a plan or roadmap for the gradual integration of cutting-edge topics into the curricula. This would improve students' educational experience and prepare them better for future challenges in their fields.

Criterion 1.4 Admission Requirements

Evidence:
- Self-Assessment Report
- Qassim Website
- Student Handbook for each programme
- Central Student Manual
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Admission to the <u>Bachelor programme in Electrical Engineering</u> requires successful completion of secondary education in a scientific track. Applicants must take and pass two national standardised tests: the General Aptitude Test (GAT), which assesses quantitative and analytical reasoning, and the Scholastic Achievement Admission Test (SAAT), which covers subjects such as mathematics, physics, chemistry, biology, and English. Admission decisions

are based on a weighted formula that considers the applicant's high school GPA, performance in these tests, and programme preferences. For international applicants or those with foreign qualifications, equivalency certification from the Saudi Ministry of Education is required. Additionally, non-native English speakers must provide proof of English language proficiency through recognised tests such as IELTS or TOEFL.

On average, around 150 people apply for the Bachelor's programme, of whom 100 are accepted. Therefore, the admission ratio is 1:1.5.

Applicants for the Master of Science in Electrical Engineering programme must hold a Bachelor's degree in Electrical Engineering with a minimum GPA of 3.25 out of 5, or equivalent. The Master of Science in Renewable Energy Engineering programme is open to applicants with a Bachelor's degree in Electrical or Mechanical Engineering from a recognised university, with a minimum GPA of 3.0 out of 5. For both Master's programmes, applicants must submit a valid score from the General Aptitude Test for university graduates, administered by the National Centre for Measurement. Applicants must also demonstrate a certain level of English proficiency by providing the results of a recognised test, such as a TOEFL (PBT) score of at least 460 or an IELTS band score of 4.5 or above. Where applicable, applicants may be required to complete designated undergraduate complementary courses. Non-Saudi applicants are only eligible if they are supported by an official scholarship. A SAR 100 application fee and a SAR 40,000 tuition fee apply to the respective Master's programme.

The average number of applications received for the Master programme in Electrical Engineering is 29 per cohort, with 9 applicants being admitted. Therefore, the admission ratio is 1:1.5. For the Renewable Energy Engineering programme, there are usually 25 applicants, nine of whom are accepted. Here, the admission ratio is 1:2.8.

The experts review the admission requirements and procedures, finding them appropriate for supporting students in achieving the intended learning outcomes of their respective programmes. They also note that the admission requirements are transparent and binding for all stakeholders, and they welcome Qassim University's clear and binding rules on the recognition of external qualifications. The admission ratios also confirm the demand for the three programmes.

Criterion 1.5 Workload and Credits

Evidence:

- Self-Assessment Report
- Program Handbooks
- Study plans

- Module descriptions

- Discussions during the audit

- Student surveys

- Statistical data

Preliminary assessment and analysis of the experts:

Qassim University uses a local credit system that awards credit hours (CRH). They also provide a conversion into ECTS, which will be explained in detail below.

The experts learn that Qassim University monitors and documents the total student workload for each module, forming the basis of the credit system. The university categorises the workload into four areas: lectures, tutorials, laboratory classes and self-study. While the entire student workload is taken into account, however, the local credit system itself is based primarily on contact hours. Consequently, when awarding credit hours (CRH), only lecture and laboratory hours are formally considered.

To calculate the precise CRH, Qassim University considers the number of hours spent on lectures and lab sessions per week. That is, one credit hour is awarded for each contact hour of a lecture per week. A semester lasts for 15 weeks. However, lab sessions are given half the credit hours, as the number of hours spent per week is actually lower. For example, if 2 hours are assigned for lab sessions per week for a certain module, only 1 CRH is awarded for the lab unit. In other words, CRH for lab sessions are calculated by dividing the actual lab hours per week by two.

When calculating the workload, Qassim University estimates that students will spend a certain amount of time on self-study for each credit hour. For the Bachelor's programme, each credit hour (CRH) corresponds to an additional 1.5 hours of self-study per week. For Master's programmes, the expectation is higher: 4 hours of self-study per CRH and 6.5 hours per CRH for thesis modules.

The example below illustrates how credit hours are calculated and converted into ECTS. It refers to a module comprising lectures and laboratory sessions.

Credit Hours (CRH)	Contact Hours		
	Theory/Lecture	Tutorial	Laboratory
3	2	0	2

The example shows that the module consists of two hours of lectures and two hours of laboratory classes each week. This equates to three credit hours, so an estimated 4.5 hours of self-study time is allocated to that module (3 credit hours x 1.5 hours).

The total workload would be as follows: 30 hours (lectures) + 30 hours (laboratory work) + 67.5 hours (self-study/preparation) = 127.5 hours.

To convert the CRH into ECTS, Qassim determined that one ECTS credit corresponds to 25 hours. Taking the previous example, 127.5 divided by 25 equals 5.1 ECTS.

Overall, the <u>Bachelor's degree programme in Electrical Engineering</u> comprises 160 local credit hours (CRH) across 10 semesters, including the preparatory year. This corresponds to 300.6 ECTS credits. Excluding the preparatory year, the programme comprises 139 CRH across eight semesters, equivalent to 225 ECTS credits.

Each of the <u>Master's programmes</u> consists of 30 CRH, equating to approximately 101.8 ECTS credits over four semesters.

The following two tables show the CRH and ECTS awarded throughout the Bachelor's and Master's programmes in Electrical Engineering.

ECTS Calculation for Electrical Power Engineering Track students at Program Level								
	Level	CrH*	Actual Contact Hr			Average Independent Study Hours/week (Th*2 + Lab*1)	Total Workload/week (Actual + Independent)	Total Workload in the semester (Total workload * 15 Weeks)	ECTS Credits (25 Hr: 1ECT)
			Theory		Lab				
			Lecture	Tutorial					
pyp year	Level 1	10	9	0	2	20	31	465	18.6
	Level 2	11	9	1	4	22	35	525	21
Freshman Year	Level 3	18	14	3	8	36	58	870	34.8
	Level 4	19	17	4	4	38	59	885	35.4
Sophomore Year	Level 5	17	11	3	12	34	57	855	34.2
	Level 6	17	14	3	6	34	54	810	32.4
Junior Year	Level 7	17	17	5	0	34	51	765	30.6
	Level 8	16	14	3	4	32	50	750	30
Senior Year	Level 9	16	15	5	2	32	49	735	29.4
	Level 10	19	19	5	0	38	57	855	34.2

Average	16	13.9	3.2	4.2	32	50.1	751.5	30.06
Total	160	139		42	320	501	7515	300.6

Actual Hours are calcuated based on

•	2 Crh Theory (2,0,0)	=	2 hours Lecture
••	3 Crh Theory (3, 0, 1)	=	3 hours Lecture 1 hour Tutorial
•••	3 Crh Mix (2, 1,0)	=	2 hours Lecture 2 hour Lab
••••	1 Crh Lab (0, 1,0)	=	2 hours Lab
•••••	4 Crh Mix (3,1,1)	=	3 hours Lecture 1 hour Tutorial 2 hours lab

ECTS Calculation for Electrical Engineering Master's Program								
	Level	CrH*	Actual Contact Hr		Average Independent Study Hours/week (3*Th + 6*Research)	Total Workload/week (Actual + Independent)	Total Workload in the semester (Total workload * 16 Weeks)	ECTS Credits (25 Hr:1ECT)
			Th Lecture	Reseacrh				
General Courses	Level 1	9	9	0	36	45	720	28.8
Electtive	Level 2	9	9	0	36	45	720	28.8
	Level 3	6	6	0	24	30	480	19.2
Thesis	Level 4	6	0	6	0	39	624	24.96
Average		7.5	6	1.5	24	39.75	636	25.44
Total		30	24	6	96	159	2544	101.76

Total	101.76

Actual Hours are calcuaated based on	*	3 Crh Theory (3,0,0)	=	3 hours Lecture
	**	1 Crh Research (0, 1,0)	=	6 hours Research

The experts acknowledge the local credit system and its correct conversion into ECTS, confirming that Qassim University awards credits based on students' total workload, including contact hours and self-study time. Furthermore, they note that all compulsory components of the study programme are awarded credits. They also consider the estimated workload to be realistic and well-founded. However, they note that the workload is distributed rather unevenly. For instance, the first semester of the preparatory year in the Bachelor programme only encompasses 18 ECTS credits, whereas several other semesters are awarded 34/35 ECTS credits. Students report in the audit that this slightly imbalanced distribution of workload is not a problem for them, and while some semesters may be a bit harder than others, the studies in each semester are definitely manageable. Some students report using the summer courses occasionally to help them stay on track and complete their studies within the intended timeframe if they are struggling during the semester. Overall, however, they confirm that the workload is generally in line with that indicated in the documents, and that it is possible to complete the study programmes within the intended period. They explain furthermore that the workload is monitored via surveys, through which students can provide feedback on the adequacy of the workload for each module. The positive feedback is also reflected in the statistics, since students typically require the intended study period to complete the programmes, i.e. approximately 10 semesters for the Bachelor's programme and 4 semesters for the Master's programmes.

