K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

## **Course Specification**

## 1- Basic Information

Course Title	Microcontrollers	& Applications			
Course Code	CSE 411				
Academic Year	2022-2023				
Coordinator	Dr. Essam Nabil Ahn	ned			
Teaching Staff	Dr. Essam Nabil Ahn	ned			
Level	Level (4)				
Semester	First Term				
Number of Weekly	Lecture	2			
<b>Contact Hours</b>	Tutorial	1			
	Lab	1			
Department offering the	Electronics and	d Communications Engineering,			
program	Computers and	d Systems Engineering,			
	Communications and Computer Engineering				
Department offering the	Computers and Systems Engineering				
course	• Computers and Systems Engineering,				
2- Aim of the course					

- 1. Develop a basic knowledge of programming the microcontroller with high efficiency and reliability using different embedded languages.
- 2. Having acquired a good knowledge of improving interfacing of the microcontroller with the outer media. In addition, to connect with the PC.
- 3. Encourage the student to analyze embedded devices and analyze the microcontroller different units and modules.
- 4. Assist the student to implement the experiments and projects using microcontroller related software and hardware components.

3- Course related program competencies

Level A – General	<ul> <li>A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.</li> <li>A.2 Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.</li> </ul>				
Level B - Speciality	<ul> <li>B.2 Design, model and analyze an electrical/electronic/digital system or component for a specific application; and identify the tools required to optimize this design.</li> <li>B.3 Design and implement elements, modules, sub-systems or systems in electrical/electronic/digital engineering using technological and professional tools.</li> <li>B.4 Estimate and measure the performance of an electrical/electronic/digital system and circuit under specific input excitation and evaluate its suitability for a specific application.</li> </ul>				
4- Course	Difference between microprocessors and microcontrollers, General architecture of microcontrollers, Architecture of one of the available microcontrollers that will be used in this course, its assembly, Programming with either C or Basic, Input and output of data in this microcontroller, Timers, Counters, and Interrupts, Software and hardware applications will be assumed in each part. Dealing with A/D and D/A either internal or external, the student should build a complete project to control a simple process like controlling temperature and displaying it or controlling the speed of a motor and displaying it also.				
Contents	<ul> <li>01 Experimenting with the assembly language of the used microcontrollers, or the high-level language used with the simulator.</li> <li>02 Experimenting with the assembly language of the used microcontrollers, or the high-level language used with the simulator.</li> <li>03 Experimenting with the assembly language of the used microcontrollers, or the high-level language used with the simulator.</li> <li>04 Experimenting with the assembly language of the used microcontrollers, or the high-level language used with the simulator.</li> <li>04 Experimenting with the assembly language of the used microcontrollers, or the high-level language used with the simulator.</li> <li>05 Experiment on dealing with interrupts.</li> <li>06 Experiment on dealing with interrupts.</li> <li>07 Experiment on dealing with Timers, and Counters.</li> <li>08 Experiment on dealing with Timers, and Counters.</li> </ul>				

- 09 Doing a complete course project to use the microcontroller in controlling a physical variable like temperature or pressure and display that variable. The A/D, and D/A must be used in this project.
- 10 Doing a complete course project to use the microcontroller in controlling a Physical variable like temperature or pressure and display that variable. The A/D, and D/A must be used in this project.
- 11 Doing a complete course project to use the microcontroller in controlling a physical variable like temperature or pressure and display that variable. The A/D, and D/A must be used in this project.

# Topic	Lecture	Tutorial/Practical	No of hours
Difference between microprocessors and microcontrollers, General architecture of microcontrollers.	4	4	8
Architecture of one of the available microcontrollers that will be used in this course, its assembly, Programming with either C or Basic.	б	6	12
Input and output of data in this microcontroller.	6	6	12
Timers, Counters, and Interrupts, Software and hardware applications will be assumed in each part.	8	8	16
Dealing with A/D and D/A either internal or external, the student should build a complete project to control a simple process like controlling temperature and displaying it or controlling the speed of a motor and displaying it also.	4	4	8
Total sum	28	28	56

5- Teaching and learning methods 6- Teaching and learning methods for disable studer	1.       Lecture (online/in class         2.       Discussion         3.       Tutorial         4.       Problem solving         5.       Brain storming         6.       Projects         7.       Self-learning         8.       Research and Reportin         9.       Computer Simulation         10.       Teamwork         1.       Additional Tutorials         2.       Online lectures and as:         3.       Using as many audio/v         4.       Providing extra opport	<ol> <li>Lecture (online/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> <li>Teamwork</li> <li>Additional Tutorials</li> <li>Online lectures and assignments</li> <li>Using as many audio/visual aids as possible.</li> <li>Providing extra opportunities for practice</li> </ol>			
7- Teaching and learning methods for low capacity students 8- Teaching and learning	<ol> <li>Assign a portion of the and</li> <li>provide them with spe</li> <li>Repeat the explanation tutorials.</li> <li>Assign a teaching assis performance</li> <li>Assign course project to a Give them advanced as</li> </ol>	<ol> <li>Assign a portion of the office hours for those students and</li> <li>provide them with specific tailored tasks.</li> <li>Repeat the explanation of some of the material and tutorials.</li> <li>Assign a teaching assistance to follow up their performance</li> <li>Assign course project tasks to those students.</li> </ol>			
methods for outstanding students	<ol> <li>Give them advanced extra-curriculum topics.</li> <li>Encourage them to take part in a pilot research and studies.</li> </ol>				
9- Students assessment					
a- Assessment methods	<ol> <li>Mid Term Examination (writte</li> <li>Practical Examination</li> <li>Oral Examination</li> <li>Formative (quizzes- presentation</li> <li>Final Term Examination (writte</li> </ol>	en/ online) tion -reports) ten)			
b- Assessment schedule	- Exercise sheet/ Lab assignment :	Weekly			
	- Quizz-1:	Week no. 5			
	- Mid-Term exam:	Week no . 8			
	- Quizz-2:	Week no. 12			
	- Final – term examination:	Week no. 16			
c- Weighting of	- Class tutorial and quizzes :	20 %			
assessment	- Mid-term examination:	20 %			
	- Final – term examination:	60 %			
	Tota	al 100 %			

10- List of text books and references:							
There are lectures notes prepared in the form of a book							
authorized by the department.							
[1] Daniel Tobak, Kenneth J. Hintz, Microcontrollers: Architecture,							
Implementation and Programming, McGraw Hill, 1992.							
[2] Frederick M Cady "Microcontrollers and Microcomputers							
Principles of Software and Hardware Engineering", Prentice							
Hall, Jun 19, 2009.							
[3] F. E. VPerez, R. PAreny, Microcontrollers: Fundamentals and							
Applications with PIC, CRC Press, Feb., 2009.							
[4] Danny Cansey, Muhammed Ali Mazidi, PIC Microcontrollers and							
Embedded Systems Using Assembly and C, Pearson Prentice							
Hall, 2007.							
[5] Lucio Di Jasio, Tim Wilmshurst, Dogan Ibrahim, PIC							
Microcontrollers, Know it all, Elsevier Inc, 2008.							
https://www.misrochip.com/dosign_contors/misrocontrollers							
https://www.microcmp.com/design-centers/microcontrollers							

11-Course ccontents – Course related program competencies						
	Lev	el A	Level B			
	A.1	A.2	B.2	B.3	B.4	
Difference between microprocessors and microcontrollers, General architecture of microcontrollers.	V		$\checkmark$			
Architecture of one of the available microcontrollers that will be used in this course, its assembly, Programming with either C or Basic.		$\checkmark$		$\checkmark$	$\checkmark$	
Input and output of data in this microcontroller.		$\checkmark$		$\checkmark$	$\checkmark$	
Timers, Counters, and Interrupts, Software and hardware applications will be assumed in each part.		$\checkmark$		$\checkmark$	$\checkmark$	
Dealing with A/D and D/A either internal or external, the student should build a complete project to control a simple process like controlling temperature and displaying it or controlling the speed of a motor and displaying it also.	$\checkmark$	$\checkmark$	V	$\checkmark$	$\checkmark$	

12-Teaching and learning methods - Course related program competencies							
	Lev	el A		Level B	•		
	A.1	A.2	B.2	B.3	B.4		

Lecture (online/in class)	$\checkmark$		$\checkmark$		
Discussion	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Tutorial	$\checkmark$		$\checkmark$		
Problem solving	$\checkmark$		$\checkmark$		
Brain storming	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Projects		$\checkmark$		$\checkmark$	$\checkmark$
Self-learning	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Research and Reporting	$\checkmark$		$\checkmark$		$\checkmark$
Computer Simulation		$\checkmark$		$\checkmark$	
Teamwork		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$

13- Assessment methods - Course related program competencies							
Assessment methods	Course related program competencies						
	Level A Leve		Level E	el B			
	A.1	A.2	B.2	B.3	B.4		
1. Mid Term Examination (written/ online)	$\checkmark$		$\checkmark$				
2. Practical Examination				$\checkmark$	$\checkmark$		
3. Oral Examination	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$		
4. Formative (quizzes- presentation -reports)							
5. Final Term Examination (written							

# Authorized from board of the department at 1/9/2022

#### **Course coordinator:**

Dr. Essam Nabil Ahmed





K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

## **Course Specification**

#### 1- Basic Information

Course Title	Digital Control Systems				
Course Code	CSE 412				
Academic Year	2022-2023				
Coordinator	Assoc. Prof. Walid Salah Eldeen Abdellatif				
Teaching Staff	Assoc. Prof. Walid Salah Eldeen Abdellatif				
Level	Level (4)				
Semester	First Term				
Number of Weekly	Lecture 2				
<b>Contact Hours</b>	Tutorial 1				
	Lab 1				
Department offering the	• Electronics and Communications Engineering,				
program	Computers and Systems Engineering,				
	Communications and Computer Engineering				
	• Communications and Computer Engineering				
Department offering the	Computers and Systems Engineering				
course					
2- Aim of the course					
1. Develop a basic knowled	ge of real time systems; Concepts of computer control; direct				
digital control algorithms	and their implementation.				
2. Develop a basic knowled	edge of programming logic controller (PLC) in automatic control				
systems.					
3. Discuss the different pro	programming methods of PLC.				
<ol><li>Encourage the student t</li></ol>	o understand the main concept of PLC.				
5. Assist the student to imp	lement the experiments using software (PLC) and hardware				
components.					
3- Course related program compe	tencies				

Level A – General	<ul> <li>A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.</li> <li>A.3 Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical, and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.</li> </ul>						
Level B - Specialty	<ul> <li>B.2 Design, model and analyze an electrical/electronic/digital system or component for a specific application; and identify the tools required to optimize this design.</li> <li>B.3 Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.</li> <li>B.4 Estimate and measure the performance of an electrical / electronic/digital system and circuit under specific input excitation and evaluate its suitability for a specific application.</li> </ul>						
4- Course Contents	Introduction to real control algorithms an logic controllers (PL Programming of PL applications; interloc	time systems; C nd their impleme .Cs) in industrial Cs by ladder log cking and sequent	oncepts of computer contation; Advantages of automation; Basic cor ic; PLC program develtial logic.	ontrol; Direct digital using programmable nponents of a PLC; opment for control			
# Topic		Lecture	Tutorial/Practical	No of hours			
Introduction systems; Co control; Di algorithms implementa	n to real time oncepts of computer rect digital control and their ation	4	4	8			
Advantages programma (PLCs) in ir	Advantagesofusingprogrammablelogic controllers6612(PLCs) in industrial automation1212						
Basic components of a PLC; Programming of PLCs by ladder ;logic8816							
PLC program	n development for lications	6	6	12			
Interlocking .logic	and sequential	4	4	8			

