T-103
2022

Program Name: Chemical Engineering Technology
Program Code (as per Saudi university ranking): **071102**
Qualification Level: Intermediate Diploma
Department: Chemical Engineering Technology
College: College of Applied Industrial Technology (CAIT)
Institution: Jazan University
Program Specification: New☐ updated* ■
Last Review Date: 4/7/2024

*Attach the previous version of the Program Specification.

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A. Program Identification and General Information

1. Program's Main Location:
Al-Haquo
2. Branches Offering the Program (if any):
None
3. Partnerships with other parties (if any) and the nature of each:
None
4. Professions/jobs for which students are qualified

Chemical engineers work mostly in offices or laboratories. They may spend time at industrial plants, refineries, and other locations, where they monitor or direct operations or solve onsite problems. Nearly all chemical engineers work full time.

The Chemical Engineering Technology (CHET) program is aimed at the following areas of work (not to limit below but many other sectors too):

1- Oil & Gas, Petroleum, and Industries
2- Chemical Industries
3- Food and Dairy industries
4- Desalination and water treatment
5- Environmental pollution
6- Cement and Glass
7- Iron and steel
8- Chemical engineers will also work in the production of energy, electronics, clothing, and paper and other sectors.

5. Relevant occupational/ Professional sectors:

Chemical engineers work in manufacturing, pharmaceuticals, healthcare, design and construction, pulp and paper, petrochemicals, food processing, specialty chemicals, microelectronics, electronic and advanced materials, polymers, business services, biotechnology, and environmental health and safety industries.
214501: Chemical Engineer
214502: Technical Chemical Engineer
214503: Chemical Engineering Specialist
214504: Water Desalination Engineer
214301: Environmental Engineer
214302: Water Treatment Engineer
214303: Sanitary Engineer313301: Chemical Processes Technician
313302: Chemical Reactor Operation Technician
313303: Chemical Process Control Panels Technician
313201: Desalination Plant Operator
313202: Waste Incinerator Operator
313203: Wastewater Treatment Plant Operator
313204: Water Encroachments & Leaks Inspector
313205: Water Processes Controller
313206: Industrial Wastewater Treatment Unit Inspector
313207: Wastewater Pipes Treatment Technician

313208: Water & Wastewater Plant's Control Panels Technician
313401: Gas Plant Operation Technician
313402: Oil Refining Technician
313403: Oil Derivatives Production Technician
313404: Oil Refining Operations Control Panel Technician

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. Not Exist		

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

exit points/awarded degree	Credit hours
1. Associate Diploma in Chemical Engineering Technology + Ability to get Certificate in Industrial Safety in chemical engineering Technology	36
2. Intermediate Diploma in CHET	70

8. Total credit hours: (70)

B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

To prepare well-qualified technicians for immediate employment in the field of Chemical Engineering Technology, through the provision of high-quality technical programs and strategic partnership.

2. Program Objectives:

1- To provide process-oriented purposeful leadership.
2- To prepare qualified graduates who are valued as members of the workforce in CHET–related industries.
3- To provide an academic environment that stimulates excellence through student focused strategies.
4- To collaborate with industry and the community to cater to their needs and the needs of the program's students.

3.Program Learning Outcomes*

Knowledge and Understanding	
K1	An ability to demonstrate a broad and coherent body of knowledge, with depth in the underlying principles and concepts in the discipline,
Skills	
S1	An ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline
S2	An ability to design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes appropriate to the discipline,
S3	An ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature
S4	An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results
Values, Autonomy, and Responsibility	
V1	An ability to function effectively as a member of a technical team, a commitment to quality, timeliness, and continuous improvement
V2	An ability to engage in self-directed continuing professional development

*Add a table for each track or exit Point (if any)

C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	--	--	--
	Elective	--	--	--
College Requirements	Required	1	1	1.43
	Elective	--	--	
Program Requirements	Required	12	31	44.29
	Elective	--	--	--
Capstone Course/Project		2	3	4.28
Field Training/ Internship		2	4	5.71
Residency year		--	--	--
Others	English	4	16	22.86
	Computer	1	1	1.43
	Other Dept	--	--	--
	Math & Science	6	14	20
Total		28	70	100

* Add a separate table for each track (if any).

