



Second level courses (Sophomore)

First semester (Fall)

No.	Cod	Course Name	Instructor			
1	CECE 102	Fundamental of structured programming	Dr. Mohamed Mahmoud Ahmed Mohamed El- Ghoboushi			
2	CECE 201	Digital Logic Design I	Dr. Mohamed Mahmoud Ahmed Mohamed El- Ghoboushi			
3	CECE 202	Electric Circuits I	Dr. Ibrahim Ali Mahmoud Abdel Dayem			
4	MATH 201	Calculus III	Dr. Gamal El-Anani			
5	ENGR 206	Strength and Testing of Materials	Prof. Dr. Al-Desouki Ibrahim Saleh Eid			
6	ENGR 102	Lower intermediate English	Dr. Ahmed El-Hosseini			
7	BASE309	Human Rights	Dr. Abd El-Aziz Ramadan			





Course specification

Course code		Course name				
CECE 102		Fundamental of structured				
programmi	_					
programmi	A- Affiliat	ion				
Relevant prog		Control and computer system				
1 0		engineering				
Department of	fering the program:	Electrical and communication				
		engineering				
Department of	fering the course:	Electrical and communication				
		engineering				
Date of progra		2008-2009				
	al from the higher ministry of	27/1/2008				
education						
Date of course	•	2021-2022				
	<u>B-Basic Infor</u>	mation				
Title		Fundamental of structured				
		programming				
Code		CECE 102				
Credit Hours		3Cr. hr				
Lectures		2hr				
lab		2hr				
Total		4hr				
Prerequisite		CECE 101				
Instructor nat	me/Email	Dr. Mohamed Mahmoud Ahmed				
		Mohamed El-Ghoboushi				
		mohammed.ghaboushy@sva.edu.eg				
	<u>C- Professional i</u>	nformation				
	1- Course learning	objectives:				
	Prepare the students for the adv	anced course in C++ which will provide				
oc 1	-	l knowledge and skills to become a C++				
	programmer.	0				
		cal problem domain into a hierarchy of				
oc 2	objects.					
	5					





- oc 3 Know Objects, their behaviors, and their relationships, will be modeled and these models will be programmed into a functional application that the student will compile, modify, enhance and run.
- oc 4 Write Program in a structured style whereby reinforcing the concepts of software quality, reliability and maintainability.

2- program objectives served by the course:

Upon the completion of the course the student should be able to:

- OP 5 Prepare students for engineering analyses and problem-solving using appropriate mathematical and computational methodologies.
- OP 6 Prepare undergraduate students who can create new ways to meet society's needs by applying fundamentals of engineering sciences to practical problems using design and syntheses of electrical components, circuits, and systems.
- OP 7 Teach students to use experimental and data analysis techniques for electrical power engineering applications
- OP 12 Prepare engineers who can work on electrical power systems, including designing and realizing such systems.

• The fetation between the course objectives and the program objective										
C	ourse objectives	program objectives								
1	oc 1	OP5								
2	oc 2	OP6								
3	oc 3	OP5								
4	oc 4	OP7								
4- Learning outcomes of the course (LOs)										

3- The relation between the course objectives and the program objectives

Upon the completion of the course, the student should be able to:

Lo1Describe OOPs conceptsLo2Use functions and pointers in your C++ programLo3Understand tokens, expressions, and control structuresLo4Explain arrays and strings and create programs using themLo5Describe and use constructors and destructors5- Program competencies served by the course:

Upon the completion of the Program the student should be able to:

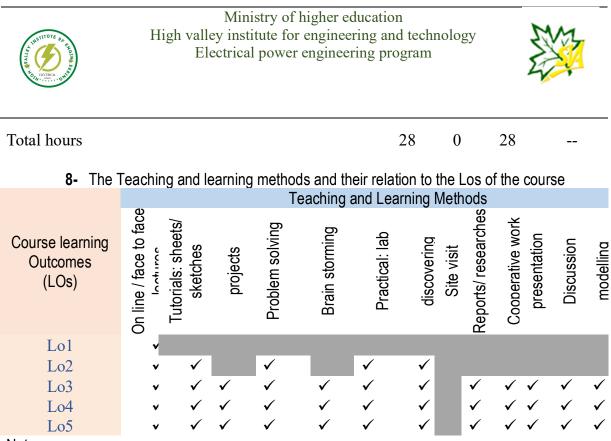




	Design, model and analyze an electrical/electronic/digital system or
B2	component for a specific application; and identify the tools required to
	optimize this design
	Design and implement: elements, modules, sub-systems or systems in
B3	electrical/electronic/digital engineering using technological and professional
	tools.

6- The relation between the course learning outcomes and the program competencies

	Course (LOs)		comne	tencies			
		program competencies					
1	Lol	B2					
2	Lo2		B2				
3	Lo3		B2				
4	Lo4		2, B3				
5	Lo5		2, B3				
7	 Course content and the relation between the co 	ourse conte	nts and	the cours	e LOs		
Week	Торіс	Lectu	Tut	Practi	course		
No.		re hr.	oria	cal	LOs		
			1 hr.	hours			
1	Introducing C ++ Programming	2	0	2	LO1		
2	Variables	2	0		LO1		
		2	U	2			
3	Working with Tokens, Expressions and	2	0	2	LO1		
	Control Structures in C++						
4	Managing Input and Output Data	2	0	2	LO2		
5	Arranging the Same Data Systematically:	2	0	2	LO3		
	Arrays	2	0	2			
6	Revision and quiz	2	0	2	LO3		
7	Decisions	2	0	2	LO3		
8	Midterm		1.0				
9	Functions	2	0	2	LO2		
10	Pointers + (Quiz)	2	0	2	LO3		
11	Maximum power transfer.	2	0	2	LO5		
12	Quiz(2) + solved examples	2	0	2	LO4		
12	Classes and Objects in C++	2	0	2	LO5		
13			0		200		
13	Implementing OOPs Concepts in C++	2	0	2	LO5		
	-						



Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

Student assessment method												
	a- Assessment method and its relation to the Los of the course											
Tools of assessment												
Course ILOs	auizzes Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ recearches presentation	modelling			
Lo1					_							
Lo2			\checkmark		\checkmark							
Lo3	\checkmark \checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark \checkmark	\checkmark			
Lo4	\checkmark \checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark \checkmark	\checkmark			
Lo5	\checkmark \checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark \checkmark	\checkmark			
		b	- Time	schedule	of assess	ment						
Quizzes Quiz (1) Week (3) Quiz (2) Week (10)												
Quiz (2)week (10)DiscussionsEvery week for any studentPresentations and Moviesweekly												





Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exam		weekly Week (2,3) Week (4,8) Week (4,8) weekly Week (7)			
final exam	- Grading system	Week (14)			
quizes	Quiz(1) Quiz(2)	(2.5) marks (2. 5) marks			
Discussions Sheets and Sketches Researches and reports the Projects Practical modelling	15% 15% 20% 30% 20%	30 marks	(60) marks		
Attendance		(10) marks			
Mid-term exam final exam Total	(15) marks (40) marks (100) marks				
	10- List of referen		,		
a) Course notesb) Required books	Lecture notes and handouts Timothy B. D'Orazio, McGraw-Hill, "Programming in C++ lessons and applications", International Edition, 2004				
c) Recommend books	Walter Savitch, Addison-Wesley, 'Problem solving				
d) Periodicals, Web sites, etc	 with C++", 7thedn, 2009. <u>www.prenhall.com</u> presentations, handouts by Mohamed, N.A. 				

11- Facilities required for teaching and learning:

• Appropriate teaching design studios including presentation board, data show

- Google classroom
- E- learning
 - 12- Requirements for Disable facilities:
 - On line teaching hours if it is needed





• Extra assignments

Course coordinator:	Dr. Mohamed Mahmoud Ahmed Mohamed El- Ghoboushi	1 1 10
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	4
Date:	2021/2022	







Course specification

Course c	ode:	Course name				
CECE 20		Digital logic design I				
		A- Affiliation				
Relevant	program:	Electrical power engineering				
Departm	ent offering the program	m: Electrical and communication engineering				
Departm	ent offering the course:					
Data of r	no grom on oration.	engineering 2008-2009				
-	program operation: approval from the highe					
education		27/1/2008				
Date of c	course operation	2021-2027				
		<u>B-Basic Information</u>				
Title Code Credit H Lectures Tutorial Total Prerequis Instructo	site or name/Email	Digital logic design I CECE 201 3Cr. hr 2hr 2hr 4hr CECE 101 Dr. Mohamed Mahmoud Ahmed Mohamed El- Ghoboushi mohammed.ghaboushy@sva.edu.eg - Professional information				
		1- Course learning objectives:				
oc 1	Explain the logic gate	s concepts				
oc 2	Explain the boolean al	lgebra and logic simplification.				
oc 3	Explain karnaugh map	3				
oc 4	Explain combinationa	l logic analysis				
oc 5	Explain functions of c	combinational logic				
	2- pro	gram objectives served by the course:				
Upon the	e completion of the cou	rse the student should be able to:				
OP 5	-	r engineering analyses and problem-solving using ical and computational methodologies.				





OP 6	Prepare undergraduate students who can create new ways to meet society's needs by applying fundamentals of engineering sciences to practical problems using design and syntheses of electrical components, circuits, and systems.									
OP 7	Teach students to use experimental and data analysis techniques for electrical power engineering applications									
OP 12	Prepare engineers who can work on electrical power systems, including designing and realizing such systems.									
	3- The relation between the c	ourse objectives and the program objectives								
	Course objectives	program objectives								
1	oc 1	OP5								
2	oc 2	OP6								
3	oc 3 OP5									
4	oc 4 OP7									
5	oc 5	OP12								
	4- Learning o	utcomes of the course (LOs)								
Upon t	he completion of the course, the	student should be able to:								
Lo1	Understand logic gates: definit	tion, function and practice.								
Lo2	Know boolean algebra and practice.	logic simplification: definition, function and								
Lo3	Know laws and rules of boolea	an algebra and demorgan's theorems.								
Lo4	Understand boolean analysis boolean algebra.	of logic circuits and logic simplification using								
Lo5	Understand standard forms of b truth tables	Understand standard forms of boolean expressions and boolean expressions and								
Lo6	Know the karnaugh map, c combinational logic.	ombinational logic analysis and functions of								
	5- Program comp	petencies served by the course:								
Upon t	he completion of the Program th	e student should be able to:								
	Design and del and suchers an	-1								

- 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
- B3 Design and implement: elements, modules, sub-systems or systems in electrical/electronic/digital engineering using technological and professional tools.





