

Accreditation Report

Programme Accreditation of
German International University Cairo (GIU)
Mechatronics/Automotive Engineering (B.Sc./M.Sc.)
Manufacturing Engineering (B.Sc./M.Sc.)
Robotics and Automation Engineering (B.Sc./M.Sc.)
Automation and Control Engineering (B.Sc./M.Sc.)
Electrical Power and Energy Systems Engineering (B.Sc./M.Sc.)
Pharmaceutical Engineering (B.Sc./M.Sc.)

I Procedure

Date of contract: 25 April 2024

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Attendance by ACQUIN office: Dr. Michael Mayer, Dr. Jasmine Rudolph

Accreditation decision: 12. September 2024

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II Introduction

The experts would like to thank the representatives of the HEI as well as students that they have taken part in the discussions and willingly shared information and their views during the site visit. The discussions are valuable not only for the assessment of the institution, but also for a better understanding of the legal and sociocultural context of the local higher education system.

Evaluation basis for the peer-review experts is the self-assessment report of the HEI as well as intensive discussions during the site visit with the HEI management, deans and/or heads of the departments, head(s) of the study programme(s), study programme(s) coordinators, teachers, lecturers, administrative staff, students, and graduates.

Main objective of the accreditation procedure is to assess the quality of the study programmes and compliance with the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG). The ESG standards are applied as main assessment criteria in the international accreditation procedure. In addition, the respective country-specific criteria and standards are taken into account.

A group of experts was set up, which ensured that all areas relevant to the accreditation procedure (e.g. legal, structural, social etc. aspects) as well as the ESG and national criteria were considered. The peer-review experts include professors, representatives of the professional practice and the student representative. A certificate with the ACQUIN seal is awarded upon accreditation of the study programme(s).

1 The Higher Education System in Egypt

The higher education system in Egypt operates under the supervision of the Ministry of Higher Education and Scientific Research. This system comprises public universities, private universities, and specialized institutes. The system emphasizes maintaining and enhancing educational quality through a structured process of evaluation and accreditation.

The Supreme Council of Universities (SCU) in Egypt is the highest governing body responsible for the overall supervision and coordination of higher education institutions in the country. It plays a crucial role in formulating policies, regulations, and strategies for the development and enhancement of the higher education system. The SCU oversees the accreditation and recognition of academic programs, ensures the quality of education, and standardizes academic degrees across universities. It also facilitates the coordination between different universities and governmental bodies, ensuring that the educational institutions meet national standards and contribute to the country's socio-economic development.

The GIU has undergone the equivalency of all of its degree programs through the SCU at which the compatibility of the syllabi and bylaws is checked against the Egyptian standards and the equivalent Egyptian degree programmes.

Overall, the accreditation process in Egypt's higher education system aims to ensure that institutions deliver high-quality education, ensure academic excellence, and produce graduates who are well-equipped to meet the demands of the local and global job markets.

2 Short profile of HEI

The German International University is a non-for-profit institution headquartered in the New Administrative Capital – Egypt, established based on the frame of the Cultural Agreement concluded between the Government of the Arab Republic of Egypt and the Government of the Federal Republic of Germany in 1960 and 1984 as well as the Establishment Agreement of 2018, and based on the Presidential Decree and the decision of the Minister of Foreign Affairs in 2019. The German International University (GIU) offers academic degrees (Bachelors', Master and PhD Degrees) based on the German study curricula, academic standards as well as study rules and regulations which are fully matching the Egyptian guidelines and recognized and accredited by the Egyptian Ministry of Higher Education and Research.

The University is established in close cooperation with its founding universities: HTW Berlin, Technical University of Ulm THU, Berlin School of Economics and Law HWR, Heilbronn University of Applied Sciences HHN, German University in Cairo GUC and Alliance of UAS7. The university is supported by many governmental entities among which: German Federal Foreign Office, German Federal Ministry of Education and Research, German Academic Exchange Service DAAD, Egyptian Ministry of Foreign Affairs, Egyptian Ministry of Higher Education and Scientific Research and German Embassy in Cairo.

The GIU awards Bachelor of Science (B.Sc.), Master of Science (M.Sc.) and Doctor of Philosophy (Ph.D.) degrees in various fields of the faculties listed below:

1. Faculty of Engineering
2. Faculty of Informatics & Computer Science
3. Faculty of Economics and Business Administration
4. Faculty of Design
5. Faculty of Architectural Engineering
6. Faculty of Biotechnology
7. Faculty of Pharmaceutical Engineering & Technology
8. Faculty of Physical Therapy

Vision

The university's vision as follows: "Consolidating a platform of German Higher Education System in Egypt, Middle East and the African Region, granting accessibility to the world class German University Education, promoting to industry and economy in the region through integrating practice-oriented education, academia, research and state-of-art technology, Enhancing scientific, technical, economic and cultural cooperation between Germany and its partners all over the world."

Mission

The university has formulated several missions, the most important of which is to achieve excellence in teaching and research. The university aims to introduce an innovative German education approach that focuses on academic and professional expertise in order to nurture students' talents and competencies. Secondly, the university strives to offer world-class interdisciplinary curricula that are highly practice oriented. Thirdly, the goal is to develop competitive graduates with unique qualifications that align with the global job market. Furthermore, the university fosters internationality and aims to establish industrial and business networks with

national and international industry leaders in Egypt, Germany, and beyond. The university invests in training and developing staff using up-to-date technology to create an intellectual atmosphere that adapts to the dynamic global industrial environment.

University Values

The University is based on 10 core values: Autonomy and Academic Freedom, Accessibility, Neutrality, Diversity and Equality, Openness, Innovation, Respect, Truth, Flexibility and Responsiveness of Engineering aspires to be recognized locally, regionally, and internationally for providing quality engineering education, while bridging the gap between theory and practice and blending the know-how with the do-how, via adopting an industry-driven project-based approach. The Faculty of Engineering strives to provide high-quality German-based engineering education centred around the key principles of active learning and industry-focused curricula, in addition to promoting lifelong-learning, critical thinking, and effective communication. The Faculty of Engineering prepares students to become successful engineers and be able to contribute effectively to their profession and community.

Short info of the faculty of Pharmaceutical Engineering

The special nature of Pharmaceutical Engineering programmes involving both pharmacy and engineering sciences means that the programme encompasses basic sciences and applied pharmaceutical technology and engineering disciplines, in addition to core pharmaceutical engineering topics that bridge the schism between pharmacy and engineering, or in other words between drug discovery and drug production.

The programme is organized over a study period of four academic years, where each academic year comprises two main semesters, the Winter semester and the Spring semester. The programme of the Pharmaceutical Engineering also fulfils the Bologna process for the comparability with academic study programme in German and European Universities.

The programme is organized as a coherent structure with each part building on the relevant ones. It is devised to have its own separate identity not only from pharmacy, but also from other engineering disciplines. Its relationship to pharmacy means that its two strands namely engineering, and pharmacy develop progressively synergistically along the programme such that every year group has both pharmacy courses and engineering courses.

3 General information on the study programme(s)

Mechatronics/Automotive Engineering (B.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	8
Number of ECTS credits	240
Form of study	full time

Mechatronics/Automotive Engineering (M.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	3
Number of ECTS credits	90
Form of study	full time

Manufacturing Engineering (B.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	8
Number of ECTS credits	240
Form of study	full time

Manufacturing Engineering (M.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	3
Number of ECTS credits	90
Form of study	full time

Robotics and Automation Engineering (B.Sc.),

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	8
Number of ECTS credits	240
Form of study	full time

Robotics and Automation Engineering (M.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	3
Number of ECTS credits	90
Form of study	full time

Automation and Control Engineering (B.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	8
Number of ECTS credits	240
Form of study	full time

Automation and Control Engineering (M.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	3
Number of ECTS credits	90
Form of study	full time

Electrical Power and Energy Systems Engineering (B.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	8
Number of ECTS credits	240
Form of study	full time

Electrical Power and Energy Systems Engineering (M.Sc.)

Location	German International University
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	New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Engineering
Standard period of study (semesters)	3
Number of ECTS credits	90
Form of study	full time

Pharmaceutical Engineering (B.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Pharmaceutical Engineering
Standard period of study (semesters)	8
Number of ECTS credits	240
Form of study	full time

Pharmaceutical Engineering (M.Sc.)

Location	German International University New Administrative Capital, Cairo, Egypt
Date of introduction	September 2019
Faculty/ department	Faculty of Pharmaceutical Engineering
Standard period of study (semesters)	3
Number of ECTS credits	90
Form of study	full time

III Implementation and assessment of the criteria

1 ESG Standard 1.1: Policy for quality assurance

Institutions should have a policy for quality assurance that is made public and forms part of their strategic management. Internal stakeholders should develop and implement this policy through appropriate structures and processes, while involving external stakeholders.

1.1 Implementation

The aim of the German International University is to continuously improve its processes and its quality management system. GIU adopted Total Quality Management (TQM) since its inauguration in 2019, where stakeholders' needs and expectations are to be met through applying continuous quality improvement (CQI) concept {plan- do- check- act} while focusing on quality culture.

The GIU internal quality assurance system applies a systematic way that verifies whether the ongoing activities are constituent with the quality assurance system objectives and in accordance with the national standards and the European Standards and Guidelines (ESG.). All of the offered programs are to be continuously reviewed and evaluated to always enhance the quality and standards of teaching and learning.

Aligned with the core mission of GIU, our quality system is dedicated to fostering a distinctive university teaching and learning experience. We are committed to achieving this goal by integrating the most effective international practices in quality assurance, establishing and nurturing a pervasive quality culture, and continually enhancing the quality of education.

At GIU, our quality system encompasses processes of both national and international accreditation, spanning programme and system accreditation levels. This comprehensive approach ensures that our academic and professional programs consistently meet the highest standards of excellence. Additionally, we are actively involved in the establishment of new courses and programs, employing a forward-looking perspective to adapt to emerging educational needs and trends.

A fundamental aspect of our quality system is the facilitation of various types of evaluations and the solicitation of feedback from diverse stakeholders. By engaging with students, faculty, industry partners, and the broader community, we seek to refine and optimize our academic programs and services continually. This iterative process allows us to meet the expectations of our stakeholders, contributing to the ongoing effectiveness and relevance of our educational offerings. In essence, the GIU quality system serves as a dynamic framework, driving continuous improvement and innovation in our academic endeavors. We remain steadfast in our commitment to delivering a world-class education that prepares our students for success in an ever-evolving global landscape.

Objectives

- To ensure the quality of education and academic programs and maintain international accreditation together with national accreditation.

- To ensure the implementation of self-assessment and continuous improvement processes in order to enable the University to achieve the required quality assurance standards in all academic and administrative fields.
- To promote and enhance the diffusion of quality culture among the University's staff. The structure of the Quality Management and assurance system is composed of "QMAC Board Level Committee" which supervises the Quality Assurance and Accreditation Centre.

The Quality Assurance and Accreditation Centre supervises the Quality Committees inside the GIU faculties/programs headed by quality representative from the faculties' academic staff.

Quality Management and Accreditation Committee (QMAC) (Board Level)

The Quality Management and Accreditation Committee adopts Total Quality Management (TQM) concepts together with spreading a culture of Total Quality Management in which everyone is involved and committed, to continuous enhancement, this is achieved through the following good practices that are used in education: Using the student-centred approach instead of the teacher centred approach (content-oriented approach). The programme outcomes approach where the concept of learning outcomes (competencies) is used for curriculum design. The assessment of student learning and workload.

Quality Committees (Faculties Level)

The Quality Assurance and Accreditation Centre supervises the Quality Committees inside the GIU faculties. The head of each unit would be a quality representative from the faculties' staff. The Quality Committees role is to ensure achieving excellence in teaching and research by adopting the highest quality curricula and applying the highest quality teaching, research and administration.