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	101ENGD	English Language 1	R	---	6	College
	191CSC	Computer Essentials	R	---	1	College
	191MATH	Mathematics - I	R	---	2	College
	191PHYS	General Physics	R	---	2	College
	111CBS	Industrial Safety and Environment	R	---	1	College
	192CHEM	General Chemistry	R		2	College
	111CHET	Introduction to Chemical Engineering Technology	R	---	3	Program
Level 2	102ENGD	English Language 2	R	101ENGD	6	College
	112CHET	Applied Organic Chemistry	R	192CHEM	3	Program
	113CHET	Methods of Chemical Analysis	R	192CHEM	2	Program
	114CHET	Momentum Transfer	R	111CHET	2	Program
	222CHET	Chemical Engineering Thermodynamics	R	191PHYS	3	Program
	191CHET	Graduation Project in Chemical Engineering Technology – I	R	15 Cr. U*	1	Program
	181CHET	COOP Training in Chemical Engineering Technology – I	R	20 Cr. U*	2	Program
	Summer Semester (Associate Diploma)					

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 3	203ENGD	Communication Skills	R	102ENGD	2	College
	115CHET	Equipment Design & Drawing	R	---	2	Program
	231CHET	Environmental Pollution	R	---	2	Program
	292MATH	Mathematics – II	R	191MATH	3	College
	224CHET	Mass Transfer Operations	R	114CHET	3	Program
	223CHET	Process Heat Transfer	R	222CHET	2	Program
	233CHET	Process Installation and Control	R	114CHET	3	Program
Level 4	204ENGD	Technical English	R	102ENGD	2	College
	221CHET	Separation Process	Required	192CHEM	3	Program
	232CHET	Petroleum Refining and Testing	Required	221CHET	3	Program
	294MATH	Applied Statistics	R	292MATH	2	College
	293MATH	Calculus	R	292MATH	3	Program
	291CHET	Graduation Project in Chemical Engineering Technology – II	R	191CHET	2	Program
	281CHET	COOP Training in Chemical Engineering Technology – II	R	181CHET	2	Program
	Summer Semester (Intermediate Diploma)					

*Include additional levels (for three semesters option or if needed.
**Add a table for the courses of each track (if any)

3. Course Specifications:

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

https://www.jazanu.edu.sa/ar/colleges/college-applied-industrial-technology-cait/coursespecification3chet

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	S1	S2	S3	S4	V1	V2
101ENGD	I	I		I		I	
191CSC	P	P	I		P	P	I
191MATH	I	I				I	
191PHYS	P	P	P		P	I	
111CBS	M	M	M		M	M	M
192CHEM	P	P	I		I	I	
102ENGD	P	P		P		I	
111CHET	P	P	P		P	I	P

Course code & No.	Program Learning Outcomes						
	Knowledge and understanding	Skills				Values, Autonomy, and Responsibility	
	K1	S1	S2	S3	S4	V1	V2
112CHET	P	P	P		P	I	
113CHET	M	M	M		M	M	P
203ENGD	P	P		M		M	
114CHET	P	P	P		P	P	
115CHET	P	P	P	P		P	
191CHET	M	M	M	M	M	M	M
181CHET	M	M	M	M	M	M	M
221CHET	M	M	M		M	P	P
292MATH	P	P				P	
204ENGD	P	P		P		P	
231CHET	M	M	M	P	M	M	M
222CHET	M	M	P		P	P	
223CHET	M	M	M		P	P	P
224CHET	M	M	M		P	P	P
232CHET	M	M	M	P	M	M	M
233CHET	P	M	M	M	M	M	M
294MATH	P	M	P		M	P	
293MATH	P	P	P			P	
291CHET	M	M	M	M	M	M	M
281CHET	M	M	M	M	M	M	M

*Add a separated table for each track (if any).

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.