Total sum		28	28		56
5- Teaching and learning methods	Teaching and learning       1. Lecture (online/in class)         2. Discussion       3. Tutorial         4. Problem solving       5. Brain storming         6. Projects       7. Self-learning         8. Research and Reporting       9. Computer Simulation				
6- Teaching and learning		1. Additional Tutorials			
methods for disable studer	nts	2. Online lectu	res and assig	nments	
		3. Using as many audio/visual aids as possible.			
7- Teaching and learning		4. Providing extra opportunities for practice     1. Assign a portion of the office hours for these students			
methods for low capacity		and		nee nours n	
students		2. provide them with specific tailored tasks.			
		3. Repeat the explanation of some of the material and			
		tutorials.	ching accista	oco to follou	uup thair
		4. Assign a teaching assistance to follow up then performance			
8- Teaching and learning		1. Assign course project tasks to those students.			
methods for outstanding		2. Give them advanced extra-curriculum topics.			
students		<ol> <li>Encourage them to take part in a pilot research and case studies</li> </ol>			
9- Students assessment		studies.			
a- Assessment	1. M	id Term Examina	tion (written/	online)	
methods	2. Pr	actical Examinati	on		
	3. O	ral Examination			
	4. FC	nal Term Examina	- presentation	i -reports)	
b- Assessment schedule	- Exerc	cise sheet/ Lab assi	gnment :	, Weekly	
	- Quizz	2-1:	-	Week no.	5
	- Mid-	Term exam:		Week no .	8
	- Quizz-2: Week no. 12			12	
	- Final	inal – term examination: Week no. 16			
c- Weighting of	- Class	tutorial and quizze	es :	20 %	
assessment	- Mid-	term examination:		20 %	
	- Final	– term examinatio	on:	60 %	
			Total	100 %	

10- List of text books and references:							
a- Course notes	There are lectures notes prepared in the form of a book						
	authorized by the department.						
b- Text books/ References	[1] Hugh Jack, "Automating Manufacturing Systems with PLCs",						
	Version 5.0, May 4, 2007.						
	[2] Stuart and Peter Norving , Artificial Intelligense : a modern						
	approach Russel , Prentice Hall , 2nd Ed.,2003						
c- Periodicals, Web sites	"DVP_PLC Application Examples, www.delta.com.tw/ia						
etc	DVP-PEC Application examples. <u>www.delta.com.tw/la</u>						

11-Course contents – Course related program competencies											
	Leve	IA		Leve							
	A.1	A.3	A.4	B.2	B.3	B.4	B.5				
Introduction to real time systems; Concepts of computer control; Direct digital control algorithms and their implementation	1			V							
Advantages of using programmable logic controllers (PLCs) in industrial automation	V	1		V		V					
Basic components of a PLC; Programming of PLCs by ladder logic;		1				V					
PLC program development for control applications	V	V		$\checkmark$		V					
Interlocking and sequential logic.		V				V					

12-Teaching and learning methods - Course related program competencies										
	Level A			Level						
	A.1	A.3	A.4	B.2	B.3	B.4	B.5			
Lecture (online/in class)	1									
Discussion	$\checkmark$	1		$\checkmark$	1	1				
Tutorial	1	1		$\checkmark$	1					
Problem solving				$\checkmark$	$\checkmark$					
Brain storming				$\checkmark$	$\checkmark$	$\checkmark$				

Projects			$\checkmark$	V	V	
Self-learning	V					
Research and Reporting					V	
Computer Simulation					$\checkmark$	
Teamwork	V					

13- Assessment methods - Course related program competencies											
Assessment methods	Course related program comptencies										
				Level A					B		
		A.1	A.3	A.4	B.2	B.3	B.4	B.5			
1. Mid Term Examination (written/ online)		V	1		V	$\checkmark$					
2. Practical Examination					V						
3. Oral Examination						$\checkmark$					
4. Formative (quizzes- presentation -reports)			$\checkmark$		$\checkmark$	$\checkmark$					
5. Final Term Examination (written			$\checkmark$		$\checkmark$	$\checkmark$					

## Authorized from board of the department at 1/9/2022 Course coordinator:

Mes



Dr. Walid Salah Eldeen Abdellatif

K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

#### **Course Specification**

#### 1- Basic Information

Course Title	Advanced control	systems		
Course Code	CSE 413			
Academic Year	2022-2023			
Coordinator	Dr. Bassam A. Hemad			
Teaching Staff	Dr. Bassam A. Hemad			
Level	Level (4)			
Semester	1 <sup>st</sup>			
Number of Weekly	Lecture	2		
<b>Contact Hours</b>	Tutorial	2		
	Lab	1		
Department offering the	<ul> <li>Electronics ar</li> </ul>	nd Communications Engineering,		
program	Computers a	nd Systems Engineering,		
	<ul> <li>Communicati</li> </ul>	ions and Computer Engineering		
Department offering the	Electronics Engine	ering and Electrical		
course	Communication			
2- Aim of the course				

- 1. To provide students with the State variable canonical forms of continuous-time control systems.
- 2. Having acquired a good knowledge of improving solutions of the time invariant state equations
- 3. Having acquired a good knowledge o, controllability, observeability, Lyapunov stability of stat-space representation
- 4. To provide students with quadratic optimal regulator systems.

3- Course related program competencies

Level A – General	<ul> <li>A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.</li> <li>A.2 Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions</li> <li>A.3 Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical, and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development</li> <li>A.4 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.</li> </ul>							
Level B - Speciality	<ul> <li>B.2 Design, model and analyze an electrical/electronic/digital system or component for a specific application; and identify the tools required to optimize this design.</li> <li>B.3 Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.</li> <li>B.4 Estimate and measure the performance of an electrical / electronic/digital system and circuit under specific input excitation and evaluate its suitability for a specific application.</li> <li>B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems and services</li> </ul>							
4- Course Contents	State variable canon the time – invariant stability of state – sta observers , design of regulator systems .	ical forms of cont state equations , e ate models , pole regulator system	inuous-time control sys controllability , observe placement , design of S is with observers , Quac	tems, solution of ability , Lyapunov ervo systems , state Iratic optimal				
# Topic		Lecture	Tutorial/Practical	No of hours				
State variat of continuo systems,	ble canonical forms us-time control	4	6	10				
solution of state equat	the time – invariant ions	6	9	15				
controllabil Lyapunov s	ity , observeability , tability of state –	8	12	20				

state models ,									
pole placement , design of Servo systems , state obse ,	rvers	6	6 <mark>9</mark> 15						
design of regulator system with observers , Quadratic optimal regulator systems	IS	4 6 10							
Total sum		28	42	70					
5- Teaching and learning methods		<ol> <li>Lecture (onl</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem sol</li> <li>Brain storm</li> <li>Projects</li> <li>Self-learning</li> <li>Research an</li> <li>Computer S</li> <li>Teamwork</li> </ol>	<ol> <li>Lecture (online/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> </ol>						
6- Teaching and learning methods for disable studen	ts	<ol> <li>Additional Tutorials</li> <li>Online lectures and assignments</li> <li>Using as many audio/visual aids as possible.</li> <li>Providing extra opportunities for practice</li> </ol>							
7- Teaching and learning methods for low capacity students		<ol> <li>Assign a por and</li> <li>provide then</li> <li>Repeat the e tutorials.</li> <li>Assign a tea performanc</li> </ol>	tion of the office he m with specific tailo explanation of some ching assistance to e	ours for those students pred tasks. e of the material and follow up their					
8- Teaching and learning methods for outstanding students		<ol> <li>Assign course project tasks to those students.</li> <li>Give them advanced extra-curriculum topics.</li> <li>Encourage them to take part in a pilot research and case studies.</li> </ol>							
a- Assessment methods	1. M 2. Pr 3. O 4. Fc 5. Fi	Mid Term Examination (written/ online) Practical Examination Oral Examination Formative (quizzes- presentation -reports)							
b- Assessment schedule	- Exerc - Quizz - Mid-	Final Term Examination (written) kercise sheet/ Lab assignment : Weekly uizz-1: Week no. 5 Nid-Term exam: Week no. 8							

	- Quizz-2:	Week r	0. 12
	- Final – term examination:	Week	no. 16
c-Weighting of	- Class tutorial and quizzes :	%	20
assessment	- Mid-term examination:	%	20
	- Final – term examination:	%	60
	Total	100 %	
10- List of text books and re	ferences:		
a- Course notes	There are lectures notes prepared in	the form	of a slides.
b- Text books/ References	• R.C Dorf and R.H. Bishop, m	odern co	ontrol systems,
	Pearson 12 <sup>th</sup> Ed 2011		
	• W. Bolton , programmable log	gic contr	ollers , 4 <sup>th</sup> Ed 2006 .
c- Periodicals, Web sites	Web Sites related to Microcontrollers	& Applica	ations as:
etc	http://www.qariya.info/vb/forumd	<u>isplay</u>	
	https://www.microchip.com/desig	n-centers	/microcontrollers

11-Course contents – Course related program competencies											
	Leve	A			Level B						
	A.1	A.2	A.3	A.4	B.2	B.3	B.4	B.5			
State variable canonical forms of continuous-time control systems,	1	V									
solution of the time – invariant state equations	1	V	1								
controllability , observeability , Lyapunov stability of state – state models ,		V	1	V	1	V	V	$\checkmark$			
pole placement , design of Servo systems , state observers ,	1		1	$\checkmark$			V	$\checkmark$			
design of regulator systems with observers , Quadratic optimal regulator systems				$\checkmark$	1	$\checkmark$	$\checkmark$	$\checkmark$			

12-Teaching and learning methods - Course related program competencies								
	Level A	Level B						

	A.1	A.2	A.3	A.4	B.2	B.3	B.4	B.5
Lecture (online/in class)								
Discussion	V							
Tutorial	V	1	1	$\checkmark$	1	1	1	$\checkmark$
Problem solving	1	1	1	$\checkmark$	1	1		
Brain storming		1		1	1	$\checkmark$		
Projects		1			1	1	1	$\checkmark$
Self-learning		1			1	$\checkmark$	1	$\checkmark$
Research and Reporting								$\checkmark$
Computer Simulation							1	
Teamwork							$\checkmark$	$\checkmark$

13- Assessment methods - Course related program competencies									
Assessment methods	Course related program comptencies								
		Level	Α			Leve	l B		
		A.1	A.2	A.3	A.4	B.2	B.3	B.4	B.5
1. Mid Term Examination (written/ online)		1	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
2. Practical Examination									
3. Oral Examination									
4. Formative (quizzes- presentation -reports)		1	1	$\checkmark$	$\checkmark$	1	1		
5. Final Term Examination (written		1	1	1	1	1	1		

Authorized from board of the department at 1/9/2022 Course coordinator:





Dr Bassam A. Hemad

K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

## **Course Specification**

#### **Course Title Software Engineering** CSE 414 **Course Code** 2022-2023 Academic Year Coordinator Dr. Elhossiny Ibrahim Elhossiny Dr. Elhossiny Ibrahim Elhossiny **Teaching Staff** Level Level (4) First Term Semester of Lecture 2 Number Weekly Tutorial 1 **Contact Hours** Lab 1 Computers and Systems Engineering, Department offering the • program Department offering the course 2- Aim of the course

#### 1- Basic Information

1. Use current advanced techniques, skills, and tools necessary for computing practices to specify, design, and implement computer-based systems.

2. Design and implement a system to meet the required needs within realistic constraints.

3. Demonstrate skills of software documentation, and quality assurance and evaluation as part of software development.

4. Communicate and work effectively within multi-disciplinary teams.

5. Display professional and ethical responsibilities and engage in self- and life-long learning.

6. Manage projects related to computer systems in diverse fields of applications.

#### 3- Course related program competencies

A9. Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
A10. Acquire and apply new knowledge; and practice self, lifelong, and other learning strategies.