Supporting Committees for the Quality Assurance System

The following committees assist in enhancing the quality assurance system at GIU as well as offering support and feedback to students. They are established inside each faculty in collaboration with the quality team and include academic staff members and teaching assistants.

Students' Curriculum Committee (SCC)

The committee is headed by academic staff and includes representatives of the students from each programme/level. The objectives of the Students' Curriculum Committee are to involve the students in the internal quality assurance system at the GIU as a corner stone as well as open a communication channel between Faculty and University, Faculty and Faculty, Faculty and Students. The Committee wants to enhance the educational process by updating curricula and shows the points of innovation and differentiation in the curricula compared to national and international ones.

Internal quality assurance

The GIU internal quality assurance system focuses on academic programme enhancement. The programme performance review is conducted by the faculty for each academic semester in terms of staff achievement/development, student performance, etc. The entire academic staff; including heads, academics and TAs, participate in quality management processes as part of their ongoing academic activities. The Plan- Do- Check- Act cycle is used for executing continuous quality improvement (CQI) for each programme according to scheduled time limit. Refer to Quality Management Policy and Procedures.

External Stakeholder Feedback

The university is to apply for programs' accreditation (every 5- 7 years as per the accreditation period) by reputable accreditation agencies where its programs and self- reports are evaluated, and feedback is given. The university makes use of the feedback in enhancing its programs. Also, the programs bylaws are periodically (every 4-5 years) revised by the Supreme Council of Universities and the Ministry of Higher Education. The university makes use of the given feedback in updating and enhancing its programs. Feedback from the fresh graduate survey, the employer survey are to be collected and analysed every year and the results and feedback are to be incorporated in enhancing the programme.

Academic Integrity

In addition, being a high-quality university mandates a healthy intellectual atmosphere of excellence fostered by a strong academic integrity policy that is capable of preserving noble academic and research values. As stipulated in article 7 of the study and examination regulations of the GIU, violations of academic integrity are intolerable at the GIU.

Assessment

The German International University has defined an overall policy for quality assurance, which is based on the PDCA cycle (Plan – Do – Check – Act). This is named Total Quality Management (TQM). The Total Quality Management is made public and is available at the university. Therefore, also internal stakeholders are included to maintain the quality management support. The TQM supports systematically the continuous reviews and evaluation according to ESG and national standards.

GIU has therefore defined guidelines, standards and relevant regulations. All staff and students are fully involved, while respecting academic and democratic freedoms and freedom of expression. The resources provided by GIU to support quality assurance management are adequate, and interviews with teaching staff have shown that the climate at GIU is conducive to this freedom.

The review panel gained the very good impression that the degree programs we reviewed meet the needs of future society for job-ready graduates who are equally capable of working in the private or public sector and also engaging in academic research and teaching. University leadership has demonstrated that it is responsible for ensuring that the competency goals of the degree programs reflect the academic and research development of the degree programs. In this way, the reviewed degree programs meet the needs of society and the labor market.

The study programs function on the basis of an effective internal quality assurance system and are supported by strong, focused research.

The quality assurance policy is complemented by cyclical external quality assurance.

GIU has well organized and operationalized the assurance of the quality of the learning process and the programs we reviewed, as the main objective of quality assurance for such academic educational institutions as an ongoing, continuous process is considered an important segment in the overall quality assurance policy and activities.

Quality assurance in this case is a current regulatory mechanism that synchronizes the key elements of academic accountability in academic programs and processes. The systematic implementation of the policy is the result of a structured process of evaluations, assessments (internal and external) aimed at continuous improvement and maintenance of standards and their implementation.

The GIU Quality Assurance Policy ensures continuous improvement based on rigorous and regular self-assessment and corrective quality planning actions. The overall management of the quality management process is integrated into the complex structure of GIU, with full participation at all levels of deans, institutes, programs, faculty, students and administration.

The quality assurance is implemented in the vision of the German International University. With this vision it is ensured, that the quality fulfills the stakeholder expectations from internal (e.g., university management, lecturer, students) and external (e.g., experts from accreditation). The structure for implementing the quality assurance is defined on different levels at the university (board level, university level, faculty level). Therefore, all stakeholders are included into the development and implementation of this policy with these defined structures. The processes are defined to support the design, approval, and verification of the different study programmes. Systematic monitoring and evaluation according (see ESG Standard 1.9) is also defined. During the accreditation of the engineering study programs with external experts could be shown, that the policy and the implementation in different processes are well known. Overall, this criterion is fulfilled with no conditions, recommendations, or suggestions.

1.2 Conclusion

The criterion is **fulfilled**.

2 ESG Standard 1.2: Design and approval of programmes

Institutions should have processes for the design and approval of their programmes. The programmes should be designed so that they meet the objectives set for them, including the intended learning outcomes. The qualification resulting from a programme should be clearly specified and communicated, and refer to the correct level of the national qualifications framework for higher education and, consequently, to the Framework for Qualifications of the European Higher Education Area.

2.1 Implementation

The GIU takes a strategic approach to programme design, development and approval to ensure it fits the overall institutional vision taking into account programme provisions. A proper cycle of approvals is sought prior to offering any new degree programme. Stakeholders involved with the cycle of approvals are (1) board of trustees, (2) faculty deans, (3) external reviewers. The acquired approval is based on a proper market survey, the academic planning and resource allocation. Finally, the recognitions of the ministry of higher education as well as the Supreme Council of Universities is also required.

Bachelor of Science

The Bachelor of Science in Engineering Programme contributes to the mission of the university by introducing unique university teaching and learning experience in the field of Automation and Control Engineering, Electrical Power and Energy Systems Engineering, Mechatronics/Automotive Engineering, Robotics and Automation Engineering, and Manufacturing Engineering through innovative solid German education approach that focuses on academic and professional expertise and the nourishment of the students' talents and competencies. The programme applies teamwork, both multidisciplinary and multicultural environments. The programme enhances the ability of its students to work effectively under time pressure, meet deadlines, and apply lifelong learning.

The standard period of study of the Bachelor of Science in Engineering programme is 8 semesters with 240 ECTS credits (30 ECTS credits per semester, 60 ECTS credits per year). An internship of 20 ECTS credits and a thesis of 20 ECTS credits are among the components of the programme.

Programme Vision

The Faculty of Engineering aspires to be recognized locally, regionally, and internationally for providing quality engineering education, while bridging the gap between theory and practice and blending the know-how with the do-how, via adopting an industry-driven project-based approach.

Programme Mission

The Faculty of Engineering strives to provide high-quality German-based engineering education centered around the key principles of active learning and industry-focused curricula, in addition to promoting lifelong- learning, critical thinking, and effective communication. The Faculty of Engineering prepares students to become engineers and be able to contribute effectively to their profession and community. The mission of the Faculty of Engineering is to provide students with freedom of thought, expression, and intellectual inquiry. Furthermore, to inspire students to become qualified engineers with desire for learning and commitment to professional and ethical responsibility. The programmes develop innovative and make important contributions to the society. Promote industrial cooperation and provide practical solutions for the industrial problems.

Objectives

The Faculty of Engineering has carefully developed its Electrical and Mechanical, Manufacturing, Robotics and Automation Engineering majors to provide students with strong foundations that will enable them to be ready for future careers in the emerging fields of both Electrical and Mechanical Engineering. The engineering majors emphasize on applied learning with a student-centred approach that focuses on having a perfect blend of the know how and the do-how. In addition, most of the courses have a project component to improve the research skills of the students and to prepare them for pursuing their Master degrees. After the completion of the Bachelor of Science degree in Engineering, the graduate will master a wide spectrum of engineering knowledge and specialized skills and can apply acquired knowledge using theories and abstract thinking in real life situations. The apply analytic critical and systemic thinking to identify, diagnose and solve engineering problems with a wide range of complexity and variation. Work in and lead a heterogeneous team of professionals from different engineering specialties and assume responsibility for own and team performance is also an important objective. Graduates take full responsibility for self-learning and development, engage in lifelong learning and demonstrate the capacity to pursue post- graduate and research studies. The ability to communicate effectively by using different modes is to learn as well as tools and languages with various audiences; to deal with academic/professional challenges in a critical and creative manner. Graduates develop as sense for value the importance of the environment, both physical and natural, and work to promote sustainability principles.

Learning Outcomes

The Engineering students will gain specific knowledge and skills in widely various engineering fields. Thus, the students will be able to:

1. Apply knowledge of math, science, technology, and engineering fundamentals to identify, formulate and solve engineering problems in a creative and innovative way.
2. Conduct experiments and/or simulations, and analyse and interpret the results, while using statistical analysis to draw conclusions.
3. Integrate the know-how and the do-how to solve real-world engineering problems, across different subject areas and multidisciplinary fields.
4. Model, analyse, design and implement engineering systems in a creative and innovative way that integrate different hardware and software components in both electrical and mechanical systems, individual or hybrid, to meet desired specifications.

5. Utilize contemporary technologies, including software packages, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles, pertaining to the electrical/mechanical engineering disciplines, to develop solutions.
6. Communicate technical matters, to professionals and the public, graphically, verbally and in writing, using contemporary tools.
7. Practice self-continuous learning and professional development, when joining the job market to succeed in working under expert guidance or as a member of multi-disciplinary teams.
8. Adopt suitable national and international standards and codes; and integrate legal, economic and financial aspects to design, build, operate, inspect and maintain equipment in both electrical and mechanical systems.
9. Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements, while using the acquired entrepreneurial and leadership skills to anticipate and respond to new and challenging situations.
10. Improve intercultural and linguistic competence, via acquiring knowledge in both the English and the German languages.

The Bachelor of Science in Engineering programme prepares its graduates for the labour market and promotes their personal development. It provides them with a broad and advanced knowledge base. Graduates of all Engineering study majors will have solid practical and theoretical knowledge in the fields of Automation and Control Engineering, Electrical Power and Energy Systems Engineering, Robotics and Automation Engineering, Automotive Engineering, and Manufacturing Engineering. This will qualify them for a wide range of successful careers in the Engineering industry worldwide, dependent on their Engineering specialization. The GIU has established partnerships with both national and international companies and organizations to provide internship opportunities for our students. The application process is merit-based, and our students are directly selected by the organizations based on their qualifications and skills. Each student is assigned an internal supervisor from our faculty who closely monitors her/his progress throughout the programme. The supervisors regularly meet with their students to review bi-weekly progress reports and provide constructive feedback. Additionally, the university supervisors can visit the students in their internship locations to ensure that they are receiving adequate support and training.

Master of Science programmes

The Master of Science in Engineering Programme contributes to the mission of the university by introducing unique university teaching and learning experience in the fields of Automation and Control Engineering, Electrical Power and Energy Systems Engineering, Mechatronics/Automotive Engineering, Robotics and Automation Engineering, and Manufacturing Engineering through innovative solid German education approach that focuses on academic and professional expertise & the nourishment of the students' talents and competencies.

The standard period of study of the Master of Science in Engineering is 3 semesters with 90 ECTS credits (30 ECTS credits per semester, 60 ECTS credits per year however, for students lacking the prerequisite knowledge, up to 30 ECTS credits of qualifying subjects may be added). A master thesis of 30 ECTS credits is among the components of the programme. The master's degree is a consecutive degree.

Programme Vision

The Faculty of Engineering aims to be recognized locally, regionally, and internationally for providing high quality education and innovative research in addition to developing future leaders.

Programme Mission

The Faculty of Engineering strives to provide high-quality Master of Science programs that allow the continuation of the specializations offered in the undergraduate programmes. The goal of these programs is to allow students to pursue advanced studies and to develop their skills to be prepared for further academic, research and professional careers. The mission of the Faculty of Engineering is to provide students with high quality scientific research consistent with the highest international standards in the fields of Automation and Control Engineering, Electrical Power and Energy Systems Engineering, Mechatronics/Automotive Engineering, Robotics and Automation Engineering, and Manufacturing Engineering.