Policies	Major Strategies
1. Use of world class methods and technologies in teaching and learning	1. To oblige all faculty members to be trained and have knowledge about teaching methods in class. 2. Provide the potentials that support different teaching methods and strategies
2. Establish a teaching and learning center focused on student retention and success	1. Resource allocation and facility identification. 2. Identify and appoint outstanding leaders and faculty members
3. Foster a culture of independent thinking, and entrepreneurship among students and faculty	1. Conduct competitions for the best project 2. Perform visits for the students with mills in JEC 3. Expand student activities such as clubs, and activities that enhance leadership skills, team spirit, & entrepreneurship

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.

The program should devise a plan for assessing Program Learning Outcomes (all learning outcomes should be assessed at least twice in the bachelor program's cycle and once in other degrees).

	NQF Learning Domains and Learning Outcomes	Teaching Strategies	Assessment Methods
K.	**Knowledge** **At the end of the program, the graduates will be able to:**		
K.1	An ability to demonstrate a broad and coherent body of knowledge, with depth in the underlying principles and concepts in the discipline,	Lecture, tutorial, reading, writing report on an activity, active learning, experiential learning	Assignment, exam, class activities
S.	**Skills** **At the end of the program, the graduates will be able to:**		
S.1	An ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline	Lecture, tutorial, project Based Learning (PBL) and case study	Assignments, exams, projects, case studies and Lab exam
S.2	An ability to design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes appropriate to the discipline,		

S.3	An ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature		
S.4	An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results		
V.	**Values** **At the end of the program, the graduates will be able to:**		
V.1	An ability to function effectively as a member of a technical team, a commitment to quality, timeliness, and continuous improvement	Task completion, active learning	Observation, log book, participation, Lab exam
V.2	An ability to engage in self-directed continuing professional development		

D. Student Admission and Support:

1. Student Admission Requirements

https://www.jazanu.edu.sa/ar/colleges/college-applied-industrial-technology-cait

A newly registered student should meet the following conditions:

1- The student should have Saudi nationality. In case of the non-Saudi student, their mother should carry Saudi nationality.
2- The students must have graduated from high school (science section).
3- The students should not have been graduated for more than five years before admission.
4- The student may not have been dismissed from the university or another university for disciplinary reasons.
5- Admission is allowed in the case of school grade average not less than 65%.
6- The students should pass any other requirements which may be set by the college.
7- The college has the right to transfer any student who has earned a GPA less than 3 in the first semester of the first year, in coordination with the Admission and Registration Deanship, according to the availability of the university tuition. A pledge is taken by the student regarding this action.

Students are distributed to departments after the preparatory first year, according to their requests, their GPA, and available places in the specific program.

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).

https://www.jazanu.edu.sa/en/colleges/college-applied-industrial-technology-cait/academic-advising

Advising in this case addresses:

(i) Orientation for students with an introduction to their study plan; course assessment; progression; student responsibilities; student expectations; college rules and regulations. Particular attention is paid to:
- Student commitment to college systems

- Regular exposure to the academic programs and related career opportunities
- How to manage achievement of learning outcomes

(ii) Remedial solutions for under-achievement
(iii) Management of the student's attendance record

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).

https://www.jazanu.edu.sa/en/colleges/college-applied-industrial-technology-cait/academic-advising

First preparatory year – Instructors undertake duties of counseling with two compulsory counseling sessions held per semester.

Program (2nd year onwards) – Departmental faculty undertake counseling duties (academic advising) which consists of advice on queries of a pastoral nature; advice on study plan and progression; advice on adding/dropping courses.

Faculty office hours are posted at office locations and are included in the faculty teaching roster. The following system is in place to implement the above:

1. CAIT students in the 1st year are divided among the teachers and assigned at the beginning of the semester
   a. Semester 1 students can seek access and be advised/counseled by native Arabic speakers (if applied).
   b. There is one "float" advisor that students can go to as an additional resource, should they not feel comfortable speaking with their designated advisor due to personal, cultural, etc.
   c. The float is ideally being a native Arabic speaker and the student must still get a referral from their designated advisor for administrative and record keeping purposes.
2. Set forms including a checklist are provided that explain BCC policies and the teacher goes over these with the student and they both sign and date.
3. All forms are in Arabic and English.

Post- first year - Program student counseling/ advising:

1. Advisors provide advice on the completion of the study plan and progression of the student/ adding and dropping courses.
2. The students can also raise any issues and seek guidance at that time.

