هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-103
2022

Program Specification

Program Name: Renewable Energy Engineering
Program Code (as per Saudi university ranking): 1210
Qualification Level: Bachelor
Department: Electrical Engineering
College: College of Engineering and Information Technology
Institution: Onaizah Private Colleges
Program Specification: New ☐ updated* ☒
Last Review Date: 2023-06

Content:

Content	Page
A. Program Identification and General Information	3
B. Mission, Objectives, and Program Learning Outcomes	5
C. Curriculum	7
D. Student Admission and Support	23
E. Faculty and Administrative Staff	27
F. Learning Resources, Facilities, and Equipment	28
G. Program Quality Assurance	33
H. Specification Approval Data	55

A. Program Identification and General Information

1. Program's Main Location:

Main Campus; Onaizah Private Colleges

2. Branches Offering the Program (if any):

N/A

3. Partnerships with other parties (if any) and the nature of each:

None

4. Professions/jobs for which students are qualified:

1. Solar PV system engineer.
2. Wind energy engineer.
3. Hydrogen energy engineer.
4. Fuel cell system engineer.
5. Smart grid engineer.
6. Solar thermal engineer.
7. Biomass energy engineer.
8. Energy storage engineer.
9. Renewable Energy Engineer.
10. Researchers.
11. University staff.

5. Relevant occupational/ Professional sectors:

1. Energy Sector.
2. All engineering departments in government agencies.
3. Design, implementation, and supervision of renewable energy stations.
4. Maintenance and operation of renewable energy projects in both government and private agencies.
5. Ministry of Water and Electricity.
6. Ministry of Municipal and Rural Affairs.
7. Saudi Council of Engineers.
8. The General Corporation for Water Desalination.
9. The General Corporation for Ports.
10. Saudi Arabian Airlines.
11. Construction and contracting companies.
12. Ministry of Transportation.
13. Ministry of Agriculture and Water Resources.
14. General Electricity Corporation.

15. Aramco Oil Corporation.
16. Saudi Basic Industries Corporation (SABIC) and NEOM.

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. None	None	None

7. Exit Points/Awarded Degree (if any):

exit points/awarded degree	Credit hours
1. None	None

8. Total credit hours: 165 Credit Hours

B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

To offer competitive higher education in renewable energy engineering within a supportive academic environment that prepares qualified engineers with vital employability skills, and to make research contributions, promote community engagement, and participate in realizing the Kingdom's Vision 2030.

2. Program Objectives:

1. Improve the quality of teaching and learning experiences, the quality of learning resources and the quality of basic facilities, equipment, and supporting infrastructure.
2. Provide support to students through improvement of academic, social, psychological, and professional advising, counselling, and supportive services.
3. Enhance the performance of faculty members both professionally and academically.
4. Improve of the program's administrative efficiency and processes and procedures.
5. Prepare competent and qualified graduates with vital employability skills demanded in the labor market.
   A. Enable graduates to demonstrate core knowledge in electrical Engineering using essential technologies and basic research skills.
   B. Enhance students' critical thinking, problem-solving, communication and teamwork skills.
   C. Improve students' awareness of ethical values, principles of professional conduct, independence, and autonomy.
6. Contribute to the field of electrical Engineering through production of quality research in alignment with OC and program's research priorities.
7. Contribute to the local community through services, programs, and consultations.

3. Program Learning Outcomes:

Knowledge and understanding	
K1	Identify fundamental renewable energy concepts, principles and theories in relation to the underlying engineering, mathematics and science concepts.
K2	Interpret performance characteristics and behavior of renewable energy devices and equipment.
K3	Discuss the preliminary design features of renewable energy systems and subsystems in relation to their underlying engineering principles.

K4	Describe current developments and emerging trends within the field of renewable energy technologies.
K5	Recognize ethical values, safety provisions and precautions, principles of professional conduct in both laboratory and field environments of renewable energy engineering.
K6	Discuss the basic elements of planning and research processes of renewable energy projects.
Skills	
S1	Design optimized and sustainable solutions to predictable and unpredictable problems, mainly related to generation, transmission, distribution and utilization of renewable energy.
S2	Simulate renewable energy components, systems and sub-systems.
S3	Analyze complex renewable energy systems using proper mathematical equations and formulae.
S4	Investigate the behavior of renewable energy systems under various constraints and operating conditions using proper computational, information technology, and research methods.
S5	Critically evaluate solutions to problems, current developments, emerging trends and technologies in the field of renewable energy; in addition to their impact on economic, environmental and societal contexts.
S6	Effectively communicate inquiries, research results of and solutions to complex issues in renewable energy with a range of audiences.
Values, Autonomy, and Responsibility	
V1	Effectively participate in renewable energy teams and think-tank groups in solving renewable energy systems' problems in order to advance the discipline and society.
V2	Demonstrate ethical values, safety provisions and precautions, principles of professional conduct in both laboratory and field environments of renewable energy engineering.
V3	Act responsibly, independently, and autonomously in both work and learning situations of renewable energy engineering.

C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	12	7.3%
	Elective	-	-	-
College Requirements	Required	11	34	20.6%
	Elective	-	-	-
Program Requirements	Required	38	106	64.2%
	Elective	2	6	3.6%
Capstone Course/Project	Required	2	5	3.1%
Field Training/ Internship/ Capstone Course	Required	1	2	1.2%
Residency year	-	-	-	-
Others	-	-	-	-
Total		**60**	**165**	**100**

2. Program Courses

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	ENG0011	General English (1)	R		8	College
	STAT100	Statistics	R		2	College
	PHYS110	General Physics (1)	R		2	College
	CSC105	Computer Skills	R		4	College
	PSYCH101	Thinking Skills and Learning Styles	R		2	College
Level 2	ENG0012	General English (2)	R	ENG0011	5	College
	ENG102	English for Engineering and Computer Science	R	ENG0012	2	College
	MATH105	Calculus	R		3	College
	PHYS115	General Physics (2)	R	PHYS110	3	College
	CSC111	Computer programming	R	CSC105	3	College
Level 3	IC101	Introduction to Islamic culture	R		2	Institution
	ARAB101	Linguistic skills	R		2	Institution
	PHYS131	General Physics (3)	R	PHYS115	4	College
	GE104	Basics of Engineering Drawing	R		3	College
	MATH106	Integral Calculus	R	MATH105	3	College
	CHEM111	General Chemistry	R		4	College
Level	GE105	Basics of Engineering Technology	R	GE 104	2	College

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
4	MATH107	Linear Algebra & Analytic Geometry	R		3	College
	MATH203	Differential and Integral Calculus	R	MATH106	3	College
	GE210	Engineering Mechanics	R	MATH106 MATH107	3	College
	EE201	Fundamentals of Electric Circuits	R	PHYS131	3	College
	ME271	Thermodynamics	R	CHEM111	3	Program
Level 5	MATH208	Differential equations	R	MATH203	3	College
	GE211	Introduction to Engineering Design	R		3	College
	CSC209	Computer Programming	R	MATH107 MATH203	3	College
	EE202	Electric Circuit Analysis	R	EE201	3	College
	EE205	Electric Circuits Laboratory	R	EE202	1	College
	CE230	Fluid Mechanics	R	GE210 ME271	3	Program
Level 6	IC102	Islam and Community Building	R	IC101	2	Institution
	ME330	Heat Transfer	R	CE230	3	Program
	EE300	Instruments & Electrical Measurements	R	EE205	3	College
	EE301	Signals and systems Analysis	R	EE202	3	College
	EE312	Electronics (1)	R	EE202	3	College
	EE313	Electronics Laboratory (1)	R	EE312	1	College
Level 7	IC103	Economic System in Islam	R	IC101	2	Institution
	STAT325	Probabilities and statistics	R	MATH203	3	College
	REE301	Introduction to Renewable Energy Systems	R	EE202 ME285	3	Program
	REE302	Meteorology for Renewable Energy Resources	R	REE301	3	Program
	EE340	Fundamentals of Power Systems	R	EE202	3	College
	EE351	Principles of Control Systems	R	EE301	3	College
Level 8	IC104	Political System in Islam	R	IC101	2	Institution
	ARAB103	Arabic Writing	R		2	Institution
	REE320	Photovoltaic Energy Systems	R	REE306	3	Program
	REE321	Photovoltaic Energy Lab	R	REE320	1	Program
	XXXXXX	Free Course	R		3	Program
	REE330	Electromechanical Energy Conversion	R	EE202	3	Program
	REE340	Solar Thermal Energy Systems	R	REE306 ME330	3	Program
Level 9	ECON401	Engineering Economy	R	Pass 90 Hrs.	3	Program
	REE430	Wind Energy Systems	R	REE306 REE330	3	Program
	REE436	Power Electronics for RE Applications	R	EE312	3	Program
	REE4XX	Elective Course (1)	E		3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	REE491	Senior Design Project (1)	R	Pass 122 Hrs.	3	Program
Level 10	MGMT402	Project Management	R	Pass 90 Hrs.	3	College
	REE420	Energy Storage Systems	R	REE320 REE340	3	Program
	REE4XX	Elective Course (2)	E		3	Program
	XXXXXX	Free Course	R		3	Program
	REE492	Senior Design Project (2)	R	REE491	2	Program
	GE406	Summer Training	R	Pass 111 Hrs.	2	Program
Elective Courses	REE440	Efficient Utilization of Energy	E	REE320 REE340	3	Program
	REE442	Batteries	E	REE320	3	Program
	REE443	Fuel Cells	E	CHEM111 ME330	3	Program
	REE445	Biomass Energy Systems	E	REE301 ME330	3	Program
	REE446	Geothermal Energy Systems	E	REE301 ME330	3	Program
	REE448	Selected Topics in Renewable Energy	E	REE301	3	Program