The single study programmes have the following special contents.

Mechatronics/Automotive Engineering

This major lays the foundation for a Systems Engineering approach to automotive design, not necessarily specialized to a particular drive or a particular type of transportation. Graduates of this major are generalists who are able to perform in many fields of the automotive industry, such as development, testing, application, and maintenance. The major offers the required mechanical background to consider during the design process of the vehicles. The electronic and electrical components are studied as they are the actuators and sensors of the vehicle. The brain of the vehicle is introduced through the utilization of German International University of the different programming languages and algorithms. On top of that, control theory is implemented to guarantee that the vehicle executes the desired tasks.

Manufacturing Engineering

This major is focusing on designing, improving, managing, and running manufacturing operations in an industrial context. It provides an understanding of engineering materials and manufacturing processes and their fundamental background as a core field of study. Also, the major addresses knowledge of materials and advanced manufacturing techniques to address emerging challenging engineering problems and to find feasible solutions for them.

Automation and Control Engineering

This major prepares students to be highly qualified professionals, able to understand, analyse, design, and manage systems and processes, which use control and automation techniques. The major combines the information resulting from the research in industry and the current practices and future trends in different emerging technologies in control and signal processing to develop and implement electrical, electronic, mechanical, and computer-based systems to work according to a planned automated strategy.

Robotics and Automation Engineering

Nowadays, robots have also become more common in nonindustrial sectors, e.g. in farming, gardening, households, healthcare, traffic and transportation. Robots are mechatronic systems on a complex level, where software, electronics, kinetics and kinematics must be highly coordinated. In this major, students not only learn to model the kinetics, kinematics, and dynamics of robots, but also explore material and construction aspects, as well as the proper networking of the automation systems. They acquire programming skills and learn the project management issue that enables them to develop and install robots wherever they are needed.

Electrical Power and Energy Systems Engineering

This major qualifies the students for the fundamental and modern design, installation, operation and control of electrical power and energy systems. Graduates are prepared for engineering activities in the development of devices and systems in electrical energy and automation technology in addition to project planning of electrical and automation systems and their operation, testing and maintenance. The technical and methodological skills are developed for the following cutting-edge areas of electrical engineering: electrical power engineering and sustainable systems, mathematical modelling and control of sustainable power systems, power electronics and electric drives, automation of power systems and smart grids, project engineering, construction and maintenance of components and plants for electrical energy technology.

Pharmaceutical Engineering

Bachelor of Science

The Bachelor of Science in Pharmaceutical Engineering Programme contributes to the mission of the university by introducing unique university teaching and learning experience in the field of Pharmaceutical Engineering through innovative solid German education approach that focuses on academic and professional expertise & the nourishment of the students' talents and competencies. The programme applies teamwork, both multidisciplinary and multicultural environments. The programme enhances the ability of its students to work effectively under time pressure, meet deadlines, and apply lifelong learning. The standard period of study of the Bachelor of Science in Pharmaceutical Engineering is 8 semesters with 240 ECTS credits (30 ECTS credits per semester, 60 ECTS credits per year). An internship and a thesis are among the components of the programme.

Programme Vision and Mission

The vision of the Pharmaceutical Engineering programme is to be the leader of pharmaceutical engineering education in the Middle East and Africa, and to be the go-to place for industrial training and consultancy. The mission of the Pharmaceutical Engineering programme at the GIU is to produce pharmaceutical engineers ready to be deployed in the pharmaceutical industry with minimal further training. Our well-equipped labs and unique pharmaceutical factory coupled with our truly interdisciplinary curriculum enable us to achieve this mission.

Objectives

The objectives of the B.Sc. programme in Pharmaceutical Engineering track are to provide the graduates of the programme with:

- Able to master a wide spectrum of basic and advanced pharmaceutical engineering knowledge and specialized skills and to apply acquired knowledge using theories and abstract thinking in real life situations.
- Apply analytic critical and systemic thinking to identify, diagnose and solve engineering problems with a wide range of complexity and variation.
- Value the importance of the environment, both physical and natural, and work to promote sustainability principles.
- Have an advanced knowledge and skills in using techniques and modern pharmaceutical and engineering tools necessary for pharmaceutical engineering practice.
- Acquire full responsibility for own learning and self-development, engaging in lifelong learning and demonstrating the capacity to engage in post-graduate and research studies.
- Communicate effectively using different modes, tools and languages with various audiences; to deal with academic/professional challenges in a critical and creative manner.
- Demonstrate leadership, business administration and entrepreneurial skills.

The Bachelor of Science in Pharmaceutical Engineering programme prepares its graduates for the labour market and promotes their personal development. It provides them with a broad and advanced knowledge base.

Master of Science

The German International University offers Master of Science (M.Sc.) programme that allow the continuation of the specializations offered in the undergraduate programs.

The goal is to allow students to pursue advanced studies and to develop their skills to prepare them for flexible career choices including academic, research, or professional ones.

The increasingly complex landscape of the pharmaceutical industry evident in emerging advanced therapies and novel technologies, together with the resulting changes in regulatory expectations coupled with a global market, demand that graduates of the programme be able to handle novel technologies and to have the skills to adapt to new ones possibly not yet developed. Thus, it is imperative that the students not only be exposed to advanced knowledge in the field, but also be able to extract such knowledge on their own through research and development-based courses, achieving a balance between research and application.

The standard period of study for the master's degree in Pharmaceutical Engineering is 3 semesters) of 90 ECTS credits, 60 ECTS credits per academic year (30 ECTS per semester). A

master thesis of 30 ECTS credits is among the components of the programme. The master's degree is consecutive to the bachelor's degree and consists of 9 courses and a master thesis.

Programme Vision and Vision

The vision of the Pharmaceutical Engineering master programme is to be the leader of pharmaceutical engineering education in the Middle East and Africa, and to be the go-to place for industrial training and consultancy.

The mission of the Pharmaceutical Engineering master programme at the GIU is to expand the research capabilities of our pharmaceutical engineers to promote scientific and technological development.

Objectives

The objectives of the M.Sc. programme in Pharmaceutical Engineering track are to provide the graduates of the programme with:

1. Be aware of the pharmaceutical industry trends, regulatory expectations, and the challenges faced in addressing them.
2. Demonstrate advanced knowledge and skills of modern computational and experimental methods in pharmaceutical engineering.
3. Develop capabilities of the research techniques, data analysis, design and synthesis methods in the area of specialization.
4. Able to design and develop innovative, cost efficient, automated and sustainable process in the pharmaceutical industry
5. Able to solve open-ended and challenging engineering problems, think critically and function well in a team.

2.2 Assessment

2.3 Mechatronics/Automotive Engineering

The study programme Mechatronics/Automotive Engineering is a profile derived from the mechanical engineering base programme. The degree programmes mission (Bachelor and Master), to provide high-quality education in Mechatronic/Automotive Engineering, fits well into the overall mission of the GIU. The study programme itself is one of 3 study programmes in the mechanical engineering track and is well designed in close cooperation with the German partner universities. The study programme reflects the objectives of higher education of the Council of Europe and offers relevant modules of contents for all four objectives.

Design of the study programme

All important groups of stakeholders (board of trustees, faculty deans, external reviewers, students) were involved in the development of the study programme in Mechatronics/Automotive Engineering. Particularly noteworthy is the close cooperation with German universities in the development of the degree programme. The involvement of all these groups ensures that the

programme meets international standards and allows students to develop in a research and industry-oriented manner.

It was noticeable that the number of electives as well as one's own choice of electives is still limited in the Mechatronic/Automotive Engineering programme. The currently proposed electives Computer Networks, Signal and Image Processing and Fluid Mechanics and Thermodynamics are also not particularly related to the specialization Mechatronic/Automotive Engineering.

Objectives, learning outcomes and curriculum structure

A broad basic education in mechanical engineering is the first goal of the programme in the first 4 semesters and partly in the 5th semester. Then the focus changes to the special needs of the Mechatronics/Automotive Engineering profile with advanced topics like Automotive Basics, Vehicle Dynamics and Vehicle Powertrain.

The structure of the curriculum is well suited to achieving the teaching and learning objectives. It was only noticeable that, for a Mechanical Engineering programme, technical mechanics is anchored relatively late in the curriculum (Mechanics I in the 3rd semester, Mechanics II and Mechanics of Materials in the 4th semester).

Student workload

The workload of students on the Mechatronics/Automotive Engineering degree programme is clearly defined and transparently documented with the help of the module descriptions. The module descriptions contain information on attendance times and the amount of self-study required. The laboratory practical associated with the modules deepen the knowledge acquired through practical applications and thus contribute to a better understanding of the students. The workload in the Mechatronics/Automotive Engineering degree programme is therefore in line with the European Credit Transfer and Accumulation System (ECTS).

The examination workload for students is spread over the semester for almost all modules and typically contains 5 examination elements. There is usually a written exam at the end, which in most cases accounts for 40% of the module grade, with the remaining 60% being made up of the other examination elements. The resulting workload appears to be quite high; there may be opportunities to reduce the workload by reducing the number of examination elements per module.

Following the assessment, the GIU responded to the recommendations of the expert panel and initiated the following project for the Mechatronics study programme: In order to take account of the general recommendations, the university plans to increase the number of elective modules available.

2.4 Conclusion

The criterion is **fulfilled**.

Recommendations

1. It is recommended to offer electives for the specialization that are closer to the Mechatronics/Automotive Engineering profile.

2.5 Manufacturing Engineering Bachelor and Master Major

Vision, Mission, Goals

The vision, mission, and goals of the Bachelor's and Master's degree programme of Manufacturing Engineering are in line with GIUs overall vision, mission, and goals, that are to provide high-quality German-based engineering education centered around the key principles of active learning and industry-focused curricula. The Manufacturing Engineering major provides students with in-depth engineering knowledge that will equip them for a future career in industrial practice as well as in a scientific environment.

Development of programme

The design and development of the Bachelor's and Master's degree programmes is based on the GIU's internal quality assurance system. Developing the Manufacturing Engineering major, internal as well as external feedback was conducted. The entire academic staff (e.g. heads, academics and teaching assistants), a German partner university, students during the "Students Curriculum Committee" as well as future employer surveys builds the foundation. Moreover, the programme performance review is conducted by the faculty for each academic semester in terms of staff achievement/development, student performance, and students experience.

Learning outcomes and study content/curriculum

The Manufacturing Engineering Bachelor and Master majors emphasize on applied learning with a student-centered approach. The objectives and learning outcomes focus on qualifying the students for a career in the field of manufacturing and industrial engineering. It is noticeable that the two perspectives of technical engineering and factory operation are chosen and taught in the curriculum of the Bachelor's and Master's major. This breadth of training should be reflected in the title of the Bachelor's and Master's programme as well.

The forms of examination are chosen coherently with regard to the corresponding learning objectives - for example, semester-long examination forms are increasingly chosen, which can contain both various theoretical and more application-orientated components.

However, it is noticeable that the technical subject content is only taught in English. In view of the university's orientation and objectives, it would be entirely appropriate to include a German-language programme of technical subjects in higher semesters of the Bachelor degree programme (at least in part). Within this framework, the level of training in German language should also reach B2.

Module description and Workload

The expected student workload is clearly defined for each course within the Manufacturing Engineering programmes in accordance with the European Credit Transfer and Accumulation System (ECTS). Each course description includes credit points that reflect both classroom time and expected hours of independent study. The integrated practical (project) or laboratory

courses in the Bachelor's and Master's degree programmes are particularly positive, that are designed to reinforce theoretical knowledge through practical application.