В5	Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services.											
	6- The relation between the course learning outcomes and the program competencies											
	Course (LOs) program competencies											
1	Lo1		B2									
2	Lo2		B2, I	33								
3	Lo3		B2									
4	Lo4		B2									
5	Lo5		B2									
6	Lo6		B5									
	7- Course content and the relation betwee	en the cours	e content	s and the cou	urse LOs							
Wee	Торіс	Lecture	Tutori	Practical	course							
k		hr.	al hr.	hours	LOs							
No.												
1	Introduction	2	2	0	Lo1							
2	Number systems	2	2	0	Lo1							
3	Logic Gates	2	2	0	Lol							
4	Boolean algebra and logic simplification	2	2	0	Lo2							
5	Laws and rules of Boolean algebra	2	2	0	Lo2							
6	Demorgan's theorem	2	2	0	Lo3							
7	Midterm		1.0									
8	Boolean analysis of logic circuits	2	2	0	Lo4							
9	Logic simplification using Boolean algebra	2	2	0	Lo4							
10	Standard forms of Boolean expressions	2	2	0	Lo5							
11	Boolean expressions and truth tables	2	2	0	Lo5							
12	Karnaugh map	2	2	0	Lo6							
13	Combinational logic analysis	2	2	0	Lo6							
14	Final Exam		2.0									
	otal hours 28 28 0											

8- The Teaching and learning methods and their relation to the Los of the course Teaching and Learning Methods





Course learning Outcomes (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
Lo1	✓												
Lo2	\checkmark	\checkmark											
Lo3	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark			\checkmark
Lo3 Lo4	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo5	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Mataa													

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving. Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

touoning a						essment	metho	d			
	a- Assessment method and its relation to the Los of the course										
		_			Т	ools of a	issessr	nent			
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lo1											
Lo2							_		_		
Lo3	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark		\checkmark
Lo4	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo5	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
				k	- Tim	e schedu	lle of a	ssessment	t		
Quizzes				Quiz () Quiz ()			eek (3 eek (1	/			
Discussions Presentations and Movies Sheets and Sketches Researches and reports			,	Ev we we	· · ·	eek for an	ıy studen	t			





the Projects		Week (4,8)	
Practical modelling		Week (4,8)	
Attendance		weekly	
Mid-term exam		Week (7)	
final exam		Week (14)	
	c- Gradin	g system	
Quizzes	Quiz (1)	(5) marks	
Quizzes	Quiz (2)	(5) marks	
Discussions	15%		
Sheets and Sketches	20%		
Researches and reports	20%	5 marks	(40) marks
the Projects	30%		
Practical modelling	20%		
Attendance		(10) marks	
Mid-term exam		(15) marks	
final exam		((60) marks
Total	(100) marks		
	10- List of	references:	
a) Course notes	Lecture not	es and handouts	
b) Required books	1. Digital Fundamentals, 11th Edition by Thomas L,		
	Floyd		
	2. Digital	Design Principles a	nd Practices- 4th Ed,
	John F. Wakerly, Prentice Hall, 2005		
c) Recommend books	Mentioned a	at time.	
d) Periodicals, Web	No periodic	als are needed.	
sites, etc	_		

11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning

12- Requirements for Disable facilities:

- On line teaching hours if it is needed
- Extra assignments





Course coordinator:	Dr. Mohamed Mahmoud Ahmed Mohamed El- Ghoboushi	
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	151
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	6D
Date:	2021/2027	





Course specification

Course code:		Course name			
CECE 202		Electric circuits (I)			
	A- Affi	liation			
Relevant prog	gram:	Electrical power engineering			
Department o	ffering the program:	Electrical and communication			
		engineering			
Department o	ffering the course:	Electrical and communication			
		engineering			
Date of progra		2008-2009			
Date of appro education	val from the higher ministry of	£ 27/1/2008			
Date of course	e operation	2021-2027			
	<u>B-Basic Inf</u>	<u>ormation</u>			
Title		Electric circuits (I)			
Code		CECE 202			
Credit Hours		3Cr.hr			
Lectures		2hr			
Tutorial		2hr			
Total		4hr			
Prerequisite		PHYS 102			
Instructor nan	ne/Email	Dr. Ibrahim Ali Mahmoud Abdel Dayem			
		dr.ibrahim@sva.edu.eg			
	<u>C- Professiona</u>	<u>l information</u>			
	1- Course lea	arning objectives:			
oc 1	Identify electrical component	s (resistors, capacitors, inductors, and etc.)			
oc 2	Perform circuit analysis and calculations for resistive, capacitive, and inductive DC circuits.				
oc 3	Apply basic laws and ca Superposition, Thevenin's, ar	lculations to circuit theorems such as ad Nortons.			
oc 4	Understand the principles of DC and AC.				
	2- program objectives served by the course:				
Upon the com	pletion of the course the stude	nt should be able to:			
OP 5	Prepare students for engineering analyses and problem-solving using appropriate mathematical and computational methodologies.				





