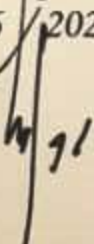




Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For the Academic Year 2020-2021

University: *University of Technology*
College: *Control and Systems Engineering*
Number Of Departments In The College: *Three*
Date Of Form Completion: *8 / 6 / 2021*

Dean ' s Name:	Dean ' s Assistant for Scientific Affairs:	The College Quality Assurance and University Performance Manager:
Assist. Prof. Dr. <i>Ahmed Akia Oglah</i>	Prof. Dr. <i>Mohammed Yousif Hassan</i>	Assist. Prof. <i>Shaymaa Mahmood Mahdi</i>
Date: <i>8 / 6 / 2021</i>	Date: <i>8 / 6 / 2021</i>	Date: <i>8 / 6 / 2021</i>
Signature: 	Signature: 	Signature: 

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	Ministry of Higher Education & Scientific Research
2. University Department/Centre	Control and Systems Engineering Department
3. Programme Title	Computer and Control Engineering Branch
4. Title of Final Award	Bachelor Degree in Computer and Control Engineering.
5. Modes of Attendance offered	Semesters / for all Stages
6. Accreditation	ABET
7. Other external influences	
8. Date of production/revision of this specification	2020-2021
9. Aims of the Program	
Graduating engineering cadres specialized in computer and control engineering and supplying the labor market with qualified engineers capable of performing their engineering duties to the fullest.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

- A1: Introduce the student to the basics of computer and control engineering.
- A2: Familiarize students with applications related to computer and control engineering.
- A3: Enabling the student to find solutions to problems related to computer and control engineering applications.
- A4: Enabling the student to invent designs in the field of computer and control engineering applications.

B. Subject-specific skills

- B1: Define the problems of the topic.
- B2: Systems design to solve problems.
- B3: Implementation of designs and evaluation of results.

Teaching and Learning Methods

Theoretical lectures, practical laboratory experiments, preparing reports, discussion, training, scientific visits, preparing research and participating in scientific conferences and exhibitions.

Assessment methods

Paper exams, oral discussions, homework

C. Thinking Skills

- C1: The ability to innovate, create and develop individual skills and talents.
- C2: competitiveness
- C3: Interact with the needs of the community and learn about its problems.
- C4: experience the work environment and instilling professional ethics and teamwork.

Teaching and Learning Methods

- Solving Mathematical Problems.
- Preparing and implementing algorithms using a computer.
- Using modern software and means of communication such as the Internet for viewing and research.

Assessment methods

Paper exams, oral discussions, homework

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

D1: Ability to work in teams to get a specific job done.

D2: The ability to absorb and adopt scientific developments in the field of specialization.

D3: The ability to keep pace with scientific and technical development.

D4: Use of modern technologies and means of communication.

Teaching and Learning Methods

Participation in scientific seminars and conferences, scientific field visits, design and implementation of devices and projects to participate in scientific exhibitions.

Assessment Methods

Discussion, presentation of research and studies.

11. Programme Structure

12. Awards and Credits

Level/Year	Course or Module Code	Course or Module Title	Credit hours	
First Year-1 st semester	ENGL2101	English Language 1	2	
	MATH2104	Mathematics 1	theory: 3 tutorial :1	
	EENG2105	Fundamentals of Electrical Engineering 1	theory: 2 tutorial :1 practical: 2	
	ELPH2106	Electronic Physics 1	3	
	ENDR2107	Engineering Drawing 1	practical: 3	
	COMP2103	Computer Science	theory: 1 practical: 2	
	WRKS2102	Workshops 1	practical: 6	
First Year-2 nd semester	ENGL2151	English Language 2	2	
	MATH2154	Mathematics 2	theory: 3 tutorial :1	
	EENG2155	Fundamentals of Electrical Engineering 2	theory: 2 tutorial :1 practical: 2	
	ELPH2156	Electronic Physics 2	3	
	ENDR2157	Engineering Drawing II	practical: 3	
	DITE2153	Digital Techniques	theory: 1 tutorial :1 practical: 2	
	WRKS2152	Workshops 2	practical: 6	