The literature listed in the module descriptions, on the other hand, could be expanded, especially in view of the students' self-study parts.

Following the assessment, the university responded to the expert panel's recommendations and initiated several projects for the Manufacturing Engineering programme. Firstly, the University will explore the possibility of renaming the programme to 'Industrial Manufacturing' to better reflect its content and appeal to a wider range of students and employers. Such a name change is a lengthy process that will need to be co-ordinated with the Board of Governors for Higher Education following internal University decisions.

In addition, current and relevant literature is included in each module to provide students with access to the latest research and industry developments.

In order to strengthen language skills in specialised contexts, the university will also offer the following German courses: Firstly, elective German courses (B1/B2) are offered as intensive courses during the summer months to facilitate student participation. On the other hand, selected specialised courses will be held in German.

2.6 Conclusion

The criterion is **fulfilled**.

Recommendations

1. It is recommended to rename the majors in "Manufacturing and Industrial Engineering" (Bachelor and Master)
2. In the module descriptions should be an addition of book sources/literature sources (Bachelor and Master).
3. It is recommended to teach technical subjects/modules also at least partly in German (Bachelor).

2.7 Robotics and Automation: Bachelor and Masters

The Robotics and Automation programme at the German International University in Cairo aims at creating engineers who are capable of developing and installing robots across different industries. Two types of qualifications are available: a Bachelor of Science (B.Sc.) degree and a Master of Science (M.Sc.) degree. The GIU also offers a PhD programme for graduates who want to continue in doing in-depth research in their field.

The B.Sc. and M.Sc. programs align with the four purposes of higher education as outlined by the Council of Europe: Preparation for sustainable employment, personal development, preparing students for active citizenship, and creating a broad advanced knowledge base and stimulating research and innovation. The learning outcomes for each course are clearly defined in the Curriculum and Course Catalogue of each programme.

Both courses are situated within the Mechanical Engineering department of the GIU.

The 4-year B.Sc. degree is organized as follows: the first two semesters teach the foundations required for an engineering degree: Mathematics, Computer Science, Physics, Electrical Engineering. In the second and third year, more specialized subjects relevant to Robotics and Automation are offered such as Industrial Robots and Parallel Kinematics. The last year is dedicated to a bachelor thesis and an internship programme with industry.

The M.Sc. degree consists of three semesters: the first semester consists of advanced courses in mathematics, automation, and robotics. In the second semester, students can select from multiple specialized courses in robotics while the third semester focuses on the master thesis.

Both programs follow a thought-out structure with clear dependencies between the courses ensuring a smooth student progression.

Programme Creation & Modifications

The programs were initially developed through collaborative efforts involving faculty from multiple German universities and industry partners, ensuring that the curriculum not only meets academic standards but also aligns with industry needs. This collaborative approach continues to drive the programme's evolution, with ongoing adjustments made to reflect new technological advancements and industry trends – both in Egypt and internationally.

Modifications to the major are systematically handled through a formal approval process that incorporates feedback from both internal (e.g. the student curriculum center) and external stakeholders (e.g. Founding Dean, German university partners, feedback from industry that provides internship placements). This process ensures that the programs remain relevant and rigorous.

Incorporation of Students and Stakeholders

Students and other stakeholders are actively involved in the curriculum design process. Their input is crucial for aligning the programme with student career aspirations and market requirements. This participatory approach not only enhances the curriculum but also ensures that the programme fosters personal and professional development. External stakeholders include the German university partners and feedback from industry via the internship programme.

Workload Calculation

The expected student workload for each course is clearly defined in the Curriculum and Course Catalogues. The workload calculations adhere to the European Credit Transfer and Accumulation System (ECTS). Each course description includes teaching hour allocations in three categories: Lecture, Tutorial, Practical. The descriptions also contain the expected hours of student workload. Laboratory courses are integral to the programme and require a careful calculation of workload to ensure a balanced student experience.

Following the assessment, the university responded to the expert panel's recommendations and initiated several projects for the Manufacturing Engineering programme. Firstly, they will integrate PLC programming and automation topics into the curriculum, offering courses such

as ELEC 603 as electives. Secondly the curriculum will be expanded to include more content in machine vision, machine learning, and ROS programming (C++ and Python). Thirdly they go in the process of hiring additional professors with complementary backgrounds in robotics to strengthen our faculty and enhance the diversity of expertise available to students.

2.8 Conclusion

The criterion is **fulfilled**.

Recommendations

1. PLC programming and automation topics should be implemented into the programme, e.g. offer ELEC 603 as an elective (currently only in „Automation and Control Engineering“).
2. The contents in the topic areas machine vision, machine learning, ROS programming (C++ and Python) should be increased. This will ensure that the programme remains future-proof for the upcoming industry demands.
3. The GIU should hire additional PhDs in robotics with complimentary backgrounds to existing staff. This will ensure that the broad demands in robotics can be met, especially in the computer science related fields.

2.9 Automation and Control Engineering Bachelor and Master Major

The Automation and Control Engineering programme at the German International University in Cairo equips students with comprehensive skills in automation and control technologies. Rooted in a curriculum that balances academic knowledge with practical application, the programme aligns with the four purposes of higher education as outlined by the Council of Europe. It begins with foundational courses in Mathematics, Computer Science, Physics, Electrical, and Electronic Engineering, progressively delving into specialized knowledge in automation and control engineering. Advanced courses cover topics such as Programmable Logic Controllers (PLC), Classic and Advanced Control Systems, and embedded systems, facilitating a deep understanding of the field.

Programme Creation

The programme was initially developed through collaborative efforts involving faculty from German universities and industry partners, ensuring that the curriculum not only meets academic standards but also aligns with industry needs. This collaborative approach continues to drive the programme's evolution, with ongoing adjustments made to reflect new technological advancements and industry trends.

Programme Modifications

Modifications to the major are systematically handled through a formal approval process that incorporates feedback from both internal (e.g. the Student Curriculum Center) and external

stakeholders (e.g. Founding Dean and cooperation partners). This process ensures that the programme remains relevant and rigorous.

Incorporation of Students and Stakeholders

Students and other stakeholders are actively involved in the curriculum design process. Their input is crucial for aligning the programme with student career aspirations and market requirements. This participatory approach not only enhances the curriculum but also ensures that the programme fosters personal and professional development.

Workload Calculation

The expected student workload is clearly defined for each course within the programme, adhering to the European Credit Transfer and Accumulation System (ECTS). Each course description includes credit allocations that reflect both in-class instructional time and the expected hours of independent study. Laboratory courses, integral to the programme, are designed to reinforce theoretical knowledge through practical application, thereby necessitating a careful calculation of workload to ensure a balanced student experience.

While the bachelor's programme provides a robust foundation in both automation and control engineering, the master's programme currently emphasizes control engineering disproportionately.

Following the assessment, the GIU responded to the expert group's recommendations and planned changes to include more automation topics in the curriculum of the Master's study programme in Automation and Control Engineering, which will be compulsory rather than elective.

2.10 Conclusion

The criterion is **fulfilled**.

Recommendations

1. It is recommended to revisit the master's curriculum to incorporate more courses in automation, thereby maintaining the balance essential for comprehensive education in this field.

2.11 Electrical Power and Energy Systems Engineering Bachelor and Master Major

The bachelor course on Electrical Power and Energy Systems Engineering is organized as a full-time 4-year programme where consequently 240 ECTS are credited. The first six semesters consist of lectures, exercises, seminars and labs, while in the 7th semester, the bachelor thesis is written. The 8th semester is reserved for an internship. Six modules are defined as elective modules to individualize the programme. The master course on Electrical Power and Energy Systems Engineering is organized as a full-time 1.5-year programme where conse-

quently 90 ECTS are credited. The first two semesters consist of lectures, exercises and seminars, whereof two modules are designed as elective modules. In the third semester, the master thesis is written.

Both, the bachelor and the master course are well-balanced between theory and practice as well as fundamental courses and specialization modules. The programmes are oriented towards student and industry needs. Especially, elective modules are changed, if industry needs or student interests are changing. The qualification standards of ESG 1.2 are fully met. The programme is designed without specific modules on system theory and electromagnetic field theory, although parts of these topics are included in some other modules. The programmes are clearly inspired by programmes of universities of applied sciences.

The only critical point is the lack of sufficient elective modules in both programs. Students don't have a real choice but are allocated to modules according to vacancies with respect to their chosen major. This temporary modus operandi has been chosen mainly due to the young history of GIU and staffing is still in progress.

Following the assessment GIU will review and expand the elective course offerings for each student and in each semester to provide a broader range of options. Therefore, Faculty members will be encouraged to develop new elective courses that reflect current industry trends and technological advancements.

The aim of the GIU is to provide a Real Course Choices. The faculty management in collaboration with the scheduling department will continue to ensure that courses schedules are designed to offer different choices to students in each semester, avoiding overlaps and conflicts that limit the offered options. As part of the continuous improvement process at the GIU, the feedback will be collected from the students through the Student's curriculum Committee to insure their satisfaction about the offered choices of elective courses.

2.12 Conclusion

The criterion is **fulfilled**.

Recommendations

1. The number of elective modules in each semester and each major in both the bachelor and the master programme of Electrical Power and Energy Systems Engineering should be increased in such a way, that there is a real choice for students.
2. Even if there is not sufficient teaching staff, students should have the chance to select their elective module on their own and should be responsible for their choice. To not overload popular modules, group sizes may be limited, and a first-come-first-serve registration policy may be applied, so students have to select alternative courses and topics on their own, if their favorite module is fully occupied.

2.13 Pharmaceutical Engineering Bachelor and Master Major

The Pharmaceutical Engineering programme at the German International University (GIU) in Cairo equips students with comprehensive skills in pharmaceutical technologies with background in pharmaceutical science in 8 semesters in B.Sc. and 3 semesters in M.Sc. studies. The programme only started in winter semester 2019/20 and thus there are no graduates so far. This pharmaceutical engineering study programme is attractive for a high number of female students as compared to other engineering study programmes.

Rooted in a curriculum that balances academic knowledge with practical application, the programme aligns with the four purposes of higher education as outlined by the Council of Europe. It begins with foundational courses in Mathematics, Informatics, Physics and Chemistry for Pharmaceutical Engineering and Biology for Engineers completed with Fundamentals of Mechanical and Electrical Engineering as well as Language courses in English and German. Thermodynamics, Mechanics and Machine Elements, Fluid Mechanics, Control Engineering and Sensors complete the engineering basics. With Principals of Physical Pharmacy, Drug Formulation, Pharmaceutical Analysis and Technology, progressively developing into specialized knowledge in pharmaceutical engineering. Advanced courses cover topics in the field of process engineering such as Chemical Reaction Engineering, Advanced Process Engineering, Digitalization, Statistics, Process Validation, Automation as well as Microbiology, Water and Air Systems, Environment, Health and Safety, facilitating a deep understanding of the field on bachelor level. The master course deepens the process engineering knowledge into Engineering Management, Economics, Pharmaceutical Manufacturing as well as addresses the actual needs and topics of Sustainability and Environmental Impact in Pharmaceutical Industry. There is also a Master Thesis Preparatory Project und two electives out of a group of 7 lectures offered before the Master Thesis will start in the 3rd semester.

Programme Creation

The programme was initially developed through collaborative efforts involving faculty from five German universities and governmental partners, ensuring that the curriculum not only meets academic standards but also aligns with industry needs. This collaborative approach continues to drive the programme's evolution, with ongoing adjustments made to reflect new (bio)technological and multidisciplinary advancements and industrial needs and trends e.g. quality control and risk management.

Programme Modifications

Modifications to the major will systematically handled through a formal approval process that incorporates feedback from both internal (e.g. the Student Curriculum Centre) and external stakeholders (e.g. Founding Dean and cooperation partners). This process ensures that the programme remains relevant and rigorous.