3. Course Specifications

Insert hyperlink for all course specifications using NCAAA template (T-104)

https://drive.google.com/drive/folders/1nwU0ClOoC2YCeJkRTHVfJHJB-Rr2y0UY

4. Program learning Outcomes Mapping Matrix

Align the program learning outcomes with program courses, according to the following desired levels of performance *(I = Introduced P = Practiced M = Mastered).*

Course code & No.	Program Learning Outcomes														
	Knowledge and understanding						Skills						Values, Autonomy, and Responsibility		
	K1	K2	K3	K4	K5	K6	S1	S2	S3	S4	S5	S6	V1	V2	V3
ENG0011												I			
STAT100	I										I				
PSYCH101												I			
CSC105										I					
PHYS110	I		I												
ENG0012												I			
ENG102												I			
MATH105	I								I						
CSC111								I							
PHYS115	I				I										I
IC101														I	
ARAB101												I			
GE104	I						I								
MATH106	I								I						
CHEM111	I								I				I		
PHYS131	P				I				P				I		
GE105		I			I		I								
MATH107	P								P						
EE201	P						I								
MATH203	P										I				
GE210			I				I						P		
ME271	P						P								
EE202							P			P					
EE205					P		P								
MATH208	P								P						
CSC209	P							P							
GE211			P		I							P			
CE230		P									P				
IC102														P	
EE300										P		P			
EE301							P			P					
EE312	P						P	P							

Course code & No.	Program Learning Outcomes														
	Knowledge and understanding						Skills						Values, Autonomy, and Responsibility		
	K1	K2	K3	K4	K5	K6	S1	S2	S3	S4	S5	S6	V1	V2	V3
EE313				P			P	P							
ME330	P	P					P								
IC103														P	
REE301				P	P		M								
REE302					P			P							
STAT325	M								P						
EE340	M					P	P								
EE351			P						P						
ARAB103												P	P		
IC104												P		P	
REE320			M				M				P				
REE321								M		P					
REE330		P			M				M						
REE340	M						M		M						
ECON401						P									P
REE430			M				M								
REE436		M		M			M		M						
REE491		M		M					M					M	
MGMT402						M					M				
GE406							M			M		M		M	M
REE420	M											M			
REE492							M	M	M	M			M		
REE442		P		I						M					
REE440						M				M			M		
REE443			P	P			M						M		
REE445			P						M						
REE446				P		I				M					
REE448			M	M			M			M					

5. Teaching and learning strategies applied to achieve program learning outcomes

Describe teaching and learning strategies, including curricular and extra-curricular activities, to achieve the program learning outcomes in all areas.

OC-QMS guiding principle #5 (and its relevant policies and processes) mandates that an OC academic program should:

1. Align all its courses with its PLOs (process P-P-04 and its guidelines & procedures).
2. Define individual CLOs for each course (process P-P-05 and its guidelines & procedures).
3. Map all individual CLOs with PLOs based on step #1.
4. Map all individual CLOs with appropriate teaching strategies and learning activities through CTAs matrices (process P-P-06 and its guidelines & procedures). This process is semi-automated through OC-E-QMS.
5. Map all PLOs to appropriate teaching strategies and learning activities, based on the established alignments of individual CLOs as defined in steps 1 to 4 and include this mapping in the PLOs Assessment Plan (process P-P-07 and its guidelines & procedures). This process is fully automated through OC-E-QMS.

Accordingly, the program adhered strictly to the previous steps and their associated processes and procedures, systematically aligning all courses with the defined PLOs. The content of each course was meticulously deconstructed into individual CLOs, which were subsequently associated with appropriate teaching strategies and learning activities in accordance with the OC-QMS guidelines. These mappings were then embedded in our PLOs Assessment Plan, facilitating a unified and effective approach to pedagogy across the program. The following table summarizes the mapping of our PLOs to teaching strategies and learning activities based on the relevant NQF domain:

NQF-PLO Domain	Mapped Teaching Strategies/Learning Activities
Knowledge & Understanding PLOs	1. Lectures. 2. Tutorials. 3. (Online) Video. 4. Discussions (and similar active learning activities). 5. Online Discussions (e.g., Discussion Forums). 6. Independent Study or Research. 7. Group Work and Cooperative Learning Activities (including online group activities). 8. Group Research.
Skills PLOs	1. Interactive Lecture Demonstration. 2. Demonstration Video. 3. Discussions (and similar active learning activities). 4. Group Work and Cooperative Learning Activities (including online group activities). 5. Extracurricular Activities. 6. Lab Work and Experiential Learning Activities. 7. Fieldwork. 8. Seminar. 9. Peer group presentations. 10. Project or research work. 11. Case Study.
Values, Autonomy and Responsibility PLOs	1. Discussions (debates and similar active learning activities). 2. Independent Study. 3. Group Work and Cooperative Learning Activities (including online group activities). 4. Lab Work. 5. Fieldwork. 6. Group Project or Research. 7. Extracurricular Activities.

As further explained in the OC-QMS handbook, the sequence of teaching strategies and learning activities in the table above is structured in line with Bloom's taxonomy, which represents a continuum of increasing complexity in learning. For each domain—Knowledge & Understanding, Skills, and Values, Autonomy, and Responsibility—the strategies progress from simpler to more complex strategies and activities. For instance, in the Knowledge & Understanding domain, the strategies transition from basic information transmission (lectures, tutorials) to more complex activities (discussions, group work, independent research). A similar pattern is observed in the Skills domain, starting with direct instruction (interactive demonstrations, videos) and moving towards more practical tasks (lab work, fieldwork, projects). Lastly, in the Values, Autonomy, and Responsibility domain, the strategies shift from fostering reflection and critical thinking (discussions, debates) to encouraging autonomy and responsibility (independent studies, group projects). Thus, the sequence of strategies in each domain aligns with Bloom's taxonomy, guiding students from simpler to more complex learning tasks.

As detailed in OC-QMS handbook, this progression of teaching strategies and learning activities also corresponds to the course level and the level of the link established between the course and a PLO (i.e., introduced, practiced, or mastered). When preparing CTAs, course instructors are made aware through OC-E-QMS of the course level and its links to PLOs. Therefore, in introductory or lower-level courses, simpler teaching strategies (e.g., lectures and tutorials) are recommended to be used to convey foundational knowledge and understanding. As students' progress to intermediate and advanced level courses, the complexity of teaching strategies and learning activities is expected to increase. This aligns with the need for students to develop more sophisticated skills, demonstrate greater autonomy, and take on more responsibility in their learning. Hence, more complex activities are introduced in these courses such as discussions, debates, sophisticated group work, and independent research in the Knowledge & Understanding domain; lab work, fieldwork, and projects in the Skills domain; and independent studies and group projects in the Values, Autonomy, and Responsibility domain.

Furthermore, the mapping between PLOs of each domain and teaching strategies/learning activities in this table aligns well with widely recognized theories on pedagogy and learning as summarized below:

Knowledge & Understanding: Since this domain primarily involves PLOs related to the acquisition and comprehension of information, traditional teaching methods like lectures and tutorials are useful for delivering information, while discussions and group work foster understanding and help students to actively engage with the material. Independent study or independent research promotes in-depth exploration of the topic

and reflects the "student-centered" aspect of OC Learning and Teaching Philosophy (outlined in OC-QMS handbook). Online tools like videos and discussion forums can enhance accessibility and provide diverse modes of engagement.