However, the experts were surprised by the reduced workload in the Master's programmes, according to which students acquire an average of around 25 ECTS credits per semester. In the audit, Master's students report that they find the workload adequate and appreciate having additional time that they can use for extra reading and research, for example. During the audit, the experts learned that most students work alongside their studies, either at the university or in a job related to their chosen profession, and that, to accommodate students' employment, classes are usually held in the afternoon/evening and towards the end of the week. The experts conclude that the Master's programme appears to be part-time rather than full-time. While they do not mind this study format, they recommend making it transparent that the Master programmes are part-time and offering full-time versions for students who would like to complete their Master's degree in less than two years.

In conclusion, the experts find that the credits awarded for all three programmes accurately reflect the total student workload, and that the credit calculation is consistent and correct. They also consider the workload estimates to be realistic and well-founded, as confirmed by student feedback and statistics, and monitored by the university. However, the experts suggest making it transparent that the master programmes are currently offered part time and offering full-time options too.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-Assessment Report

- Study plans

- Module descriptions

- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to the self-assessment report, teaching methods are chosen based on the characteristics of the module and the intended learning outcomes. In general, the didactic and teaching methodology at Qassim University is founded on a student-centred learning approach. Each programme combines traditional lectures with laboratory work, problem-based tutorials, fieldwork and industry-oriented projects. These are complemented by the use of an online learning management system which supports digital interaction and content delivery. This blended learning model ensures that digital and in-person components are used effectively and mutually enrichingly.

A core component of the programmes is the structured introduction to independent scientific work. In the undergraduate programme, this is achieved through a two-semester senior design project and compulsory summer or cooperative training. In the Master's programmes, students develop advanced research skills through the completion of a thesis. Additionally, students engage in seminars designed to foster competencies in scientific reading, writing and critical analysis.

The effectiveness of teaching and learning methods is systematically reviewed. Each semester, student feedback, course assessments and input from academic and industrial stakeholders are gathered and analysed by subject and programme committees. These findings inform continuous quality improvement efforts and guide adjustments to teaching strategies and curriculum updates. This ensures that teaching methods remain aligned with programme objectives and responsive to developments in academia and industry.

Students report in the audit that they are very satisfied with the different forms and methods of teaching. They confirm that the teaching methods are student-centred and that the teachers are very committed to helping students when they have difficulties in learning the subject matter.

The expert group considers the teaching methods and tools to be appropriate for supporting students in achieving the intended learning outcomes of their respective programmes of study. They also find that the methods are adequately adapted to the specific subject, culture and study format. Furthermore, they confirm that the programmes incorporate a variety of teaching and learning methods, and value the opportunity for students to apply their knowledge in a practical setting while also developing their scientific skills.

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

In its response, the university welcomes all suggestions and requirements made by the experts and outlines concrete measures to implement them. In the Bachelor's programme, they will incorporate comprehensive C++ programming training and increase the range of electives by offering courses from other engineering and non-engineering departments. They will also introduce an orientation course to help students navigate the available courses. Regarding the Master's programmes, they intend to raise the scientific level of the electives by first conducting an exhaustive review of all Master's-level courses, then increasing the scientific complexity and content to align with international standards, and maximising the potential of the laboratory equipment. They also state that they will increase the renewable energy content of the Master's programme in Renewable Energy En-

gineering by ensuring that at least 60% of elective courses explicitly cover renewable energy. Furthermore, Qassim University states that they will revise the module descriptions in all three programmes to ensure they accurately reflect the academic level and content of the work completed by students. Additionally, the university confirms that it will adopt the recommendations, encourage international exchange opportunities, and formulate academic roadmaps for the integration of future-relevant subjects. The experts appreciate the university's willingness to adopt their demands and precise plans for implementation. However, as none of the requirements and recommendations have yet been implemented, the experts maintain their original assessment, as described above.

Regarding the suggestion from the experts to communicate transparently that the current Master's programmes are part-time and to offer them as full-time options too, Qassim University states that both programmes are full-time, with classes taking place in the afternoon and evening to accommodate working students. However, the experts disagree with this, since the workload indicated in the programmes is clearly lower than that of a traditional full-time model. For this reason, they maintain their recommendation.

The criterion is partly fulfilled.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, Concept and Organisation

Evidence:
- Self-Assessment Report
- Sample exams & theses
- Study plans
- Module descriptions
- Programme Handbook for each programme including examination regulations
- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to the self-assessment report, the examination forms are designed in a way to assess whether the Intended Learning Outcomes have been achieved. The assessment system encompasses various examination methods, such as written tests, oral presentations, laboratory evaluations, quizzes, assignments, projects and student portfolios. Typically, assessment in a module consists of mid-term and final examinations. At the end of the Bach-

elor's programme, students carry out a senior design project (SDP), whereas Master's students complete a thesis. The types of examination and their alternatives are pre-defined and documented for each module. Students are informed of the specific assessment methods and requirements, including coursework, exams and other evaluation criteria, at the beginning of each module. Qassim University has a mandatory attendance policy: in order to be permitted to take the final examination, students must attend at least 80% of the course sessions.

For cooperative internships and summer internships, grades are based on an evaluation of the student's performance during the internship and the internship report, as evaluated by the student's internship advisor and the program committee.

The examinations are graded using transparent criteria, and students are given the opportunity to review and discuss their results with their instructors. If they wish to dispute the results, they can submit a request to the Head of Department, who will form a committee of specialists to re-mark the exam answer sheet and produce a report on each case. If the student deserves a higher grade, the report's findings are presented to the department council and then the college council, who make a decision and submit it to the university administration to amend the result.

Qassim has policies in place for students who miss exams due to excused absences caused by illness, as well as adjustments for students with special needs or in special circumstances. These circumstances include hospitalisation, medical rest without hospitalisation, chronic conditions, sudden illness during an exam, the death of a first-degree relative, the death of a second-degree relative, accompanying a first-degree relative who is hospitalised, road accidents, non-cancelled government appointments (committee decision required) and physical inability to write.

In accordance with Qassim University's Study and Examination Regulations, students with a valid reason may request substitute exams. However, failing to take a substitute exam will result in an automatic fail. The exam must be taken during the subsequent academic semester or year. The policy document specifies twelve types of excuses and special conditions that allow students to request substitute exams.

As the regulations on retaking exams are unclear in the self-assessment report, the experts discuss this with the programme coordinators. They learn that the passing score for a module is 60% for all assignments combined. Academic advisors track student performance and will recommend dropping a course if they see that there is a high risk of students not reaching the threshold. Students who do not reach the threshold will fail the module and have to repeat it. The programme coordinators add that students can only retake a module a limited number of times. Students who have an overall score that is too low or who have

exceeded the maximum duration of eight years of study will be expelled from their study programme.

As previously mentioned, at the end of the <u>Bachelor's programme,</u> students must complete a Senior Design Project. This capstone project is usually assigned by teaching staff from the relevant programme, although topics may occasionally be derived from suggestions by industrial partners. The project is carried out in groups of up to three students. The final grade consists of a group component, which assesses collective performance and results, as well as the performance of each individual student. The individual assessment is based on the final report and oral presentation submitted by each student at the end of the project.

In <u>both Master's programmes,</u> the Master's thesis accounts for a fifth of the curriculum and is governed by clearly defined guidelines that are publicly accessible. These guidelines are set out in programme-specific handbooks and a thesis manual, which detail the preparation, ethical requirements and evaluation procedures. The thesis process is divided into two main phases: investigation and documentation. Firstly, students must independently investigate and understand a topic typically aligned with their supervisor's research interests. They must then present their findings in a coherent written document that adheres to academic standards. This document is evaluated against criteria such as clarity, structure, adherence to academic style, and compliance with the university's ethical standards. The thesis must demonstrate an in-depth understanding of the subject matter and adhere to the defined standards of scholarly writing and integrity. The evaluation process ends with a formal thesis defence, where the student presents their work to a specialised committee. This defence is the final stage of assessment, ensuring that the thesis meets academic and programme-specific expectations. The evaluation criteria, as outlined in the thesis manual, reflect the learning outcomes and competencies described in the programme specifications.