Incorporation of Students and Stakeholders

The curriculum design process is carried out with the participation of students and stakeholders. For aligning the programme with student career aspirations and market requirements the feedback of the students and stakeholders is fundamental. This participation not only enhances the curriculum but also ensures that the programme fosters personal and professional

development. But the students' outcome, skills and career development would also benefit from courses in Intercultural Competence and Unconscious Bias.

Workload Calculation

The expected student workload is clearly defined for each course within the programme, adhering to the European Credit Transfer and Accumulation System (ECTS). Each course description includes credit allocations that reflect both in-class instructional time and the expected hours of independent study. Laboratory courses, integral to the programme, are designed to reinforce theoretical knowledge through practical application, thereby necessitating a careful calculation of workload to ensure a balanced student experience.

While the bachelor's programme provides a clear and robust foundation in mechanical and process engineering applied to pharmaceutical engineering, the master's programme will emphasize specific up-to-date applications of the pharmaceutical industry such as active pharmaceuticals, biopharmaceutical processing, impact on and of environment and sustainability, and quality design. It is recommended to also emphasize scale-up processes, and preservation processes for biological products such as freezing or lyophilization. A visit of the master students to Frankfurt to attend the world's leading trade show ACHEMA with respect to process industries, to learn about industrial plants in process engineering. This trade show takes place only every 3rd year. With respect to medical application, the annual trade show for medical technology and healthcare - medica - in Duesseldorf may guide the students to their future employment field.

Following the assessment, the university responded to the expert panel's recommendations and initiated several projects in order to strengthen language skills in specialised contexts, the university will also offer the following German courses: Firstly, elective German courses (B1/B2) are offered as intensive courses during the summer months to facilitate student participation. On the other hand, selected specialised courses will be held in German.

2.14 Conclusion

The criterion is **fulfilled**.

Recommendations

1. It is recommended to teach technical subjects/modules also at least partly in German (Bachelor and Master).

3 ESG Standard 1.3: Student-centred learning, teaching, and assessment

Institutions should ensure that the programmes are delivered in a way that encourages students to take an active role in creating the learning process, and that the assessment of students reflects this approach

3.1 Implementation

General aspects and methods of teaching:

The university applies various teaching methods to address students' needs and capabilities. Content is usually delivered in multiple modes and different levels of abstraction starting with lectures and ending with practical sessions and/or tutorials. Teaching formats are lectures, seminars, practical, tutorials, projects, individual supervision, guest speakers, collaborative and cooperative learning, experiential learning, "Learning by making and doing", field- and place-based learning, gamification, global learning, research-based learning.

Continuous assessment

Students at the GIU are continuously assessed throughout their study period in all courses by means of written, oral and practical examinations, quizzes, course assignments, research papers, practical work and other means of assessment as suitable to their field of study. At the beginning of the semester, the criteria and method for assessment and marking are published in advance, allowing students to understand the process and prepare accordingly. During the assessment, students are given opportunities to demonstrate their understanding of the intended learning outcomes. Examiners provide feedback that is linked to advice on the learning process, if necessary. To ensure consistency and fairness, subjective assessments are usually carried out by more than one examiner. There are regulations in place to account for mitigating circumstances, such as a second chance midterm exam, makeup exams for the final, as well as having a "best of" policy for quizzes and sometimes assignments. Finally, to promote fairness and transparency, a formal remarking procedure is in place for students who have concerns about their assessment results.

Examination system

Students at the GIU are continuously assessed throughout their study period in all courses by means of written, oral and practical examinations, quizzes, course assignments, research papers, practical work and other means of assessment as suitable to their field of study. At the beginning of the semester, the criteria and method for assessment and marking are published in advance, allowing students to understand the process and prepare accordingly. During the assessment, students are given opportunities to demonstrate their understanding of the intended learning outcomes. Examiners provide feedback that is linked to advice on the learning process, if necessary. To ensure consistency and fairness, subjective assessments are usually carried out by more than one examiner. There are regulations in place to account for mitigating circumstances, such as a second chance midterm exam, makeup exams for the final, as well as having a "best of" policy for quizzes and sometimes assignments. Finally, to promote fairness and transparency, a formal remarking procedure is in place for students who have concerns about their assessment results. Students facing any problems or having complaints can report it to the different course educators or seek help from the student affairs to file an official complaint.

Assessment forms:

Course work: includes assignments, seminars, projects and presentations. The total grade of course work should carry a weight between 10% and 30% of the total course grade if quizzes, midterm and final term exams exist.

Quizzes: 10-20-minute exams or computer-based tests that may be conducted before the midterm and the final exam, according to the course requirements. The total grades of the quizzes

should not carry a weight more than 20% of the total course grade, if course work, midterm and final term exams exist.

Mid-semester exam: covers approximately half the course material. The grade of this exam should carry a weight between 20 and 30% of the total course grade, if quizzes, assignments and final term exam exist.

Final semester subject examination: to be done during the last two weeks of every semester. The grade of this exam should carry a weight between 30% and 50% of the total course grade if quizzes and midterm exam exist.

Internships

The internship semester is an essential part of the GIU study programs, the students from all faculties must complete a total of 5 consecutive months of internships before their graduation. The aim of the internship is to link between the academic programs studied and their actual implementation in the field. The career centre at the GIU is responsible to support students to find internships in companies in Egypt and abroad. The GIU Internship Integration document explains thoroughly the rules and regulations of the Internship at the GIU along with the whole process for the internship approval, reporting and final evaluation. The GIU offers various supporting activities for the students to facilitate the internship process, e.g. the preparatory Internship & Workplace Readiness Course, the Career Fair and Involvement of Industry and Business via cooperation agreements.

3.2 Assessment

GIU's student-centered teaching places the student's learning process at the center. The emphasis is on active rather than passive learning. Critical, analytical learning and independent knowledge production are also in the foreground. Students assume personal responsibility for learning processes and learning outcomes.

The University offers various types and methods of teaching and learning at GIU, including lectures, problem-based approaches such as seminars and discussions, group work, case analysis, simulations, scientific research, and presentations. These methods provide a diverse approach to actively engaging students in the learning process, leading to the improvement of various skills, which is highly beneficial.

The university has a comprehensive and clearly defined evaluation concept. It systematically records problems and suggestions for improvement, allowing them to be addressed by the appropriate individuals. This concept is well described for all students and is available on the university's website. Furthermore, students can directly exchange ideas with the lecturers, enabling them to provide feedback and engage in discussions.

The students have a wide range of courses and additional subjects to choose from, allowing them to specialize and deepen their interests.

Emphasizing the flexible design of individual study plans should remain a strong focus. Additionally, it is essential to provide further training for lecturers in teaching methods and current topics to ensure that the university stays up to date with the latest technology. Notably, students express high satisfaction with the teaching methods, lecturers, and campus, and they would highly recommend the university to their friends.

According to the evaluation of the review panel, the examination forms are overall very well suited and variant to acquire the learning objectives and competencies to be achieved in the present study programs. The students were very positive about the examination system, the examination density and the examination organization. The communication of examination dates and contents is transparent to the students. Examination dates are published in good time for students. In the discussion rounds, students stated that they felt well prepared for the exams by the lecturers, that the workload of the exams in both study programs is easy to manage, and that they are informed about the exam dates in good time. The density of examinations is thus appropriate, and a good distribution of examination performances is ensured by the study plan. The preparation and organization of examinations is rated positively in the evaluations. The workload is described by the students as appropriate and manageable. The assessment criteria for passing or failing a module are reasonable and transparent for the students. The weighting of the individual grades is comprehensible and provides a meaningful picture in the overall grading. The review panel has asked the students very precisely about the general examination load: the students report that the examination load is not too high. The review panel therefore assesses the examination load as appropriate.

The study programs offer an excellent mix of teaching and learning methods. The defined learning outcomes are achieved through appropriate teaching and learning methods. Examinations are regulated. The forms of examination are announced in advance.

Student assessment is based on fair and transparent standards and there are procedures for student appeal. The University works closely with the students and the employers and is committed to improving programs to ensure that students are in demand in the job market.

The students are actively involved in the development of programs by taking part in the curriculum committee. Any student could be elected to the curriculum committee by other students.

Students have the opportunity to give feedback on the quality of teaching, to express their views on programmes and to evaluate a particular subject. Furthermore, the University's management actively communicates with future employers, demonstrating the care and continued support for students after graduation.

3.3 Conclusion

The criterion is **fulfilled**.

4 ESG Standard 1.4: Student admission, progression, recognition, and certification

Institutions should consistently apply pre-defined and published regulations covering all phases of the student "life cycle", e.g. student admission, progression, recognition and certification.

4.1 Implementation

Admission

The University is committed to attract academically outstanding, creative and dynamic high school graduates. The responsibility of staff of the Office of Undergraduate Admission is to

target highly qualified Egyptian and International applicants for first-year enrolment. The Admission Policy considers strength the study subject area and the results of the GIU Evaluation Tests for Admission (e.g. including: English Language Test, Reasoning Test, further cognitive skills based on the test). Additionally, an Aptitude test is used for students applying for faculty of Design and for faculty of Architecture Engineering. The main objective for the aptitude tests is to measure general knowledge and skills of students to predict the performance of potential student. The assessment criteria for this test are based on the fundamentals relating to applicants' abilities and skills.

The Admission System developed in cooperation with the IT department, supports all the processes concerning the application and admission including the testing of prospective GIU students including various student services such as the admission to exams, evaluation, students' requests or financial services.

The Students Electronic Administration System supports all the processes concerning the student registration and assessment in order to provide our students the maximum support possible. Students are enabled to access and regularly monitor throughout the academic semester the following study related services: Semester schedule and semester exam plan, Semester work records (Quizzes, Assignments, etc.), Attendance records, Mid-term exam results, Final exam results and results of the previous semesters.

GIU provides scholarships offered to outstanding students as well as giving incentives to students for maintaining high standard of academic achievements. The increasing number of scholarships offered over the past years reflects the quality of students admitted at GIU including the top ranked students at all high schools certificates i.e. Al-Thanawia Al-Amma and its equivalents, where students will be completely exempted from the study fees on the condition of constantly high performance.

Progression

Student progress is monitored as stated in Article 23 of the "Study and Examination Regulations" for the timely completion of their study programme:

"Students progression from one year to the next is dependent upon satisfactory completion of all academic courses (except of two) of the previous year. Students who complete a partial year's work may proceed to the next year courses for which they have prerequisites. Knowledge of the material of the prerequisite modules can be assumed if the student attended the midterm and the final exams."

Throughout the study duration of the students at the GIU, there are various types of support to ensure successful progression until graduation:

- Scholarships and financial support to enrolled students
- Performance monitoring via electronic system
- Counselling services (e.g. orientation programmes)
- Students' development (e.g. career centre activities)
- International exposure (e.g. semester abroad, workshops, internships)
- Extracurricular activities and sports programme

- Additional services for students with special needs (e.g. special examination arrangements)

Recognition and Certification

GIU programmes are nationally accredited by the supreme council of universities which ensures that the university's certificates will be internationally recognized. The European Credit Transfer and Accumulation System (ECTS) is used as the basis for transferring marks and credits for student's records to maintain curricula with international compatibility and facilitating academic recognition according to the European standards. Upon completion of the graduation requirements, the graduates will receive graduation certificates and transcript of records. The certificate includes the student's personal information, the faculty granting the degree, the awarded degree, the major (if any), the cumulative grade and bachelor thesis grade. The transcript additionally includes the number of completed courses, the total earned hours, the classification of courses according to General, Core and Advanced courses and the internship completion status.

4.2 Assessment

The overall assessment of meeting the ESG standard for student admission, progression, recognition, and certification is very positive.