4. Special Support

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

https://www.jazanu.edu.sa/sites/default/files/2022-06/JU39-04-04-06%2804%29%20Request%20Form%20for%20a%20Student%E2%80%99s%20Exceptional%20Case.pdf

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	--	--	--	--	--	--
Associate Professor	--	--	--	--	--	--
Assistant Professor	Chemical Engineering	Environmental and Material Science	Materials Fabrication	2	--	2
	Chemical Engineering	Chemical Engineering	Process Design/ Modeling	2	--	2
Lecturer	Chemical Engineering	Chemical Engineering	Modeling	1	--	1
Teaching Assistant	Industrial	Industrial	Industrial Engineering	2	--	2
Technicians and Laboratory Assistant	Industrial	Industrial	Industrial Engineering	2	--	2
Administrative and Supportive Staff	Admin	--	--	8	--	8
Others (specify)	Librarian	--	--	2	--	2

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.)*

Policy: JU39-05-03-01

1	**PROCEDURE TITLE:**	**Textbook Evaluation and Selection**
2	**SCOPE:**	Assigned faculty members from the academic department responsible for the course can suggest and evaluate new texts and texts being used.
3	**PURPOSE:**	The purpose of this policy is to provide a framework that will allow updating of present textbooks, reference and other resource provisions. The actions highlighted in this document are initiated by faculty member/s of course related academic department through their program coordinator of the course.

4 PROCEDURE ACTIVITIES:

	Activity	Responsibility	Form
4.1	Fill in Textbook Evaluation and Selection form and submit it to the program coordinator.	Faculty member	JU39-05-03-01/01
4.2	If all the fields in the form are properly filled in, and the textbook evaluation and selection criteria are fulfilled, recommend it to the HoD. Otherwise, it needs a revision by the initiator.		
4.3	Make further revision and approve if: a. the evaluation and selection process has been followed b. textbook content addresses 80% of LOs of the course. Otherwise, the request will be rejected.	HoD	
4.4	Send the approved document to CDU for further action of validating and checking course syllabus alignment with a copy of selected textbook.	HoD	
4.5	Approve the request.	Head of CDU	
4.6	Order the textbook via College Manager Office.	College Manager	
4.7	Verify the textbook at the time of delivery in warehouse and approve for distribution to student.	CDU and Requester	

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

Faculty and teaching staff can instigate the purchase of new texts by (see below) following the Textbook Evaluation and Selection Procedure (JU39-05-03-01). They can address needs and acquisition of other resources through the course report.

All material is subject to scrutiny by faculty members with feedback supplied via the semester course report. This document has provision for comments on the suitability of the above in relation to the achievement of student outcomes. the adequacy of textbooks, reference and other resource provisions are evaluated via the confidential Course Evaluation Survey which conducted every semester during the test period

3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the program)

Laboratory Emergency Policy
https://jazanu.edu.sa/sites/default/files/2023-01/Standard%20Operating%20Procedures%20For%20Lab%20Safety--.pdf

G. Program Quality Assurance:

1. Program Quality Assurance System

Provide a link to quality assurance manual.

https://jazanu.edu.sa/en/colleges/college-applied-industrial-technology-cait/qa-and-accreditation

Faculty participate in the monitoring of program quality, annual review and planning for improvement through the following mechanisms:

1. Participation in Faculty satisfaction survey
2. Production of course file
3. Production of course report
4. Participation in the Program Advisory and Evaluation Committee
5. Participation in course revamping

All staff are asked to participate in quality initiatives and to oversee the application of processes. Program quality is driven through course reporting and through the work of the PAEC – Program Advisory and Evaluation Committee. The PAEC has been established as a conduit for company and faculty feedback on student achievement and program quality through the monitoring of the application of the study plan. Course revamping is open to any faculty member. He is able to initiate such actions through the preparation of a proposal for course revamping which is subsequently to the HOD and if deemed appropriate, forwarded to the Departmental Council. Should the Departmental Council recommend the course revamping, the proposal will be recommended to the Curriculum Development Division, undergo scrutiny through the Quality Assurance and Accreditation Unit, and be submitted to the College Council. On approval of the course revamping, a copy of approved material will be distributed to the department and program concerned for implementation.