The experts also learn that the university also employs a systematic review process to ensure that assessments remain aligned with the intended learning outcomes. These reviews evaluate whether exams accurately measure students' achievement levels, are suitable for the degree level and allow sufficient time for preparation.

In the audit, students report to be satisfied with the examination system for all <u>three study programmes</u>. They confirm that they receive all relevant information such as examination dates and assessment criteria at the beginning of the semester. The examination policy, including the compensation policy, is made transparent to all concerned. When asked about the workload and the difficulty of the examinations, students say that both are appropriate and manageable.

The experts concur with the students' opinion. After reviewing the documentation and samples of exams and theses, they conclude that Qassim University has a robust examination system in place. They confirmed that a variety of competence-based assessment methods were used in the three programmes under review and that these were adequate for assessing the achievement of the learning outcomes of the courses and programmes. The samples also demonstrate that they correspond to the respective EQF level. The experts also positively note that the assessment forms are regularly reviewed and that the entire assessment system is monitored to ensure fairness and appropriateness. Additionally, the experts find the procedure for the final thesis in both the Bachelor's and Master's programmes convincing. Samples of final theses from all three programmes demonstrate that students can work scientifically and independently on projects at the appropriate level.

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

As the experts did not identify any shortcomings with regard to this criterion, the university does not submit a comment on this section. The experts' assessment therefore remains the same as described above.

Criterion fulfilled.

3. Resources

Criterion 3.1 Staff and Development

Evidence:

- Self-Assessment Report
- Staff Handbook
- Study plans
- Module descriptions
- Discussions during the Audit

Preliminary assessment and analysis of the experts:
The Electrical Engineering department currently employs 26 full-time PhD faculty members who teach both the Bachelor's and Master's programmes. Furthermore, the department employs 13 teaching assistants who are currently studying for Master's and PhD degrees in countries such as the United States, Canada, the United Kingdom and Australia. The Master's programme in Renewable Energy Engineering shares teaching staff from the Electrical

and Mechanical Engineering departments, amounting to a combined total of 18 faculty members dedicated to its delivery. In the Bachelor's and Master's programmes in Electrical Engineering, the percentage of full professors is 11%, associate professors 29%, and assistant professors 61%. In the Renewable Energy Engineering programme, the distribution is as follows: 33% full professors, 11% associate professors and 56% assistant professors. The current teacher-to-student ratio in the Bachelor's programme is 1:7. For the Master's programmes, the faculty-to-student ratio is approximately 1:1.

The teaching load for faculty members is determined based on their academic rank and is assigned in accordance with published university regulations. Professors are assigned 10 contact hours per week, associate professors 12, and assistant professors 14. Depending on faculty availability and administrative responsibilities, faculty members holding additional administrative positions, such as department chairs, may be granted a reduced teaching load. In the case of thesis supervision, one contact hour is credited to both the supervisor and the co-supervisor per student.

The adequacy of faculty staffing is routinely verified through structured mechanisms. The Programme Committee, supported by the Statistical and Information Unit, monitors specific key performance indicators (KPIs), such as the student-to-faculty ratio, the distribution of faculty members across academic ranks and the alignment of faculty members' specialisations with programme requirements. These indicators are evaluated annually and recommendations are submitted to the department council as part of the Annual Programme KPI Report. The process of faculty recruitment is overseen by the Deanship of Human Resources and governed by national regulations.

The experts learn that faculty engagement in academic and research activities is strongly promoted across all three programmes. The portion of the entire workload allocated to research per faculty member is between 45% and 60%. During this time, teachers are expected to participate in scholarly research, contribute to scientific publications, and attend academic workshops and seminars aimed at enhancing their pedagogical and professional skills. Qassim University also grants faculty the opportunity to apply for academic sabbatical leave after five years of full-time service and encourages publication in high-impact journals by offering awards for contributions to reputable academic outlets.

The university has also established a Scientific Research and Innovation Unit (SRIU) at the College of Engineering. This unit is responsible for developing the college's research strategic plan, promoting innovation and research ethics, and maintaining a comprehensive database of research activities. The unit monitors research performance through KPIs defined by the National Center for Academic Accreditation and Evaluation (NCAAA). Research accomplishments are documented annually in the Unit's Achievement Report.

In order to support professional development, Qassim University has established several assistant deanships and specialised centres focused on enhancing faculty skills. These entities offer training courses every semester which are open to all faculty members across the university. The training programmes cover a wide range of topics, including teaching and learning strategies, modern tools for engineering education, research methods, and intellectual property rights. The courses are designed to enhance faculty members' academic and pedagogical competencies and to cultivate a supportive and effective learning environment. Teaching performance is regularly assessed through student evaluations, which also provide feedback to help with continuous improvement.

In the audit, the teachers confirm that the university's management is actively supporting the teaching staff, providing them with the adequate conditions necessary to carry out their teaching and research activities, as well as furthering their professional and pedagogical development.

The experts acknowledge the supportive environment at Qassim University and the mechanisms in place to foster the continuous improvement of its teaching staff. Overall, the experts conclude that the composition, professional orientation and qualifications of the teaching staff are well-suited to delivering the degree programmes at the intended level successfully. They also welcome the fact that teachers are actively involved in research activities, as evidenced by the number of research projects and publications. The students confirm this positive impression, stating that they are highly satisfied with the teaching staff and their expertise. In particular, they appreciate that teachers are always available whenever students need additional assistance and are open to feedback at any time.

Criterion 3.2 Student Support and Student Services

Evidence:

- Self-Assessment Report

- Discussions during the Audit

Preliminary assessment and analysis of the experts:
At Qassim University, comprehensive student support and services are provided across all three programmes to ensure that students are guided, both academically and administratively, throughout their studies. All essential information related to programme admission, study plans and graduation requirements is accessible via the university's website and the official website of the College of Engineering. Further detailed resources are available in each programme's handbook, providing insight into academic regulations, students' rights and responsibilities, and the processes for appeals and complaints.

As previously mentioned, academic performance is continuously monitored. The university's Deanship for Admission and Registration works closely with programme administrators to track students' academic progress. Each student is assigned an academic advisor who maintains records of their progress, and a structured academic advising system is in place. Advisors proactively initiate discussions with students regarding their academic progress and offer guidance when needed. At Master's level, thesis supervisors provide additional academic supervision, guiding students through their research projects.

In addition to academic support, students have access to a wide range of services that contribute to a well-rounded university experience. These include student clubs and initiatives that promote entrepreneurship and innovation. The university's Alumni Unit facilitates career development by organising job fairs and career counselling days to connect students with potential employers, and housing support services assist students with both on- and off-campus accommodation needs. The university also provides full scholarships to both national and international undergraduate and postgraduate students.

The experts consider that there are sufficient resources to provide individual guidance, counselling and support to all students. The support system helps students to adapt to the university environment, to achieve the intended learning outcomes and to complete their studies successfully. Students report being well informed about and satisfied with the services available to them.

Criterion 3.3 Funds and equipment

Evidence:

- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

As a public institution, Qassim University receives most of its funding from the government. In addition, the university generates supplementary income through consultancy services. Furthermore, a significant proportion of the university's research activities are supported by external grants, which increases research output. Considering Qassim University's finances, the experts believe that there is secure funding and reliable financial planning in place to ensure that the three programmes continue at the same level for the next five years.

The College of Engineering at Qassim University is equipped with facilities that support teaching and research. The three departments within the college share access to 33 rooms, comprising 24 classrooms, four lecture halls, four rooms dedicated to active learning and

two drawing halls. Classroom sizes vary, with an average of 50 square metres per room and a capacity of up to 30 students. Additionally, there are three larger classrooms, each measuring approximately 70 square metres and with a capacity of 50 students. The college also includes three 120-square-metre lecture halls that can seat 85 students and one large, theatre-style lecture hall measuring 250 square metres with a capacity of 185. All instructional rooms are equipped with whiteboards and data projectors to support effective teaching and presentations.

The laboratory facilities are equipped to support experimental coursework, senior design projects, research and community service initiatives. Each laboratory can accommodate up to 25 students per session. Overall, the Electrical Engineering Department maintains 15 laboratories, while the Mechanical Engineering Department operates 19. The university provides comprehensive documentation detailing the available laboratories and their respective equipment.

While Qassim University has several libraries, the Central Library is the most frequented by engineering students. Plans are currently underway to establish a dedicated library within the College of Engineering building. Each year, the Deanship collaborates with the colleges to assess their needs for textbooks, reference materials, journals, databases and other academic resources. These assessments inform future acquisitions, ensuring that educational resources remain relevant and up to date. The library's collection includes books in both Arabic and English, covering all fields of engineering offered by the college. Additionally, an electronic centre within the library provides access to international academic databases and journals, including IEEE and Springer, to support the research activities of faculty and students.