Skills: PLOs in this domain are concerned with the application of knowledge or the performance of certain actions. Interactive lecture demonstrations, group work, and seminars provide opportunities for students to practice skills in a controlled environment. Lab work and fieldwork allow students to apply what they've learned in a practical, real-world context, and they reflect the "**practical-oriented**" aspect of OC Learning and Teaching Philosophy. Peer group presentations and project work can help develop communication and project management skills, which are crucial in many professions. The table indicates that the Skills domain is associated with a relatively wider array of teaching strategies and learning activities. This variety is crucial to cater to the two diverse subcategories of skills: **cognitive** (interactive lectures, discussions etc.) and practical (lab work, field work, extracurricular activities etc.).

Values, Autonomy, and Responsibility: PLOs in this domain are centered on personal and ethical development, as well as the capacity to work independently and take responsibility for one's own actions. Discussions, particularly debates, can help students to explore different perspectives and develop their own values. Independent study encourages autonomy and self-direction. Group work can foster a sense of responsibility, as students must collaborate effectively and contribute to a collective outcome. Lab work, fieldwork, and project work can help students understand the practical implications and real-world impacts of their actions. All these strategies and activities resonate well with the "**value-driven**" aspect of OC Learning and Teaching Philosophy.

(For more details on these teaching strategies and learning activities, along with their practical implementation cases, forms, and templates, please refer to the "Practical Guide to OC-Approved Teaching and Assessment Strategies.")

OC-QMS also mandates that these mappings between PLOs, teaching strategies and learning activities must be reviewed periodically by the program based on analysis and evaluation reported in regular PLOs assessment reports as well as CLOs assessment results in course reports (more on these periodic reviews, their established procedures, and timeframes is given in the OC-QMS handbook). Furthermore, our program places great emphasis on professional development for our faculty, recognizing their pivotal role in successful implementation of the teaching strategies and learning activities outlined above. Working in collaboration with the Development Administration, we create an Annual Faculty Training Plan that outlines a comprehensive suite of

development programs. These programs equip our faculty with the latest knowledge and skills in pedagogical methods, technology integration, assessment design, student engagement techniques, and accommodating diverse learning styles. The participation of our faculty in these programs is monitored and assessed through two KPIs: OC-16 and OC-17. Moreover, appropriate, and effective implementation of these teaching strategies and learning activities inside classrooms is monitored and evaluated through regular peer review and chairperson evaluation (templates OC-QMS-D-01, OC-QMS-D-02 and OC-QMS-D-03, respectively). Based on the outcomes of these periodic reviews and evaluations, we can identify areas where additional faculty training is needed or suggest revisions in the mapping of our teaching strategies and learning activities to the Program Learning Outcomes (PLOs).

As far as extra-curricular activities are concerned, their actual planning is of two levels: course-level, and program-level. At the course-level they are considered a separate teaching strategy/learning activity particularly aligned with CLOs in the skills and values domains and documented in the relevant courses' specifications. At the program-level, Quality Assurance Committee (QAC) follows an established mechanism through which extracurricular activities are selected, mapped to PLOs, and evaluated for their effectiveness. This mechanism was initially prepared with close involvement of faculty and students, and it mainly consists of the following components:

1. **Input from Stakeholders** (mainly Faculty, Students, and our Professional Advisory Board).
2. **Selection Criteria** (more importantly relevant to PLOs)
3. **Mapping to PLOs**.
4. **Evaluation Process** (mainly collection of feedback from stakeholders and achievement results of mapped PLOs; conducted at the conclusion of each academic year).
5. **Review & Update** (based on evaluation results).

6. Assessment Methods for program learning outcomes

Describe assessment methods (Direct and Indirect) that can be used to measure the achievement of program learning outcomes in all areas.

In addition to the alignment and mapping of teaching strategies and learning activities to PLOs (steps summarized above), OC-QMS also mandates that an OC academic program should:

1. Map all individual CLOs with appropriate assessment methods through CTAs matrices (part of process P-P-06 and its guidelines & procedures). This process is semi-automated through OC-E-QMS.
2. Map all PLOs to appropriate assessment methods, based on the established alignments with individual CLOs as defined in steps 1 to 4 and include this mapping in the PLOs Assessment Plan (part of process P-P-07 and its guidelines & procedures). This process is fully automated through OC-E-QMS.

Accordingly, the program adhered strictly to the previous steps and their associated processes and procedures, systematically aligning all courses with the defined PLOs. The content of each course was meticulously deconstructed into individual CLOs, which were subsequently associated with appropriate assessment methods in accordance with the OC-QMS guidelines. These mappings were then embedded in our PLOs Assessment Plan, facilitating a unified and effective approach to pedagogy across the program. The following table summarizes the mapping of our PLOs to assessment methods based on the relevant NQF domain:

NQF-PLO Domain	Mapped Assessment Methods
Knowledge & Understanding PLOs	1. Quiz (including online). 2. Homework. 3. Written Exam (both MCQ and Essay Questions). 4. Essay (both Individual and Group). 5. Research Summary. 6. Student Portfolio (knowledge tasks).
Skills PLOs	1. Written Exam. 2. Oral Exam or Interview. 3. Practical Assessment (according to a specific rubric, in both labs and classrooms). 4. Fieldwork Assessment (e.g., by field experience supervisors) 5. Presentation (both individual and group, according to a specific rubric). 6. Project/research assessment. 7. Short Reports (both individual and group, according to a specific rubric). 8. Case Study (both individual and group). 9. Course Evaluation Survey (item 14). 10. Observation (according to a specific rubric). 11. Student Portfolio (skills tasks).
Values, Autonomy and Responsibility PLOs	1. Observation (according to a specific rubric by faculty, peer students and/or committee). 2. Oral Exam or Interview. 3. Case Study (both individual and group). 4. Fieldwork Observation. 5. Student Portfolio (independent or team tasks).

Like the sequence and order of teaching strategies and learning activities discussed in the previous section, and as further explained in the OC-QMS handbook, the order of assessment methods in the table above also corresponds to Bloom's Taxonomy, which represents a continuum of increasing complexity in learning, and hence, in assessment process. Each domain—Knowledge & Understanding, Skills, and Values, Autonomy, and Responsibility—involves a progression in the assessment methods from relatively straightforward to more complex tasks. Within the Knowledge & Understanding domain, assessments transition from basic tasks such as quizzes and homework, which test basic recall and comprehension, to more complex activities like essays and research summaries that require deeper understanding and synthesis of information. The Skills domain follows a similar progression, beginning with standard written and oral exams, and then advancing to hands-on, practical assessments, fieldwork, presentations, and projects. These methods not only test the application of knowledge but also the analysis and synthesis of data, concepts, and situations. Lastly, the Values, Autonomy, and Responsibility domain employs strategies that require the highest levels of cognitive complexity. Starting from observations and peer-assessments, which foster reflection, it moves on to oral interviews, case studies, and fieldwork observations, all requiring critical thinking, decision-making, and responsibility. Again, this progression of assessment methods corresponds to the course level and the level of the link established between the course and a PLO as discussed in the previous section.

The mapping between PLOs of each domain and assessment methods in this table aligns well with widely recognized theories on pedagogy and assessment as summarized below:

Knowledge & Understanding: The methods listed under this domain are designed to assess PLOs related to the students' theoretical knowledge and their understanding of the concepts. Quizzes and homework assignments can be used to gauge the students' understanding of the course material. Written exams (both multiple-choice and essay questions) can assess the ability of students to recall information and mentally apply the knowledge they have acquired. Essays allow students to demonstrate their understanding of a topic in depth, including the ability to synthesize information and present arguments. Research summaries help in understanding how well students can comprehend, analyze, and summarize knowledge as research. Student portfolios (knowledge tasks) provide a comprehensive view of the student's learning progression and knowledge absorption over time. Each method embodies the "**student-centered**" approach that is a cornerstone of the OC Learning and Teaching Philosophy (outlined in OC-QMS handbook), as they all foster independent thinking and individual effort.