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

Integrated course reporting for non-MMET taught courses will take place regularly on an annual basis via submission to the Mechanical Engineering Technology Department's PAEC committee to ensure that these courses meet the needs of the students. In addition, CAIT improves the degree of interaction between departments through formal involvement of assigned coordinators to follow up with the course director and closely monitor details and completeness.

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://www.jazanu.edu.sa/sites/default/files/2021-11/00-assessment-plan-of-clos-plos-cait.pdf

The mechanism by which CAIT assess its LOs and evaluate their development against courses and academic programs are accurate and powerful since it is carried out automatically by means of Excel spreadsheet. It is worth to note that assessment of CLOs is conducted every semester, however assessment of PLOs is conducted annually.

They are the statements of what each student knows, understands and is able to do on completion of a learning process. They are defines in terms of

Knowledge: The outcomes of the assimilation of information through learning. It is the body of facts, principles, theories and practices that is related to the field of study.

Skills: The outcomes of applying the knowledge and using know-how to complete tasks and solve problems. They are the cognitive or practical.

Values: The outcomes of proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development.

LOs in course level and program level are all defined in terms of the above category. First, the PLOs are defined according to the Accreditation Board for Engineering and Technology (ABET) and the National Quality Framework (NQF) with two more outcomes to comprise "Knowledge" domain and enhance "Values" domain. The Students Outcomes (SOs).

The direct assessment of PLOs is carried out using the same Excel sheet, for which PLOs assessment is carried out for a specified course. Here, the CLOs of the course or the KPIs associated with these CLOs "attributes" are used for assessing PLOs associated to this course only. The mapping matrix between CLOs and PLOs is used for assessment process taking into consideration the Level of Learning (LoL) assigned. First the PLOs is assessed for each Assessment Tool. For the sake of clarifying the procedure, please refer to the manual published in the above mentioned link

The PLOs assessed for each assessment tool for each graduate are summed up to provide a comprehensive assessment for PLOs for this course, it is worth noting that after summing up, a normalization to unity for PLOs is applied for better comparison and analysis.

The final stage is that assembling the assessed PLOs for the key courses, i.e. the courses of the highest two or three levels. This is stage is accomplished by means of a complementary Excel spreadsheet for which the data for each graduate is fed to the sheet for assembly and get the total assessment for the PLOs for this academic program. The total assessment of PLOs for this academic program, according

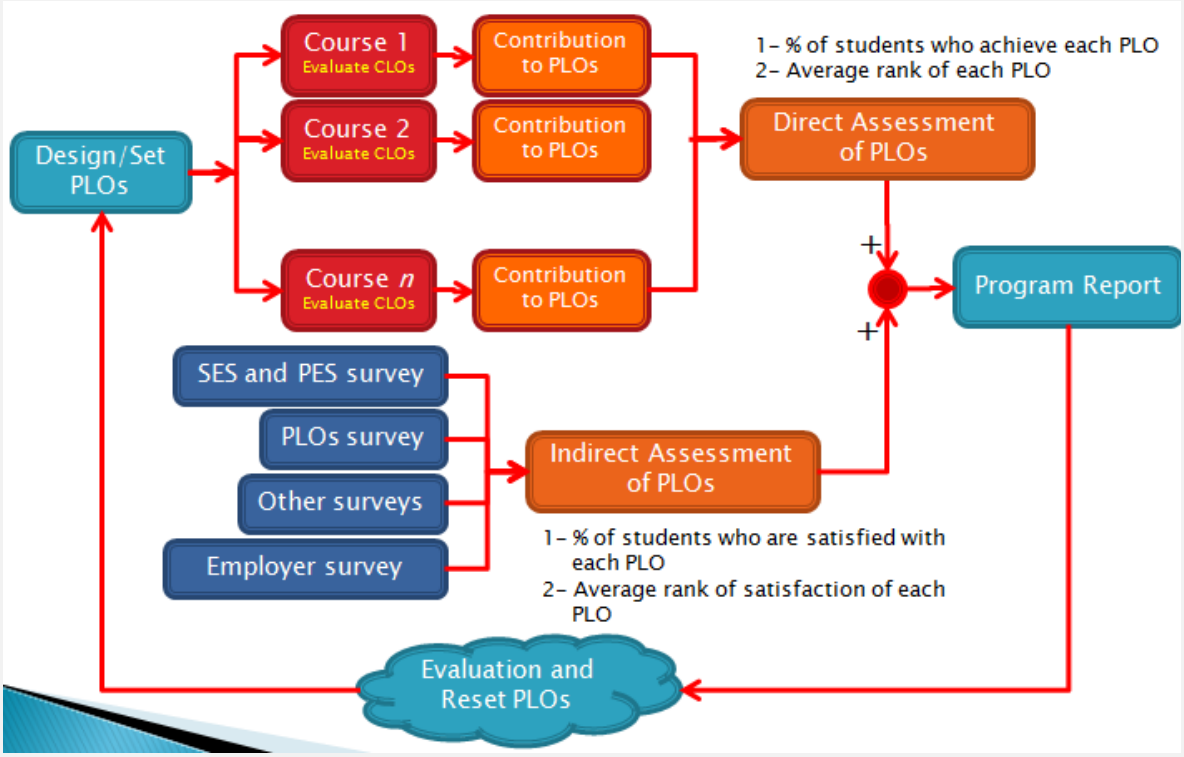
to the selected key courses, can then be evaluated and defined using a rubric of three levels of achievement; they are:

