عمليات

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic Year 2015-2016

University: Technology
College : Department of Chemical Engineering / Chemical Processing Engineering
Number Of Departments In The College : -
Date Of Form Completion :

Prof. Dr. Thamir Jasim Mohammad
Dean's Name
Date : / / 2016
Signature

Assistant Prof. Dr. Amer Aziz Abl-Rahman
Dean's Assistant For Scientific Affairs
Date : 22 / / 2016
Signature

Dr. Farah Talib Jasim AL-Sudani
The College Quality Assurance And University Performance Manager
Date : / / 2016
Signature

Quality Assurance And University Performance Manager
Date : / / 2016
Signature

الجامعة التكنولوجية
قسم
الهندسة الكيمياوية

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	University of Technology
2. University Department/Centre	Chemical Engineering Department/
3. Programme Title	Chemical Processing Engineering
4. Title of Final Award	B.Sc. in chemical engineering
5. Modes of Attendance offered	4 years full time
6. Accreditation	None
7. Other external influences	
8. Date of production/revision of this specification	1 June 2016

9. Aims of the Programme

1-	Able to engage engineering theories with chemical engineering practice to design and analyse process problems taking into account environmental impacts and safety.
2-	Effective communication team work and Successful leadership in chemical engineers related careers (industries, water treatment, catalytic reactor).
3-	Maintain a lifelong interest in learning for personal and professional developments.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

A1. Develop the ability to use chemical engineering principles to solve problems of practical importance to society.

A2. Able to formulate, analyze, and solve practical chemical engineering problems.

A3. Identify the principles of chemical engineering, including chemical reaction equilibrium and thermodynamics, mass and energy balance, transport processes, separation processes, mechanical unit operations and process control.

A4. Able to design a chemical system, process, or component with consideration of realistic constraints including practical, economic, environmental, safety, ethical, social, and political implications.

B. Subject-specific skills

B1. Integrate processing steps into a sequence and apply analysis technique such as energy and mass balance.

B2. Chemical engineering graduates will possess self-learning skills to ensure life-long learning.

B3. Chemical engineering graduates will have selected technical elective courses, concentrations, projects, and minors that satisfy their professional interest or career goals.

B4. Able to function and work effectively alone and in a team environment, including multidisciplinary teams.

Teaching and Learning Methods

Lectures, Tutorials, Example Classes, Practical Applications, reports, Weekly homework problems.

Assessment methods

partial test (Oral questions :- multiple choice ,alternative response), Open questions that have a definite answer , or do not have a definite answer, Quizzes, homework problems , Mid. term exams , Final exam.

C. Thinking Skills

C1. Perform complete mass and energy balances for chemical engineering plants.

C2. Apply the principles of chemical equilibrium and process thermodynamics to systems with chemical reactions.

C3. Chemical engineering graduates will be able to write coherent, concise, and accurate technical reports.

C4. Chemical engineering graduates will be able to use computers effectively for solving chemical engineering problems.

Teaching and Learning Methods

Written method implies the following forms of activity: copying, taking notes, composing theses, writing essays, etc.

Laboratory method implies the following forms of activity: conducting experiments, showing video materials, etc.

Practical methods unite all the teaching forms that stimulate developing practical skills in students.

Explanatory method is based on discussing a given issue.

Designing and presenting a project.

Discussion/debates. This is the most widely spread method of interactive teaching.

Case study – the teacher discusses concrete cases together with the students and they study the issue thoroughly.

Assessment methods
partial test (Oral questions :- multiple choice ,alternative response), Open questions that have a definite answer , or do not have a definite answer, Quizzes, homework problems , Mid. term exams , Final exam.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Collaborate effectively within multidisciplinary team.
D2. Work in stressful environment and within constraints.
D3. Communicate effectively.
D4. Search for information and engage life-long self-learning discipline.
D5. Acquire entrepreneurial skills.

Teaching and Learning Methods
Lectures, Tutorials, Example Classes, Practical Applications, reports, Weekly homework problems.

Assessment Methods
partial test (Oral questions :- multiple choice ,alternative response), Open questions that have a definite answer , or do not have a definite answer, Quizzes, homework problems , Mid. term exams , Final exam.