The GIU has clearly defined standards and procedures for admission, which are available to the public on its website. To be admitted to the bachelor's programme, students must pass an entrance test and must have a good academic record. The application procedure is designed to be transparent and easy to follow for all degree programmes. There is no ambiguity about the deadlines and contents of the application procedure. The degree documents are sufficiently informative. They list the degree earned and other degree information. Learning outcomes are presented in the form of grades for the corresponding examinations.

The University has several mechanisms in place to monitor student progress. Student's examination results are analysed, and, in the event of poor performance, the necessary action is taken to support the student. Student progress is monitored regularly, and relevant data is collected and reported to departments. The departments analyse the data and take appropriate action. It would be desirable for the university to maintain the current monitoring of student workload in order to avoid overloads.

On completion of the study programmes, students are awarded a certificate of completion.

4.3 Conclusion

The criterion is **fulfilled**.

5 ESG Standard 1.5: Teaching staff

Institutions should assure themselves of the competence of their teachers. They should apply fair and transparent processes for the recruitment and development of the staff

5.1 Implementation

The overall vision of the GIU is to build a distinguished centre of excellence in teaching and research that extends beyond the regional borders. This is planned to be achieved, in part, by selectively appointing members of staff with an established national and international reputation from both the German and Egyptian sides.

Selection of academic staff members

The teaching staff consists of highly qualified academics from Germany, Egypt and other countries that are pre-screened, interviewed and selected through a selection committee consisting of the founding deans, academic staff members from the GIU and the German cooperation partners. Applicants for teaching positions should show relevant experience with respect to the position under application as well as possessing the needed general and teaching skills.

Criteria for Appointment

The criteria for appointment of academic staff based on the fact that the applicant concerned has achieved distinction in his or her academic discipline. In reaching the decision as to whether these criteria have been met by candidates, a selection committee comprising members from the partner universities and GIU will consider that.

Development of academic staff members

GIU is committed to staff development as an integral part of its commitment to delivering high quality teaching and research activities. Academic staff at GIU will take periodical training and development programs to meet the planned future teaching and research needs of GIU.

Evaluation of academic staff members

In line with its commitment to ensure the quality of teaching and research processes, GIU says that it has a developed system for evaluating academic staff performance using various criteria

Human Resources

Under the direction of the president of the university, the faculty is led by a/an (acting) dean. There are currently 95 academic staff members, and 74 teaching assistants. In addition, humanities courses are taught by professors from the humanities departments respectively. The ratio of teaching staff to students is 1 academic staff to 13 students. The ratio of teaching assistants to students is 1 teaching assistant to 16 students. The number of the teaching assistants assigned to each course is calculated based on the ratio one teaching assistant to 25 students in tutorials and one teaching assistant to 12 students in practical courses.

The staff teaching load is defined as follows:

- Full professor: 8 teaching hours/week

- Associate professor and lecturer: 12 teaching hours/week
- Teaching Assistant: 14 teaching hours/week

The current teaching staff male to female ratio is 1 to 0.67.

5.2 Assessment

The teaching staff is well educated and motivated and can carry out the study programme both in terms of personnel and content. The specializations of the individual professors are also a perfect fit and provide broad expertise for the programme.

Training opportunities

The university offers the opportunity for further education and research stays, through the regular exchange of teaching staff with partner universities, which, as can be seen from the CVs, are regularly used. Furthermore, feedback is given to teaching staff as part of the evaluation of classes. In the event of specific deficits, offers are made to improve teaching.

Scientific Activities

The scientific activities of the staff are supported in an appropriate manner. The publication of scientific articles, participation in conferences and poster sessions is encouraged. The publication list of the Faculty of Engineering includes 28 publications at national and international conferences/journals in 2023 alone.

Recruitment

The university has clear and transparent recruitment procedures. Job advertisements are published both on the website and in international newspapers and suitable candidates are selected from the applicants by a selection committee.

GIU provides sufficient support for teachers in the acquisition and application of new learning methods and the technologies used for this purpose.

GIU attaches great importance to the further qualification of its teaching staff. Newly appointed professors receive a comprehensive range of didactic training.

The measures for staff development are considered appropriate by the review panel, as they include relevant and meaningful continuing education offerings to improve teaching. In the discussion with those responsible for the study programmes, the expert group was able to determine that there is obviously a good contact between teachers and students, which was confirmed once again by the students. They appreciate the very good personal support from the lecturers.

There is sufficient qualified academic as well as administrative staff for the implementation of the study programmes.

A particular strength of the organization is the good networking with a large number of partner universities, particularly in Germany. The high proportion of female lecturers also stands out positively.

5.3 Conclusion

The criterion is **fulfilled**.

6 ESG Standard 1.6: Learning resources and student support

Institutions should have appropriate funding for learning and teaching activities and ensure that adequate and readily accessible learning resources and student support are provided.

6.1 Implementation

General aspects

According to the documentation of the GIU, the HEI provides its students with all the support needed to excel in their learning and ensure an exciting teaching environment. Learning resources are readily accessible to all students. On the faculty level, relevant physical resources are available to be used by the students for their studies. On the university level, the GIU provides other general resources that are available to be used by all students like the library and computing facilities across the campus. The GIU also has English and German departments which serve all faculties which try to support all students be ready for the global job market, explore different cultures, and develop valuable skills that can be applied in many different areas of their life. Students are also provided with comprehensive student support services to help them succeed academically and personally. This includes counselling services, mentoring and students' advising.

The faculty offers a wide range of facilities to make the study experience easier. For example, direct access to fully equipped lecture halls and tutorial rooms, a library that offers wide range of physical book covering areas in business, marketing, accounting, finance, entrepreneurship, and international business, as well as statistical programs (SPSS and STATA) and several online databases.

Student support centre

The Student Support Centre at the GIU provides comprehensive support to applicants, undergraduate and postgraduate students across various areas. It offers guidance and counselling to students through personalized one-on-one meetings and correspondence through official communication channels. Its range lasts from gathering recent information and guiding requests over challenges in the academic performance of the students and dealing with disabilities, financial issues and the regulations of policies and procedures. Additionally, a mentoring committee was established to provide help and support for students who faced educational difficulties, which hindered their progression through the individual study programme.

Library

The University's Library complements the study and research activities of the GIU. It hosts scientific and academic online databases that give access to primary sources for research

purposes. Furthermore, the library includes online services that cover different disciplines and books in different fields. The collections available are in German, English and Arabic.

IT Infrastructure and Service

The university is committed to providing state-of-the-art information technology infrastructure. The GIU is committed to develop the GIU Administration System as the backbone of all GIU administrative, teaching, research and learning processes. The GIU Computer Centre serves as a central service facility to develop and administer the GIU network, ensuring a high level of security. It operates various computer platforms in GIU computer rooms. Students and staff have access to the GIU library system and the Internet through the centre. The centre implements the GIU administration system (GIU IS), which supports all administrative, teaching, research, and learning processes. Additionally, a web-enabled information system on the GIU website keeps students and staff informed. The centre continuously trains and develops staff in the latest IT applications. It provides instructional teaching support for staff and produces courseware. New students are acquainted with facilities and systems, ensuring the use of cutting-edge technology in teaching.

The GIU offers a Content Management System that provides the students with the teaching material on and off GIU campus and a Student Electronic Administration System (Semester work records, exam results etc.). The GIU IT centre maintains a wireless and wired network to be accessed by the students. In addition, access via PC and wired network in the Computer Laboratories and the Library are provided. All lecture theatres, classrooms and laboratories are connected to the network and have Internet access. The following computing services are offered: Information Technology Orientation, User access to student network and library system, Internet Access, Student e-mail accounts and Software Applications.

English and Scientific Methods Department

The English and Scientific Method Department' department aims to build a leading centre of excellence in teaching and research, contributing to the general welfare nationally and internationally. Its mission is to provide high-quality education and to enable students to enhance their capabilities, skills, and knowledge for lifelong learning. GIU graduates should acquire up-to-date knowledge in scientific methods, critical thinking, research paper writing, communication, presentation skills, academic reading, argumentative writing, and report writing. To this end, various courses such as Academic English and Research Writing are offered. GIU students should be equipped with the essential skills for academic and professional success.

German department

The German Language Department offers all GIU students the possibility to learn the basics of the German language as well as to reach a high level of German language proficiency during their studies for those who are willing to reach such advanced levels. The programme combines regular courses with additional summer courses, providing motivated students with essential language skills for studying at German universities. Four compulsory German language courses (Levels 1 to 4) are offered to build a strong foundation. All students must pass the final exam at Level 4. Students have the option to take courses in Advanced Electives for the "Track to Germany" programme with advanced courses up to Level 10. Another option is to participate

in extra summer programs such as cultural trips, sports, language trips, and internships in Germany. This comprehensive approach is aimed at equipping students for success in German-speaking academic and professional environments.

Advising System

The advising system existed since the inauguration of the GIU. The major aim of the advising process is to assist students who can't follow the regular track. At the beginning of each semester, these students are invited to a meeting with their corresponding advisors, in order to discuss their academic situation. This meeting aims at helping advising students in putting an efficient future plan to graduate. The advisors are assigned academic staff members and teaching assistants in each educational programme headed by advising committee head and the Vice Dean for student's affairs.

Mentoring System

Quality team played a major role in initiating and sustaining the mentoring system. The mentoring system was to provide help and support for students who faced educational difficulties which hindered their progression through the study programme, delayed their graduation & affected their GPA. Assigned Staff academic members and teaching assistants in each educational programme offered academic and administrative support to these students.

6.2 Assessment

The GIU offers adequate funding for learning and teaching. Students have sufficient and adequate resources at their disposal.

The university has several offices supporting students' mobility, internships, career placement, IT-development, and language training, which provides students with excellent support throughout their studies. The overwhelming approval of students of university facilities and support systems testifies to this. There are also numerous support options for students. Firstly, applying for a place at GIU is a simple process, and transferring to or from another university is also easy, because it is based on the ECTS system. The credits can be easily recognised.

The expansion and intensification of international partnerships should be in the focus of GIU, also in terms of student mobility. Most activities have so far taken place in Cairo/Egypt. It would therefore be in line with the mission and vision of the GIU, if more activities were offered in Germany or other countries

There should be more practical student activities and competitions in student groups like:

(1) Formula student (designing cars, mechanical engineering)

<https://www.formulastudent.de/fsg/> international design competition

(2) ChemCar Competition for Process Engineering students

<https://en.wikipedia.org › wiki>

The *Chem-E-Car Competition* is an annual college competition for students majoring in Chemical Engineering. There is always a race at ACHEMA in Frankfurt

(3) Students should become a member of the Young Engineer's group of VDI (with a sub group to be founded in Cairo)

<https://www.vdi.de/aktivitaeten/netzwerke/young-engineers>

VDI – The Association of German Engineers

Engineers need a strong network that supports, advances and represents them in their work. That is exactly the task that the VDI – The Association of German Engineers – take on. The VDI have been reliably supporting engineers for more than 160 years. The Association provides them with a professional base and maintain a lively network at regional, national and international levels. Members must not be German.

The overall assessment of meeting the ESG Standard on learning resources and student support is very positive. Teaching and research facilities as well as student services and the administration are located on the campus of the university and are therefore easily accessible for all students and faculty.

Following the assessment the GIU offers different academic and non-academic activities nationally and internationally in all educational programs and encourages and supports the students to participate and engage in all campus life through the various Active Working Groups. As part of the continuous improvement, the GIU will work on increasing the variety and number of student activities, including Active Working Groups, workshops, and competitions.

6.3 Conclusion

The criterion is **fulfilled**.

Recommendations

1. There should be more practical student activities and competitions in student groups.
2. Internships in industry in Germany or scientific project/bachelor/master thesis at German universities should be offered to the students.