In the audit, both students and teachers report that they are highly satisfied with the facilities and equipment at Qassim Uni, noting that all the necessary tools and software are available. Teachers add that, if they require tools for research projects that the university does not have, they can submit a request and usually receive the desired equipment within a couple of months. They also inform the experts that Qassim University regularly surveys faculty and students on their satisfaction with the equipment and facilities.

During the audit, the experts visit the campus's facilities and laboratories. They found the infrastructure and equipment in the labs to be rather impressive and definitely adequate to achieve the intended outcomes of the three programmes. As mentioned in Chapter 1.3 of this report, they found that, given the excellent resources available to students and teachers, the course content could be much more advanced, particularly at Master's level. They therefore encourage staff members to make full use of the high-quality equipment to raise the level of courses and teach more advanced subjects in the three programmes.

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

As the experts did not identify any shortcomings with regard to this criterion, the university does not submit a comment on this section. The experts' assessment therefore remains the same as described above.

Criterion fulfilled.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidence:

- Self-Assessment Report
- Module descriptions
- Websites of all study programmes

Preliminary assessment and analysis of the experts:
Having studied the module descriptions of all three programmes, the experts confirm that they contain most of the necessary information, including the course name, code and credit points awarded; the grading scale; the intended learning outcomes; the content; the recommended reading; the possible prerequisites; the examination methods; and the assessment criteria. However, the module descriptions lack information about the person responsible for each module and the total workload per module, since they currently only include information about contact hours, not self-study time. This information must be added to the module descriptions. As mentioned in Chapter 1.3, the experts also learn in the audit that the module descriptions do not always accurately reflect the content and level of the subject actually taught in some modules. Therefore, the descriptions must be revised to reflect the actual content and level of tasks carried out by students.

Students confirm during discussions that information about courses is always available online, and that details concerning examinations and course content are provided at the beginning of each course by teaching staff.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Exemplary diploma certificate per study programme
- Exemplary Diploma Supplement certificate per study programme

- Exemplary transcript per study programme

Preliminary assessment and analysis of the experts:

The experts confirm that all graduates are awarded a Diploma and a Diploma Supplement in English after graduation. In addition, every graduate receives a Transcript of Records, which lists all the courses that the graduate has completed, the achieved credits, grades, and cumulative GPA. The Diploma Supplement contains almost all required information about the degree programmes but is missing a classification of the final grade of the graduate. This classification should include statistical data on the final results of other students in the cohort, enabling the graduate's performance to be compared with that of his peers.

Criterion 4.3 Relevant Rules

Evidence:

- Self-Assessment Report
- All relevant regulations as published on the university's webpage
- Audit Discussions

Preliminary assessment and analysis of the experts:

The auditors confirm that the rights and obligations of both Qassim University and the students are clearly defined and binding. All rules and regulations are published on the university's website and students receive course materials at the beginning of each semester. In addition, all relevant information about the programmes is available on the programme homepages.

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

Qassim University reports that they will adopt the experts' demands and revise the module descriptions accordingly. This will involve including information about the person responsible for the module and changing the content description to reflect the actual content and level of the tasks carried out. They also state that they will amend the Diploma Supplement to include the statistical data required by the ECTS Users' Guide. The experts welcome the university's intention to implement all the requirements. However, as these have not yet been carried out, the experts maintain their assessment as described above.

Criterion is partly fulfilled.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-Assessment Report

- Quality System Manual

- Survey reports per programme

- Samples surveys

- Discussions during the audit

Preliminary assessment and analysis of the experts:

The experts discuss the quality management system at Qassim University with the programme coordinators and students. They learn that quality management is an integral aspect of academic and institutional development at Qassim University. It ensures that educational programmes consistently meet high standards and remain aligned with national accreditation requirements. The quality management system operates on the basis of the Plan-Do-Check-Act (PDCA) cycle. This continuous improvement framework is intended to promote a dynamic process of strategic planning, implementation, monitoring and review at all levels of academic programming.

Programme assessment and continuous improvement are primarily the responsibility of faculty members, with the Undergraduate Programme Committee traditionally providing leadership. This committee collaborates with Subject Committees and encourages broader faculty engagement. Every year, faculty members evaluate and revise programmes on a smaller scale. Every five years, a major review of the programmes is conducted, focusing on the curricula as well as programme learning outcomes. Both minor and major reviews are largely based on feedback from internal and external stakeholders, including students, teachers, alumni, industrial partners and other external evaluators. Student feedback is gathered through surveys carried out at the end of every semester regarding teaching and learning. Additionally, the Student Advisory Committee, comprising junior and senior students, submits evaluations and suggestions regarding the learning experience to the programme director, thereby contributing to improvements in educational delivery. Faculty members are also engaged through annual surveys, in which they assess the quality of teaching and the research infrastructure. Feedback from the Professional Advisory Board (PAB), which includes external faculty, alumni and industry experts, is gathered annually.

These stakeholders review educational objectives and curriculum content to ensure alignment with workplace requirements. Furthermore, every two years, an external visitor conducts a thorough evaluation of the programme's ABET reaccreditation-related activities, providing a detailed report that informs the improvement process.

Once stakeholder feedback has been analysed and synthesised, the Committee prepares revised programme specifications and submits them to the Department Council for approval. Once approved, the updated programme elements, including the revised course learning outcomes, are implemented across the relevant courses. Faculty members then incorporate these changes using standardised templates to ensure alignment between individual course content and the overarching programme outcomes. The Quality Unit and the Vice Dean of Academic Affairs monitor the implementation phase to verify that educational delivery remains effective and consistent with the intended learning goals.

The quality management team at Qassim University uses Key Performance Indicators (KPIs) as fundamental tools for evaluating programme effectiveness. These are defined quantitatively in advance and benchmarked against both internal and external standards. Reports generated from KPI analysis include performance trends and highlight areas of strength and improvement. The assessment criteria are defined in alignment with the university's mission, curricular relevance and coherence, faculty qualifications and engagement, student learning and success, and resource efficiency.

In the audit, students report being very satisfied with the quality assurance at Qassim University, which includes a welcoming and friendly atmosphere where feedback is encouraged and treated seriously. They confirm that surveys are carried out every semester and that feedback can also be communicated in person at any time. However, they state that the results of the surveys, and the changes implemented to address any issues, are not communicated to the students. Students emphasise, though, that they observe changes based on their feedback being implemented in subsequent semesters. While the experts appreciate that feedback is welcomed and changes are implemented, they deem a closed-feedback loop necessary to ensure transparent communication with students about the survey results and what is done with the feedback afterwards. The university can decide how to communicate the summarised and anonymous results to students, whether by email or in person in class, but students must be informed about the survey results and any intended remedial action.

Overall, however, the experts are impressed with Qassim University's comprehensive and institutionalised quality management. They welcome the regular review of all programmes and the consideration of feedback from internal and external stakeholders. They conclude that the current quality management system is adequate to ensure not only that the quality

of the programmes is upheld, but also that it is continuously improved. Nevertheless, they require the student feedback loop to be closed.

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

Qassim University agrees with the experts' assessment. In their response, they state that they will establish formal methods, such as reporting sessions, to inform students about the survey results. While the experts welcome this, they uphold the requirement that students be informed about the survey results, since these plans have not yet been implemented.

Criterion not fulfilled.

E Additional Documents

No additional documents needed.

F Comment of the Higher Education Institution (21.08.2025)

The expert panel's comprehensive evaluation of our three engineering programs is greatly appreciated by College of Engineering (COE), Qassim University (QU), and we agreed with their overall evaluation. We are pleased that the experts highlighted numerous positive aspects of our programs, including the supportive environment, excellent laboratories, highly qualified faculty members, and robust quality management system.

In Response to Expert Requirements and Recommendations

For All Degree Programs

Module Descriptions

We comprehend the experts' desire for us to enhance the quality of our module descriptions. The COE, QU commits that it will:

- Including additional details regarding the individual responsible for each module.
- The student's burden, including the number of hours they spent studying independently, is meticulously calculated.
- Revising the descriptions to ensure that they accurately reflect the academic level and genuine content of the work that students complete
- Maintaining the clarity and comprehensiveness of all module descriptions in accordance with international standards.

Timeline: The UG program is already finalize the new curriculum as discussed with the expert panel during their visit. However, the PG programs curriculum will be modified in academic year 2025-2026. Therefore, the new curriculum for both programs are implemented in 2026-2027 academic session.