OP 6		Prepare undergraduate students who can create new ways to meet society's needs by applying fundamentals of engineering sciences to practical problems using design and syntheses of electrical components, circuits, and systems.				
OP 7		Teach students to use experimental and data analysis techniques for electrical power engineering applications				
OP 12		Prepare engineers who can work on electrical power systems, including designing and realizing such systems.				
			e objectives and the program objectives			
	Сс	ourse objectives	program objectives			
1		oc 1	OP5			
2		oc 2	OP6, OP7			
3		oc 3	OP5			
4		oc 4	OP7, OP12			
		4- Learning outcor	nes of the course (LOs)			
Upon the	comp	pletion of the course, the stud	ent should be able to:			
Lol	Abi	lity to apply basic laws to res	istive circuits.			
Lo2	Abi	Ability to perform mesh and nodal analysis.				
Lo3	Abi	Ability to apply circuit theorems.				
Lo4	Abi	lity to use phasors to analyze	steady-state sinusoidal circuit analysis.			
Lo5	Abi	lity to understand complex po	ower.			
		5- Program competen	cies served by the course:			
Upon the	comp	oletion of the Program the stu	dent should be able to:			
B2	com		an electrical/electronic/digital system or cation; and identify the tools required to			
В3		trical/electronic/digital engin	nts, modules, sub-systems or systems in eering using technological and professional			
B4	syst		formance of an electrical/electronic/digital input excitation, and evaluate its suitability			
В5	buil	-	ernational standards and codes to: design, tain electrical/electronic/digital equipment,			





6-	The relation between the course learning outcomes	and the p	orogram co	ompeten	cies	
	Course (LOs) pro	ogram coi	npetencie	es		
1 2 3 4	Lo1 Lo2 Lo3 Lo4	B2 B2, B3 B2, B3 B4, B5				
5	Lo5	B				
7.	 Course content and the relation between the course 	e contents	s and the	course L	Os	
Week No.	Торіс	Lect ure	Tutori al hr.	Practi cal	cour se	
1	Introduction to electric circuit variables and elements.	hr. 2	2	hours 0	LOs LO1	
2	Magnetic field quantities	2	2	0	LO1	
3	Simple resistive circuits+ Solved examples+ Quiz (1).	2	2	0	LO1	
4	Techniques for circuit analysis.	2	2	0	LO2	
5	Node voltage method.	2	2	0	LO3	
6	Mesh current method.	2	2	0	LO3	
7	Source transformation.	2	2	0	LO3	
8	Midterm	2	1.0	0	1.02	
9 10	Superposition. Thevenin and Norton equivalent circuits.	2 2	2 2	$\begin{array}{c} 0\\ 0\end{array}$	LO2 LO3	
10	Maximum power transfer.	2	2	0	LOS LOS	
11	Quiz (2) + solved examples	2	2	0	LOJ	
12	Operational Amplifiers.	2	$\frac{2}{2}$	0	LO4 LO5	
13	Introduction to inductance and capacitance.	2	2	0 0	LO5	
15	Sinusoidal steady state analysis (a.c. circuits).	2	2	0	LO3	
14	Final Exam		2.0			
Total ho	urs	28	28	0		





8- The Teaching and learning methods and their relation to the Los of the course **Teaching and Learning Methods** On line / face to face Reports/ researches Cooperative work utorials: sheets/ Problem solving Brain storming Practical: lab Course learning presentation discovering Discussion mndallinn Site visit lectures projects Outcomes (LOs) Lo1 Lo2 \checkmark Lo3 ⁄ \checkmark Lo4 ⁄ Lo5

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

9- Student assessment method										
a- Assess	sment me	ethoc	and its	relation	to the Los	s of the	course			
				Т	ools of as	sessme	ent			
Course ILOs	مرتبتیم Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lol										
Lo2	$\checkmark\checkmark$	\checkmark	\checkmark							١
Lo3	$\checkmark\checkmark$	\checkmark	\checkmark			\checkmark		\checkmark		۱
Lo4	$\checkmark\checkmark$	\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	\checkmark	١
Lo5	$\checkmark\checkmark$	\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	\checkmark	١
 b- Time schedule of assessment 										
Quizzes			Quiz (1) Quiz (2)	·		eek (3) eek (1)	·			
Discussions Presentations and Movies			- • •			ery we ekly	ek for a	ny studer	nt	





Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exam final exam		weekly Week (2,3) Week (4,8) Week (4,8) weekly Week (7) Week (14)	
C	- Grading syst		
quizes	$\operatorname{Quiz}(1)$	(2.5) marks	
*	Quiz (2)	(2.5) marks	
Discussions	15%		
Sheets and Sketches	15%		
Researches and reports	20%	15 marks	(40) marks
the Projects	30%		
Practical modelling	20%		
Attendance		(5) marks	
Mid-term exam		(15) marks	
final exam			marks
Total		· · · · ·	marks
	10- List of refere		
a) Course notes		and handouts	
b) Required books		W. Nilsson, and Sus	
		ic Circuits, 10th edit	
		s K. Alexander & M	,
		mental of Electric Ci	rcuits, 5th
	edition		
c) Recommend books	Mentioned at		
d) Periodicals, Web sites,	No periodical	s are needed.	
etc			
11- Fa	cilities required f	or teaching and learnin	a.

11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning

12- Requirements for Disable facilities:

- On line teaching hours if it is needed
- Extra assignments





Course coordinator: program Coordinator	Dr. Ibrahim Ali Mahmoud Abdel Dayem Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	A L
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	60
Date:	2021/2027	





Course specification

Course code: Course name					
Math201		Ca	alculus III		
		A- Affiliation			
Relevant p	rogram:		Electrical power engineering		
Departmen	t offering the program	m:	Electrical and communication engineering		
Departmen	t offering the course	:	Basic science		
Date of pro	ogram operation:		2008-2009		
Date of appeducation	proval from the highe	er ministry of	27/1/2008		
Date of con	urse operation		2021-2027		
		<u>B-Basic Information</u>	<u>1</u>		
Title Code Credit Hours Lectures Tutorial Total Prerequisite Instructor name/Email		Calculus III Math201 3Cr. hr 2hr 2hr 4hr Math102 Dr. Gamal El Anani gamalanany@sva.ed - Professional informa	ation		
		 Course learning object 			
oc 1	Explain concepts of	f sequences and series			
oc 2		f mathematical Vector	-		
oc 3	Apply knowledge o	f mathematics to solv	e Partial differentiation problems.		
oc 4	Explain Concepts o	f double integrals			
oc5	Search and analyze data, to Deal with design situations within solving design problems based on the analytical process for Multiple integrals				
oc 6	Demonstrate methodologies of solving engineering problems with Green's Theorem.				
oc 7	Apply knowledge of Theory of equations, and Complex numbers to solve engineering problems.				
	2- program objectives served by the course:				