Skills: Assessment methods under this domain are mainly concerned with assessing students' practical skills, their ability to apply knowledge, and their proficiency in certain techniques or methods. Written exams can test theoretical knowledge along with the application of essential cognitive skills. Oral exams or interviews can assess communication skills required by the field. Practical assessments are linked to evaluating hands-on skills in a lab or classroom setting. Fieldwork assessments help assess skills that are applicable in real-world or field situations. Presentations, projects, short reports, and case studies assess a variety of skills including research, organization, critical thinking, communication, and teamwork. The course evaluation survey can be a tool to understand how effectively the skills are being imparted and received from the students' perspective. Observation allows the teacher to assess skills in real-time in a natural setting. Student portfolios (skills tasks) offer an ongoing record of skill development and competency. The above table indicates that the Skills domain is associated with a relatively wider choice of assessment methods. This variety is important for two reasons: 1) to cater to the two diverse subcategories of skills: **cognitive** (written exam, short reports, portfolios etc.) and **practical** (student presentations, projects, practical assessment etc.), and 2) to reflect two tenets in OC philosophy of learning and teaching, namely "**diversity**" and "**authentic assessment**".

Values, Autonomy, and Responsibility: The methods associated with this domain are aimed at assessing PLOs related to students' attitudes, values, autonomy, and responsibility in their learning process. Observation is a great tool to assess students' behavior, attitude, and values in a natural setting. Observation by peer students encourages students to critically evaluate others' work, which can foster a sense of responsibility and improve their understanding of the subject. Oral exams or interviews can provide insights into students' thought processes, values, and ability to articulate their understanding independently. Case studies can show how students apply their knowledge and skills in a complex, real-world scenario, reflecting their values and sense of responsibility. Fieldwork observation allows for the assessment of students in real-world scenarios, which can reveal their values, autonomy, and sense of responsibility. Student portfolios (independent or team tasks) can demonstrate students' ability to manage their learning process independently or as part of a team. These assessment methods resonate well with the "value-driven" and "value-based "components in OC Learning and Teaching Philosophy.

(For more details on these assessment methods, along with their potential implementation cases, suggested forms, and templates, please refer to the "Practical Guide to OC-Approved Teaching and Assessment Strategies.")

OC-QMS also mandates that these mappings between PLOs and assessment methods must be reviewed periodically by the program based on analysis and evaluation reported in regular PLOs assessment reports as well as CLOs assessment results in course reports, and recommendations of relevant committees such as the Advisory Board (more on these periodic reviews, their established procedures, and timeframes is given in the OC-QMS handbook). Furthermore, our program places great emphasis on professional development for our faculty, recognizing their pivotal role in successful implementation of the assessment methods outlined above. Again, working in collaboration with the Development Administration, the program's Annual Faculty Training Plan outlines a comprehensive suite of development programs. These programs equip our faculty with the latest knowledge and skills in pedagogical and assessment methods, technology integration, assessment design, student engagement techniques, and accommodating diverse assessment styles. As mentioned in the previous section, the participation of our faculty in these programs is monitored annually through two KPIs: OC-16 and OC-17. Moreover, appropriate, and effective implementation of these assessment methods inside classrooms is monitored and evaluated through regular peer review and chairperson evaluation (templates OC-QMS-D-01, OC-QMS-D-02 and OC-QMS-D-03, respectively). Based on the outcomes of these periodic reviews and evaluations, we can identify areas where additional faculty training is needed or suggest revisions in the mapping of our assessment methods to the Program Learning Outcomes (PLOs).

It should be noted here that all assessment methods outlined above are course-based, and hence, they are mainly direct methods (exams, observation, practical assessment according to specific rubrics etc.), except for the Course Evaluation Survey under the Skills domain. The reasoning is discussed in detail in the OC-QMS handbook. At the program-level, however, we use both **direct** and **indirect** assessment methods for the PLOs. Our main program-level direct method is the **exit exam**. It serves as a comprehensive evaluation of our students' knowledge, skills, and values, just prior to graduation. According to OC-QMS, exit exams should have two parts: **theoretical** and **practical**. Questions in the theoretical part are mainly aligned with PLOs in the Knowledge domain, and some PLOs in the Skills domain. Practical tasks of the exit exam are aligned with PLOs in the Skills and Values domain. To ensure appropriate alignment between the exit exam's theoretical questions, practical tasks and PLOs, the program uses the OC Exit Exam Specification template (OC-QMS-P-05) in which we explicitly link each PLO to a question/task bundle in the exit exam, with details regarding each bundle.

The main indirect assessment method at the program-level is based on two annual **surveys**: PO_EMPO (employers survey) and PO_GRAD (alumni/alumnae survey). The mapping between elements/questions in these two surveys and the PLOs is explicitly outlined in the PLOs Assessment Plan (under the Program-Level Additional Assessment Methods section). Furthermore, results of the direct course-based assessment methods as well as of the program-level assessment are reported in the PLOs Assessment Report. This report includes individual results of each assessment method, aggregated and normalized results, various comparisons of results between courses, sections, teaching strategies, learning activities and assessment methods.

In addition to mapping PLOs to assessment methods, our program also ensures a comprehensive mapping of PLOs to our **Graduate Attributes (GAs)**. This is an integral part of our holistic approach to teaching and learning, ensuring that our graduates are well-equipped with the necessary skills and attributes to thrive in their chosen fields. The mapping of GAs to PLOs is explicitly outlined in our PLOs Assessment Plan, where each GA is linked to relevant PLOs, which in turn are assessed through the various assessment methods detailed earlier. This connection ensures that not only are we assessing the attainment of specific learning outcomes, but we are also evaluating how well our program is instilling the desired graduate attributes in our students. As mandated by OC-QMS, the assessment of GAs is done by aggregating the individual results of the mapped PLOs. This method allows us to evaluate the achievement of GAs based on the comprehensive performance of students across all relevant learning outcomes. By mapping and assessing our GAs, we can monitor and evaluate how effectively our program is preparing our graduates for their future endeavors. This aligns with our commitment to continuous improvement, as the feedback from these assessments is used to make necessary adjustments and enhancements to our teaching strategies, learning activities, and assessment methods.

D. Student Admission and Support

1. Student Admission Requirements

1. The student must be a Saudi national or a non-Saudi who holds a regular residency.
2. Obtaining a high secondary school certificate with a minimum of 75% GPA or its equivalent from inside or outside the Kingdom.
3. The high secondary school certificate or its equivalent should not have passed for more than five years.
4. Pass the required admission tests (general abilities + achievement) organized by the National Center for Measurement and Evaluation.
5. Passing any exams or personal interview required by the colleges.
6. The student must be medically fit.
7. The student must not have been dismissed from another university or college for disciplinary action.

2. Guidance and Orientation Programs for New Students

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

At the beginning of each academic year, students are engaged in comprehensive orientation programs through which they are familiarized with:

- Onaizah Private Colleges.
- College of Engineering and Information Technology.
- Renewable Energy Engineering Program: At the beginning of each semester the program conducts specific orientation days for the newly enrolled students in which students are introduced to various facilities including labs and lecture rooms. The program goals, PLOs, and code of conduct are thoroughly explained to the students. Also, the program is committed to ensuring many rights (including academic and non-academic rights) for the students, which contributes to providing a pioneering university environment.
- Facilities and Equipment.
- Learning Resources.
- All Offered Services.

3. Student Counseling Services

(Academic, professional, psychological and social)

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

- **Academic Counseling:**
  - The Academic Counseling unit offers advice for students to guide them academically throughout their studies.
  - Each faculty member at the college is assigned to provide academic counseling for maximum ten students.
  - The academic advisor is committed to preparing a file for each student containing his/her academic performance.
- **Career and Professional Counseling:**
  - The Alumni Unit provides students with a variety of different career planning counseling.
  - A number of activities are organized including Alumni Day, Job Day, Career Path, etc.
- **Psychological and social Counseling:**
  - The Family and Social Counseling Center at OC provides a wide range of psychological and social counseling services.
  - It has an inventory of files of students visiting the Center for counseling purposes.
- **Other Counseling Services:**
  - The Solutions Center acts as a lawyer for OC students. It investigates any potential difficulties or issues faced by students.

Then, it provides them with practical recommendations and counseling services.

4. Special Support

(Low achievers, disabled, gifted, and talented students).

Academic advising and support services provided to students.

1. Guidance and Orientation Programs for New Students

At the beginning of each academic year, students are engaged in comprehensive orientation programs through which they are familiarized with:

- Onaizah Private Colleges.
- College of Engineering and Information Technology.
- Renewable Energy Engineering Program.
- Facilities and Equipment.
- Learning Resources.
- All Offered Services.