Level B - Speciality	<ul> <li>B2. Design, model and analyze an electrical/electronic/digital system or component for a specific application; and identify the tools required to optimize this design.</li> <li>B3. Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.</li> <li>B5. Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services</li> </ul>						
4- Course Contents	The principles of Software Engineering, SDLC SW life cycle model, selection of life cycle model, Software Processes, Software Requirements management, object oriented design, software system verification, validation, and software Maintenance, the basics of Software Management and quality assurance, documentations and reports, system reset, user accounts, flow of events.						
# Topic		Lecture	Tutorial/Practical	No of hours			
The prin Engineerin model, sele	nciples of Software ag, SDLC SW life cycle ection of life cycle model	4	4	8			
Software F Requireme	Processes, Software ents management	6	6	12			
Object or system ver software M	iented design, software rification, validation and faintenance	6	6	12			
The basics Manageme	of Software ent and quality assurance	4	4	8			
Documents.	ations and reports, et, user accounts, flow of	8 8		16			
Total sum		28	28	56			
5- Teaching and learning methods		<ol> <li>Lecture (online/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> </ol>					

		9. Computer Simulation				
		10. Teamwork				
6- Teaching and learning m	ethods for	Additional lutorials     Online lectures and assignments				
disable students		<ol> <li>Online rectures and assignments</li> <li>Using as many audio/visual aids as possible</li> </ol>				
		4. Providing extra opportunities for practice				
		1. Assign a portion of the office hours for those				
		students and				
7- Teaching and learning m	ethods for	2. Provide them with specific tailored tasks.				
low capacity students		3. Repeat the explanation of some of the material				
		and tutorials.				
		4. Assign a teaching assistance to follow up their				
		1 Assign course project tasks to those students				
8- Teaching and learning methods for		<ol> <li>Give them advanced extra-curriculum topics.</li> </ol>				
outstanding students		3. Encourage them to take part in a pilot research and				
		case studies.				
9- Students assessment						
a- Assessment	1. Mid Term Examination (written/ online)					
methods	2. Practical	Examination				
	3. Oral Exa	nination				
	4. Formativ	/e (quizzes- presentation -reports)				
b- Assessment schedule	- Exercise she	et/Lab assignment : Weekly				
	- Quizz-1:	Week no. 5				
	- Mid-Term e	xam: Week no. 8				
	- Quizz-2:	Week no. 12				
	- Final – term	examination: Week no. 16				
c- Weighting of	- Class tutoria	Il and quizzes : %				
assessment	- Mid-term ex	kamination: %				
	- Final – term	examination: %				
		Total 100 %				
10- List of text books and re	eferences:					
a- Course notes	There are	e lectures notes prepared in the form of a book				
b- Text books/ References	[1] Ian Som	merville, Software Engineering, 10 <sup>th</sup> Edition, Pearson				
	Educati	on Limited, 2016.				
	[2] Rod Ste	pnens, <i>Beginning Software Engineering</i> , John Wiley &				
	Sons, Inc, 2015.					

c- Periodicals, Web sites	[1] https://nptel.ac.in/courses/106/105/106105087/
etc	[2] <u>https://www.coursera.org/courses?query=software%20engineering</u>
	[3] https://www.tutorialspoint.com/software_engineering/index.htm

11-Course ccontents – Course related program competencies							
	Level	Α	Level B				
	A.9	A.10	B2	B.3	B.5		
The principles of Software Engineering, SDLC SW life cycle model, selection of life cycle model	V			√			
Software Processes, Software Requirements management	√	$\checkmark$	$\checkmark$		$\checkmark$		
Object oriented design, software system verification, validation and software Maintenance	V	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
The basics of Software Management and quality assurance	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$		
Documentations and reports, system reset, user accounts, flow of events.	$\checkmark$	$\checkmark$		$\checkmark$	V		

12-Teaching and learning methods - Course related program competencies							
	Level	Α	Level B				
	A.9	A.10	B2	B.3	B.5		
Lecture (online/in class)	$\checkmark$		$\checkmark$				
Discussion	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Tutorial	$\checkmark$		$\checkmark$				
Problem solving	$\checkmark$		$\checkmark$				
Brain storming	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Projects		$\checkmark$		$\checkmark$	$\checkmark$		
Self-learning	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Research and Reporting	$\checkmark$		$\checkmark$		$\checkmark$		
Computer Simulation		$\checkmark$		$\checkmark$			
Teamwork	√	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		

13- Assessment methods - Course related program competencies							
Assessment methods		Course related program competencies					
		IA	Level B				
	A.9	A.10	B2	B.3	B.5		
1. Mid Term Examination (written/ online)	$\checkmark$		$\checkmark$				
2. Practical Examination		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
3. Oral Examination	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
4. Formative (quizzes- presentation -reports)	$\checkmark$		$\checkmark$				
5. Final Term Examination (written)	$\checkmark$		$\checkmark$				

# Authorized from board of the department at 1/9/2022

**Course coordinator:** 

9-test



Dr. Elhossiny Ibrahim Elhossiny

K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

## **Course Specification**

#### 1- Basic Information

Course Ti	tle	Parallel and Distributed Computer Systems				
Course Co	ode	CSE 415				
Academic	Year	2022-2023				
Coordinat	tor	Dr. Nader Mohamed	Abd Elmohsen			
Teaching	Staff	Dr. Nader Mohamed	Abd Elmohsen			
Level		Level (4)				
Semester		First Term				
Number	of Weekly	Lecture	2			
Contact H	lours	Tutorial	-			
		Lab	2			
Departmer	nt offering the	Electronics and	nd Communications Engineering,			
program		Computers a	nd Systems Engineering,			
		Communications and Computer Engineering				
Department offering the Computers and Systems Engineering						
	course					
course						
course 2- Aim of the	course					
course 2- Aim of the 1. State	e <b>course</b> e different types of p	parallel and distributed o	computers.			
Course 2- Aim of the 1. State 2. Desc	e <b>course</b> e different types of p cribe different proce	parallel and distributed c	computers. a flow mechanisms			
COURSE 2- Aim of the 1. State 2. Desc 3. Expl	e <b>course</b> e different types of p cribe different proce ain the concepts clus	parallel and distributed of ssors structures and dat ster programming, share	computers. a flow mechanisms ed memory programming, message			
Course 2- Aim of the 1. State 2. Dese 3. Expl pass	e <b>course</b> e different types of p cribe different proce ain the concepts clus sing, client/server co	parallel and distributed of ssors structures and dat ster programming, share mputing, performance e	computers. a flow mechanisms ed memory programming, message evaluation, case studies.			
COURSE 2- Aim of the 1. State 2. Desc 3. Expl pass 3- Course rel	e different types of p cribe different proce ain the concepts clus sing, client/server co ated program compe	parallel and distributed of ssors structures and dat ster programming, share mputing, performance e tencies	computers. a flow mechanisms ed memory programming, message evaluation, case studies.			
COURSE 2- Aim of the 1. State 2. Desc 3. Expl pass 3- Course rel	e different types of p cribe different proce ain the concepts clus sing, client/server co ated program compe	parallel and distributed of ssors structures and dat ster programming, share mputing, performance e tencies	computers. a flow mechanisms ed memory programming, message evaluation, case studies.			
Course 2- Aim of the 1. State 2. Desc 3. Expl pass 3- Course rel	e different types of p cribe different proce ain the concepts clus sing, client/server co <b>ated program compe</b> A.6 Plan, supervise	parallel and distributed of ssors structures and dat ster programming, share mputing, performance e <b>tencies</b> and monitor implementat	computers. a flow mechanisms ed memory programming, message evaluation, case studies.			
COURSE 2- Aim of the 1. State 2. Dese 3. Expl pass 3- Course rel	e different types of p cribe different proce ain the concepts clus sing, client/server co <b>ated program compe</b> A.6 Plan, supervise consideration	parallel and distributed of ssors structures and dat ster programming, share mputing, performance e tencies and monitor implementat other trades requirement	computers. a flow mechanisms ed memory programming, message evaluation, case studies. tion of engineering projects, taking into s.			
COURSE 2- Aim of the 1. State 2. Desc 3. Expl pass 3- Course rel	e different types of p cribe different proce ain the concepts clus sing, client/server co <b>ated program compe</b> A.6 Plan, supervise consideration A.9 Use creative, in	barallel and distributed of ssors structures and dat ster programming, share mputing, performance e tencies and monitor implementat other trades requirement novative and flexible think	computers. a flow mechanisms ed memory programming, message evaluation, case studies. tion of engineering projects, taking into is. king and acquire entrepreneurial and			
COURSE 2- Aim of the 1. Statu 2. Deso 3. Expl pass 3- Course rel 5 5 1	e different types of p cribe different proce ain the concepts clus sing, client/server co <b>ated program compe</b> A.6 Plan, supervise consideration A.9 Use creative, int leadership skil	barallel and distributed of ssors structures and dat ster programming, share mputing, performance e tencies and monitor implementat other trades requirement novative and flexible think ls to anticipate and respor	computers. a flow mechanisms ed memory programming, message evaluation, case studies. tion of engineering projects, taking into is. king and acquire entrepreneurial and nd to new situations.			
COURSE 2- Aim of the 1. State 2. Desc 3. Expl pass 3- Course rel Ferance of the pass 1. Verance of the Pass	e different types of p cribe different proce ain the concepts clus sing, client/server co <b>ated program compe</b> A.6 Plan, supervise consideration A.9 Use creative, in leadership skill	barallel and distributed of ssors structures and dat ster programming, share mputing, performance e tencies and monitor implementat other trades requirement novative and flexible think ls to anticipate and respon	computers. a flow mechanisms ed memory programming, message evaluation, case studies. tion of engineering projects, taking into is. king and acquire entrepreneurial and nd to new situations.			
Course 2- Aim of the 1. State 2. Desc 3. Expl pass 3- Course rel Pass 9 1 Pass 1 Pass 1 Pass 1 Pass 1 Pass 2 Pass Pass 2 Pass 2 Pass	e different types of p cribe different proce ain the concepts clus sing, client/server co <b>ated program compe</b> A.6 Plan, supervise consideration A.9 Use creative, in leadership skill A.10 Acquire and ap	barallel and distributed of ssors structures and dat ster programming, share mputing, performance e tencies and monitor implementat other trades requirement novative and flexible think ls to anticipate and respor	computers. a flow mechanisms ed memory programming, message evaluation, case studies. tion of engineering projects, taking into is. king and acquire entrepreneurial and ind to new situations. practice self, lifelong and other learning			

Level B - Speciality	<ul> <li>B.3 Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.</li> <li>B.4 Estimate and measure the performance of an electrical / electronic/digital system and circuit under specific input excitation and evaluate its suitability for a specific application.</li> <li>B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services.</li> </ul>						
4- Course Contents	Distributed systems, parallel processors architecutes, vector processors, compilers, loosly and tighly coupled processors, data flow machines, data pallelism, interconnecting networks, parallel programming, cluster programming, shared memory programming, message passing, client/server computing, performance evaluation, case studies.						
# Topic		Lecture	Tutorial/Practical	No of hours			
Distributed	systems	8	8	16			
parallel processors architecutes		4	4	8			
vector processors, compilers, loosly and tighly coupled processors		6	6	12			
data flow machines, data pallelism, interconnecting networks, parallel programming, cluster programming, shared memory ,programming		6 6		12			
message passing, client/server, computing, performance .evaluation, case studies		4	4	8			
Total sum		28	28	56			
5- Teaching and learning methods       1. Lecture (online/in class)         2. Discussion       3. Tutorial         4. Problem solving       5. Brain storming         6. Projects       7. Self-learning         8. Research and Reporting       9. Computer Simulation			ine/in class) ving ing g d Reporting imulation				