7 ESG Standard 1.7: Information management

Institutions should ensure that they collect, analyse and use relevant information for the effective management of their programmes and other activities.

7.1 Implementation

The GIU student portal provides students with access to several resources, such as lectures, tutorials, assignments, and projects. Additionally, it offers the opportunity to monitor academic progress, including quiz grades, transcript, and attendance status for enrolled courses. The GIU-Student online-portal requires a student account and a password.

The university endeavours to maintain a well-organized email communication system to inform both prospective and current students in the form of newsletters, admissions information and

event information. Application status updates and important deadlines are submitted via email, too.

Key Performance Indicators

The university reports to consistently work on university wide Key Performance Indicators (KPIs) in order to establish and maintain effective programme management. By continuously monitoring and evaluating these KPI, the university aims to ensure the success and improvement of its programs.

Examples of student management using KPI:

- Monitoring the number of enrolled students as well as the retention rates
- Understanding the demographic characteristics of the students
- Analysing student data related to performance, progress, and outcome
- Student population profile and monitoring alumni students

7.2 Assessment

The current procedures for collecting and analyzing information on study programmes and student progression activities serve as a fundamental element of internal quality assurance.

The information management systems used by the GIU meet the international standards in terms of features and functionality and fulfil the requirements for intuitive usability of modern information systems. The systems cover the needs of a university for the monitoring and control of its activities. According to the GIU, the data generated can be used in the intended way for the control and further development of the university.

The university collects useful data on many levels enabling a smooth management of day-to-day activities and processes, while also capturing valuable quality management data that open perspectives from top-down and bottom-up. The evaluation of data is accompanied by quality assurance measures and the planning of follow-up activities.

Various systems provide information to learners, employers, stakeholders, and faculty. Confidentiality of information and data protection are generally ensured.

The GIU appears to have implemented systematic methods of data collection, e.g. student feedback, academic performance metrics and programme evaluations by using the so called "Content Management System" CMS. This system enables student data to be recorded and analyzed and KPIs to be derived. Moreover, CMS is used to centrally provide teaching materials (scripts, videos), manage grades and communicate with students. The established KPIs (like exam pass rates, drop-out rates, GPA scores, etc.), are used to make informed decisions and to generate reports. In terms of the completeness, timeliness and usability of the information collected, the procedure can be rated positively. The GIU has recognized the importance of involving both students and staff in data provision, assessment and follow-up planning.

7.2 Conclusion

The criterion is **fulfilled**.

8 ESG Standard 1.8: Public information

Institutions should publish information about their activities, including programmes, which is clear, accurate, objective, up-to date and readily accessible.

8.1 Implementation

The university describes its public information as easily accessible for all stakeholders such as prospective students, enrolled students, parents and other interested staff. Public information about the GIU is provided through the following mechanisms:

The GIU website includes different information about the university establishment, mission, vision, faculties, admission, programs, etc. The admission steps and procedures are explained on the GIU website. They include for instance information about the online application, the admission tests, or the students' selection criteria.

Maintaining active social media profiles on platforms like Instagram and Facebook is widely recognized as one of the primary methods for sharing information with the public. The university is committed to consistently updating these profiles with news, events, and important information.

8.2 Assessment

Generally, the GIU provides comprehensive information on its activities. The main website offers ample news on current activities and links to all relevant subjects, from university administration to research and study programmes, including international issues. Websites are well-structured, not overloaded with content, and topical. Social media plays a meaningful and successful role in conferring information to stakeholders and the public. Application to the study programmes is possible online and is supported by detailed procedure information.

The central instrument for the publication of information is thus the university's website, which shapes the image of the university brand and provides an accessible and up-to-date information environment for prospective students.

It fulfils its medial purpose of informing internal as well as external stakeholders about all information relevant to GIU. It thus functions as an important tool for disseminating news, up-to-date information and resources about the university and its various programmes, its initiatives and GIU activities. With a user-friendly interface and comprehensive content, the website represents the central point of contact for anyone seeking information about GIU, its staff, research and study programmes, and service facilities.

The website was implemented in accordance with the standards for website design. The information is available around the clock. There are services for people with visual impairments.

GIU has established an efficient communication system that uses various digital platforms to ensure a seamless and efficient flow of information both internally and externally. The university's intranet system serves as an important platform for publishing.

Publication of notices, announcements, and other important content that is disseminated to all members of the university. In addition, the University's official correspondence is handled through an electronic information and document management system that allows for the efficient and secure management of university documents and other important information.

The University conducts its activities based on the principles of transparency, openness, involvement and awareness of all stakeholders in educational activities, focusing on students, teaching staff and employers. One of the most important ways to provide information is using information technology and media. In addition to the information on the university's website, details about degree programmes undergoing accreditation are communicated to the public and to prospective students through a variety of events.

Overall, GIU uses a variety of communication channels to ensure that the public is informed about GIU's degree programmes, services, and activities, and that all inquiries and requests are handled in a timely and professional manner.

The GIU provides information on their activities to the general public via the following means: a) website, b) social media (Instagram, Facebook, LinkedIn). The website contains information on the study programs, the GIU history, mission, vision, admission mechanisms, structural organization, job postings, facilities and general news and events. The social media pages contain information on graduation ceremonies, visits, student projects as well as open positions for staff and lecturers.

On the website, each Bachelor study programme of the Engineering department is described at an appropriate level of detail. Learning outcomes, technical content as well as career opportunities are described for all programs. For each programme there is a table listing the names of all courses organized by semester including the ECTS per course. The public information GIU provides is sufficient for students and prospective students to have a clear, accurate, objective and up-to-date picture of the GIU activities and the Bachelor study programs.

Currently, a description of the study programs for the Master courses is unfortunately missing.

A separate section on the website contains information regarding the admission procedure, requirements, and selection criteria. Links to an online platform for the application procedure are also provided. There are also information about tuition fees as well as scholarships and other opportunities for financial aid.

The GIU also provides information directly to their students which are non-public. A password-protected student portal provides access to lecture material and timetables and managing assignments, projects and submissions. The portal allows tracking the academic progress, e.g. access to grades and attendance status. Email is also used as a means of communication to students.

8.3 Conclusion

The criterion is **fulfilled**.

Recommendations

1. It is recommended to add public information on the Master study programme that have recently started.
2. Improvements could be made by adding information on the planned and actual research activities including project descriptions, publications, and information on the PhD programs. This information is currently missing.

9 ESG Standard 1.9: On-going monitoring and periodic review of programmes

Institutions should monitor and periodically review their programmes to ensure that they achieve the objectives set for them and respond to the needs of students and society. These reviews should lead to continuous improvement of the programme. Any action planned or taken as a result should be communicated to all those concerned.

9.1 Implementation

All programs at the GIU are periodically reviewed using the Continuous Quality Improvement Cycle, which follows the Plan-Do-Check-Act methodology. This process is outlined in the Quality Management Policy and Procedures document at the GIU. Programme revision is conducted at specified intervals, primarily based on ongoing monitoring of student progression, completion rates, workload, and other relevant data.

Each year, programs are revised with input from external stakeholders, such as employers and recent graduates, collected through annual surveys. The feedback from these surveys is analysed and communicated to relevant parties to inform programme enhancements and updates. Employers provide insights into the skills needed in the labour market via the employer survey, while graduates offer feedback on the learning environment, support services, learning outcomes, and workload adequacy through the Fresh Graduate Survey. Additionally, feedback from internal stakeholders, including students and academics, is gathered through curriculum committee meetings to further refine and improve the programs.

Curriculum Committee

The Curriculum Committee oversees the implementation, evaluation, and revision of academic programs and courses offered by the different faculties. According to the university, the curriculum committee plays also an important role in quality assurance. Members of the curriculum committee are also the quality assurance representatives of their faculties. The committee plays a crucial role in ensuring that the curriculum meets the defined intended learning outcomes, aligns with the educational goals of the university, and maintains academic standards. The committee submits the feedback collected by the student curriculum committee to the executive board twice per semester.

Student Curriculum Committee

The Student Curriculum Committee actively seeks feedback from students during the semester. It comprises students from each batch in every faculty and an academic advisor who has to hold a PhD. The feedback gathered is discussed in a scheduled meeting with the academic advisor. The advisor compiles a report for the curriculum committee head, and by the end of the semester, students fill out course evaluation surveys. According to the university, in this way, the university aims to understand the problems of students and improve the quality of teaching.

9.2 Assessment

Quality assurance and improvement of programs are key components of the GIU. Therefore, the university has implemented a comprehensive and well-thought-out quality and continuous

framework for the improvement of programs. The quality process and the results of quality measurements and improvements are made transparent to stakeholders.

The university has published several quality assurance documents, detailing the quality control of programs and its strategic goals, which together define the process of programme evaluation and the common development goals of the organization. Students, faculty, staff, alumni, and external partners are required to participate through various formal and informal exchanges of information to evaluate programme, which ensures that curricula are current and responsive to societal and economic changes. The university also uses an appropriate spectrum of surveys to evaluate its performance, e.g., enrolment and graduation survey of students, student course and teacher evaluation, and surveys directed at dean's office and administration.

Important research is implemented in the curricula – each of the syllabi provides a literature list with at least one international publication.

It is especially commendable that the main stakeholders, faculty, staff, and students, are enthusiastic about quality management and are willing to discuss how to improve the programme. This is considered a key element of all evaluation and improvement efforts.

Student expectations and needs are met by the programme, based on the data provided by the university and the ad hoc survey conducted during the discussions with students. The experts conducted a short survey on student satisfaction with the question of whether they would recommend the university programme they are studying to their own family members. Out of the selected group participating in the discussions, all students recommended their study programme.

GIU policies and procedures promote a culture of reflective practice and provide mechanisms for continuous improvement of processes and quality. Improvement requires systematic collection and use of feedback and data, quality benchmarking, input from internal and external experts, continuous engagement with GIU students as partners, fostering collaborative approaches, acting on lessons learned, and building on best practices.

The GIU is monitoring and reviewing periodically the programs with different forms of academic committees and evaluations. GIU regularly conducts surveys, evaluations and statistical analyses. On this basis, measures are derived to ensure the success of the studies. This supports the quality and the further development of the programs. International evaluations are done like fresh graduate survey, alumni survey, or employer survey. Additionally external reviews like the programme accreditation are done to evaluate the study programs. These actions are included in the PDCA cycle to check if the objectives, learning outcomes and the specific design of the study programs is reached. Therefore, it can be said, that the objectives are achieved and that the needs of the students and society are included in the respective measures. In the discussions with the students could be shown, that potential improvements are considered by the university responsables. A continuous improvement for the study programs is possible by using the defined PDCA cycle according to ESG standard 1.1. In case of additional actions for the on-going monitoring or periodic review of the study programs, it will be planned and communicated to the respective parties.

Overall, the quality assurance and development of the study programs is based on a systematic and comprehensible procedure, enriched by participatory and dialog-based opportunities for students to help shape further development in the long term. The mechanisms for reviewing quality assurance, such as regular workload surveys and the associated adjustment to the

study programs, are implemented in a meaningful way, and the resulting results are used as a basis for further development.

9.3 Conclusion

The criterion is **fulfilled**.

10 ESG Standard 1.10: Cyclical external quality assurance

Institutions should undergo external quality assurance in line with the ESG on a cyclical basis

10.1 Implementation

The internal quality assurance system at the GIU is responsible for preparing the different self-reports during national and international accreditation procedures, as well as programme catalogues and all supporting documents needed for the external quality assurance process. The university applies for programme accreditation every 5-7 years through reputable agencies, where its programs and self-reports are evaluated, feedback is provided, and accreditation is granted. The university utilizes this feedback to improve its programs. Additionally, the programs' bylaws are recognized by the Supreme Council of Universities. Furthermore, the programs bylaws are revised by the Supreme Council of Universities and the Ministry of Higher Education every 4-5 years.