2. Student Counseling Services (academic, career, psychological and social)

A. Academic Counseling:

i. The Academic Counseling unit offers advice for students to guide them academically throughout their studies.

ii. Each faculty member at the college is assigned to provide academic counseling for a maximum of ten students.

iii. The academic advisor is committed to preparing a file for each student containing his/her academic performance.

B. Career Counseling:

i. The Alumni Unit provides students with a variety of different career planning counseling.

ii. Several activities are organized including Alumni Day, Job Day, Career Path, etc.

C. Psychological Counseling:

i. The Family and Social Counseling Center at OC provides a wide range of psychological and social counseling services.

ii. It has an inventory of files of students visiting the Center for counseling purposes.

D. Other Counseling Services:

i. The Solutions Center acts as a lawyer for OC students. It investigates any potential difficulties or issues faced by students.

ii. Then, it provides them with practical recommendations and counseling services.

3. Special Support (low achievers, disabled, gifted and talented)

A. Underachieving Students:

i. These are detected and monitored through E-register.
ii. Then, they are sent to their respective academic advisors.
iii. After that, free-of-charge remedial and tutorial sessions are provided for them.

B. Disabled Students:

i. Students with physical disabilities or other special needs are provided with appropriate access points such as wheelchairs ramps, special facilities, and so on.

C. Gifted and Talented Students:

i. The Creativity and Innovation Center identifies and provides counseling for gifted and talented students, by engaging them in various activities.
ii. These students are also recognized and rewarded.

E. Faculty and Administrative Staff

1. Needed Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professor	Renewable Energy Electrical Engineering	Solar Energy Power electronics	-	2	-	-
Associate Professor	Electrical Engineering	Wind Energy	-	1	-	-
Assistant Professor	Renewable Energy Physics Mechanical Engineering Electrical Engineering	Renewable Energy Physics Renewable Energy Solar Energy	-	4	-	-
Lecturer	Electrical Engineering	Renewable Energy	-	1	-	-
Teaching Assistant	-	-	-	-	-	-
Technicians & Laboratory Assistant	-	-	-	7	-	-
Administrative & Supportive Staff	-	-	-	-	-	-
Others (specify)	-	-	-	-	-	-

F. Learning Resources, Facilities, and Equipment

1. Learning Resources

Learning resources required by the Program (textbooks, references, and e-learning resources and web-based resources, etc.)

The department of Electrical Engineering formed the "Learning Resources, Facilities, and Equipment Committee" as per operational objective number (20) in the 2022 operational plan of the "Renewable Energy Engineering Program". The committee formation letter includes a number of key tasks assigned to the committee, most importantly "Preparing, implementing, and following up mechanisms to provide all essential, supportive and electronic learning resources and references".

The mechanism and its procedures can be summarized in the following points:

1. The committee identifies all learning resources required for the academic program including essential, supportive, and electronic books and references by automatic extraction of resources listed in the latest version of the program's course specifications through OC-E-QMS. Then it prepares a dated list including these resources.
2. The list is presented to the department council for discussion and approval.
3. After the council approves the list, the committee, through the department chairperson, presents the list to the dean of the college.
4. The dean contacts the "Library and Learning Resources Administration" with the list of resources specific to the academic program.
5. The Library and Learning Resources Administration identifies the currently unavailable print and electronic resources in the library, determines their cost, and contacts the Assistant Chief Supervisor for Planning and Quality regarding provision of those resources, who in turn contacts the General Supervisor to approve the purchase and procurement.
6. After written approval from the Chief Supervisor, the Library Administration secures the resources through available channels.
7. The Library Administration notifies the dean once all the learning resources listed are available in or through the library.
8. If the library is unable to secure some of the listed resources and references, it should notify the dean and suggest alternatives such as providing electronic copies of the required print resources or vice versa or suggest alternative titles.
9. If the library suggests any alternative titles for the listed resources, these alternatives must be presented to the department council through the department head and course coordinator for discussion, approval or disapproval. Then the

course specification is updated based on the department council approval and course coordinator recommendation.

The "OC Standard Operating Procedures (SOPs) - Chapter Five" Handbook includes a description of other details related to this mechanism, its procedures, and templates.

The committee also periodically (at the end of each academic year) evaluates the quality of learning resources (including essential, supportive, and electronic books and references) by:

1. Reviewing course evaluation results related to developing or updating learning resources, references, and textbooks in the relevant course reports.
2. Reviewing learning resources quality evaluation results in the program's annual survey reports, specifically:
   - Results of item analysis (33) in PO_PRO_01 survey.
   - Results of item analysis (13) in PO_SU_01 survey
   - Results of item analysis (28, 29, 30) in PO_SU_02 survey

As well as the performance indicators results related to learning resources in the program's annual KPIs report, more specifically indicators: OC-50, OC-51, KPI-P-17, OC-54, OC-71, in addition to the recommendations related to these indicators in the report.

In case this review by the committee suggests updating the program list of learning resources, it should follow the procedural steps outlined above.

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

A Learning Resources, Facilities and Equipment Committee is formed which includes the following tasks:

1. Periodic evaluation of learning resources, facilities, and equipment needed by the program, according to the questionnaire's feedback.
2. Developing a coordination plan with the risk management and development department. Training the faculty, staff and students on public and professional safety means and emergency evacuation plans.
3. Preparing a clear mechanism for the disposal of hazardous waste (if any) in coordination with the concerned departments within the colleges.
4. Preparing a clear mechanism to provide public health and occupational safety requirements in facilities and equipment, in coordination with the concerned departments.
5. Preparing a clear mechanism and specific procedures to provide all the learning resources stipulated in the course recommendations, and the needs of the resources during the provision of courses.

3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the program)

Onaizah Private Colleges (OC) takes a proactive and thorough approach to ensuring a safe, healthy, and secure learning environment for students and staff.

Regular inspections and maintenance of all facilities and equipment are conducted in close coordination with external specialists and agencies to proactively identify and mitigate any potential risks. Fire safety is a major area of focus, with fire extinguishers readily available in all corridors. Smoke detectors and fire alarms are placed strategically throughout campus facilities and residences.

The Risk Management Administration team conducts fire drills and periodic checks of all fire safety equipment in conjunction with the Civil Defense Department to ensure proper functioning. First aid kits equipped to treat minor injuries are kept in main corridors and locations for easy access. Fire hoses are located in all major hallways and buildings.

In addition to regular fire safety inspections and drills, all campus buildings have clearly marked emergency exits on each floor leading to outside evacuation points. Detailed floor maps showing emergency exits and assembly points are posted in every hallway and classroom. Students and staff are informed about proper emergency evacuation procedures including orderly exit through marked emergency doors. Practice evacuation drills are conducted periodically to ensure everyone is familiar with routes. Designated assembly points are assigned for each building and marked with visible signs. Sufficient open spaces have been allocated around campus buildings to accommodate people during emergency evacuations.

OC operates two well-equipped health clinics staffed by qualified medical practitioners to care for students and personnel in both male and female sections. During the COVID-19 pandemic, OC implemented additional safety measures such as providing masks, hand sanitizers, and enforcing the use of the Tawakkalna app to screen for infections before allowing entry to campus. Those measures also include procedures for transitioning to secure online learning when in-person classes are suspended due to public health risks. Students access virtual classrooms safely through the college's licensed Blackboard platform which provides robust security features including password-protected access, encrypted data transmission, and role-based permissions. Strict cybersecurity policies are enforced to maintain information security. The IT department closely monitors the system and network for any potential threats or anomalies.

Comprehensive safety protocols are enforced in all laboratories, with clear instructions provided nearby. Regular training is conducted on proper lab procedures, safe equipment operation, and aggression response strategies. Rigorous information security standards are maintained through the use of secured networks, firewalls, anti-virus software, and access controls. A CCTV camera system provides monitoring of facilities, and offices are secured with proper locks to restrict access. Critical information is backed up both locally and on secure cloud servers. Additional measures are in place such as backup power generators and redundant internet connections to ensure continuity of service in case of outages. OC's maintenance team performs scheduled upkeep of all safety and security systems.