		10. Teamwork				
6- Teaching and learning		1. Additional Tutorials				
methods for disable studen	ts	2. Online lectures and assignments				
		3. Using as many audio/visual aids as possible.				
7- Teaching and learning		1. Assign a portion of the office hours for those students				
methods for low capacity		and				
students		2. provide them with specific tailored tasks.				
		3. Repeat the explanation of some of the material and				
		tutorials.				
		4. Assign a teaching assistance to follow up their				
<u> </u>		performance				
8- Teaching and learning		1. Assign course project tasks to those students.				
methods for outstanding		2. Give them advanced extra-curriculum topics.				
students		3. Encourage them to take part in a pilot research and case				
		studies.				
9- Students assessment						
a- Assessment	1. N	id Term Examination (written/ online)				
methods	2. 0	al Examination				
	3. Formative (quizzes- presentation -reports)					
	4. Fi	nal Term Examination (written)				
b- Assessment schedule	- Exer	ise sheet/ Lab assignment : Weekly				
	- Quiz	-1: Week no. 5				
	- Mid-	Term exam: Week no . 8				
	- Quiz	-2: Week no. 12				
	- Final	- term examination: Week no. 16				
c- Weighting of	- Class	tutorial and quizzes : %				
assessment	- Mid-	term examination: %				
	- Final	- term examination: %				
		Total 100 %				
10- List of text books and re	ference	s:				
a- Course notes	Le	cture note not avaliable				
b- Text books/ References	[1]	Claudia Leopod, parallel and distributed computing: a survey of				
		models, paradigms, and approaches. Willy, 2001				

	[2] Bary Wilkinson, Michael Alien, Parallel Programming, prentice hall, 1999.
c- Periodicals, Web sites	2

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11-Co	11-Course contents – Course related program competencies									
	Le	evel A	A			Level B				
		Α	.4	A.6	A.9	B.3	B.4	B.5		
-	Introduction to the theory of languages, evolution of computer languages and translators	1	1	V	$\checkmark$		V			
-	formal specification of languages, context dependent and context free languages	V	1	V		$\checkmark$				
-	logical structure of a compiler, lexical, syntax and semantic analysis,			V	$\checkmark$		V	$\checkmark$		
	code generation and optimization, strorage and regist allocation	ter √	1	V	1	$\checkmark$		$\checkmark$		
-	runtime considerations.	1	1		$\checkmark$	$\checkmark$	V			

12-Teaching and learning methods - Course related program competencies						
	Level	Α		Level B		
	A.4	A.6	A.9	B.3	B.4	B.5
Lecture (online/in class)	1	1	$\checkmark$	1	$\checkmark$	1
Discussion	$\checkmark$	$\checkmark$		1	1	$\checkmark$
Tutorial	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	V	$\checkmark$
Problem solving				$\checkmark$		
Brain storming				$\checkmark$	V	1
Self-learning						1
Research and Reporting					V	
Teamwork						

13- Assessment methods - Course related program competencies					
Assessment methods	Course related program comptencies				
	L	Level A	Level B		

	A.1	A.3	A.4	B.3	B.4	B.5
1. Mid Term Examination (written/ online)	V	1	V	$\checkmark$		
2. Practical Examination						
3. Oral Examination		1	$\checkmark$	$\checkmark$	V	
4. Formative (quizzes- presentation -reports)	V	1	1	$\checkmark$	V	$\checkmark$
5. Final Term Examination (written	V	1	$\checkmark$	$\checkmark$	V	$\checkmark$

Authorized from board of the department at 1/9/2022 Course coordinator:



Dr. Nader Mohamed Abd

Elmohsen

K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

#### **Course Specification**

## 1- Basic Information

Course Title	Artificial_Intelligence	
Course Code	CSE 471	
Academic Year	2022-2023	
Coordinator	Dr. Gafary Mahmoud	1
Teaching Staff	Dr. Gafary Mahmoud	1
Level	Level (4)	
Semester	Second Term	
Number of Weekly	Lecture	2
<b>Contact Hours</b>	Tutorial	2
	Lab	0
Department offering the	<ul> <li>Electronics ar</li> </ul>	nd Communications Engineering,
program	<ul> <li>Computers ar</li> </ul>	nd Systems Engineering,
	<ul> <li>Communicati</li> </ul>	ions and Computer Engineering
Department offering the	<ul> <li>Computers and</li> </ul>	Systems Engineering
course		
2- Aim of the course		

1. To teach student basics of artificial intelligence, and its applications.

2. To equip students with methods of search strategies, fuzzy logics, machine learning, and neural networks.

- 3. To acquire students a good idea to use blind search methods.
- 4. To teach students the concepts and applications of rule-based systems.

5. To provide students with the design steps of intelligent control systems.

3- Course related program competencies

	A.1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.							
eneral	A.2. Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions							
Level A – G	A.3. Apply engineering design processes to produce cost- effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.							
	A.5. Practice research tec as an inherent part of lear	hniques ai ning.	nd methods of inv	vestigation				
Level B - Speciality								
4- Course	Search: Graph search – Constraint	satisfaction	- Games –					
Contents	Machine Learning: Decision trees	s, Neural Net	works: Knowledge					
	representation and infer	rence: Propo	sitional and first order	logic				
# Topic	- Kule-based Systems	- Fuzzy logi	Tutorial/Practical	No of hours				
Search: Gra	nh search	2	2	1				
		2	2	4				
Fuzzy logic	systems	4	4	8				
Neural Netw	works:	4	4	8				
Machine Le	earning: Decision trees							
Propositional and first order logic – Rule- based systems 4 4 8								

Knowledge representati	on and inference.						
		4	4	8			
Total sum		18	18	36			
5- Teaching and learning m	ethods	1 Lecture	(/in class)				
	culous	2. Discuss	ion				
		3. Tutoria	1				
		4. Problem	n solving				
		5. Brain st	orming				
		6. Projects	5				
		7. Self-lea	rning				
		8. Researc	h and Reporting				
		9. Comput	ter Simulation				
6 Tooching and looming an	othods for disable	1 Addition	UIK pal Tutoriala				
6- Teaching and learning m	ethous for disable	1. Additio	nai Tutoriais Acturos and assignm	onto			
students		2. Unime i	s many audio/visual a	aids as nossible			
		A Providir	og extra opportunitie	s for practice			
7- Teaching and learning m	ethods for low	1 Assign a	a portion of the office	hours for			
canacity students		1. Assign a portion of the office hours for those students and					
capacity students		2 provide them with specific tailored tasks					
		3. Repeat	the explanation of so	me of the			
		materia	and tutorials.				
		4. Assign a	a teaching assistance	to follow up			
		their pe	erformance				
8- Teaching and learning m	ethods for	1. Assign o	course project tasks t	o those			
outstanding students		students.					
		2. Give the	. Give them advanced extra-curriculum				
		topics.					
		3. Encoura	age them to take part	: in a pilot			
		researc	h and case studies.				
9- Students assessment							
a- Assessment	1. Mid Term Exam	ination (writt	en/ online)				
methods	2. Practical Examir	nation					
	3. Oral Examinatio	n					
	4. Formative (quiz	zes- presenta	tion -reports)				
	5. Final Term Exam	nination (writ	ten)				
b- Assessment schedule	- Exercise sheet/ Lab	o assignment : Weekly					
	- Quizz-1:		Week no. 5				
	- Mid-Term exam:		Week no . 8				

	- Quizz-2:	Week no.	12			
	Final – term examination:	Week no.	16			
c- Weighting of	- Class tutorial and quizzes :	10 %				
assessment	- Mid-term examination:	20 %				
	- Final – term examination:	70 %				
	Total	100 %				
10- List of text books and re	ferences:					
a- Course notes	There are lectures notes prepare	d in the for	m of a pdf.			
b- Text books/ References	<ul> <li>Aarup, M., Arentoft, M. M., I</li> <li>J., and Stokes, I. (1994). OPTI A knowledge-based planning spacecraft AIV. In Fox, M. an M., editors, Knowledge Base Kaufmann, San Mateo, Califo</li> <li>Stuart and Peter Norving Art approach Russel Prentice Ha</li> <li>Abu-Mostafa, Y. S. and Psalti neural computers. Scientific</li> </ul>	<ul> <li>Aarup, M., Arentoft, M. M., Parrod, Y., Stader, J., and Stokes, I. (1994). OPTIMUM-AIV: A knowledge-based planning and scheduling system for spacecraft AIV. In Fox, M. and Zweben, M., editors, Knowledge Based Scheduling. Morgan Kaufmann, San Mateo, California.</li> <li>Stuart and Peter Norving Artificial Intelligence: a modern approach Russel Prentice Hall, 2nd Ed 2003</li> <li>Abu-Mostafa, Y. S. and Psaltis, D. (1987). Optical poural computers. Scientific American, 256:88, 05</li> </ul>				
c- Periodicals, Web sites	Web Sites related to Artificial Intelligence engineering as:					
etc	www. Artificial Intelligence.hmc.edu,					
	www.tutorial. Artificial Intelligence.	edu,				
	www.web.mit.edu					

11-Course contents – Course related program competencies							
	Level	Level A Level B					
	A.1	A.2	A.3	B.1	B.2	В.З	B.4
Solving problems by searching	1	$\checkmark$	$\checkmark$	V	V	$\checkmark$	1
Inference in First Order Logic	$\checkmark$	$\checkmark$	1	V		$\checkmark$	
Fuzzy logic control	1	1	1	$\checkmark$	1	$\checkmark$	1
Intelligent Agent	$\checkmark$	$\checkmark$	1	$\checkmark$		$\checkmark$	
Learning in Neural and Belief Networ	$\checkmark$	$\checkmark$	$\checkmark$	V	$\checkmark$	$\checkmark$	$\checkmark$

12-Teaching and learning methods - Course related program competencies								
		Lev	el A		Level B			
	A.1	A.2	A.3	A.5	B.1	B.2	B.3	B.4
Lecture (online/in class)		1	$\checkmark$	$\checkmark$	1	$\checkmark$	$\checkmark$	$\checkmark$
Discussion		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	
Tutorial	1	$\checkmark$	$\checkmark$	$\checkmark$	1	$\checkmark$	$\checkmark$	$\checkmark$
Problem solving	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		$\checkmark$	
Brain storming	$\checkmark$	V						
Projects	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	B.1	B.2	B.3	B.4
Self-learning		1			1	$\checkmark$	$\checkmark$	1
Research and Reporting			$\checkmark$		1		$\checkmark$	
Computer Simulation					$\checkmark$	$\checkmark$	$\checkmark$	V
Teamwork					$\checkmark$		$\checkmark$	

13- Assessment methods - Course related program competencies									
Assessment methods	Course related program co	mpten	cies						
		Level A				Level B			
		A.1	A.2	A.3	A.5	B.1	B.2	B.3	B.5
1. Mid Term Examination (written/ online)		√		$\checkmark$		√	√	√	
2. Practical Examinati	on				V	1			
3. Oral Examination							1	1	$\checkmark$
4. Formative (quizzes- presentation -reports)		1	$\checkmark$	$\checkmark$	$\checkmark$			$\checkmark$	
5. Final Term Examina	ation (written	1	$\checkmark$	$\checkmark$	1		1	1	

Authorized from board of the department at 4/2/2023 **Course coordinator:** 

1.

Dr. Gafary Mahmoud

K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

#### **Course Specification**

#### 1- Basic Information

Course Title	Industrial Process Control		
Course Code	CSE 463		
Academic Year	2022-2023		
Coordinator	Dr. Bassam A. Hemade		
Teaching Staff	Dr. Bassam A. Hemade		
Level	Level (4)		
Semester	Second Term		
Number of Weekly	Lecture 2		
<b>Contact Hours</b>	Tutorial 1		
	Lab 1		
Department offering the	<ul> <li>Computers and Systems Engineering,</li> </ul>		
program			
Department offering the	Electronics Engineering and Electrical		
course	Communication		

#### 2- Aim of the course

- 1. To introduce the students to basic components of control systems that existed in the industry, and actions of controllers.
- 2. To enhance students' ability to define the required actions of the controller based on safe-fail criteria.
- 3. To acquire students the skills for improving feedback controllers gains, and tuning strategies.
- 4. To emphasize the comprehensive treatment of cascaded control, override, selective control, Ratio, and feedforward control
- 5. To analyze multivariable process control.