Upon the completion of the course the student should be able to:

- **OP** 1 Sequences and series (including power series).
- OP 2 Vectors and planes.
- OP 3 Partial differentiation.
- OP4 Introduction to double integrals (including double integrals in polar coordinates).
- OP 5 Multiple integrals.
- OP 6 Cylindrical and spherical coordinates Vector-valued functions, vector calculus: Green's Theorem, Gauss Theorem and Stokes' Theorem and their
- applications.
- OP7 Complex numbers.
 - **3-** The relation between the course objectives and the program objectives

Cou	rse objectives		program objecti	ves
1	oc 1		OP1	
2	oc 2		OP2	
3	oc 3		OP3	
4	oc 4		OP4	
5	oc 5		OP5	
6	oc 6		OP6	
7	oc 7		OP7	
	4 T	•		、 、

4- Learning outcomes of the course (LOs)

Upon the completion of the course, the student should be able to:

Lo1	Explain concepts and theories of mathematics and sciences, appropriate to calculus III.
Lo2	Demonstrate methodologies of solving engineering problems, data collection and interpretation
Lo3	Select appropriate solutions for engineering problems based on analytical thinking
Lo4	Apply knowledge of mathematics to solve engineering problems.
Lo5	Apply knowledge of linear algebraic equations, iterative methods, and infinite series to solve engineering problems.
Lo6	Prepare and present technical reports about application of matrices to solve engineering problems.
Lo7	Communicate effectively in tutorial class room with the demonstrator.





Lo8	Effectively manages tasks, time, and resources, when solving mathematics
LUO	problems, and in exams

Lo9 Apply knowledge of mathematics to solve differential problems

5- Program competencies served by the course:

Upon the completion of the Program the student should be able to:

- A1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics
- A2 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
 - 6- The relation between the course learning outcomes and the program competencies

	e.	ompetener	•0								
	Course (LOs)	pro	gram com	petencies							
1	Lo1	Al									
2	Lo2	A1									
3	Lo3	A1									
4	Lo4		A1								
5	Lo5		A2								
6	Lo6		A2								
7	Lo7		A2								
8	Lo8		A2								
9	Lo9		A2								
	7- Course content and the relation between the course contents and the course LOs										
Week	Торіс	Lecture	Tutorial	Practical	course LOs						
No.		hr.	hr.	hours							
1	Sequences and series (including power series	2	2	0	Lo1, Lo2						
2	Vectors and planes.	2	2	0	Lo1, Lo3						
3	Partial differentiation	2	2	0	Lo5, Lo6, Lo7, Lo8						
4	Introduction to double integrals	2	2	0	Lo2, Lo4						
5	Double integrals in polar coordinates	2	2	0	Lo2, Lo4						
6	Multiple integrals.	2	2	0	Lo2, Lo4						
7	Cylindrical and spherical coordinates	2	2	0	Lo4						
8	Midterm		1.0								





9	Vector-valued functions,	2	2	0	Lo2, Lo4
10	vector calculus	2	2	0	Lo2, Lo4
11	Green's Theorem	2	2	0	Lo2, Lo5, Lo6
12	, Gauss Theorem	2	2	0	Lo2, Lo4
13	Stokes' Theorem and applications	2	2	0	Lo2, Lo4
14	Complex numbers.	2	2	0	Lo2, Lo4
15	Revision	2	2	0	Lo2, Lo4, Lo5, Lo6
14	Final Exam		2.0		,
Total	hours	28	28	0	

8- The Teaching and learning methods and their relation to the Los of the course

					Te	eachin	g and L	earning Me	thods				
Course learning Outcomes (LOs)	 On line / face to face 	Tutorials: sheets/	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
Lo1	\checkmark	\checkmark		\checkmark	\checkmark						\checkmark	\checkmark	
Lo2	\checkmark	\checkmark		\checkmark	\checkmark						\checkmark	\checkmark	
Lo3	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	✓	\checkmark	
Lo4	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo5	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo6	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo7	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo8	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo9	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations.

The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.





			9-	Studer	nt asses	sment r	nethod	l			
	 Assessment method and its relation to the Los of the course 										
					То	ols of as	sessm	ent			
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lo1 Lo2 Lo3 Lo4 Lo5 Lo6 Lo7 Lo8 Lo9	 ✓ 		<td> ✓ ✓</td> <td></td> <td></td> <td></td> <td> ✓ ✓</td> <td>$\begin{array}{c} \checkmark \\ \checkmark$</td> <td>$\begin{array}{c} \checkmark \\ \checkmark$</td> <td></td>	 ✓ ✓				 ✓ ✓	$\begin{array}{c} \checkmark \\ \checkmark $	$ \begin{array}{c} \checkmark \\ \checkmark $	
	b- Time schedule of assessment										
Quizzes			(Quiz (1)	We	eek (3)			
			(Quiz (2)		eek (1	· ·			
Discussio Presentati Sheets an Researche Attendanc Mid-term final exam	ions a d Ske es anc ce exan	etches 1 reports				we we We We We	ekly ekly eek (2, eekly eek (7 eek (1	3)	ıny stude	ent	
				c-		ading sy		1			
	quize scuss			Quiz	x(1) x(2) x%		5) ma 5) ma				
	and S	Sketches	ts	50	9% 5%	ſ	5 mar		(3	60) mark	5
		Atten Mid-ter		n		· ·	10) ma 20) ma				
		final of To	exam	11		(.	20) III	(5	50) mark 00) marl		
	10- List of references:										