Regarding the Diploma Supplement Classification

We comply with the recommendation to include statistical data regarding the final results in the Diploma Supplement, the Diploma Supplement Classification. The COE, QU will:

- Develop a classification system that incorporates comparative statistical data regarding the performance of student cohorts.
- Assure that graduates have the ability to compare their performance to that of peers by providing standardized grade distribution information.
- All diploma supplements should be updated to align with international best practices.

Timeline: Implementation will commence in January 2026 for all recent graduates.

Regarding Student Feedback Loop

We are aware of the critical nature of concluding the feedback cycle with students. The subsequent actions will be implemented by COE, QU officials:

- Establish formal methods for informing students about the survey results and the actions you intend to take in response.
- Establish consistent reporting sessions that provide students with concise summaries of the survey results.
- Publish annual reports that detail the ways in which student feedback has resulted in enhancements.
- Establish a variety of methods for discussing the survey results.

Timeline: New regulations regarding the submission of remarks will be implemented by May 2026.

For the Bachelor's Degree Programme

Regarding C++ Programming Integration

We recognize the critical significance of C++ programming in the field of electrical engineering education. The COE, QU will:

- Incorporate comprehensive C++ programming instruction into the curriculum to ensure that students acquire the necessary object-oriented programming skills for microcontroller and embedded systems programming.
- While incorporating object-oriented programming as a mandatory component, preserve the current Python programming.
- Conduct laboratory sessions to provide practical experience with Python and C++ programming.

Timeline: Courses in object-oriented programming will be implemented during the academic year of 2026-2027 along with the new curriculum.

Regarding Expanded Elective Options

We are in support of providing students with a greater variety of course options in relation to the expansion of elective options. The COE, QU officials will implement the subsequent procedures:

- Introduce electives from other engineering and non-engineering departments that are interdisciplinary.
- Offer students a more comprehensive understanding of the field and improved career preparation.
- Uphold academic rigor while expanding the selection of elective courses available to students within the core group/track.

Timeline: The UG program is already finalize the new curriculum as discussed with the expert panel during their visit. Therefore, the new curriculum for program is implemented in 2026-2027   academic   session.

Regarding Track Selection Guidance

We agree with the significance of structured guidance in the selection of tracks. The COE, QU will:

- Develop an orientation course that is specifically designed to introduce various specialization programs.
- Furnish a comprehensive account of the course requirements and career paths for each discipline.
- Improve academic advising protocols for the selection of electives and tracks
- Develop decision-support tools and resources for students.

Timeline: The new orientation course will be implemented during the academic year 2025-2026. Nevertheless, the track selection is exclusively accessible to the current plan D, as focus groups will substitute the track in the new study plan E.

For the Master's Degree Programmes

Regarding Enhanced Academic Rigor

We recognize the necessity of increasing the academic rigor of our Master's. The COE, QU will:

- Conduct an exhaustive examination of all Master's-level courses.
- Raise the level of scientific complexity and content to align with the international Master's level standards.
- Maximize the potential of our laboratory equipment and exceptional faculty qualifications.
- Ensure that all courses exhibit a comprehensive academic scope that is suitable for graduate study.

Timeline: The PG programs curriculum will be modified in academic year 2025-2026. Therefore, the new curriculum for both programs are implemented in 2026-2027 academic session.

Regarding Renewable Energy (MSc-REE) Focus

In order to satisfy the requirements for the Renewable Energy Programme, we agree that our Master's program must be more focused on renewable energy. The COE, QU will:

- To ensure that 60% of elective courses are explicitly related to renewable energy, establish a minimum requirement.

- Formally document the responsibilities of the academic advisor in assisting with the selection of appropriate electives.
- Ensure that the program content accurately reflects the renewable energy specialization.
- Achieve consistency between the title of the program and the content of the course.

Timeline: The MSc-REE programme curriculum will be modified in academic year 2025-2026. Therefore, the new curriculum for programme is implemented in 2026-2027 academic session.

Regarding Part-time Programme Transparency

Both of our master's programmes are full-time. The duration of our programs is two years. They are available in the afternoon and evening to accommodate working students who are not enrolled in a part-time program. Consequently, we would appreciate it if you could confirm that we are not eligible for a part-time Master's programme.

Additional Institutional Obligations

Improvement of Student Mobility

Although it is not a formal requirement, we acknowledge the importance of international experience. The COE, QU is dedicated to:

- Encourage international exchange opportunities and student mobility.
- Form partnerships with international universities to facilitate student exchange.
- Establish administrative support structures to facilitate outgoing mobility.
- Establish funding mechanisms to facilitate the international experiences of students

Curriculum Innovation

The COE, QU will persist in its efforts to:

- Identify emerging technologies and cutting-edge topics for curriculum integration in a proactive manner.
- Formulate academic roadmaps for the integration of future-relevant subjects.
- Conciliate academic innovation with industry feedback in the development of curricula.
- Enhance academic leadership in curriculum design while maintaining our robust industry partnerships.

Quality Assurance Implementation and Monitoring

Quality Assurance

- Our established quality management system will oversee all modifications.
- Relevant academic committees will receive consistent progress reports.
- Feedback from students and faculty members will be collected and analysed on an ongoing basis.
- Throughout the implementation procedure, external stakeholders will be consulted.
  Resource Allocation

Resource Allocation

- These advancements have been achieved through the allocation of the requisite financial and human resources.
- The delivery of the curriculum will be improved through faculty development programs.
- The advanced course content will be supported by laboratory and equipment enhancements.
- In order to enhance student services, administrative support will be improved.

Conclusion

In accordance with the established timelines, Qassim University is dedicated to the execution of all expert recommendations and requirements. This accreditation process is perceived by us as a chance to enhance and further develop our engineering programs continually. Our objective is to contribute to the global engineering community and Saudi Arabia's Vision 2030 by offering a world-class education that equips our graduates with the skills necessary for successful careers.

We anticipate the opportunity to showcase our dedication to excellence and advancement in future evaluations, and we remain open to ongoing dialogue with ASIIN and the expert community.

Additional Document

1) Conditions for accepting excuse for retake exams (ENG/ARABIC)

G Summary: Expert recommendations (02.09.2025)

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Electrical Engineering	With requirements for one year	30.09.2031	EUR-ACE®	30.09.2031
Ma Electrical Engineering	With requirements for one year	30.09.2031	EUR-ACE®	30.09.2031
Ma Renewable Energy Engineering	With requirements for one year	30.09.2031	EUR-ACE®	30.09.2031

Requirements
For all programmes

A 1. (ASIIN 4.1) The module descriptions have to include information about the responsible person and the total workload per module.

A 2. (ASIIN 4.2) The Diploma Supplement has to include statistical data as set forth in the ECTS Users' Guide.

A 3. (ASIIN 5) Ensure that students are informed about the survey results.

For the Bachelor programme Electrical Engineering

A 4. (ASIIN 1.3) Ensure that students are taught programming skills in C++ with adequate focus.

For both Master programmes

A 5. (ASIIN 1.3, 4.1) The module descriptions have to be revised to reflect the actual content and level of the tasks carried out in each module.

A 6. (ASIIN 1.3) The scientific level of the course electives has to be enhanced.

For the Master programme Renewable Energy Engineering

A 7. (ASIIN 1.3) Determine a certain percentage of the electives that must be from the field of renewable energy to ensure that the content of the programme is aligned with its title. Additionally, it has to be formally defined and documented that academic advisors assist students with choosing electives.

Recommendations
For all programmes

E 1. (ASIIN 1.3) It is recommended to promote student mobility and establish partnerships with universities abroad.

E 2. (ASIIN 1.3) It is recommended that a roadmap is created to define the topics that are particularly important for the future of the respective discipline and to plan how they can be introduced into the curricula gradually.

For the Bachelor programme Electrical Engineering

E 3. (ASIIN 1.3) It is recommended that more space is allocated to electives in the curriculum to allow for greater technical specialisation and to enable students to take electives from other disciplines.

E 4. (ASIIN 1.3) It is recommended that a course is introduced to guide and assist students in choosing their track and suitable modules.

For both Master programmes

E 5. (ASIIN 1.5) It is recommended to transparently communicate that the current Master programmes are part-time and to also offer them as full-time options.

H   Comment of the Technical Committee 02 – Electrical Engineering/Information Technology (10.09.2025)

Technical Committee 02 – Electrical Engineering/Information Technology (10.09.2025)

Assessment and analysis for the award of the ASIIN seal:

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

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

The Technical Committee deems that the intended learning outcomes of the degree programmes do comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 02 – Electrical Engineering/Information Technology.