To ensure continuous review and enhancement of safety protocols at the program, the Learning Resources, Facilities and Equipment Committee in our department oversees evaluations of all emergency preparedness and safety procedures directly through scheduled inspections and indirectly through surveys distributed to students and staff. Those surveys cover important aspects related to awareness and effectiveness of safety protocols and risk management at the college. Key areas included in the surveys are familiarity with risk management guidelines outlined in OC policies, training received on emergency response procedures and evacuation drills, adherence to information security standards, knowledge of safety guidelines for laboratory experiments and equipment usage, accessibility and condition of fire safety apparatus, overall campus security measures, and any other safety concerns. Feedback received through the surveys provides valuable insights into the strengths and potential gaps in existing risk mitigation practices at OC. The input helps the Learning Resources, Facilities and Equipment Committee determine where additional risk awareness and management training or upgrades to safety infrastructure may be needed across the college's academic and residential facilities.

G. Program Quality Assurance

1. Program Quality Assurance System

Provide a link to the quality assurance manual.

https://docs.google.com/document/d/1XDgmcloW_k4UVMszHnLy_ZEH8Z5P9R_5/edit

2. Procedures to Monitor Quality of Courses Taught by other Departments

Procedures to Monitor Quality of Courses Taught by other Departments:

The updated OC-QMS includes established mechanisms through which academic programs should monitor the quality of courses taught by other academic departments/programs as well as cross-listed courses. The key elements of these mechanisms include:

1. **Involvement of all programs in which the course is delivered (or listed) in reviewing course learning outcomes (CLOs):**
   OC-QMS includes procedures for developing/updating course learning outcomes in the OC-E-QMS electronic system. These entail a series of reviews, most importantly reviews by the program director (as well as assistant director and quality assurance committee members; QAC for short) of CLOs in OC-E-QMS, particularly those linked to one of the program learning outcomes (PLOs). The system allows the director of each program in which the course is delivered to comment on the CLOs linked to its PLOs, accept or reject them, and explain the rationale, for all courses including those offered across departments or colleges.

   The course specification includes a QR code and hyper-link showing the detailed report of the review process as well as its timeframes associated with each program director, along with the outcomes and course coordinator's responses. Refer to the OC-E-QMS Manual for details on electronic reviews of CLOs, and the OC-QMS Handbook (process P-P-05).

2. **Involvement of all programs in which the course is delivered in reviewing and approving the course specification matrix:**
   Similarly, the OC-QMS process P-P-06 requires engagement of all program directors (and QACs) in reviewing course matrices (CTAs) for joint, externally offered, or cross-listed courses via OC-E-QMS. The course specification includes a QR code and link showing the detailed report of the review process, as well as its timeframes associated with each program director, along with the outcomes and course coordinator's responses to relevant program directors' comments.

3. **Involvement of all programs in which the course is delivered in reviewing and approving the course specification:**
   Furthermore, all program directors (and QACs) participate in reviewing the specifications for courses offered in their programs by other departments or programs (per process P-P-010 in OC-QMS). The electronic system gives each program director the authority to accept or reject with justification the specification for any course linked to their academic program be it delivered by the program itself or another program/department within OC. Course specs can only be approved by both program directors and college quality unit (QU). Upon approval by these two parties, the course coordinator/instructor cannot modify them without going through the programs' directors of program in which the course is delivered and their relevant department councils. Each course specification includes a QR code and link showing the review details and reports for each program director.

4. **Involvement of all programs in which the course is delivered in reviewing and approving CLOs assessment results:**
   Additionally, all directors (and QACs for that matter) of programs sharing the course must participate in reviewing and approving CLOs assessment results and their relevant evidence, especially results and targets for the CLOs linked with the program in its curriculum mapping matrix (process P-E-02 in OC-QMS). The electronic system gives each program director the authority to accept or reject with justification the assessment results and/or its evidence for a particular course. Final approval of assessment results and their evidence cannot be granted until all directors of the programs linked to the course provide their individual approval and feedback. All course reports include a QR code and link showing the detailed report of the review process, timing, and outcomes associated with each program director.

5. **Involvement of all programs in which the course is delivered in reviewing and approving the course report:**
   Similarly, to the (semester) course report, OC-QMS through process P-E-03 requires engagement of all program directors (and QACs) in reviewing and accepting course reports for externally offered courses through the electronic system. Directors of the program in which the course is offered can also view all related reports including student evaluation survey report, peer review report, chairperson evaluation of course instructor(s), and course recommendations within the course report. They are also expected to provide feedback within OC-E-QMS. All course reports include a QR code and link showing the detailed documented processes, timeframes, and reviews of related reports by each program director, and documentation of their acceptance or rejection of the course reports.

6. **Inclusion of course learning outcomes (CLOs) assessment results in PLOs Assessment reports of all programs in which the course is delivered:**
   Additionally, CLOs assessment results and targets of all courses taught either by the program itself, or another program/department are automatically included by OC-E-QMS in PLOs Assessment Reports (or PLOARs for short, according to template OC-QMS-C-07 and process P-E-01 in OC-QMS). Analysis of PLOs assessment results in the report relies on CLOs assessments of all courses based on their links to program outcomes (in the mapping matrix resulted from process P-P-04). Recommendations in the program outcomes report are binding for all courses offered by the program or externally delivered and must be adopted based on the relevant college council decision (related to discussing and approving PLOARs).

7. **Review and approval by the college quality unit (QU) and quality assurance administration (QAA):**
   For all the above processes, reviews by QU and QAA represent the final stage of endorsement, approval, or rejection of those processes' outcomes. OC-QMS does not allow acceptance of any process outcome such CLOs, CTAs, specifications or reports without the approval of all relevant program directors through OC-E-QMS. All ad-hoc or periodic taskforces and review teams formed by QAA to review of outcomes of the above processes cannot approve any specifications or reports or provide the final rubric evaluation for some processes like P-P-06 without full approval of those specifications or reports by all program directors in which the course is delivered. QUs must coordinate (or liaise where needed) between those programs in case of differing perspectives on the outcomes of any of the above processes.

8. **Involvement in forming the course team:**
   As outlined in process P-P-12 of OC-QMS, the course team is formed during the program planning stages. The team is usually headed by the course coordinator, who is typically affiliated with the program responsible for the course delivery. However, OC-QMS provide adequate flexibility for the team to include instructors across all sections, where some of those instructors may be from other programs where the course is offered, thereby representing those programs on course teams to varying extents. In any case, the course team cannot make final decisions on any changes to the course (CLOs, CTAs matrices, specifications, reports) without approval from the director of each program in which the course is delivered, as explained for each process above.

9. **Participation of all programs in the periodic review of CLOs, CTAs matrices, and course specifications:**
   Additionally, all programs participate in the periodic review process for course learning outcomes, CTAs matrices, and specifications (process P-P-08 in OC-E-QMS). The director of each program can recommend through quality committees and department councils any changes, whether major or minor, relating to courses offered by other programs or departments, and according to the procedure outlined in the OC-QMS handbook. Again, QUs must coordinate as needed between programs in case of differing perspectives on enacting such changes.

3. Procedures Used to Ensure the Consistency between Main Campus and Branches (including male and female sections). Not Applicable

4. Assessment Plan for Program Learning Outcomes (PLOs),

https://docs.google.com/document/d/1QRbO1yyyxfR4tOjxY5NKLRKBq-ljjVJ9/edit

5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness and Quality of Teaching and Assessment	Faculty (Peer Review)	classroom/virtual visit + peer review template OC-QMS-D-01 through OC-E-QMS	end of semester
	Students	surveys (PO_SU_01 & PO_SU_02) + course evaluation surveys (CESs)	end of the academic year
	Alumni/Alumnae	survey (PO_GRAD)	end of the academic year
	Professional Advisory Board/Committee	meeting (discussion and recommendations of PLOs Assessment Report and Annual Program Report APR)	end of the academic year
	Chairperson	visit + meeting with a sample of students + evaluation template OC-QMS-D-03	end of semester
	Quality Assurance Committee (QAC)	review of the main points in the course reports + final analysis and evaluation of PLOs Assessment Report (OC-QMS-C-07)	end of semester comprehensive: end of the academic year
Effectiveness and Quality of Field Experience/ Training	Field Experience/Training Students	survey (PO_FTR_STU)	end of the academic year
	Field Experience/Training Supervisors	survey (PO_FTR_SUP)	end of the academic year
	Professional Advisory Board/Committee	meeting (discussion and recommendations of Field Experience Report)	end of semester
	Chairperson	visit + meeting with a sample of students + evaluation template OC-QMS-D-03	end of semester
Quality of Learning Resources	Students	surveys (PO_SU_01 & PO_SU_02)	end of the academic year