Cyclical feedback from surveys of fresh graduates, employers, and alumni is collected and analyzed annually, and the results are used to enhance the programs as part of the external quality assurance. All feedback is gathered and delivered to relevant parties for programme updates and improvements. Recommendations and feedback, along with accreditation reports, are reviewed before applying for the next accreditation cycle. Furthermore, the university benchmarks its practices against those of other reputable institutions to enhance its programmes.

10.2 Assessment

GIU has implemented several measures for cyclic external quality assurance. This includes a 5 to 7-year reaccreditation period, a periodical review from the Supreme council of Universities and the Ministry of Higher Education as well as annual feedback surveys from alumni and requirements of external stakeholders. Feedback is collected, reviewed and used to update and enhance programmes. Additionally, GUI benchmarks itself against other universities and develops best practices out of the benchmark on the programme level.

On the strategic level, GIU has implemented a board of trustees to advice, review and approve decisions of other university bodies. The board meets twice a year and consists of members from science, industry, government institutions and NGOs.

GIU therefore fully fulfills he requirements of ESG on cyclic external quality assurance.

10.3 Conclusion

The criterion is **fulfilled**.

11 Assessment of compliance the Standards and Guidelines in the Higher European Area (ESG) in the actual official version and the German Council of Science and Humanities (WR)

The study programmes „**Mechatronics/Automotive Engineering (B.Sc./MSc), Manufacturing Engineering (B.Sc./MSc.), Robotics and Automation Engineering (B.Sc./MSc.), Automation and Control Engineering (B.Sc./MSc.), Electrical Power and Energy Systems Engineering (B.Sc./MSc.) and Pharmaceutical Engineering (B.Sc./MSc.)**“ were assessed on the basis of the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG), and the national or other relevant regulations.

The expert group concludes that the **ESG standards** 1.1 (Policy for quality assurance), 1.2 (Design and approval of programmes), 1.3 (Student-centred learning, teaching and assessment), 1.4 (Student admission, progression, recognition and certification), 1.5 (Teaching staff), 1.6 (Learning resources and student support), 1.7 (Information management), 1.8 (Public information), 1.9 (On-going monitoring and periodic review of programmes) and 1.10 (Cyclical external quality assurance) are fulfilled.

The assessment criteria are as follows:

Standard 1.1 Policy for quality assurance: Universities have a publicly accessible quality assurance strategy, which is part of their strategic management. This strategy is developed and implemented by internal stakeholder representatives through appropriate structures and processes, involving external stakeholders.

The criterion is **fulfilled**.

Standard 1.2 Design and approval of programmes: Universities have procedures for the design and approval of their courses. The courses are designed in such a way that their objectives, including the desired learning outcomes, can be achieved. The qualification obtained during a degree programme is clearly defined and communicated; it refers to the corresponding level of the national qualifications framework for higher education and, consequently, the qualifications framework for the European Higher Education Area.

The criterion is **fulfilled**.

Standard 1.3 Student-centred learning, teaching and assessment: Universities ensure that the courses offered are carried out in such a way as to encourage students to play an active role in the design of the learning process and that this approach is also taken into account when assessing students / examinations.

The criterion is **fulfilled**.

Standard 1.4 Student admission, progression, recognition and certification: Universities ensure that the courses offered are carried out in such a way as to encourage students to play an active role in the design of the learning process and that this approach is also taken into account when assessing students / examinations.

The criterion is **fulfilled**.

Standard 1.5 Teaching staff: Universities ensure the competence of their teachers. They use fair and transparent procedures for the recruitment and further training of their employees.

The criterion is **fulfilled**.

Standard 1.6 Learning resources and student support: The university has adequate funding to finance study and teaching and ensure that there is always a sufficient and readily available range of learning and support available for their studies.

The criterion is **fulfilled**.

Standard 1.7 Information management: Universities ensure that they collect, analyze and use the relevant data relevant to the successful conduct of studies and other activities.

The criterion is **fulfilled**.

Standard 1.8 Public information: Universities publish easily understandable, correct, objective, up-to-date and well-accessible information about their activities and courses of study.

The criterion is **fulfilled**.

Standard 1.9 On-going monitoring and periodic review of programmes: Universities are constantly monitoring their courses and regularly reviewing them to ensure that they achieve the goals set and meet the needs of students and society. The tests lead to a continuous improvement of the courses. All affected parties will be informed about any measures planned or resulting from this.

The criterion is **fulfilled**.

Standard 1.10 Cyclical external quality assurance: Universities regularly undergo external quality assurance procedures in accordance with the ESG.

The criterion is **fulfilled**.

12 Accreditation Recommendation

The peer-review experts recommend unconditional accreditation of „Mechatronics/Automotive Engineering (B.Sc./MSc), Manufacturing Engineering (B.Sc./MSc.), Robotics and Automation Engineering (B.Sc./MSc.), Automation and Control Engineering (B.Sc./MSc.), Electrical Power and Energy Systems Engineering (B.Sc./MSc.) and Pharmaceutical Engineering (B.Sc./MSc.)“.

The peer-review experts recommend the following **recommendations**:

(General) recommendations

1. To establish a leading research profile at GIU that excels in cross-disciplinary engineering approaches, distinctly aligning with German standards of innovation and practical application, thereby setting a benchmark in academic excellence amidst Cairo's competitive university sector.
2. The numbers of electives should be increased for each student and in each semester.
3. The GIU should provide courses in such a way that there is a real choice for the students in each semester.
4. There should be more practical student activities and competitions in student groups.
5. Internships in industry in Germany or scientific project/bachelor/master thesis at German universities should be offered to the students.
6. It is recommended to add public information on the Master study programmes that have recently started.
7. Improvements could be made by adding information on the planned and actual research activities including project descriptions, publications, and information on the PhD programs. This information is currently missing.

Recommendations for study programme „Mechatronics and Automotive Engineering (B.Sc./M.Sc.)“

1. It is recommended to offer electives for the specialization that are closer to the Mechatronics/Automotive Engineering profile.

Recommendations for study programme „Manufacturing Engineering“ (B.Sc./M.Sc.)

1. It is recommended to rename the majors in “Manufacturing and Industrial Engineering” (Bachelor and Master)
2. In the module descriptions should be an addition of book sources/literature sources (Bachelor and Master).
3. It is recommended to teach technical subjects/modules also at least partly in German (Bachelor).

Recommendations for study programme „Robotics and Automation Engineering” (B.Sc./M.Sc.)

1. PLC programming and automation topics should be implemented into the programme, e.g. offer ELEC 603 as an elective (currently only in „Automation and Control Engineering“).
2. The contents in the topic areas machine vision, machine learning, ROS programming (C++ and Python) should be increased. This will ensure that the programme remains future-proof for the upcoming industry demands.
3. The GIU should hire additional PhDs in robotics with complimentary backgrounds to existing staff. This will ensure that the broad demands in robotics can be met, especially in the computer science related fields.

Recommendations for study programme „Automation and Control Engineering” (B.Sc./M.Sc.)

1. It is recommended to revisit the master’s curriculum to incorporate more courses in automation, thereby maintaining the balance essential for comprehensive education in this field.

Recommendations for study programme „Electrical Power and Energy Systems Engineering” (B.Sc./M.Sc.)

1. The number of elective modules in each semester and each major in both the bachelor and the master programme of Electrical Power and Energy Systems Engineering should be increased in such a way, that there is a real choice for students.
2. Students should have the chance to select their elective module on their own and should be responsible for their choice. To not overload popular modules, group sizes may be limited and a first-come-first-serve registration policy may be applied, so students have to select alternative courses and topics on their own.

Recommendations for study programme „Pharmaceutical Engineering” (B.Sc./M.Sc.)

1. It is recommended to also emphasize scale-up processes, and preservation processes for biological products such as freezing or lyophilization.

IV Decisions of the Accreditation Commission of ACQUIN

Based on the evaluation report of the expert group and the statement of the Higher Education Institution, the Accreditation Commission of ACQUIN decided on its meeting on the 12 September 2024:

General recommendations for all study programmes:

- To establish a leading research profile at GIU that excels in cross-disciplinary engineering approaches, distinctly aligning with German standards of innovation and practical application, thereby setting a benchmark in academic excellence amidst Cairo's competitive university sector.
- The numbers of electives should be increased for each student and in each semester.
- The GIU should provide courses in such a way that there is a real choice for the students in each semester.
- There should be more practical student activities and competitions in student groups.
- Internships in industry in Germany or scientific project/bachelor/master thesis at German universities should be offered to the students.
- It is recommended to add public information on the Master study programmes that have recently started.
- Improvements could be made by adding information on the planned and actual research activities including project descriptions, publications, and information on the PhD programs. This information is currently missing.

Mechatronics/Automotive Engineering (B.Sc./M.Sc):

The study programmes “Mechatronics/Automotive Engineering” (B.Sc./M.Sc) are accredited without any conditions.

The accreditation is valid until 30 September 2030.

The following recommendations are given for the further development of the study programmes:

- It is recommended to offer electives for the specialization that are closer to the Mechatronics/Automotive Engineering profile.

Manufacturing Engineering (B.Sc./M.Sc):

The study programmes “Manufacturing Engineering” (B.Sc./M.Sc) are accredited without any conditions.

The accreditation is valid until 30 September 2030.

The following recommendations are given for the further development of the study programmes:

- It is recommended to rename the majors in “Manufacturing and Industrial Engineering” (Bachelor and Master)
- In the module descriptions should be an addition of book sources/literature sources (Bachelor and Master).
- It is recommended to teach technical subjects/modules also at least partly in German (Bachelor).

Robotics and Automation Engineering (B.Sc./M.Sc):

The study programmes “Robotics and Automation Engineering” (B.Sc./M.Sc) are accredited without any conditions.

The accreditation is valid until 30 September 2030.

The following recommendations are given for the further development of the study programmes:

- PLC programming and automation topics should be implemented into the programme, e.g. offer ELEC 603 as an elective (currently only in „Automation and Control Engineering“).
- The contents in the topic areas machine vision, machine learning, ROS programming (C++ and Python) should be increased. This will ensure that the programme remains future-proof for the upcoming industry demands.
- The GIU should hire additional PhDs in robotics with complimentary backgrounds to existing staff. This will ensure that the broad demands in robotics can be met, especially in the computer science related fields.

Automation and Control Engineering (B.Sc./M.Sc):

The study programmes “Automation and Control Engineering” (B.Sc./M.Sc) are accredited without any conditions.

The accreditation is valid until 30 September 2030.

The following recommendations are given for the further development of the study programmes:

- It is recommended to revisit the master’s curriculum to incorporate more courses in automation, thereby maintaining the balance essential for comprehensive education in this field.

Electrical Power and Energy Systems Engineering (B.Sc./M.Sc):

The study programmes “Electrical Power and Energy Systems Engineering” (B.Sc./M.Sc) are accredited without any conditions.

The accreditation is valid until 30 September 2030.

The following recommendations are given for the further development of the study programmes:

- The number of elective modules in each semester and each major in both the bachelor and the master programme of Electrical Power and Energy Systems Engineering should be increased in such a way, that there is a real choice for students.
- Students should have the chance to select their elective module on their own and should be responsible for their choice. To not overload popular modules, group sizes may be limited and a first-come-first-serve registration policy may be applied, so students have to select alternative courses and topics on their own.

Pharmaceutical Engineering (B.Sc./M.Sc):

The study programmes “Pharmaceutical Engineering” (B.Sc./M.Sc) are accredited without any conditions.

The accreditation is valid until 30 September 2030.

The following recommendations are given for the further development of the study programmes:

- It is recommended to also emphasize scale-up processes, and preservation processes for biological products such as freezing or lyophilization.