3- Course related program competencies

Level A – General	<ul> <li>A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.</li> <li>A.3 Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical, and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development</li> <li>A.4 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.</li> </ul>						
Fevel B - Speciality	<ul> <li>B.2 Design, model and analyze an electrical/electronic/digital system or component for a specific application; and identify the tools required to optimize this design.</li> <li>B.3 Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.</li> <li>B.4 Estimate and measure the performance of an electrical / electronic/digital system and circuit under specific input excitation and evaluate its suitability for a specific application.</li> <li>B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services.</li> </ul>						
Contents	controllers, Cascade	control; Override	and selective control; F	Ratio and			
	feedforward control;	; Multivariable pr	ocess control.				
# Topic		Lecture	Tutorial/Practical	No of hours			
Basic compo systems: Ac	onents of control tions of controllers	8	8	16			
Tuning of fe	edback Controllers	6	6	12			
Cascade Cor	ntrol	4	<mark>4</mark>	8			
Override an	d Selective control	4	<mark>4</mark>	8			
Ratio and feedforward control, Multivariable process control.66				12			
Total sum		28	28	56			
5- Teaching and learning 1. Lecture (online/in class) 2. Discussion				<u> </u>			

methods		3. Tutorial					
		4. Problem solving					
		5. Brain storming					
		<ul> <li>b. Projects</li> <li>7. Solf learning</li> </ul>					
		/. Self-learning Percenting					
		o. Research and Reporting					
		9. Computer Simulation 10. Teamwork					
6- Teaching and learning		1 Additional Tutorials					
mothods for disable studen	te	2 Online lectures and assignments					
	15	3 Using as many audio/visual aids as nossible					
		<ul> <li>4 Providing extra opportunities for practice</li> </ul>					
7- Teaching and learning		1 Assign a portion of the office hours for those students					
methods for low capacity		and					
students		2. provide them with specific tailored tasks.					
students		3. Repeat the explanation of some of the material and					
		tutorials.					
		4. Assign a teaching assistance to follow up their					
		performance					
8- Teaching and learning	1. Assign course project tasks to those students.						
methods for outstanding		2. Give them advanced extra-curriculum topics.					
students		3. Encourage them to take part in a pilot research and case					
	studies.						
9- Students assessment							
a- Assessment	1. M	id Term Examination (written/ online)					
methods	2. Pr	actical Examination					
	3. O	ral Examination					
	4. Fc	ormative (quizzes- presentation -reports)					
	5. Fi	nal Term Examination (written)					
b- Assessment schedule	- Exerc	cise sheet/ Lab assignment : Weekly					
	- Quizz	z-1: Week no. 5					
	- Mid-	Term exam: Week no . 8					
	- Quizz	2-2: Week no. 12					
	- Final	- term examination: Week no. 16					
c- Weighting of	- Class	tutorial and quizzes : %					
assessment	- Mid-	term examination: %					
	- Final	- term examination: %					
		Total 100 %					
10- List of text books and re	ference	25:					

a- Course notes	Lecture Notes
b- Text books/ References	[1] C.A. Smith and A. Corripio, Principles, and Practice of Automatic Process Control, John Wiley, 2nd Ed., 1997. <b>Assessment:</b>
c- Periodicals, Web sites etc	www.sites.google.com\view\bassam-awny

11-Course contents – Course related program competencies								
	Leve	IA		Level B				
	A.1	A.3	A.4	B.2	B.3	B.4	B.5	
Basic components of control systems: Actions of controllers	1							
Tuning of feedback Controllers	V	V		$\checkmark$	V	V	$\checkmark$	
Cascade Control		1	$\checkmark$			V	V	
Override and Selective control	V	1	$\checkmark$					
Ratio and feedforward control, Multivariable process control.			V					

12-Teaching and learning methods - Course related program competencies								
	Level	Level A			Level B			
	A.1	A.3	A.4	B.2	B.3	B.4	B.5	
Lecture (online/in class)	$ $ $\checkmark$							
Discussion	1	1	1	$\checkmark$	$\checkmark$	$\checkmark$	√	
Tutorial	1	1	1	$\checkmark$	1			
Problem solving			1	$\checkmark$	1			
Brain storming				$\checkmark$	1	√	√	
Projects				$\checkmark$	$\checkmark$	$\checkmark$	\	
Self-learning							$\checkmark$	
Research and Reporting						$\checkmark$		

Computer Simulation			$\checkmark$	$\checkmark$
Teamwork				

13- Assessment methods - Course related program competencies									
Assessment methods	Course related program comptencies								
		Level	Α		Leve	l B			
		A.1	A.3	A.4	B.2	B.3	B.4	B.5	
1. Mid Term Examination (written/ online)		1	$\checkmark$	$\checkmark$	√	$\checkmark$			
2. Practical Examination									
3. Oral Examination									
4. Formative (quizzes- presentation -report	cs)	1	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$			
5. Final Term Examination (written		$\overline{\mathbf{A}}$	$\overline{\mathbf{A}}$	$\overline{\mathbf{A}}$	$\overline{\mathbf{A}}$	$\overline{\mathbf{A}}$			

Authorized from board of the department at 1/9/2022 Course coordinator:

an



Dr Bassam A. Hemad

K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

## **Course Specification**

## 1- Basic Information

Course Title	Embedded System	IS				
Course Code	CSE 423					
Academic Year	2022-2023					
Coordinator	D. Nader Mohamed Abd Elmohsen					
Teaching Staff	D. Nader Mohamed Abd Elmohsen					
Level	Level (4)	Level (4)				
Semester	Second Term					
Number of Weekly	Lecture	2				
<b>Contact Hours</b>	Tutorial	1				
	Lab	1				
Department offering the	<ul> <li>Computers are</li> </ul>	nd Systems Engineering				
program						
Department offering the	Computers and Syste	ems Engineering				
course						
2- Aim of the course						

- 1. To provide students with the several ways of accomplishing, utilizing and manipulating the different types of embedded systems.
- 2. Programming the FPGA with high efficiency and reliability using HDL.
- 3. Having acquired a good knowledge about FPGA Structure: architecture, configurable logic blocks, routing, lookup tables, memory and I/O blocks.
- 4. To analyze embedded devices, design tools structure and programming
- 5. To acquire proficiency with Field Programmable Gate Arrays (FPGA)s for the purpose of creating prototypes or products for a variety of applications.
- 6. To provide a challenge for the more experienced designer.
- 7. To explore complexities, capabilities and trends of Field Programmable Gate Arrays (FPGA) and Complex Programmable Logic Devices (CPLD).
- 8. To practice conception, design, implementation, and debugging skills.

3- Course rel	ated program competencies
Level A – General	<ul> <li>A.5 Practice research techniques and methods of investigation as an inherent part of learning.</li> <li>A.3 Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.</li> </ul>
peciality	<ul> <li>B.1 Select, model and analyze electrical power systems applicable to the specific discipline by applying the concepts of: generation, transmission and distribution of electrical power systems.</li> <li>B.2 Design, model and analyze an electrical/electronic/digital system or component for a specific application; and identify the tools required to optimize this design.</li> </ul>
Level B - Spo	<ul> <li>B.3 Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.</li> <li>B.4 Estimate and measure the performance of an electrical / electronic/digital system and circuit under specific input excitation and evaluate its suitability for a specific application.</li> </ul>
4- Course Contents	Introduction to embedded systems. Introduction to HDL: entities and architecture, RTL, structural, dataflow and behavioral description. FPGA Structure: architecture, configurable logic blocks, routing, lookup tables, memory and I/O blocks. FPGA design flow. Sequential processes and finite state machines.

	Soft processors, bus programming.	ses and peripherals. Embedded design tools structure and						
# Topic		Lecture	Tutorial/Practical	No of hours				
Introductio systems.	n to embedded	2	2	4				
Introductio and archite structural, o behavioral	n to HDL: entities cture, RTL, dataflow and description.	4	4	8				
FPGA Struc configurabl routing, loc .and I/O blo	ture: architecture, le logic blocks, okup tables, memory ocks	4	2	6				
FPGA desig	n flow.	4	<mark>4</mark>	8				
Sequential .state mach	processes and finite nines	5	4	9				
Soft proces peripherals	sors, busses and	5	4	9				
Embedded .structure a	design tools and programming	4	8	12				
Total sum		28	28	56				
5- Teaching methods	and learning	<ol> <li>Lecture (online/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> <li>Teamwork</li> </ol>						
6- Teaching methods fo	and learning r disable students	<ol> <li>Additional T</li> <li>Online lecture</li> <li>Using as made</li> <li>Providing explanation</li> </ol>	utorials ires and assignments iny audio/visual aids as ktra opportunities for p	s possible. practice				
7- Teaching methods for students	and learning r low capacity	<ol> <li>Assign a por and</li> <li>provide the</li> <li>Repeat the</li> </ol>	rtion of the office hour m with specific tailore explanation of some o	s for those students d tasks. f the material and				

	tutorials.				
	4. Assign a tead	ching assistance to follow up their			
	performance	2			
8- Teaching and learning	1. Assign cours	e project tasks to those students.			
methods for outstanding	2. Give them a	dvanced extra-curriculum topics.			
students	3. Encourage t	nem to take part in a pilot research and case			
	studies.				
9- Students assessment					
a- Assessment	<ol> <li>Mid Term Examination (written/ online)</li> </ol>				
methods	2. Practical Examination	on			
	3. Oral Examination				
	4. Formative (quizzes-	presentation -reports)			
	5. Final Term Examina	tion (written)			
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly				
	- Ouizz-1·	Week no 5			
	- Mid-Term exam:	Week no . 8			
	- Quizz-2:	Week no. 12			
	- Final – term examinatio	n: Week no. 16			
c- Weighting of	- Class tutorial and quizze	es : %			
assessment	- Mid-term examination:	%			
	- Final – term examinatio	n: %			
		Total 100 %			
10- List of text books and re	ferences:				
	Thoma and lootures a	otes menored in the form of a book			
a- course notes	<u>I here are lectures n</u>	otes prepared in the form of a book			
h Toythooks/ Deferences	<u>authorized by the de</u> M Mana and C R	ima "Logic and Computer Design			
D- Text DOOKS/ References	- IVI. IVIAIIO AIIU C. K	Anne, Logic and Computer Design			
	Fundamentals," 2r	iu Edition, Prenuce Hall, Opper Saddle Kiver,			

• S. brown and Z. vranesic, "Fundamentals of digital logic with

Douglas L. Perry, "VHDL: Programming by Example", 4th Edition,

https://www.volersystems.com/blog/fpga-embedded-systems

VHDL", design 3rd edition, 2009

Web Sites related to Embedded Systems as:

• V. Pedroni, "Circuit Design with VHDL", 2004

2001.