a) Course notes	Lecture notes and handouts
b) Required books	1. Mary Attenborough, Engineering Mathematics,
b) Required books	
	McGraw - HILL Book Company Europe, 1994.
	2. Anthony croft, Robert Davison, Engineering
	Mathematics A modern Foundation for
	Electrical, Electronic & Control Engineering,
	Addison - Wesley - Publishing Company, 1992
c) Recommend books	Stokowski, E, Olinick, M and Pence, D., Calculus, PWS
	Publishing Company - Boston, 1994
d) Periodicals, Web	Web Sites related to Mathematics and Mathematical
sites, etc	engineering as:
	www.math.hmc.edu,
	www.tutorial.math.lamar.edu,
	www.web.mit.edu

11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning
- 12- Requirements for Disable facilities:
- On line teaching hours if it is needed
- Extra assignments

Course coordinator:	Dr. Gamal El Anani
program Coordinator	Dr. Amera Marey
Head of the Department	Dr. Amera Marey
Date:	2021/2027







	Course specific	cation				
Course code:	(Course name				
ENGR 206		Strength and Testing of Materials				
	A- Affiliation	n				
Relevant program:		Electrical power engineering				
Department offering the pro-		Electrical and communication				
		engineering				
Department offering the co		Basic Science				
Date of program operation:		2008-2009				
Date of approval from the l education	ligher ministry of	27/1/2008				
Date of course operation		2021-2021				
	<u>B-Basic Informa</u>	<u>ition</u>				
Title	Strength and T	esting of Materials				
Code	ENGR 206	-				
Credit Hours	3Cr. hr					
Lectures	2hr					
Tutorial	2hr					
Total	4hr					
Prerequisite Instructor name/Email	ENGR 103 Brof Dr A1 D	esouki Ibrahim Saleh Eid				
Instructor name/Eman	eldesuki.eid@s					
	C- Professional info					
	1- Course learning	objectives:				
oc 1 Formulate the fun	damentals of stress and	d strain in components				
oc 2 Apply the mechan shear loads.	nical behavior of mate	erials under tensile, compressive, and				
	ropriate experiment d rdness, impact loading	liscussion of mechanical behavior of g, fracture and fatigue.				
oc 4 Application of stre	esses and the correspor	nding deformations in components				
••	-	ial loading, torsion, and bending				
oc 6 Apply the analytic	s of statically indetern	ninate problems				
	nsformation of plane st	-				
oc8 Solve problems or	n Mohr's circle.					
oc9 Application of tra	nsverse loading					
	program objectives services	ved by the course:				





Upon the completion of the course the student should be able to:

- OP 1 Stress and strain in components
- **OP 2** Mechanical behavior of materials under tensile, compressive, and shear loads.
- OP 3 Mechanical behavior of materials under hardness, impact loading, fracture and fatigue.
- OP4 Analysis of stresses and the corresponding deformations in components
- OP 5 Axial loading, torsion, and bending
- **OP 6** Statically indeterminate problems.
- **OP7** Transformation of plane stresses,
- OP 8 Mohr's circle.
- Op9 Transverse loading.

3- The relation between the course objectives and the program objectives

C	Course objectives	program objectives
1	oc 1	OP1
2	oc 2	OP2
3	oc 3	OP3
4	oc 4	OP4
5	oc 5	OP5
6	oc 6	OP6
7	oc 7	OP7
8	oc 8	OP8
9	oc 9	OP9

4- Learning outcomes of the course (LOs)

Upon the completion of the course, the student should be able to:

- Lo1 know the various physical, chemical, and mechanical properties of metals,
- Lo2 know the standard specifications of test specimens and test procedure,
- Lo3 know the theoretical basis of material tests.
- Lo4 Interpret results of standard tests.
- Lo5 Make required data processing on test results.
- Lo6 Conduct standard tests.
- Lo7 Teach materials properties and testing to industrial school students

5- Program competencies served by the course:

Upon the completion of the Program the student should be able to:





A1	engineering fundamentals, basic science and mathematics										
A2	and objective engineering judgment to draw conclusions and development.										
A5	of learning.										
6- The relation between the course learning outcomes and the program competencies											
	Course (LOs)		am compe	tencies							
1	Lo1		A1								
2	Lo2		A1								
3	Lo3		A1								
4	Lo4		A2								
5	Lo5		A5								
6	Lo6		A5								
7	Lo7		A5								
	7- Course content and the relation between	n the course	contents a	nd the cours	se LOs						
Week	Торіс	Lecture	Tutorial	Practical	course						
No.		hr.	hr.	hours	LOs						
1	Analysis of the different problems of stress and strain in components	2	2	0	Lo1, Lo2						
2	Mechanical behavior of materials				Lo2 Lo1,						
2	under tensile	2	2	0	Lo1, Lo3						
3	Compressive, and shear loads				Lo5,						
5	compressive, and snear roads	2	2	0	L05, L06						
4	Hardness, impact loading	_	_	_	Lo2,						
		2	2	0	Lo4						
5	Fracture and fatigue.	2	2	0	Lo2,						
	8	2	2	0	Lo4						
6	Analysis of stresses and the				Lo2,						
	corresponding deformations in	2	2	0	Lo4						
	components										
7	Axial loading	2	2	0	Lo4						
8	Midterm	1.0									
9	Torsion	2	2	0	Lo2, Lo4						