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
	Faculty	surveys (PO_PRO_01, PO_PRO_02)	end of the academic year
	Learning Resources, Facilities and Equipment Committee	analysis and evaluation of relevant surveys' items and KPIs	end of the academic year
Quality of Facilities and Equipment	Students	surveys (PO_SU_01 & PO_SU_02)	end of the academic year
	Faculty	surveys (PO_PRO_01, PO_PRO_02)	end of the academic year
	Administrative Staff at the College	survey (PO_STAFF)	end of the academic year
	Learning Resources, Facilities and Equipment Committee	analysis and evaluation of relevant surveys' items and KPIs	end of the academic year
Leadership and Academic Environment	Students	surveys (PO_SU_01 & PO_SU_02)	end of the academic year
	Faculty	surveys (PO_PRO_01, PO_PRO_02)	end of the academic year
	Administrative Staff at the College	survey (PO_STAFF)	end of the academic year
Graduates' Competence and Skills and PLOs Achievement	Professional Advisory Board/Committee	meeting (discussion and recommendations of PLOs Assessment Reports)	end of the academic year
	Employers	survey (PO_EMPO)	end of the academic year
	Alumni/Alumnae	survey (PO_GRAD)	end of the academic year
	QAC	final analysis and evaluation of PLOs Assessment Report (OC-QMS-C-07)	
Quality of Services and Procedures (including various kinds of guidance and counseling)	Students	surveys (PO_SU_01 & PO_SU_02)	end of the academic year
	Faculty	surveys (PO_PRO_01, PO_PRO_02)	end of the academic year
	Counseling and Guidance Committee	analysis and evaluation of relevant surveys' items and KPIs	end of the academic year

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Overall Quality of the Program	QAC	review and evaluation of period quality reports (including mainly surveys and KPIs reports, Program Peer Review [OC-QMS-D-02], Course Reports, ARP, and PLOs Assessment Reports)	end of the academic year
	Quality Unit (College)	review and evaluation of period quality report (including mainly surveys and KPIs reports, Program Peer Review [OC-QMS-D-02], Course Reports, ARP, and PLOs Assessment Reports) through OC-E-QMS	end of each semester and academic year
	Other essential program committees (including Scientific Research and Ethics Committee and Community and Volunteer Service Committee)	periodic review and evaluation of the KPIs related to each committee in addition to evaluation of the related activities reported in the APRs.	end of the academic year
	Professional Advisory Board/Committee	meeting (periodic discussion of major quality reports e.g., PLOs Assessment Report, APR etc.)	end of the academic year
	Students Advisory Council (at the College)	meeting (discussion of developmental suggestions and initiatives)	once per semester
	Internal Reviewer (Quality Assurance Administration)	comprehensive review of quality reports and SSR according to NCAAA standards and preparation of comprehensive review report that includes the main strengths,	biennial

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
		opportunities, and recommendations for improvement.	
	External Reviewer	comprehensive review of quality reports and SSR according to NCAAA standards and preparation of comprehensive review report that includes the main strengths, opportunities, and recommendations for improvement.	triennial/ quadrennial according to OC-QMS

Evaluation Areas/Aspects (e.g., leadership, effectiveness of teaching & assessment, learning resources, services, partnerships, etc.)
Evaluation Sources (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others.
Evaluation Methods (e.g., Surveys, interviews, visits, etc.)
Evaluation Time (e.g., beginning of semesters, end of the academic year, etc.)