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
First Year	CE.111	Technical English	4	Bachelor Degree Requires (3600) credits
	CE.121	Mathematics (I)	4	
	CE.141	Basic Principles of Chem. Eng. (I)	4	
	CE.122	Chemistry	6	
	CE.131	Engineering Drawing	4	
	CE.132	Engineering Mechanics & Strength of Materials	4	
	CE.133	Electrical Technology	2	
	CE.123	Computer Programming (I)	4	
	CE.134	Workshop	4	
Second Year	CE.211	Human Rights	1	
	CE.212	Democracy	1	
	CE.221	Mathematics (II)	4	
	CE.241	Basic principles of Chem. Eng (II)	4	
	CE.242	Fluid Flow	6	
	CE.231	Physical Chemistry	5	
	CE.221	Computer Programming (II)	4	
	CE.232	Material Science& Eng.	5	
	CE.243	Fuel's Technology	3	
	CE.233	Statistics and measurements	3	
Third Year	CE.341	Thermodynamics	5	
	CE.331	Applied Mathematics	4	
	CE.342	Mass Transfer	5	
	CE.343	Reactor Design	4	
	CE.344	Heat Transfer	5	
	CE.345	Equipment Design	5	
	CE.332	Numerical Analysis	3	
	CE.346	Bio Chemical Eng.	2	
	CE.347	Particles& Nanotechnology	2	
	CE.349	Petrochemical Industries	2	
Fourth Year	CE.441	Project	4	
	CE.442	Unit Operations	5	
	CE.443	Process Control	5	
	CE.444	Chemical Process Industries	4	
	CE.445	Petroleum Refinery Eng.	2	
	CE.446	Catalysis & Catalytic Eng.	2	
	CE.431	Industrial Management	2	
	CE.446	Environment Eng. & Industrial Safety	2	
	CE.447	Corrosion Eng.	2	
	CE.432	Optimization	2	

13. Personal Development Planning

- Formative assessments
- Independent research projects
- Group projects
- Assessed seminar presentations
- Reflective commentaries / logs
- Portfolio-based assessment

14. Admission criteria .

1- The applicant must have completed a minimum of 12 years of education in school and passed all the subjects in the Higher Secondary examination.

2- All applicants must complete 17 years of age on or before the 31st of December in the year of admission.

3- Admission to higher education in Iraq is granted to students with a Secondary School Certificate, No entrance examination is required for admission to higher education, yet admission to engineering does require high scores in the Secondary School Certificate examination, these scores are determined annually by the Ministry of Higher Education and Scientific Research.

15. Key sources of information about the programme

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

Programme Learning Outcomes

Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4	D5
First Year	CE.111	Technical English	C	√					√		√			√		√		√		√
	CE.121	Mathematics (I)			√				√											
	CE.141	Basic Principles of Chem. Eng.		√	√	√		√	√	√	√	√	√	√	√	√	√			
	CE.122	Chemistry		√		√	√					√		√		√				
	CE.131	Engineering Drawing		√			√		√	√	√	√			√	√			√	
	CE.132	Engineering Mechanics & Strength of Materials		√			√									√				
	CE.133	Electrical Technology		√												√				
	CE.123	Computer Programming (I)		√	√		√	√	√	√	√			√	√	√	√			√
	CE.134	Workshop					√		√		√	√						√	√	

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

Programme Learning Outcomes

Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4	D5
Second Year	CE.211	Human Rights	C						√									√	√	
	CE.212	Democracy							√									√	√	
	CE.221	Mathematics (II)			√				√	√							√			
	CE.241	Basic principles of Chem. Eng (II)		√	√	√		√	√	√	√	√	√	√		√				
	CE.242	Fluid Flow		√	√	√		√	√	√		√		√		√				
	CE.231	Physical Chemistry		√		√			√			√		√		√				
	CE.221	Computer Programming (II)		√	√			√	√	√	√			√	√	√	√			√
	CE.232	Material Science& Eng.		√		√	√					√				√				
	CE.243	Fuel's Technology		√		√		√								√				
	CE.233	Statistics and measurements		√	√				√	√	√	√		√	√	√				√

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

Programme Learning Outcomes

Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4	D5
Third Year	CE.341	Thermodynamics	C	√		√	√	√	√	√		√	√	√		√				
	CE.331	Applied Mathematics			√			√	√	√	√	√	√	√	√	√				
	CE.342	Mass Transfer		√	√	√		√	√	√		√	√	√		√				
	CE.343	Reactor Design		√	√	√		√	√	√		√	√	√	√	√				
	CE.344	Heat Transfer		√	√	√		√	√	√		√	√	√		√				
	CE.345	Equipment Design		√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	CE.332	Numerical Analysis			√				√	√	√	√			√	√	√		√	√
	CE.346	Bio Chemical Eng.		√		√	√			√		√	√			√				
	CE.347	Particles& Nanotechnology		√		√	√			√		√				√				
	CE.349	Petrochemical Industries		√		√	√		√				√	√		√				

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

Programme Learning Outcomes

Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4	D5
Fourth Year	CE.441	Project	C	√		√	√	√	√	√	√	√	√	√	√		√	√	√	√
	CE.442	Unit Operations		√	√	√		√	√	√		√	√	√		√				
	CE.443	Process Control		√	√	√	√	√	√	√		√		√	√	√				
	CE.444	Chemical Process Industries		√		√	√		√				√			√				
	CE.445	Petroleum Refinery Eng.		√		√	√	√	√	√		√	√			√				
	CE.446	Catalysis & Catalytic Eng.		√		√			√	√		√	√			√				
	CE.431	Industrial Management		√	√		√		√		√	√		√	√	√	√	√	√	√
	CE.446	Environment Eng. & Industrial		√	√	√	√	√	√	√			√	√		√				
	CE.447	Corrosion Eng.		√			√									√				
	CE.432	Optimization			√				√	√	√	√	√	√	√	√	√	√	√	√