Second Year	HRDE2201	Human Rights	2
	ELMA2202	DC Electrical Machine	2
	DASA2251	Data Structure & Algorithms	2
	ELCN2206	Electronics 1	3
	ELCN2259	Electronics II	3
	DIMA2255	Discrete Mathematics	2
	EMAT2205	Engineering Mathematics I	3
	EMAT2254	Engineering Mathematics II	3
	COGR2258	Computer Graphics	2
	DAMS2203	Database Management Systems	2
	DISY2208	Digital Systems 1	2
	DISY2257	Digital Systems II	2
	PRLA2204	Programming Language I	3
	PRLA2253	Programming Language II	2
	COTH2207	Control Theory I	3
	COTH2256	Control Theory II	3
	MINS2209	Measurements & Instrumentation 1	2
	MINS2252	Measurements & Instrumentation II	2
	LABR2210	Laboratories I	practical: 4
	LABR2260	Laboratories II	practical: 5
Third Year	CSE 3301	Engineering Analysis	3
	CSE 3302	Numerical Analysis Using MATLAB	3
	CSE 3305	Electronic Circuits Design I	2
	CSE 3306	Electronic Circuits Design II	2
	CSE 3307	Fundamentals of Communication	2
	CSE-P3301	Computer Architecture I	3
	CSE-P3301	Computer Architecture II	3
	CSE3303	Microprocessors Techniques I	3
	CSEM3304	Microprocessor Techniques II	3
	CSE3308	Digital Signal Processing	2
	CSE-P3307	Laboratories I	practical: 6

	CSE-P3308	Laboratories II	practical: 6
	CSE-M3306	Programmable Logic Controller I	2
	CSE-M3307	Programmable Logic Controller II	2
	CSE-P3305	Software Engineering	2
	CSE-P3306	Soft Computing	3
	CSE-P3201	Digital Image Processing	2
	CSE-P3303	Advanced Digital System Design I	2
	CSE-P3304	Advanced Digital System Design II	2
Fourth Year	CSE4301	Industrial Engineering	2
	CSE4302	Nanotechnology	2
	CSE-P4201	Java Programming	2
	CSE-C4301	Digital control I	2
	CSE-C4302	Digital control II	2
	CSE-P4302	Advanced Computer Architecture I	2
	CSE-P4303	Advanced Computer Architecture II	2
	CSE-P4304	Computer Networks I	2
	CSE-P4305	Computer Networks II	2
	CSE-P4306	Operating Systems	2
	CSE-P4307	Real Time Systems	2
	CSE-P4308	Embedded Systems & Applications	2
	CSE-P4309	Reliability & Availability	2
	CSE-M4303	Computer Interfacing	2
	CSE-P4311	Design & Application I	theory: 1 practical: 2
	CSE-P4312	Design & Application II	theory: 1 practical: 2
	CSE-P4313	Laboratories I	3
	CSE-P4314	Laboratories II	2
	CSE-P4315	Project	theory: 1 practical: 3

13. Personal Development Planning

This is done through periodic review of curricula and access to scientific developments in the field of computer and control engineering.

14. Admission criteria.

- 1- Central admission plan standard.
- 2- Accepting the first graduates to the institutes.

15. Key sources of information about the program

Curriculum books, lectures by teachers that collected from various sources.

Curriculum Skills Map

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

Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Programme Learning Outcomes																									
				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	A5	A6	A7	B1	B2	B3	B4	B5	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6	D7	D8
First Year	ENGL2101	English Language 1	C														X												
	ENGL2151	English Language 2	C														X												
	MATH2104	Mathematics 1	C	X	X							X			X	X									X				
	MATH2154	Mathematics 2	C	X	X							X			X	X									X				
	EENG2105	Fundamentals of Electrical Engineering 1	C	X	X	X					X	X			X	X							X						
	EENG2155	Fundamentals of Electrical Engineering 2	C	X	X	X					X	X			X	X							X						
	ELPH2106	Electronic Physics 1	C	X							X					X							X						
	ELPH2156	Electronic Physics 2	C	X							X					X							X						
	ENDR2107	Engineering Drawing I	C			X							X			X								X					
	ENDR2157	Engineering Drawing II	C			X							X			X								X					
	DITE2153	Digital Techniques	C	X		X						X	X			X	X							X					
	COMP2103	Computer Science	C		X	X						X	X			X	X							X	X				
	WRKS2102	Workshops 1	C		X							X				X	X		X				X						
	WRKS2152	Workshops 2	C		X							X				X	X		X				X						