2002

c- Periodicals, Web sites

.....etc

11-Course contents – Course related program competencies								
	Leve	IA	Level B					
	A.5	A.6	B.1	B.2	B.3	B.4		
Introduction to embedded systems.	$\checkmark$							
Introduction to HDL: entities and architecture, RTL, structural, dataflow and behavioral description.	$\checkmark$	$\checkmark$	V	$\checkmark$	V	$\checkmark$		
FPGA Structure: architecture, configurable logic blocks, routing, lookup tables, memory and I/O blocks.		\	V		1	V		
FPGA design flow.	$\checkmark$	V						
Sequential processes and finite state machines.		$\checkmark$		$\checkmark$				
Soft processors, busses and peripherals.	V		$\checkmark$			$\checkmark$		
Embedded design tools structure and programming.		$\checkmark$		$\checkmark$		$\checkmark$		

12-Teaching and learning methods - Course related program competencies								
	Level A			Level	В			
	A.5	A.6		B.1	B.2	B.3	B.4	
Lecture (online/in class)	1							
Discussion	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	$\checkmark$	1	
		√						
Tutorial	V	$\checkmark$		$\checkmark$	$\checkmark$			
Problem solving		$\checkmark$		$\checkmark$	$\checkmark$			
Brain storming				$\checkmark$	$\checkmark$	$\checkmark$	1	
Projects				$\checkmark$	1	$\checkmark$	1	
Self-learning							1	
Research and Reporting						$\checkmark$		
Computer Simulation						$\checkmark$	1	

Teamwork						
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13- Assessment methods - Course related program competencies								
Assessment methods Course related program comptencies								
		Level	A	Leve	el B			
		A.5	A.6	B.2	B.3	B.4	B.5	
1. Mid Term Examination (written/ online)		1	$\checkmark$	$\checkmark$	1			
2. Practical Examination				$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	
3. Oral Examination			$\checkmark$					
4. Formative (quizzes- presentation -reports)			$\checkmark$	$\checkmark$			$\checkmark$	
5. Final Term Examination (written)		1	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	

Authorized from board of the department at 11/2/2023 Course coordinator:

A



Dr. Nader Mohamed Abd

Elmohsen



Department offering the program:	Electronics and Communications Engineering,
	Computers and Systems Engineering,
	Communications and Computer Engineering
Department offering the course:	Computers and Systems Engineering

# **Course Specification**

1. Course Basic Information:						
Course Code: CSE 491	Course Title: Graduation Project       Academic years: 2021/2022         Level (4) – Semester : 2 <sup>st</sup>					
Institute Requirement	Teaching hours:					
	Lecture : 2	Tutoria	al: 0	Lab: 2		

#### 2. Course Objectives

- 1- Learn how to design web site .
- 2- define the different ways to design
- 3- chose hosting and domain
- 4- Be able to manage time, tasks, and resources.
- 5- Be able to work in a team.
- 6- Think in a creative and innovative way in solving, and design engineering problems.
- 7- Take decisions, lead, and motivate individuals.

3. Inten	ded Learning Outcomes: ARS	Course ILOs
A. Knowledge and Understanding:	<ul> <li>A4) Demonstrate principles of design including elements design, process and/or a system related to computer systems engineering.</li> <li>A11) Define professional ways to design and compare to obtain perfect way</li> <li>A18) Describe Computer Networking and Communication Systems.</li> <li>A21) Describe applications of Computer engineering.</li> </ul>	<ul> <li>A4.1) Demonstrate the Methodologies of Gathering literatures,</li> <li>A4.2) Demonstrate the steps of background survey.</li> <li>A11.1) Demonstrate the Implementation of prototype, and testing.</li> <li>A11.2) Learn the concepts of writing technical report.</li> <li>A18.1) Know how to Analyze, design, modeling and programming methods using computer based applications.</li> </ul>

## Ministry of Higher Education

K 10, Bilbies – 10<sup>th</sup> of Ramadan

**High Institute of Electronic Engineering** 

Ministerial Resolution 5053 - 12/10/2016



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

Γ		B1) Select appropriate computer-	B1 1) Select the analysis technique
		based methods for modeling and	B1 2) Use appropriate Gathering literatures
		analyzing problems	D1.2) Ose appropriate Outlering iteratures.
		B2) Salact appropriate solutions for	<b>B2</b> 1) Choose suitable besting and domain
		b2). Select appropriate solutions for	B2.1) Choose suitable nosting and domain B2.2) Use testing method
	lls	engineering problems based on	B2.2) Use testing method. B2.1) Design Duckland definition
	iki	analytical tranking.	B3.1) Design Problem definition.
	I S	B3). Think in a creative and	B3.2) Develop background survey.
	na	innovative way in problem	B4.1). Combine the Analysis, design, modeling
	ect	solving and design.	and programming.
	tell	B4). Combine, exchange, and assess	B4.2). Exchange circuitry construction.
	Int	different ideas, views, and	B5.1). Evaluate the Implementation.
	8	knowledge from a range of	B5.2). Judge the Prototype.
		sources.	B6.1). Search the failure in Implementation.
		B5). Assess and evaluate the	B6.2). Design a Prototype for that failure.
		characteristics and performance	B9.1). Develop and Enhance circuitry
		of components, systems and	construction.
		processes.	B9.2). Develop background survey.
		C1) Apply knowledge of mathematics,	C1.1) Apply Problem definition.
		science, information technology,	C1.2) Merge knowledge of science, to solve
		design, business context and	engineering problems.
		engineering practice integrally to	C1.3) Use knowledge of information
		solve engineering problems.	technology to solve engineering
		C2) Professionally merge the	problems.
		engineering knowledge,	C2.1). Merge the engineering knowledge to
		understanding, and feedback to	improve design.
		improve design, products and/or	C2.2). Consolidate the engineering
		services.	understanding to improve products.
		C3) Create and/or re-design a process,	C2.3). Combine the engineering feedback to
		component or system, and carry	improve services
	lls	out specialized engineering	C3.1). Create a process, component and
	ški	designs.	system.
	al S	C4) Practice the neatness and	C3.2). Perform specialized engineering
	<b>jn</b> í	aesthetics in design and approach.	designs.
	ssi	C5) Use computational facilities and	C4.1). Develop the design in a neatness way.
	ofe	techniques, measuring	C4.2). Prepare the approaches in a style and
	Pro	instruments, workshops and	fineness method.
	5	laboratory equipment to design	C5.1). Apply computational facilities and
	•	experiments, collect, analyze and	techniques, to design experiments.
		interpret results.	C5.2). Use measuring instruments to analyze
		C6) Use a wide range of analytical	and interpret results.
		tools, techniques, equipment, and	C5.3). Select workshops and laboratory
		software packages pertaining to	equipment to collect results.
		the discipline and develop	C6.1). Utilize a wide range of analytical tools
		required computer programs.	and techniques to investigate computer
		C/) Apply numerical modeling	programs.
		methods to engineering problems.	C6.2). Prepare a verity range of equipment, and
		C11) Exchange knowledge and skills	software packages to develop computer
		with engineering community and	programs.
		industry.	
1			

## Ministry of Higher Education

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	D1) Collaborate affectively within	D1 1) Work as an individual
	D1) Conadorate effectively within	D1.1) work as an individual.
	multidisciplinary team.	D1.2) Work as a member team.
	D2). Work in stressful environment	D1.3) Work as a leader.
	and within constraints.	
	D3). Communicate effectively.	D2.1) Work under pressure environment
kills	D4). Demonstrate efficient IT capabilities.	D2.2) Work within constraints
eral S	D5). Lead and motivate individuals.	D3.1). How can you communicate with others in an effective way.
Gen		D3.2). How can you communicate with team leader in appropriate way.
D.		D4.1). Understand IT ability.
		D4.2). Develop IT efficiency.
		D5.1) Work as an individual.
		D5.2) Work as a member team.
		D5.3) Work as a leader.

#### 4. Course Contents

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Syllabus: The aim of the project is to give students a major design experience that will both develop and demonstrate the knowledge and skills acquired in earlier course work and will incorporate engineering standards and realistic constraints including economic, environmental. sustainability. manufacturability, ethical and safety considerations. In addition, the project should represent an actual problem or need of the industry or the community. The purpose of Part 1 of the Graduation Project is to explore a chosen topic and to discover and define the project problem. After initial introductory lectures, students will perform research work to explore different approaches to the problem at hand. Based on this research study, students will perform system level analysis to explore specifications. The output of Project 1 is a major report outlining the project feasibility results and laying the ground for the detailed design and implementation phase to be conducted in Project 2. This document should include a detailed project plan indicating major project implementation milestone with clear assignment of tasks among project team members.

يهدف المشروع الي اكساب الطلبة خبرة العمل بتصميم كبير يظهر قدراتهم ومهارتهم التي اكتسبوها في المواد التي سبق لهم دراستها وينميها في نفس الوقت. كما يهدف المشروع الي تطبيق المعايير الهندسية وادخال القيود الواقعية في الاعتبار سواء كانت قيودا اقتصادية, بيئية, تصنيعية, اخلاقية او قيود تتعلق بالأمان. بالإضافة الي ذلك يجب ان يتعامل المشروع مع مشكلة واقعية او احتياج حقيقي للصناعة والمجتمع . وامجتمع . والمجتمع . وتوصيف المشكلة المراد حلها. يقوم الطلبة في هذا الجزء, بعد عدد من المحاضرات, بعمل بحث يهدف الجزء الأول من المشروع الي استطلاع ودراسة الموضوع الذي تم اختياره من اجل تحديد وتوصيف المشكلة المراد حلها. يقوم الطلبة في هذا الجزء, بعد عدد من المحاضرات, بعمل بحث المشروع والوصيف المشكلة المراد حلها. يقوم الطلبة في هذا الجزء, بعد عدد من المحاضرات, بعمل بحث المشروع والوصيول الي استطلاع جدوي النظام بالإضافة الي تركيبة ومواصفات النظام بالمشروع والمت تحليلية تهدف الي المحاضرات, بعمل بحث المشروع والوصول الي تصميم اولي علي مستوي النظام بالإضافة الي تركيبة ومواصفات النظام ومهدروع والوصول الي المحالاء ولي علي ملي ذلك دراسة تحلياية تهدف الي استطلاع جدوي المشروع والوصول الي المحالاع جدوي المشروع والوصول الي تصميم اولي علي مستوي النظام بالإضافة الي تركيبة ومواصفات النظام المشروع والوصول الي تصميم الي علي مستوي النظام بالإضافة الي تركيبة ومواصفات النظام المشروع والوصول الي تصميم الي علي مستوي النظام بالإضافة الي تركيبة ومواصفات النظام ومهد للمرحلة القادمة والتي تشتمل علي التصميم المفصل وتنفيذ النظام المقترح ويجب ان يحوي هذا ومهد للمرحلة القادمة والتي تشتمل علي التصميم المفصل وتنفيذ النظام المقترح ويجب ان يحوي هذا ومهد للمرحلة القادمة والتي تشتمل علي التصميم المفصل وتنفيذ النظام المقترح ويجب ان يحوي هذا ومهد المترح ولي تعلي فر المعار المترح ويجب ان يحوي هذا ومهد للمرحلة القادمة والتي تشتمل علي التصميم المفصل وتنفيذ النظام المقترح ويخري فريق العمل من المقرير خطة مفصلة لتنفيذ المشروع توضح المراحل المختلفة وتوزيع الادوار علي فريق العمل من الطلبة الطلبة المل الطاب

#### 5. Teaching and Learning Methods

- Lectures
- Labs and workshops
- Research assignments

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#### 6. Teaching and Learning Methods for disable students

- Assign a portion of the office hours for those students.
- Give them specific tasks and evaluate them in it.
- Repeat the explanation of some of the course material and tutorials.
- Assign a teaching assistance to follow up the performance of this group of students.