Satisfactory: if the % of the students who achieve 70% or higher is more than 60% for each LO.

Need Improvement: if the % of the students who achieve 70% or higher is less than 60% but the % of the students who achieve less than 60% "F" is less than 40% for each LO.

Unsatisfactory: if the % of the students who achieve less than 60% or less is smaller than 60% for each LO.

The above steps are followed by Indirect Assessment by means of students' PLOs survey, SES survey, and PES survey. It is worth noting that all of these steps and procedures are assembled and programmed using two Excel spreadsheet for instructor convenient and accurate assessment.



5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Program Mission	Employers	Surveys	30 days
Program Objectives	Employers	Surveys	30 days
Program Outcomes	Employers	Surveys	30 days
The Survey of Labor Market and Society Needs	Employers	Surveys	30 days
Comparison with Corresponding Programs (Similarities & Differences)	Independent reviewers	Interviews	30 days
Identification of Human Resources	Administrative staff, program leaders	Visits	30 days
Identification of Facilities and Equipment for the Program	Program leaders	Visits	30 days
Program Description	Program coordinator	Interviews	30 days

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Short Description of Courses	Faculty	Interviews	30 days
Detailed Description of Courses (Including Evaluation and References)	Faculty	Interviews	30 days
Outside Arbitration for the Plan	Independent reviewers	Visits	30 days
External Evaluator Report	Independent reviewers	Interviews	30 days
Fields of Work	Employers	Visits	30 days

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 (2) year(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	S1.1	Average rating on how well the mission is known to teaching staff, and undergraduate students, on a five- point scale in an annual survey	3	Survey (teaching Staff and undergraduate and graduate students)	Annually
2	S2.1	Average rating on the adequacy of the Policy Handbook on a five-point scale	3	Survey (teaching Staff and final year students)	Annually
3	S3.1	Average rating of the overall quality on a five-point scale in an annual survey	3	Survey (final year students)	Annually
4	S3.2	Proportion of courses in which student evaluations were conducted during the year.	0.9	No. of courses evaluated / Total Courses	End of Semester
5	S4.1	Ratio of students to teaching staff. (Based on full time equivalents)	20/1	Total no. of students / Total no. of staff	End of semester
6	S4.2	Average rating of students on a five-point scale on overall evaluation of courses	3	Average rating on overall evaluation for the key courses	End of semester
7	S4.3	Proportion of teaching staff with verified doctoral qualifications.	20/1	Total no. of students / Total no. of PhD staff	End of semester
8	S4.4	Retention Rate; Percentage of students entering programs who successfully complete first year	60%	No. of students successfully complete first year of the program / Total no. of students enter the program	Annually