Second Year	HRDE2201	Human Rights	C												X	X													
	ELMA2202	DC Electrical	C		X							X												X					

		Machine																													
DAMS2203	Database Management Systems	C	X		X					X	X	X			X	X	X										X	X			
DASA2251	Data Structure & Algorithms	C	X		X					X	X	X			X	X	X										X	X			
ELCN2206	Electronics 1	C	X	X						X					X	X															
ELCN2259	Electronics II	C	X	X						X					X	X															
DIMA2255	Discrete Mathematics	C			X					X					X	X											X				
EMAT2205	Engineering Mathematics I	C			X					X					X	X											X				
EMAT2254	Engineering Mathematics II	C			X					X					X	X											X				
DISY2208	Digital Systems I	C	X	X						X	X				X	X											X				
DISY2257	Digital Systems II	C	X	X						X	X				X	X											X				
PRLA2204	Programming Language I	C			X							X			X	X											X				
PRLA2253	Programming Language II	C			X							X			X	X											X				
COTH2207	Control Theory I	C		X								X			X	X											X				
COTH2256	Control Theory II	C		X								X			X	X											X				
MINS2209	Measurements & Instrumentation 1	C		X								X			X	X											X				
MINS2252	Measurements & Instrumentation II	C		X								X			X	X											X				
COGR2258	Computer Graphics	C	X		X						X	X															X				
LABR2210	Laboratories I	C	X		X					X	X	X			X	X			X			X									
LABR2260	Laboratories II	C	X		X					X	X	X			X	X			X			X									
Third	CSE-P3305	Software	C	X		X					X	X			X	X											X				

Year	Engineering																																
	CSE-P3306	Soft Computing	C	X		X					X	X														X							
	CSE 3301	Engineering Analysis	C			X					X															X							
	CSE 3302	Numerical Analysis Using MATLAB	C			X					X															X							
	CSE-P3201	Digital Image Processing	C		X							X														X							
	CSE 3305	Electronic Circuits Design I	C	X	X						X															X	X						
	CSE 3306	Electronic Circuits Design II	C	X	X						X															X	X						
	CSE- 33073	Fundamentals of Communication*	C	X	X						X															X	X						
	CSE-P3301	Computer Architecture I	C	X		X					X	X														X							
	CSE-P3301	Computer Architecture II	C	X		X					X	X														X							
	CSE3303	Microprocessors Techniques I	C	X		X					X	X														X							
	CSEM3304	Microprocessor Techniques II	C	X		X					X	X														X							
	CSE-CM343	Digital Signal Processing	C			X					X	X														X	X						
	CSE-P3307	Laboratories I	C	X		X					X	X	X							X						X							
	CSE-P3308	Laboratories II	C	X		X					X	X	X							X						X							
	CSE-P3303	Advanced Digital System Design I	C		X						X															X	X	X					

	CSE-P3304	Advanced Digital System Design II	C		X	X						X	X			X	X				X	X	X				
Fourth Year	CSE4301	Industrial Engineering	C									X			X	X	X	X									
	CSE4302	Nanotechnology	C		X	X					X	X			X	X							X				
	CSE-P4201	Java Programming	C		X	X					X	X			X	X							X				
	CSE-C4301	Digital control I	C	X		X					X	X			X	X						X	X				
	CSE-C4302	Digital control II	C	X		X					X	X			X	X						X	X	X			
	CSE-P4302	Advanced Computer Architecture I	C	X		X				X	X	X			X	X	X						X	X			
	CSE-P4303	Advanced Computer Architecture II	C	X		X				X	X	X			X	X							X	X			
	CSE-P4304	Computer Networks I	C		X	X				X	X				X	X						X					
	CSE-P4305	Computer Networks II	C		X	X				X	X				X	X	X	X			X	X	X				
	CSE-P4306	Operating Systems	C		X	X				X	X	X			X	X	X	X			X	X	X	X			
	CSE-P4307	Real Time Systems	C	X		X				X	X	X			X	X		X			X						
	CSE-P4308	Embedded Systems & Applications	C	X	X						X				X	X							X				
	CSE-P4309	Reliability & Availability	C	X	X						X				X	X							X				
	CSE-M4303	Computer Interfacing	C	X	X	X					X	X			X	X						X					
	CSE-P4311	Design & Application I	C	X	X	X					X	X			X	X						X					