7. Student Assessment						
a. Assessment Methods b. Assessment Schedule	<ul> <li>Weekly following up.</li> <li>Monthly assignments.</li> <li>Presentations.</li> <li>Final oral exam.</li> <li>Meeting and following up:</li> <li>presentation 1:</li> <li>presentation 2:</li> <li>presentation 3:</li> <li>presentation 4:</li> <li>Final – Oral examination:</li> </ul>	Weekly Week no 3 Week no 6 Week no 10 Week no 13 Week no 14				
c. Weighting of Assessment	<ul><li>Year work:</li><li>Oral examination:</li><li>Total</li></ul>	50 % 50 % 				

8. List of text books and references					
a. Course notes	<ul> <li>None</li> </ul>				
b. Text books	<ul> <li>None</li> </ul>				
c. Recommended books	<ul> <li>It depends on Project subject.</li> </ul>				
d. Periodicals, Web sites etc	<ul> <li>It depends on Project subject.</li> </ul>				

#### **Course contents - ILOs Matrix**

Content Topics	Week	A- Knowledge & Understanding	B- Intellectual Skills	C- Professional and Practical Skills	D- General and Transferable Skills
Problem definition	1-4	A4, A11, A18,A21	B.4	C11, C22	D1,D3,D7,D9
Gathering literatures, and background survey	3	A4, A11, A18,A21	B.4	C11, C22	D1,D3,D7,D9
Analyze, design, modeling and programming	4-5	A4, A11, A21	B1,B2,B3, B11,B18	C1,C2,C3, C4,C5, C6,C7,C14	D2,D4,D6



#### **Teaching and Learning Methods - ILOs Matrix**

Teaching and Learning	A- Knowledge	В-	C- Professional	<b>D-</b> General and
Methods	&	Intellectual	and practical	transferable
Wiethous	Understanding	skills	skills	skills
Lastures	A4, A11,			
Lectures	A18,A21			
		B1,B2,B3,	C1,C2,C3,	
tutorials	A4, A11, A18	B11,B18	C4,C11,C12,	01,03,03,
			C14,C22	07,09
			C1,C2,C3,	
		B4,B5,B6,	C4,C5,	
Labs		B9,B10	C6,C7,C11,C12,	
			C14, C19, C20,	
			C22,C23	
		B1,B2,B3,		
<b>Research assignments</b>		B11,B18		
		-		08

#### **Assessment Methods - ILOs Matrix**

Assessment Methods	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Weekly assignment		B1,B2,B3, B11,B18	C1,C2,C3, C4,C5,C6, C7,C11,C12, C14, C19, C20, C22,C23	
Reports and presentation		B1,B2,B3, B11,B18		D1,D3,D5, D7,D9
Quizzes	A4, A11, A18			D2,D4,D6, D8
Final exam	A4, A11, A18	B4,B5,B6, B9,B10	C1,C2,C3, C4,C5,C6, C7,C11,C12, C14,C22,C23	

**Course coordinator:** 

Doctor. Soheir afifi





K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

#### **Course Specification**

## 1- Basic Information

Course Title	Project Managem	ent			
Course Code	IEN 425				
Academic Year	2022-2023				
Coordinator	Dr .Mohamed El-Kha	amry			
Teaching Staff	Dr .Mohamed El-Kha	amry			
Level	Level (4)				
Semester	Second Term				
Number of Weekly	Lecture	2			
<b>Contact Hours</b>	Tutorial	2			
	Lab	0			
Department offering the	<ul> <li>Electronics ar</li> </ul>	nd Communications Engineering,			
program	Computers a	nd Systems Engineering,			
	<ul> <li>Communicat</li> </ul>	ions and Computer Engineering			
Department offering the	Electronics Engineering and Electrical				
course	Communication				

#### 2- Aim of the course

This course aims to provide the student the knowledge and the skills required to understand:

1. To teach student Project management

2. To equip students with methods of organizational structures

3. To acquire students a good idea to use assessing success, planning, and learning curves,

4. To teach students the concepts and applications of cost management, and risk management,

5. To provide students with the CPM analysis, and precedence network scheduling techniques

3- Course related program competencies							
A – General	<ul> <li>A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.</li> <li>A.2 Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.</li> </ul>						
Level	A.4 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.						
Level B - Specialty	<ul> <li>B.1 Select, model and analyze electrical power systems applicable to the specific discipline by applying the concepts of: generation, transmission and .distribution of electrical power systems</li> <li>B.2 Design model and analyze an electrical/electronic/digital system or component for a specific application; and identify the tools required to .optimize this design</li> <li>B.3 Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and .professional tools</li> <li>B.4 Estimate and measure the performance of an electrical / electronic/digital system and circuit under specific input excitation and evaluate its suitability for .a specific application</li> <li>B.5 Adopt suitable national and international standards and codes to design, build operate inspect and maintain electrical/electronic/digital equipment</li> </ul>						
4- Course Contents	Course       Project management overview, organizational structures $\mathcal{I}$ assessing success,         Planning, learning curves, network scheduling techniques, CPM analysis, precedence networking, resource allocation and constraints, cost management, risk management, project performance measurement and control						
# Topic		Lecture	Tutorial/Practical	No of hours			
Properties of ele waves	ectromagnetic	4	4	8			
Maxwell's equations, Plane waves,6612Polarization6612				12			
Propagation mechanisms: . reflection, transmission and refraction, scattering, diffraction8816							

Antenna fundamentals and Propagation models		6	6	12				
riopagation models								
Antenna parameters, dipoles,								
arrays, loop antennas, helical		4	4	8				
antennas, patch antennas.								
Total sum		28	28	56				
5- Teaching and learning meth	ods	1. Lecture (on	line/in class)					
		2. Discussion						
		3. Tutorial 4. Problem sol	vina					
		5. Brain storm	ing					
		6. Projects						
		7. Self-learnin	g					
		8. Research and Reporting						
		9. Computer Simulation						
6 Teaching and learning meth	ods	10. Teanwork	Tutorials					
for disable students	e students 2 Online lectures and assignments							
		3. Using as ma	iny audio/visual aids as	possible.				
	4. Providing extra opportunities for practice							
7- Teaching and learning meth	ods	1. Assign a po	rtion of the office hours	for those students				
for low capacity students		and provide them with specific tailored tasks.						
		2. Repeat the	explanation of some of	the material and				
		tutorials.	ching assistance to foll	wun thoir				
		performance		ow up then				
8- Teaching and learning meth	ods	1. Assign cour	se project tasks to those	e students.				
for outstanding students		2. Give them advanced extra-curriculum topics.						
		3. Encourage t	hem to take part in a p	ilot research and case				
		studies.						
9- Students assessment								
a- Assessment methods	1. N	1id Term Examina	tion (written/ online)					
	2. Practical Examination							
	3.0 1 E	3. Oral Examination						
	ч. г 5. F	Formative (quizzes- presentation -reports) Final Term Examination (written)						
b- Assessment schedule	- Exer	cise sheet/ Lab ass	ignment : Weekly					
	- Quizz-1: Week no. 4							
	- Mid-	Term exam:	Weekn	10. 8				
	- Quiz	z-2:	Week no	o. 12				
	- Final	– term examinatio	on: Week n	o. 16				

c- Weighting of assessment	- Class tutorial and quizzes : 10 %						
	- Mid-term examination: 20 %						
	- Final – term examination:		70 %				
	Tota	l	100 %				
10- List of text books and references:							
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.						
b- Text books/ References	1- A Guide to the PROJECT MANAGEMENT BODY OF KNOWLEDGE         (PMBOK® GUIDE ) Sixth Edition         2- THE STANDARD FOR PROJECT MANAGEMENT						
c- Periodicals, Web sitesetc.	https://classroom.google.com/c/	NTUxNTAwN	1zEwODcx				

11-Course ccontents – Course related program competencies							
	Level A			Level B			
	A.1	A.3	A.4	B.2	B.3	B.4	B.5
Properties of electromagnetic waves	$\checkmark$	$\checkmark$	1	$\checkmark$			
Maxwell's equations, Plane waves, Polarization	√	V		$\checkmark$	V	V	1
Propagation mechanisms: reflection, transmission and refraction, scattering, diffraction		$\checkmark$	$\checkmark$			1	1
Antenna fundamentals	√	V	$\checkmark$		V		
Propagation models			V		V	V	V

12-Teaching and learning methods - Course related program competencies							
	Level A			Level B			
	A.1	A.3	A.4	B.2	B.3	B.4	B.5
Lecture (online/in class)	$\checkmark$						
Discussion	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	√	1
Tutorial	$\checkmark$	1	V	$\checkmark$	$\checkmark$		

Problem solving		$\checkmark$	$\checkmark$	$\checkmark$		
Brain storming			$\checkmark$	1	1	$\checkmark$
Projects			$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Self-learning						$\checkmark$
Research and Reporting					1	
Computer Simulation					V	$\checkmark$
Teamwork						

13- Assessment methods - Course related program competencies								
Assessment methods	Course related program competencies							
		Level	Α		Leve	el B		
		A.1	A.3	A.4	B.2	B.3	B.4	B.5
1. Mid Term Examination (written/ online)		1	1	1	$\checkmark$	1		
2. Practical Examination		1	$\checkmark$	$\checkmark$		1	$\checkmark$	$\checkmark$
3. Oral Examination			$\checkmark$		$\checkmark$		$\checkmark$	
4. Formative (quizzes- presentation -report	s)	1	$\checkmark$	1	$\checkmark$	1		
5. Final Term Examination (written		1	$\overline{\mathbf{A}}$	$\overline{\mathbf{A}}$	$\checkmark$	$\overline{\mathbf{A}}$	$\overline{\mathbf{A}}$	$\overline{\mathbf{A}}$

Authorized from board of the department at 11/2/2023 Course coordinator:

and and



Dr. Mohammed Elkhamry

K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

## **Course Specification**

#### 1- Basic Information

Course Title	مقدمة في المحاسبة			
Course Code	HUM 121			
Academic Year	2022-2023			
Coordinator	Dr. Gamal El-Anani			
Teaching Staff	Dr. Gamal El-Anani			
Level	Level (4)			
Semester	Second Term			
Number of Weekly	Lecture	2		
<b>Contact Hours</b>	Tutorial	0		
	Lab	0		
Department offering the	<ul> <li>Electronics ar</li> </ul>	nd Communications Engineering,		
program	Computers a	nd Systems Engineering,		
	Communications and Computer Engineering			
Department offering the	Basic Science			
course				
2- Aim of the course				

1. Learn the principles of accounting concept & objectives , acceptable principals of accounting

- 2. Learn the accounting branches, types of institutions financial statemen
- 3. Learn the principles of balance sheet , income statement , ownership proprietary statement , cash flow statement
- 4. Learn double entry & analysis of financial position formula , debit & credit items financial position formula.

3- Course related program competencies

Level A – General	<ul> <li>A.1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.</li> <li>A.2. Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions</li> <li>A.3. Apply engineering design processes to produce costeffective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.</li> <li>A.5. Practice research techniques and methods of investigation as an inherent part of learning.</li> </ul>
Level B - Speciality	
4- Course Contents	The scientific frame of accounting : accounting concept & objectives , acceptable principals of accounting , accounting branches , types of institutions – financial statement – balance sheet , income statement , ownership proprietary statement , cash flow statement – double entry & analysis of financial position formula , debit & credit items financial position formula – the accounting cycle , business documents , the journals, the ledgers commercial documents according to the Egyptian laws , journalizing & recording the commercial transactions of the owner of the firm , commercial papers & documents different types of revenues & expenditure. Trail balance , trail balance concept & objectives , its balance & imbalance corrections in the imbalance cases . A brief presentations of accounting in she types of companies as partnership & corporation

# Topic	Lecture	Tutorial/Practical	No of hours
The scientific frame of accounting : accounting concept & objectives , acceptable principals of accounting , accounting branches , types of institutions	4	4	8
financial statement – balance sheet , income statement , ownership proprietary statement , cash flow statement – double entry & analysis of financial position formula	6	6	12
debit & credit items financial position formula – the accounting cycle , business documents , the journals, the ledgers commercial documents according to the Egyptian laws , journalizing & recording the commercial transactions of the owner of the firm	8	8	16
commercial papers & documents different types of revenues & expenditure. Trail balance , trail balance concept & objectives , its balance & imbalance corrections in the imbalance cases	6	6	12

A brief presentation in she types of com partnership & corpo	ns of accounting panies as pration	4		4	8		
Total sum		28		28	56		
5- Teaching and learning methods			<ol> <li>Lecture (online/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> <li>Teamwork</li> </ol>				
6- Teaching and learning m students	ethods for disable	<ol> <li>1. Additional Tutorials</li> <li>2. Online lectures and assignments</li> <li>3. Using as many audio/visual aids as possible.</li> <li>4. Providing extra opportunities for practice</li> </ol>					
7- Teaching and learning methods for low capacity students			<ol> <li>Assign a portion of the office hours for those students and</li> <li>provide them with specific tailored tasks.</li> <li>Repeat the explanation of some of the material and tutorials.</li> <li>Assign a teaching assistance to follow up their performance.</li> </ol>				
8- Teaching and learning m outstanding students	ethods for	<ol> <li>Assign course project tasks to those students.</li> <li>Give them advanced extra-curriculum topics.</li> <li>Encourage them to take part in a pilot research and case studies.</li> </ol>					
9- Students assessment							
a- Assessment methods	<ol> <li>Mid Term Exam</li> <li>Practical Examini</li> <li>Oral Examinatio</li> <li>Formative (quiztional formation of the second of the sec</li></ol>	Mid Term Examination (written/ online) Practical Examination Oral Examination Formative (quizzes- presentation -reports) Einal Term Examination (written)					
b- Assessment schedule	- Exercise sheet/ Lab	assigi	nment :	Weekly			
	- Quizz-1: - Mid-Term exam:			Week no. 8			