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Electrical Engineering	With requirements for one year	30.09.2031	EUR-ACE®	30.09.2031
Ma Electrical Engineering	With requirements for one year	30.09.2031	EUR-ACE®	30.09.2031
Ma Renewable Energy Engineering	With requirements for one year	30.09.2031	EUR-ACE®	30.09.2031

Technical Committee 05 – Materials Science, Physical Technologies (18.09.2025)

Assessment and analysis for the award of the ASIIN seal:

The TC discusses the procedure and, for the most part, agrees with the experts' assessment. They merely suggest deleting the reference to C++ specifically in requirement A4, as requiring skills in this specific programming language would be too narrow.

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 05 – Materials Science, Physical Technologies.

The Technical Committee 05 – Materials Science, Physical Technologies recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Renewable Energy Engineering	With requirements for one year	30.09.2031	EUR-ACE®	30.09.2031

I Decision of the Accreditation Commission (26.09.2025)

Assessment and analysis for the award of the ASIIN seal:

The commission discusses the procedure and generally agrees with the experts' assessment. They accept the ASIIN office's suggestion to divide requirement A7 into two parts. The discussion on requirement A6 leads to a decision to adopt a more open formulation that focuses on adherence to EQF level 7. They consider the suggestion of TC 05 to delete the reference to C++ programming skills, but decide to keep it as it was since the experts had provided valid reasons for requiring programming skills in this particular language.

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

The Accreditation Commission deems that the intended learning outcomes of the degree programmes do comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committees 02 and 05.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN Seal	Accredited by German Engineers	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Electrical Engineering	With requirements for one year	With requirements for one year	30.09.2031	EUR-ACE®	suspended until A4 is fulfilled*
Ma Electrical Engineering	With requirements for one year	With requirements for one year	30.09.2031	EUR-ACE®	suspended until A6 is fulfilled*
Ma Renewable Energy Engineering	With requirements for one year	With requirements for one year	30.09.2031	EUR-ACE®	suspended until A6 is fulfilled*

*According to the ENAEE rules, the award of the EUR-ACE® label is suspended if there are subject-specific requirements. The suspension will be lifted when the respective technical requirements are fulfilled.

Requirements

For all programmes

A 1.   (ASIIN 4.1) The module descriptions have to include information about the responsible person and the total workload per module.

A 2.   (ASIIN 4.2) The Diploma Supplement has to include statistical data as set forth in the ECTS Users' Guide.

A 3.   (ASIIN 5) Ensure that students are informed about the survey results.

For the Bachelor programme Electrical Engineering

A 4.   (ASIIN 1.3) Ensure that students are taught programming skills in C++ with adequate focus.

For both Master programmes

A 5.   (ASIIN 1.3, 4.1) The module descriptions have to be revised to reflect the actual content and level of the tasks carried out in each module.

A 6.   (ASIIN 1.3) Ensure that all course electives adhere to EQF-level 7.

For the Master programme Renewable Energy Engineering

A 7.   (ASIIN 1.3) Determine a certain percentage of the electives that must be from the field of renewable energy to ensure that the content of the programme is aligned with its title.

A 8.   (ASIIN 1.3) It has to be formally defined and documented that academic advisors assist students with choosing electives.

Recommendations

For all programmes

E 1.   (ASIIN 1.3) It is recommended to promote student mobility and establish partnerships with universities abroad.

E 2.   (ASIIN 1.3) It is recommended that a roadmap is created to define the topics that are particularly important for the future of the respective discipline and to plan how they can be introduced into the curricula gradually.

For the Bachelor programme Electrical Engineering

E 3. (ASIIN 1.3) It is recommended that more space is allocated to electives in the curriculum to allow for greater technical specialisation and to enable students to take electives from other disciplines.

E 4. (ASIIN 1.3) It is recommended that a course is introduced to guide and assist students in choosing their track and suitable modules.

For both Master programmes

E 5. (ASIIN 1.5) It is recommended to transparently communicate that the current Master programmes are part-time and to also offer them as full-time options.

Appendix: Programme Learning Outcomes and Curricula

According to Programme Handbook, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme Electrical Engineering:

Knowledge and Understanding	
K1	Acquire knowledge of Basic sciences (math, physics, management, economy, etc.) and Basic Engineering sciences.
K2	Identify complex Electrical engineering problems by recognizing the principles of Electrical engineering subjects, basic sciences, and mathematics.
K3	Relate knowledge of Math, Statistics, basic sciences to their engineering specialization (Design, Manufacturing, and Thermo-fluids), together with in-depth knowledge of that specialization.
K4	Identify knowledge of societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.
K5	Recognize the impact of professional engineering solutions in societal and environmental contexts and the ability to demonstrate knowledge of and need for sustainable development.
Skills	
S.1	Investigate various electrical engineering problems through developing and conducting experiments, analyzing and interpreting of data, and synthezing of information to provide valid conclusions
S.2	Apply appropriate engineering techniques, resources and modern IT tools, including prediction and modeling to electrical engineering devices/equipment/components and systems with consideration of the limitations to assess their characteristics and operating performance.
S.3	Design a device/component/equipment/system or process related to electrical engineering field
S.4	Communicate effectively, both orally and in written form using appropriate media, on complex engineering activities with the engineering community and with society.
Values	

V1	Adhere to the professional ethics, integrity, transparency by applying contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering client practices, solutions and challenges
V2	Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals ,plan tasks, and meet objectives..
V3	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological changes.

The following **curriculum** is presented:

The Preparatory Year Program

The Preparatory Year Program (PYP) is taken into consideration as levels 1 and 2 in the graduation program. In these levels, students study the following courses:

1st Level

Course Code	Course Title	Credit Hours
CSC 105	Computer Skills	4
ENG 0011	Preparatory English (1)	8
PHYS 110	Physics (1)	2
PSYCH 101	Thinking Skills and Learning Styles	2
STAT 100	Statistics	2
Total Hours		**18**

2nd Level

Course Code	Course Title	Credit Hours
CSC 111	Computer programming	3
ENG 0012	Preparatory English (2)	5
ESP 102	English for Engineering and Computer Science	2
MATH 105	Calculus	3
PHYS 115	Physics (2)	3

Electrical Power Engineering (EPE) Track

3rd Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
IC 101	Introduction to Islamic culture	2	2	-	-	-	-
ARAB 101	Linguistic skills	2	2	-	-	-	-
PHYS 131	General Physics	4	3	2	-	-	-
GE 104	Basics of Engineering Drawing	3	1	4	-	-	-
MATH 106	Integral Calculus	3	3	-	1	-	-
CHEM 111	General Chemistry	4	3	2	-	-	-
Total Credit hours		18					

4th Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
IC 102	Islam and Community Building	2	2	-	-	IC 101	-

GE 105	Basics of Engineering Technology	2	1	2	-	GE 104	-
MATH 107	Linear Algebra & Analytic Geometry	3	3	-	1	-	-
MATH 203	Differential and Integral Calculus	3	3	-	1	MATH 106	-
GE 210	Engineering Mechanics	3	3	-	1	MATH 106	MATH 107
EE 201	Fundamentals of Electric Circuits	3	3	-	1	PHYS 131	-
EE 203	Electromagnetism	3	3	-	1	PHYS 131	-
Total Credit hours		19					

5th Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
MATH 208	Differential equations	3	3	-	1	MATH 203	-
GE 211	Introduction to Engineering Design-I	3	2	4	-	-	-
CSC 209	Computer Programming	3	2	2	-	MATH 107 MATH 203	-
EE 202	Electric Circuit Analysis	3	3	-	1	EE 201	-
EE 205	Electric Circuits Laboratory	1	-	2	-	-	EE 202
EE 208	Logic Design	3	3	-	1	-	-
EE 210	Logic Design Laboratory	1	-	2	-	-	EE 208
Total Credit hours		17					

6th Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
IC 103	Economic System in Islam	2	2	-	-	IC 101	-
STAT 328	Probabilities and statistics	3	3	-	1	MATH 203	-
GE 213	Introduction to Engineering Design-2	2	2	2	-	GE 211	-
EE 300	Instruments & Electrical Measurements	3	2	2	-	EE 205	-
EE 301	Signals and systems Analysis	3	3	-	1	EE 202	-
EE 312	Electronics - 1	3	3	-	1	EE 202	-
EE 313	Electronics Laboratory - 1	1	-	2	-	-	EE 312
Total Credit hours		17					

7th Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
ARAB 103	Arabic Writing	2	2	-	-	-	-
ME 322	Mechanical power engineering	3	3	-	1	PHYS 131	-
EE 330	Electric Machines - 1	3	3	-	1	EE202 EE 203	-
EE 340	Fundamentals of Power Systems	3	3	-	1	EE202 EE 203	-
+++	College Elective – 1	3	3	-	-	-	-
EE 351	Principles of Control Systems	3	3	-	1	EE 301	-
Total Credit hours		17					