10	Ber	nding						2		2	0		o2, o4
11	Tra	Transverse loading								2	0	Lo	o4 o2, o5
12	Sta	tically inc	nate	probl	ems.	2		2	0	Lo	o2,		
13	Tra	nsformati	olane	stress	ses.	2		2	0	Lo	o4 o2,		
14	Mo	hr's circle	.					2		2	0	Lo	o4 o2,
15	Rev	vision						2		2	0	Lo	o4 o2,
													04, 05
16	Fin	al Exam						2	2.0				
Total l	hours							28		28	0	-	-
8	- Th	e Teaching	and le	arnino	a meth	nods a	and the	eir relati	on to t	he Los	s of the cour	se	
		Ì	,		,			and Lea					
Cour learn Outcol (LO	ing mes	On line / face to face ובריוידים Tutorials: sheets/	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches.	Cooperative work	presentation	Discussion	modelling
T		-		\checkmark	\checkmark				√	\checkmark	\checkmark	\checkmark	
Lo		/ /			,								
Lo	2	/ /		√	✓.				\checkmark	✓	✓	✓	
Lo.	2 3	/ / / /			\checkmark		√			\checkmark	\checkmark	✓ ✓	
Lo. Lo. Lo.	2 3 4	/ / / / / /					✓		\checkmark	√ √	\checkmark	✓ ✓ ✓	
Loi Loi Loi Loi	2 3 4 5	/ / / / / /			✓ ✓ ✓		✓ ✓		\checkmark	✓ ✓ ✓	✓ ✓ ✓	\checkmark	
Lo. Lo. Lo.	2 3 4 5 6	/ / / / / /			\checkmark		✓		\checkmark	√ √	\checkmark		

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

> 9-Student assessment method





a- Assessment method and its relation to the Los of the course											
		_			То	ols of as	sessm	nent			
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lol	\checkmark	✓	\checkmark	\checkmark				\checkmark			
Lo2	\checkmark	\checkmark	\checkmark	\checkmark				\checkmark			
Lo3	✓ ✓ ✓	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark	\checkmark		
Lo4		√	✓	√			√	\checkmark	\checkmark	√	
Lo5	✓	√	1	√			√	√	v	√	
Lo6 Lo7	\checkmark	\checkmark	√	√			√	√	√	√	
L07	v	v	v b·	• Ti	me sch	edule of	asses	sment	v	v	
<u> </u>			-	Quiz (1			ek (3				
Quizzes				Quiz (2			ek (1				
Discussio							-	eek for a	ny stude	nt	
Presentat			vies				ekly				
Sheets an							ekly	2.)			
Research		d report	S				ek (2,				
the Project Practical		lling					ek (4) ek (4)				
Attendan		Inng					ekly	,0)			
Mid-term		n					ek (7	7)			
final exar							ek (1				
				c-	Gr	ading s	ystem				
	quize	es		-	z(1)	`	5) ma				
D:	-				z(2)	(5) ma	arks			
	scuss	Sions Sketche	G)%)%		5 mar	·lza	(3)	0) marks	
Researc)%		Jillai	KS	(3)	0) marks	•
itebeure	nes a	-	dance		,,,	(10) m	arks			
		Mid-ter	m exa	m		`	20) m				
		final	exam			,	÷	(5	0) marks	5	
		То	otal					(10	00) mark	S	
				1(f referer		1 1			
/		notes						handouts		S Coinc	2006
b) Re	Required books Material Engineering, Elsabbagh A.S, Cairo,2006										





c) Recommend books
d) Periodicals, Web sites, etc
Engineering Materials, A. ATA & El-Erian A., London,1976.
No periodicals are needed.

11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning

12- Requirements for Disable facilities:

- On line teaching hours if it is needed
- Extra assignments

Course coordinator: program Coordinator	Prof. Dr. Al -Desouki Ibrahim Saleh Eid Dr. Amera Marey	
Head of the Department	Dr. Amera Marey	أميرة
Date:	2021/2027	





Course specification

Course code:	rse code: Course name							
ENGL 102	Lower Intermediate English							
A- Affiliation								
Relevant progra		Electrical power engineering						
Department off	ering the program:	Electrical and communication						
		engineering						
-	ering the course:	Basic Science						
Date of program	-	2008-2009						
Date of approva	al from the higher ministry	y of 27/1/2008						
Date of course	operation	2021-2027						
	-	Information						
	2 30010							
Title		Lower Intermediate English						
Code		ENGL 102						
Credit Hours		3Cr. hr						
Lectures		2hr						
Tutorial		1hr						
Total		3hr						
Prerequisite	/	ENGL 101						
Instructor name	/Email	Dr. Ahmed El-Husani						
	C- Professi	<u>ahmed.elhousiny@sva.edu.eg</u> onal information						
		e learning objectives:						
oc 1	management and account	d and understand passages about the field of						
oc 2	How to write CVs and o	-						
oc 3		lge in open market environments						
oc 4	Acquiring business terminologies and abbreviations							
2- program objectives served by the course:								
Upon the comp	letion of the course the stu							
OP 1	Acquire good reading skills enabling them to read faster, comprehend and identify required information.							
OP 2	Develop effective and appropriate skills to present information in a concise manner.							