	- Quizz-2:	Week no. 12			
	- Final – term examination:	Week no. 16			
c- Weighting of	- Class tutorial and quizzes :	10 %			
assessment	- Mid-term examination:	20 %			
	- Final – term examination:	70 %			
	Т	otal 100 %			
10- List of text books and references:					
a- Course notes	There are lectures notes pre	pared in the form of a book			
	authorized by the department	<u>nt.</u>			
b- Text books/ References	Mohammed Sabry El At	tar , Mansoura Hamed &			
	Ahmed El sabagh , Princ	cipals of financial accounting,			
	Cairo University				
c- Periodicals, Web sites	Web Sites related to Mathematic	s and Mathematical engineering as:			
etc	www.math.hmc.edu,				
	www.tutorial.math.lamar.edu,				
	www.web.mit.edu				

11-Course contents – Course related program competencies						
		Lev	el A			
	A.1	A.2	A.3	A.5		
The scientific frame of accounting : accounting concept						
& objectives , acceptable principals of accounting ,	$\checkmark$					
accounting branches , types of institutions						
financial statement – balance sheet , income statement				$\checkmark$		
, ownership proprietary statement , cash flow statement	$\checkmark$	$\checkmark$				
<ul> <li>double entry &amp; analysis of financial position formula</li> </ul>						
debit & credit items financial position formula – the						
accounting cycle, business documents, the journals, the			1			
ledgers commercial documents according to the Egyptian		V				
laws , journalizing & recording the commercial						

transactions of the owner of the firm				
commercial papers & documents different types of revenues & expenditure. Trail balance , trail balance concept & objectives , its balance & imbalance corrections in the imbalance cases	$\checkmark$	V	1	
A brief presentations of accounting in she types of companies as partnership & corporation			V	

12-Teaching and learning methods - Course related program competencies				
		Leve	el A	
	A.1	A.2	A.3	A.5
Lecture (online/in class)	1	$\checkmark$	$\checkmark$	$\checkmark$
Discussion	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Tutorial	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Problem solving	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Brain storming	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Projects	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Self-learning		$\checkmark$		
Research and Reporting			$\checkmark$	
Computer Simulation				
Teamwork				

13- Assessment methods - Course related prog	gram competencies				
Assessment methods Course related program comptencies					
			Leve	el A	
		A.1	A.2	A.3	A.5
1. Mid Term Examination (written/ online)		1	$\checkmark$	$\checkmark$	$\checkmark$
2. Practical Examination					

3. Oral Examination				
4. Formative (quizzes- presentation -reports)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
5. Final Term Examination (written				

#### Authorized from board of the department at 4/2/2023 **Course coordinator:**

Dr. Gamal El-Anany





K 10, Bilbies – 10<sup>th</sup> of Ramadan



وزارة التعليم العالي المعهد العالي للهندسة الإلكترونية قرار وزاري 5053 – 2016/10/12 ك 10 طريق بلبيس العاشر من رمضان

## **Course Specification**

## 1- Basic Information

Course Title	Monitoring & Qualit	y Control Systems			
Course Code	IEN 427	IEN 427			
Academic Year	2022-2023	2022-2023			
Coordinator	Dr/ aya salem				
Teaching Staff	Dr/ aya salem				
Level	Level (4)				
Semester	second Term				
Number of Weekly	Lecture	1			
Contact Hours	Tutorial	0			
	Lab	0			
Department offering the	Electronics ar	nd Communications Engineering,			
program	Computers a	nd Systems Engineering,			
	Communicati	ons and Computer Engineering			
	Electronico Encino	aning and Electrical			
Department offering the	Electronics Engine	ering and Electrical			
course	Communication				
	Computers and Systems Engineering				
2- Aim of the course					
1. Learn history of quality,	the dimensions of qualit	y. Quality Control Concepts: quality			
assurance, total quality	management.				
2. Learn Control systems:	objectives of control syst	ems, quality systems, top			
management communicatingLearn the principles of multi-meter, the oscilloscope,					
signal generators.					
3. Learn about Hazard Analysis: high - quality recommendations, commitment					
monitoring, follow up Systems, the base line of hazard analysis critical point (HACCP).					
4. Demonstrate Sampling and Inspection: Sample size, sampling error. sampling designs					
and inspection, accepto	nce sampling plans. Qua	lity Control Tools and Techniques:			
tools for creating new o	oncepts, tools for organi	zation and analysis of data, tools for			
determine and solving	problems (Control Charts	for Variables - Control Charts for			
Attributes - PRE - contro	ol - analysis - flow charts,	).			

5. Ur rec Pro	nderstand International Standards Accreditation: Accreditation meaning, ISO quirements and recommendations, Audit program, Certification body. Analyzing ocess Capability: Process capability indices, process performance indices
3- Course re	lated program competencies
	A.5 Practice research techniques and methods of investigation as an inherent part of learning.
neral	A.7 Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams.
l A – Gei	A.8 Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools
Leve	A.9 Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
	A.10 Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.
Level B - Speciality	
4- Course Contents	Syllabus: Introduction: history of quality, the dimensions of quality.         Quality Control Concepts: quality assurance, total quality management.         Control systems: objectives of control systems, quality systems, top         management communicating. Hazard Analysis: high - quality         recommendations, commitment monitoring, follow up Systems, the base         line of hazard analysis critical point (HACCP). Sampling and Inspection:         Sample size, sampling error, sampling designs and inspection, acceptance         sampling plans. Quality Control Tools and Techniques: tools for creating         new concepts, tools for organization and analysis of data, tools for         determine and solving problems (Control Charts for Variables - Control         Charts for Attributes - PRE - control - analysis - flow charts). International         Standards Accreditation: Accreditation meaning, ISO requirements and         recommendations, Audit program, Certification body. Analyzing Process         Capability: Process capability indices, process performance indices.         Itrack والتقنيش: حجم العونة, ida الجودة, ida الجودة; توكيد الجودة, ادارة الجودة الدائمة, ida الجودة; الحرارة الجودة الدائمة, ida labustion, itad labustion, cell         guility: Process capability indices, process performance indices.         ice-outin: Impact and lact labus, ida lact is, ida lacties, ida

المستخدمة لتقدير المقدرة

# Topic		Lecture	Tutorial/Practical	No of hours
history of q dimensions Control Cor assurance, manageme objectives o quality syst manageme	uality, the s of quality. Quality ncepts: quality total quality nt. Control systems: of control systems, ems, top nt communicating	2	0	0
Hazard Ana recomment commitment follow up S line of haza point (HAC	lysis: high - quality dations, nt monitoring, ystems, the base Ird analysis critical CP)	2	0	0
Sampling an Sample size sampling de inspection, sampling pl	nd Inspection: e, sampling error, esigns and acceptance ans.	2	0	0
Quality Cor Techniques new concep organizatio data, tools solving pro Charts for A Charts for A control - an	ntrol Tools and : tools for creating ots, tools for n and analysis of for determine and blems (Control /ariables - Control Attributes - PRE - alysis - flow charts).	3	0	0
Internation Accreditatio meaning, IS recomment program, C	al Standards on: Accreditation 60 requirements and dations, Audit ertification body.	1	0	0
Analyzing P Process cap	rocess Capability: pability indices,	2	0	0

process performance indic	ces						
history of quality, the dimensions of quality. Qua Control Concepts: quality assurance, total quality management. Control syste objectives of control syste quality systems, top management communicat	ality tems: ms, ting	1	0	0			
Hazard Analysis: high - qua recommendations, commitment monitoring, follow up Systems, the bas line of hazard analysis crit point (HACCP)	ality se ical	1	0	0			
Total sum		14	0	0			
6- Teaching and learning		<ol> <li>Lecture (omne/m class)</li> <li>Discussion</li> <li>brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> <li>Teamwork</li> <li>Additional Tutorials</li> </ol>					
methods for disable studer	its	<ol> <li>Online lectu</li> <li>Using as ma</li> </ol>	res and assignments ny audio/visual aids as p	ossible.			
		4. Providing ex	tra opportunities for pra	ctice			
7- Teaching and learning methods for low capacity students		<ol> <li>Assign a portion of the office hours for those students and</li> <li>provide them with specific tailored tasks.</li> <li>Assign a teaching assistance to follow up their performance</li> </ol>					
8- Teaching and learning		1. Assign course project tasks to those students.					
methods for outstanding		2. Give them a 3. Encourage t	dvanced extra-curriculur hem to take part in a pilo	n topics. ot research and case			
	studients studies.						
9- Students assessment							
a- Assessment methods	<ol> <li>M</li> <li>Pr</li> <li>O</li> <li>O</li> <li>Fc</li> <li>Fi</li> </ol>	Aid Term Examination (written/ online) Practical Examination Oral Examination ormative (quizzes- presentation -reports) inal Term Examination (written)					

b- Assessment schedule	- Quizz-1:	Week no. 5
	- Mid-Term exam:	Week no . 8
	- Quizz-2:	Week no. 12
	- Final – term examination:	Week no. 16
c- Weighting of	- quizzes :	15 %
assessment	- Mid-term examination:	15 %
	- Final – term examination:	70 %
		Total 100 %
10- List of text books and re	eferences:	
a- Course notes	There are lectures notes authorized by the departs	prepared in the form of a book ment.
b- Text books/ References	Besterfield, D., Quality Con	trol, Prentice Hall, Englewood Cliffs NJ,
	USA, 6th. Ed., 2000.	
c- Periodicals, Web sites		
otc		

11-Course contents – Course related program competencies					
	Leve	Level A			
	A.5	A.7	A.8	A.9	A.10
4- Course Contents	$\checkmark$	1			
# Topic	1	$\checkmark$			
history of quality, the dimensions of quality. Quality Control Concepts: quality assurance, total quality management. Control systems: objectives of control systems, quality systems, top management communicating		~	1		
Hazard Analysis: high - quality recommendations, commitment monitoring, follow up Systems, the base line of hazard analysis critical point (HACCP)		V	1		
Sampling and Inspection: Sample size, sampling error, sampling designs and inspection, acceptance sampling plans.			1	1	
Quality Control Tools and Techniques: tools for creating new concepts, tools for organization and analysis of data, tools for determine and solving problems (Control Charts for Variables - Control Charts for			V	V	

Attributes - PRE - control - analysis - flow charts).			
International Standards Accreditation: Accreditation meaning, ISO requirements and recommendations, Audit program, Certification body.		~	$\checkmark$

12-Teaching and learning methods - Course related program competencies						
	Level A					
	A.5	A.7	A.8	A.9	A.10	
Lecture (online/in class)	V					
Discussion	V	$\checkmark$				
Tutorial	V	$\checkmark$	$\checkmark$	1		
Problem solving		$\checkmark$		1		
Brain storming			$\checkmark$			
Projects			$\checkmark$	1		
Self-learning					$\checkmark$	
Research and Reporting			$\checkmark$		$\checkmark$	
Computer Simulation				1		
Teamwork					$\checkmark$	

13- Assessment methods - Course related program competencies						
Assessment methods	Course related program comptencies					
	Level A					
	A.5	A.7	A.8	A.9	A.10	
1. Mid Term Examination (written/ online)	$\checkmark$	$\checkmark$				
2. Practical Examination		$\checkmark$				
3. Oral Examination		$\checkmark$	$\checkmark$			
4. Formative (quizzes- presentation -reports)			$\checkmark$	$\checkmark$		

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	5. Final Term Examination (written			$\checkmark$	$\checkmark$

## Authorized from board of the department at 11/2/2023 Course coordinator:

Dr./ aya .m. salem