8th Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
IC 104	Political System in Islam	2	2	-	-	IC 101	-
EE 331	Electric Machines - 2	3	3	-	1	EE 330	-
EE 332	Electric Machines Laboratory	1	-	2	-	-	EE 331
EE 343	Power Systems Analysis	3	3	-	1	EE 340	-
EE 344	Power Systems Laboratory	1	-	2	-	-	EE 343
EE 354	Microprocessors and Interface Circuits	3	2	2	-	EE 208	-
+++	Free Course	3	3	-	-	-	-
Total Credit hours		16					

9th Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
ECON 401	Engineering Economy	3	3	-	1	Pass 90 cr	-
EE 432	Power Electronics	3	3	-	1	EE 312	-
EE 437	Power Electronics Laboratory	1	-	2	-	-	EE 432
EE 4xx	Elective Course - 1	3	3	-	1	-	-
+++	Free Course	3	3	-	-	-	-
EE 491	Senior Design Project - 1	3	1	4	-	Pass 100 cr	-
Total Credit hours		16					

10th Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
MGMT 402	Project Management	3	3	-	1	Pass 90 cr	-
EE 446	High Voltage Engineering	3	3	-	1	EE 340	-
+++	College Elective – 2	3	3	-	-	-	-
EE 482	Design of Electrical Protection Systems	3	3	-	1	EE 340	-
EE 4xx	Elective Course - 2	3	3	-	1	-	-
EE 492	Senior Design Project - 2	2	1	2	-	EE 491	-
GE 406	Summer Training	2	2	-	-	Pass 100 cr	-
Total Credit hours		19					

Electronics and Communication (ECE) Track

3rd Level

Course Code	Course Title	CR	LT	LB	TU	Pre- Req.	Co-Req.
IC 101	Introduction to Islamic culture	2	2	-	-	-	-
ARAB 101	Linguistic skills	2	2	-	-	-	-
PHYS 131	General Physics	4	3	2	-	-	-
GE 104	Basics of Engineering Drawing	3	1	4	-	-	-

MATH 106	Integral Calculus	3	3	-	1	-	-
CHEM 111	General Chemistry	4	3	2	-	-	-
Total Credit hours		18					

4th Level

Course Code	Course Title	CR	LT	LB	TU	Pre- Req.	Co-Req.
IC 102	Islam and Community Building	2	2	-	-	IC 101	-
GE 105	Basics of Engineering Technology	2	1	2	-	GE 104	-
MATH 107	Linear Algebra & Analytic Geometry	3	3	-	1	-	-
MATH 203	Differential and Integral Calculus	3	3	-	1	MATH 106	-
GE 210	Engineering Mechanics	3	3	-	1	MATH 106	MATH 107
EE 201	Fundamentals of Electric Circuits	3	3	-	1	PHYS 131	
EE 203	Electromagnetism	3	3	-	1	PHYS 131	-
Total Credit hours		19					

5th Level

Course Code	Course Title	CR	LT	LB	TU	Pre- Req.	Co-Req.
MATH 208	Differential equations	3	3	-	1	MATH 203	-
GE 211	Introduction to Engineering Design -I	3	2	4	-	-	-
CSC 209	Computer Programming	3	2	2	-	MATH 107 MATH 203	-
EE 202	Electric Circuit Analysis	3	3	-	1	EE 201	-
EE 205	Electric Circuits Laboratory	1	-	2	-	-	EE 202
EE 208	Logic Design	3	3	-	1	-	-
EE 210	Logic Design Laboratory	1	-	2	-	-	EE 208
Total Credit hours		17					

6th Level

Course Code	Course Title	CR	LT	LB	TU	Pre- Req.	Co-Req.
IC 103	Economic System in Islam	2	2	-	-	IC 101	-
STAT 328	Probabilities and statistics	3	3	-	1	MATH 203	-
GE 213	Introduction to Engineering Design-2	2	2	2	-	GE 211	-
EE 300	Instruments & Electrical Measurements	3	2	2	-	EE 205	-
EE 301	Signals and systems Analysis	3	3	-	1	EE 202	-
EE 312	Electronics - 1	3	3	-	1	EE 202	-
EE 313	Electronics Laboratory - 1	1	-	2	-	-	EE 312
Total Credit hours		17					

7th Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
ARAB 103	Arabic Writing	2	2	-	-	-	-
EE 317	Electronics - 2	3	3	-	1	EE 312	-
EE 319	Electronics Laboratory - 2	1	-	2	-	-	EE 317
EE 320	Communications Principles	3	3	-	1	EE 301	-
+++	College Elective – 1	3	3	-	-	-	-
EE 351	Principles of Control Systems	3	3	-	1	EE 301	-
CEN 354	Principles of Networks Engineering	3	3	-	1	-	-
Total Credit hours		18					

8th Level

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
IC 104	Political System in Islam	2	2	-	-	IC 101	-
EE 322	Digital Communications	3	3	-	1	EE 320	-
EE 326	Communications Laboratory	1	-	2	-	EE 320	EE 322
EE 354	Microprocessors and Interface Circuits	3	2	2	-	EE 208	-
EE 405	ICs Technology and Applications	3	3	-	1	EE 317	-
EE 406	Integrated Circuits Laboratory	1	-	2	-	-	EE 405
+++	Free Course	3	3	-	-	-	-
Total Credit hours		16					

Course Code	Course Title	CR	LT	LB	TU	Pre-Req.	Co-Req.
ECON 401	Engineering Economy	3	3	-	1	Pass 90 cr	-
EE 423	Wave Propagation and Antennas	3	3	-	1	EE 203	-
EE 4xx	Elective Course - 1	3	3	-	1	-	-
+++	Free Course	3	3	-	-	-	-
EE 491	Senior Design Project - 1	3	1	4	-	Pass 100 cr	-
Total Credit hours		15					

10th Level

Course Code	Course Title		CR	LT	LB	TU	Pre-Req.	Co-Req.
MGMT 402	Project Management		3	3	-	1	Pass 90 cr	-
EE 420	Information Theory and Coding		3	3	-	1	EE 320	-
EE 463	Mobile Communications		3	3	-	1	EE 320	-
+++	College Elective – 2		3	3	-	-	-	-
EE 4xx	Elective Course - 2		3	3	-	1	-	-
EE 492	Senior Design Project - 2		2	1	2	-	EE 491	-
GE 406	Summer Training		2	2	-	-	Pass 100 cr	-
Total Credit hours			19					

According to Programme Handbook, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master degree programme Electrical Engineering:

	Knowledge and Understanding	
K1	Acquire in depth and specialized body of knowledge and understanding covering theories, principles, and concepts in the field of electrical engineering.	
K2	Demonstrate critical knowledge and understanding of processes, materials, techniques, practices, conventions, and/or terminology relevant to electrical engineering field.	
K3	Express advanced knowledge and understanding of recent development in the field of electrical engineering.	
K4	Exhibit advanced knowledge and understanding of a range of established and specialized research and/or inquiry techniques in the field of electrical engineering.	
	Skills: Cognitive	
S.1	Apply specialized theories principles and concepts advanced contexts in the field of electrical engineering.	
S.2	Solve problems in complex and advanced contexts in the field of electrical engineering.	
S.3	Critically assess, review, and reflect on key concepts, principles, and theories; and provide creative solutions to current issues and problems in complex and advanced contexts in the field of electrical engineering.	
S.4	Carry out advanced research or professional projects using specialized research and enquiry methodologies in the field of electrical engineering.	
	Skills: Practical and Physical	
S.5	Use processes, techniques, tools, and/or materials that are advanced and specialized to deal with complex and advanced practical activities in the field of electrical engineering.	
S.6	Carry out complex and advanced practical tasks and procedures in specialized areas related to electrical engineering field.	
	Skills: Communication and ICT	
S.7	Communicate in various forms to disseminate knowledge, skills, research results, and innovations related to electrical engineering field to specialist and non-specialist audiences.	
S.8	Process data and information quantitatively and/or qualitatively in complex	

	and advanced contexts related to electrical engineering field.
S.9	Select, use, and adapt advanced digital technological and ICT tools and applications to process and analyze a variety of data and information sets to support and advance leading research and/or projects related to electrical engineering field.
Values, Autonomy and Responsibility	
V.1	Demonstrate integrity and professional and academic values when dealing with various issues.
V.2	Initiate professional planning for learning and/or work, professional development, monitor learning and performance, and participate in academic and/or professional strategic decisions, with high autonomy.
V.3	Effectively manage specialized tasks and activities in electrical engineering and related discipline with high autonomy.
V.4	Effectively collaborates and participate in research or professional projects, undertake leadership roles, and take high responsibility of the work.
V.5	Contribute to the fostering of the community quality life.