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
9	S4.5	Graduation Rate for Undergraduate Students: Proportion of students entering undergraduate programs who complete those programs in minimum time.	60%	No. of graduates / Total no. of students enter the program	2 years
10	S4.7	Proportion of graduates from undergraduate programs who within six months of graduation are: (a) employed (b) enrolled in further study not seeking employment or further study	0.6	No. of graduates who within six months of graduation are employed, enrolled in further study, or not seeking employment or further study / Total no. of graduates	Annually
11	S5.3	Average rating on the adequacy of academic and career counselling on a five- point scale in an annual survey of final year students	3	PES of final year students	Annually
12	S6.1	Average overall rating of the adequacy of the library & media centre, including: a) Staff assistance, b) Current and up-to-date c) Copy & print facilities, d) Functionality of equipment, e) Atmosphere or climate for studying f) Availability of study sites, and Any other quality indicators of service on a five- point scale of an annual survey	3	Survey (teaching Staff and undergraduate and final year students)	Annually
13	S.6.3	Average overall rating of the adequacy of the digital library, including: a) User friendly website b) Availability of the digital databases, c) Accessibility for users, d) Library skill training and Any other quality indicators of service on a five- point scale of an annual survey	3	Survey (teaching Staff and undergraduate and final year students)	Annually

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
14	S7.1	Annual expenditure on IT budget, including: a) Percentage of the total Institution, or College, or Program budget allocated for IT; b) Percentage of IT budget allocated per program for institutional or per student for programmatic; c) Percentage of IT budget allocated for software licences; d) Percentage of IT budget allocated for IT security; Percentage of IT budge allocated for IT maintenance.	60%	Expenditure on IT budget / Total budget	Annually
15	S7.2	Average overall rating of the adequacy of: a) IT availability, b) IT Security, c) IT Maintenance, d) IT Accessibility e) IT Support systems, f) Software and up-dates, g) Age of hardware, and h) Other viable indicators of service on a five- point scale of an annual survey	3	Survey (teaching Staff and undergraduate and final year students)	Annually
16	S7.3	22. Stakeholder evaluation of a) Websites, b) e-learning services c) Hardware and software d) Accessibility e) Learning and Teaching f) Assessment and service g) Web-based electronic data management system or electronic resources (for example: institutional website providing resource sharing, networking & relevant information, including e-learning, interactive learning & teaching between students & faculty On a five- point scale of an annual survey).	3	Survey (teaching Staff and undergraduate and final year students)	Annually

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
17	S9.1	Proportion of teaching staff leaving the institution in the past year for reasons other than age retirement	0.1	No. of teaching staff leaving the institution in the past year for reasons other than age retirement / Total no. of teaching staff	Annually
18	S9.2	Proportion of teaching staff participating in professional development activities during the past year	0.6	No. of teaching staff participating in professional development activities / Total no. of teaching staff	Annually
19	S10.1	Number of refereed publications in the previous year per full time equivalent teaching staff. (Publications based on the formula in the Higher Council Bylaw excluding conference presentations)	2/1	No. of refereed publications in the previous year / Total no. of teaching staff	Annually
20	S10.2	Number of citations in refereed journals in the previous year per full time equivalent faculty members.	5/1	No. of citations in refereed journals in the previous year / Total no. of teaching staff	Annually
21	S10.3	Proportion of full-time member of teaching staff with at least one refereed publication during the previous year.	0.6	No. of full-time teaching staff with at least one refereed publication during the previous year / Total no. of teaching staff	Annually
22	S10.4	Proportion of papers or reports presented at academic conferences during the past year per full time equivalent faculty members.	0.6	No. of papers or reports presented at academic conferences during the past year / Total no. of teaching staff	Annually
23	S10.5	Research income from external sources in the past year as a proportion of the number of full-time faculty members.	0.6	No. of research with income from external sources in the past year / Total no. of teaching staff	Annually

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
24	S11.1	Proportion of full-time teaching and other staff actively engaged in community service activities.	0.6	No. of full-time teaching and other staff actively engaged in community service activities / Total no. of teaching staff	Annually

Including KPIs required by NCAAA

H. Specification Approval Data:

COUNCIL / COMMITTEE	**CHEMICAL ENGINEERING TECHNOLOGY**
REFERENCE NO.	**CAITCET2401**
DATE	**4TH OF JULY 2024**