6. Program KPIs*

The period to achieve the target (1) year(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	OC-01	Avg. Clarity of Mission for Stakeholders	>=4	Average evaluation of the stakeholders of the indicator's-related items in the central questionnaires	End of Academic Year
2	OC-02	Average of Stakeholders Awareness of Programs Mission	>=4	Average evaluation of the stakeholders of the indicators'-related items in the central questionnaires	End of Academic Year
3	OC-61	Avg. Clarity of Programs Goals for Stakeholders	>=4	Average evaluation of the stakeholders of the indicator's-related items in the central questionnaires	End of Academic Year
4	OC-03	Stakeholders' evaluation of programs committees and councils in terms of their effectiveness; impact of their decisions; and clarity of their functions and responsibilities	>=4	Average evaluation of the stakeholders for the indicator's-related items in the central questionnaires	End of Academic Year
5	OC-04	Avg. Faculty Evaluation of Programs Leadership in terms of appropriateness and adequacy of its qualification; experience and its ability to achieve the programs mission and goals	>=4	Average evaluation of the stakeholders of the indicator's-related items in the central questionnaire	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
6	OC-06	Avg. Stakeholders evaluation of Programs Administrative and Organizational Environment and Workplace Atmosphere	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
7	OC-07	Avg. Faculty Evaluation of Adequacy of Representativeness; Coordination and Integration between Programs male and female sections	3.98	Average evaluation of the stakeholders of the indicator-related items in the central questionnaires	End of Academic Year
8	OC-08	Avg. of Stakeholders Evaluation of Programs Integrity and Promotion of Equity and Equality between all of its Stakeholders	>=4	Average evaluation of the stakeholders of the indicator-related items in the central questionnaires	End of Academic Year
9	OC-11	Avg. of Stakeholders Satisfaction of Comprehensiveness and Adequacy of Information and Description provided about the Program	>=4	Average evaluation of the stakeholders of the indicator-related items in the central questionnaires	End of Academic Year
10	OC-12	Avg. Stakeholders Satisfaction of Programs Encouragement of Developmental Suggestions and Initiatives and their relevant mechanisms and procedures	N/A	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
11	OC-13	Avg. Stakeholders Awareness of Values of Scientific Integrity; Intellectual Property Rights; Rules of Ethical	>=4	Average evaluation of the stakeholders of the indicator-related items in	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		Practices and Proper Conduct		the central questionnaires	
12	OC-14	Avg. of Stakeholders Awareness of Programs Mechanisms and Procedures for Complaints; Grievance and Disciplinary	>=4	Average evaluation of the stakeholders for the indicators-related items in the central questionnaires	End of Academic Year
13	OC-15	Avg. of Stakeholders Awareness of Programs Graduate Attributes and Learning Outcomes	>=4	Average evaluation of the stakeholders of the indicator-related items in the central questionnaires	End of Academic Year
14	OC-18	Avg. of Students Evaluation of Courses Introductory Materials Including Comprehensive Information about Courses; their Assessment Methods and their Passing Requirements	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
15	OC-19	Avg. of Students Evaluation of "Feedback is provided to students about their performance and fare evaluation results at a time that allows them to improve their performance	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
16	OC-68	Avg. of Students and Supervisors Evaluation of Field Experience	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
17	OC-69	Avg. of Students and Supervisors Evaluation	>=4	Average evaluation of the	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		of Field Experience Institutions and Locations		stakeholders for the indicator-related items in the central questionnaires	
18	OC-70	Avg. of Students Evaluation of Field Experience Supervisors	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
19	OC-20	Avg. of Students Evaluation of Fairness of Programs Admission and Registration Processes	>=4	Average evaluation of the stakeholders for the index-related items in the central questionnaires	End of Academic Year
20	OC-22	Avg. of Students Evaluation of Accessibility of Programs Information Prior to Registration and Admission	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
21	OC-23	Avg. of Students Evaluation of Student Orientation Programs	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
22	OC-24	Avg. of Students Evaluation of Programs Fairness of Complaints; Grievance and Disciplinary Procedures and Implementation	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
23	OC-25	Avg. Students Satisfaction of	>=4	Average evaluation of the stakeholders for	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		Programs Academic Advising and Counseling		the indicator-related items in the central questionnaires	
24	OC-26	Avg. Students Satisfaction of Programs Professional Guidance and Counseling	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
25	OC-27	Avg. Students Satisfaction of Programs Psychological and Social Guidance and Counseling	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
26	OC-28	Avg. of Students Satisfaction of Programs Mechanisms and Procedures for Supporting Gifted; Talented and Creative Students	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
27	OC-29	Avg. of Students Satisfaction of Programs Mechanisms and Procedures for Supporting Underachieving Students	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
28	OC-30	Avg. of Students and Graduates Satisfaction of Professional Development Activities provided by the Program and College	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
29	OC-34	Avg. of Students of Special Needs and Disabilities of Facilities; Equipment and Services	>=4	Average evaluation of the stakeholders for the index-related	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		provided by the Program/College		items in the central questionnaires	
30	OC-35	Avg. Faculty Satisfaction of Programs Policies and Procedures for Selecting; Recruiting; Appointing and Contracting of/with Faculty	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
31	OC-66	Avg. of Students Evaluation of Courses Instructors	>=4	Average evaluation of the stakeholder for the indicator-related items in the central questionnaires	End of Academic Year
32	OC-40	Avg. of Faculty Satisfaction of New Faculty Orientation Programs	>=4	Average evaluation of the stakeholders for the indicators-related items in the central questionnaires	End of Academic Year
33	OC-47	Avg. of Students and Faculty Satisfaction of Quality and Adequacy of Services provided by College/Program	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
34	OC-48	Avg. of Faculty Satisfaction of Mechanisms and Procedures for their Annual Performance Appraisal and Evaluation	>=4	Average evaluation of the stakeholders of the indicator-related items in the central questionnaires	End of Academic Year
35	OC-49	Avg. of Faculty Awareness of Mechanisms; Procedures and Forms	>=4	Average evaluation of the stakeholders for the indicator-	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		for their Annual Performance Appraisal and Evaluation		related items in the central questionnaires	
36	OC-50	Avg. Stakeholders Satisfaction of Adequacy of Learning Resources available in the Program/College/OC Libraries	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
37	OC-51	Avg. Stakeholders Satisfaction of Adequacy and Accessibility of Digital Learning Resources and Databases	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
38	OC-52	Avg. of Stakeholders Satisfaction of IT Services in terms of their appropriateness; security; maintenance; and up-to-datedness	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
39	OC-53	Avg. Stakeholders Satisfaction of Quality and Adequacy of IT Support provided by IT Units	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
40	OC-54	Avg. Faculty and Students Satisfaction of Learning Management System (Blackboard) in terms of its Adequacy; Ease and Accessibility	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
41	OC-55	Avg. Stakeholders Satisfaction of Laboratories in terms of their Adequacy; Quality; Up-to-Datedness;	>=4	Average evaluation of the stakeholders for the indicator-related items in	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		Maintenance; Accessibility; and Availability of their Guidelines and Regulations		the central questionnaires	
42	OC-56	Avg. Stakeholders Satisfaction of Adequacy and Competence of Lab Technicians/Operators	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
43	OC-57	Avg. Stakeholders Satisfaction of Classrooms in terms of their Adequacy; Capacity; and Equipment	>=4	Average evaluation of the stakeholders of the indicators-related items in the central questionnaires	End of Academic Year
44	OC-58	Avg. Stakeholders Satisfaction of Quality and Adequacy of Facilities and Equipment	>=4	Average evaluation of the stakeholders of the indicator-related items in the central questionnaires	End of Academic Year
45	OC-59	Avg. Stakeholders Satisfaction of Adequacy of Safety and Security Equipment in the Program/College Facilities	>=4	Average evaluation of the stakeholders of the indicators-related items in the central questionnaires	End of Academic Year
46	OC-60	Avg. Stakeholders Awareness of Risk and Risk Management Handbooks; Procedures; Guidelines and Mock and Evacuation Drills	>=4	Average evaluation of the stakeholders of the indicators-related items in the central questionnaires	End of Academic Year
47	OC-71	Avg. Faculty and Students Satisfaction of Availability of Libraries	>=4	Average evaluation of the stakeholders of	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		in Adequate and Appropriate Times		the indicator-related items in the central questionnaires	
48	OC-05	Ratio of Students to technicians	6.65	Number of students ÷ number of technicians	End of Academic Year
49	OC-16	Percentage of Faculty Participation in Training Programs on Teaching Strategies and Learning Outcomes Assessment Methods	>=4	Number of faculty participants in courses related to teaching strategies and/or assessment methods ÷ total number of faculty in the program x 100	End of Academic Year
50	OC-17	Percentage of Faculty Participation in Training Programs on Using New Technology in Teaching and Assessment	>=4	Number of faculty participants in courses related to the use of modern technology in teaching and student assessment ÷ total number of faculty in the program x 100	End of Academic Year
51	OC-31	Percentage of Graduates who have Records in the Graduates Database of the Program/College within the Year	100	Number of graduates with records in the current year's batch ÷ total number of graduates in the current year's batch x 100	End of Academic Year
52	OC-65	Average Volunteer Hours per Student during the Year	>=4	The total number of hours students spent in volunteer work ÷ total number of	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
				students in the program	
53	OC-41	Percentage of Faculty who Participated in Conferences Seminars or Peer Reviews of Research Projects and Papers	100	Number of faculty who participated at least once in one of the aforementioned activities during the year ÷ total number of faculty x 100	End of Academic Year
54	OC-44	Percentage of Faculty Participation in Community Services/Activities	100	Number of faculty participating in at least one community activity during the year ÷ total number of faculty in the program x 100	End of Academic Year
55	OC-45	Percentage of Achieved Training Programs in Faculty Training Plan	100	The number of training programs directed to the teaching staff that were completed according to the plan during the year ÷ the total number of training programs directed to the teaching staff during the year	End of Academic Year
56	OC-46	Percentage of Faculty who Participated in the Training Programs of the Faculty Training Plan	100	Number of faculty enrolled in the planned training programs during the year ÷ total number of faculty in the program	End of Academic Year
57	OC-63	Percentage of Program Learning Outcomes that achieved their targets	60	Number of learning outcomes in the	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
				program that have achieved their objectives ÷ total number of learning outcomes in the program x 100	
58	KPI-P-01	Percentage of achieved indicators Operational plan objectives for the program	>=4	Number of program strategic objectives whose indicators have achieved the targets ÷ total number of program strategic objectives × 100	End of Academic Year
59	KPI-P-02	Student evaluation of the quality of experience learning in the program	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
60	KPI-P-03	Student evaluation of course quality	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
61	KPI-P-04	Virtual completion rate	44.59	Number of students (in a certain batch) who completed the program and obtained the certificate in the shortest possible period for the program ÷ total number of students in the same batch x 100	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
62	KPI-P-05	First year student retention rate	14.0	Number of students (in a new batch) who continued in the program until the following year ÷ total number of students in the same batch x 100	End of Academic Year
63	KPI-P-06	Student performance level Occupational exams and/or national	>=4	Average scores of students in professional and/or national examinations	End of Academic Year
64	KPI-P-07	Employment and enrollment of graduates postgraduate programs	61.69	Number of students employed in a particular batch ÷ total number of students in a batch x 100 Number of students enrolled in postgraduate studies from a given batch ÷ total number of students Batch x 100	End of Academic Year
65	KPI-P-08	The average number of students in a class	6	Number of students in the academic program ÷ number of sections in the program	End of Academic Year
66	KPI-P-09	Evaluating employers for efficiency program graduates	>=4	Average evaluation of the stakeholders for the indicators-related items in the central questionnaires	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
67	KPI-P-10	Student satisfaction with services	>=4	Average evaluation of the stakeholders for the indicator-related items in the central questionnaires	End of Academic Year
68	KPI-P-11	Student to faculty ratio	12.84	Number of students in the program ÷ number of faculty members in the program	End of Academic Year
69	KPI-P-12	percentage distribution of teaching staff	28% Professor. 58% Assistant. 14% Lecturer.	Number of faculty members in the category ÷ total number of faculty x 100	End of Academic Year
70	KPI-P-13	Faculty dropout rate from the program	13.4	Number of teaching staff who left the program permanently for reasons other than reaching retirement age or expiry of the contract period (during the year) ÷ total number of teaching staff in the program (during the year) x 100	End of Academic Year
71	KPI-P-14	Scientific publication percentage for faculty members	69.1	Number of faculty who published at least one research during the year ÷ total number of faculty in the program x 100	End of Academic Year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
72	KPI-P-15	The rate of published research for each faculty member	>=4	The total number of all research published by the faculty in the program ÷ the total number of faculty in the program	End of Academic Year
73	KPI-P-16	The rate of citations in refereed journals for each faculty member	9.8	The total number of all citations from research published by the faculty in the program during the year ÷ the total number of all research published by the faculty in the program during the year	End of Academic Year
74	KPI-P-17	Beneficiaries' satisfaction with learning resources	3.84	Average evaluation of the stakeholders for the indicators-related items in the central questionnaires	End of Academic Year

*including KPIs required by NCAAA

H. Specification Approval Data

COUNCIL / COMMITTEE	ELECTRICAL ENGINEERING DEPARTMENT COUNCIL
REFERENCE NO.	1
DATE	2023-08-23