The following **curriculum** is presented:

Year 1 – Level 1 (Semester 1)			
Course	**Course Title**	**Cr. Hrs.**	**Prereq**
GE 605	Modeling and Simulation of Engineering Systems	3	---
GE 608	Experimental Methods and Analysis	3	---
MATH 621	Engineering Mathematics	3	---
	Total	9	

Year 1 – Level 2 (Semester 2)			
Course	**Course Title**	**Cr. Hrs.**	**Prereq**
EE 6--	Elective 1	3	---
EE 6--	Elective 2	3	---
EE 6--	Elective 3	3	---
	Total	9	

Year 2 – Level 3			
Course	**Course Title**	**Cr. Hrs.**	**Prereq**
EE 6--	Elective 4	3	---
EE 6--	Elective 5	3	---
	Total	6	

Year 2 – Level 4			
Course	Course Title	Cr. Hrs.	Prereq
EE 699	Thesis	6	---
	Total	6	

Total Hours in M.Sc- Electrical Engineering Program	30 H

Table 2: Elective courses			
Course	Course Title	Cr. Hrs.	Prereq
EE 610	Physics of Semiconductors and Devices	3	-----------
EE 611	Advanced Course on Filters and Amplifiers	3	-----------
EE 612	Advanced Electro Magnetic Theory	3	-----------
EE 613	Integrated Sensors and Sensor Systems	3	-----------
EE 614	Nanoelectronics and Nanotechnology	3	-----------

EE 615	Automation & Robotics	3	----------
EE 616	Advanced Experimental Methods in Electronics	3	----------
EE 617	Embedded System Design	3	----------
EE 618	Advanced Industrial Electronics	3	----------
EE 619	System-on-Chip Design (SoC)	3	----------
EE 620	Optimization of communication Networks	3	----------
EE 621	Statistical Communication Systems	3	----------
EE 622	Advanced Digital Communication Systems	3	----------
EE 623	Digital Signal Processing	3	----------
EE 624	Digital Image Processing	3	----------
EE 625	Cellular and Mobile Communication Systems	3	----------
EE 626	Antennas and Radio waves Propagation	3	----------
EE 627	Data Encryption and Network Security	3	----------
EE 628	Fiber Optic Communications	3	----------
EE 629	Selected Topics in Communication Engineering	3	----------
EE 631	Advanced Topics in Electrical Machines.	3	----------
EE 632	Advanced Topics in Power Electronics.	3	----------
EE 633	Advanced Topics in Electrical Drive Systems.	3	----------
EE 634	Design of Electrical Machines.	3	----------
EE 635	Testing and Standard Specifications of Electrical Machine.	3	----------
EE 636	Fractional Horsepower and Servo Motors	3	----------
EE 637	Dynamics of Electrical Machines	3	----------
EE 638	Selected Topics in Electrical Machines.	3	----------
EE 639	Selected Topics in Power Electronics.	3	----------
EE 641	Distribution System Engineering	3	----------
EE 642	Distribution System Modeling and Analysis	3	----------
EE 643	Power system operation	3	----------
EE 645	Power quality	3	----------
EE 646	High Voltage Engineering	3	----------
EE 647	Dielectric and electrical insulation	3	----------
EE 648	Power Systems Planning and Reliability	3	----------
EE 649	Selected Topics in Power Systems	3	----------
EE 651	Artificial intelligence techniques in electrical power fields	3	----------
EE 652	Control of power systems	3	----------
EE 685	Introduction to Bio-nanotechnology and Biosensors	3	----------
EE 688	Selected topics in Electronics	3	----------
Total		**123**	

According to Programme Handbook, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master degree programme Renewable Energy Engineering:

Knowledge and Understanding:	
K1	Obtain a comprehensive and specialized knowledge base encompassing theories, ideas, and concepts related to renewable energy engineering and energy efficiency.
K2	Have a thorough understanding of the terminology, practices, materials, processes, and/or conventions that are relevant to renewable energy engineering and energy efficiency.
K3	Possess in-depth knowledge of recent advancements in renewable energy engineering and energy efficiency.
K4	Acquire advanced knowledge and comprehension of a variety of well-established, specialized research and/or inquiry methods in the fields of renewable energy engineering and energy efficiency. .
Skills:	
S1	Apply complex settings, specific theories, ideas, and concepts in the field of renewable energy engineering and energy efficiency.
S2	Solve problems in complicated and advanced renewable energy engineering and energy efficiency.
S3	Critically evaluate, examine, and consider important ideas, theories, and concepts. In the field of renewable energy engineering, offer creative solutions to current challenges in complex and sophisticated situations.
S4	Carry out professional projects or advanced research in Renewable Energy Engineering using specialist research and inquiry approaches.
S5	Use processes, techniques, tools, and/or materials that are advanced and specialized to deal with complex and advanced practical activities in the field of renewable energy engineering.
S6	Perform intricate and advanced practical tasks and procedures within specialized areas of Renewable Energy Engineering and associated engineering disciplines.
S7	Effectively communicate through diverse mediums to share knowledge, skills, research findings, and innovations pertaining to the field of renewable energy engineering with both specialist and non-specialist audiences.
S8	Analyze data and information using quantitative and/or qualitative methods within complex and advanced contexts applicable to the field of renewable energy engineering.
S9	Choose, employ, and customize advanced digital technologies and ICT tools and applications to process and analyze diverse sets of data and information, facilitating the advancement of research and projects within the renewable energy engineering field.

Values, Autonomy, and Responsibility:	
V1	Exhibit integrity and uphold professional and academic values when addressing a range of issues.
V2	Take the lead in professional planning for learning and/or work, as well as professional advance, monitoring learning and performance, and engaging in academic and/or professional strategic decisions with a high degree of responsibility.
V3	Efficiently oversee specialized tasks and activities within renewable energy engineering and related disciplines with a significant level of independency.
V4	Successfully engage in collaborative efforts and contribute to research or professional projects or groups, taking on leadership roles and assuming significant responsibility for the work.
V5	Contribute to enhancing the quality of life within the community.

The following **curriculum** is presented:

Academic Year	Level (Semester)	Compulsory General (MATH) Courses	Compulsory Specialized Courses	Electives Specialized Courses	Theses	Total CRs for Semester
First	1	6	3			9
First	2			9		9
Second	3	3		3		6
Second	4				6	6
Total CRs for Requirement		9	3	12	6	30

First Year

Level (1)

Course Code/No.	Course Title	CR	Theory	Tu	Lab	Prerequisites
GE 605	Modeling and Simulation of Engineering Systems	3	3	0	0	---
MATH 621	Engineering Mathematics	3	3	0	0	---
REE 611	Introduction to Renewable Energy Engineering	3	3	0	0	---
	Total	9				

Level (2)

Course Code/No.	Course Title	CR	Theory	Tu	Lab	Prerequisites
REE 6xx	Course1 (From Elective List)	3	3	0	0	---
REE 6xx	Course2 (From Elective List)	3	3	0	0	---
REE 6xx	Course3 (From Elective List)	3	3	0	0	---
	Total	9				

Second Year

Level (3)

Course Code/No.	Course Title	CR	Theory	Tu	Lab	Prerequisites
GE 608	Experimental Methods and Analysis	3	3	0	0	---
REE 6xx	Course4 (From Elective List)	3	3	0	0	---
	Total	6				

Level (4)

Course Code/No.	Course Title	Credit Hours	Prerequisites
REE 699	Theses	6	---
	Total	6	

List of Specialized Courses (Elective)

Course Code/No.	Course Title	Credit Hours				Prerequisite
		CR	Theory	TU	Lab	
REE 621	Solar thermal energy applications	3	3	0	0	----
REE 622	Concentrated solar power plants	3	3	0	0	---
REE 630	Energy Conversion	3	3	0	0	---
REE 631	Energy storage systems	3	3	0	0	----
REE 633	Energy and environment	3	3	0	0	----
REE 635	Energy efficiency	3	3	0	0	----
REE 640	Biomass energy	3	3	0	0	----
REE 650	Wind Energy	3	3	0	0	----
REE 660	Photovoltaic power systems	3	3	0	0	----
REE 665	Electrical systems related to	3	3	0	0	----
REE 670	Geothermal energy	3	3	0	0	----
REE 680	Economics and planning of	3	3	0	0	----
REE 690	Selected Topics in Renewable	3	3	0	0	----
The student studies 4 courses		**(12** CRs)				