OP 3		Jnderstand major gran peaking.	matical structures and use them in writing and					
OP 4	ı F	Know the meanings	of word-roots and use such knowledge in g the meanings of other terms of importance.					
3- The relation between the course objectives and the program objectives								
Course objectives program objectives								
1		oc 1	OP1					
2		oc 2	OP2					
3		oc 3	OP3					
4		oc 4	OP4					
5		oc 5	OP5					
		4- Learning ou	tcomes of the course (LOs)					
Upon the	complet	tion of the course, the s	tudent should be able to:					
Lol	An	alyze and respond thou	ightfully to competing claims					
Lo2	Ev	Evaluate and choose appropriate texts for citation.						
Lo3		Cite effectively and properly, conforming to academic expectations concerning paraphrase, quotation, attribution, and bibliographical forms.						
Lo4	Make informed choices about voice and style, using one's reading as a resource for rhetorical models.							
5- Program competencies served by the course:								
Upon the	complet	tion of the Program the	student should be able to:					
A7	Function efficiently as an individual and as a member of multi-disciplinary							
A8	Assume full responsibility for own learning and self-development, engage							
	6- The	relation between the c	ourse learning outcomes and the program					
	C		competencies					
1	Cour	se (LOs)	program competencies					
1 2		Lo1 Lo2	A7 A7					
3		Lo2 Lo3	A7					
4		Lo4	A8					





7- Course content and the relation between the course contents and the course LOs									
Week No.	Торіс	Lecture hr.	Tutoria l hr.	Prac tical hour s	course LOs				
1	Understand the differences between the kinds of writing academic writers are called upon to do abbreviations	2	2	0	Lo1, Lo2				
2	Uunderstand that readers in different disciplines approach text with different expectations and preferences	2	2	0	Lo1, Lo3				
3	Imagine meaningful shapes for ideas, so that a text's form is a natural manifestation of what one wants to say	2	2	0	Lo5, Lo6				
4	Recognize identifiable genres and shape texts around different generic expectations where appropriate	2	2	0	Lo2, Lo4				
5	Sequence thoughts effectively, articulating connections between a text's individual discussions	2	2	0	Lo2, Lo4				
6	How to write CVs and official letters	2	2	0	Lo2, Lo4				
7	Midterm		1.0						
8	About erosion and weathering of the rocks.	2	2	0	Lo2, Lo4				
9	The present condition & the past perfect	2	2	0	Lo2, Lo4				
10	Dailogues	2	2	0	Lo2, Lo5				
11	Revision	2	2	0	Lo2, Lo4				
12	Revision	2	2	0	Lo2, Lo4,Lo 5				
13	Final Exam		2.0						
Total hours		28	28	0					





 8- The Teaching and learning methods and their relation to the Los of the course a- Teaching and Learning Methods 													
Course learning Outcomes (LOs)	On line / face to face	Tutorials: sheets/	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modellina
Lo1	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo2	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo3	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo4	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	

Notes: The research concerns the cooperative work, the discussion, the site visit and the presentations.

The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

touoning and rounn	ing mou				sment m	nethod				
a- Assessment method and its relation to the Los of the course										
				-	Tools of a	assessr	nent			
Course ILOs	Mid -term exam	Final exam	sheets/	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lo1	√ √	\checkmark	✓				✓	\checkmark	✓	
Lo2	✓ ✓	√	✓				 ✓ 	√	✓	
Lo3	✓ ✓	√	 ✓ 			V	√	√	√	
Lo4	✓ ✓	✓	✓ T		1 6	\checkmark	√	✓	✓	
		b-			ule of as					
Quizzes			uiz (1	-		eek(3)				
		Q	uiz (2)		eek (10	/			
	Discussions Every week for any student									
Presentations and Movies weekly										
Sheets and Sketches weekly										
Researches and reports Week (2,3)										
the Projects						eek (4,				
Practical modelling	ng				We	eek (4,8	8)			





Attendance Mid-term exam final exam		weekly Week (7) Week (14)					
	c- Gradin	g system					
quizes	Quiz (1) Quiz (2)	Quiz (1) (5) marks Quiz (2) (5) marks					
Discussions Sheets and Sketches Researches and reports the Projects Practical modelling	5% 45% 10% 10% 20%	10 marks	(30) marks				
Attendance Mid-term exan final exam	1	(5) marks (20) marks (50)	marks				
Total) marks				
	10- List of re)				
a) Course notesb) Required books	Lecture The Entry two leases Digital Press, v ITools a reference Randall http://w Dutch ELT Jo Interna Interna Interna Journal Directo Journal Second Studies University	notes and handouts glish Language depar rning management sy Learning Platform fo www.Oxfordlearn.com for Q: Skills for Succ te for the book) 's ESL Cyber Listeni ww.esl-lab.com/ Journal of Applied Li ournal, Oxford Univer- tional Journal of App tional Journal of App tional Journal of Rese ting of English Language ry Listing l of Clinical Linguisti al of t5he International	rstems, namely: r Oxford University n ess (A digital ing Lab, inguistics rsity Press blied linguistics earch and Practice in reaching- FTP ics & Phonetics ils Phonetics , University Press e Research,				





- d) Periodicals, Web sites, etc
- Electronic Materials, Web Sites etc
- Language laboratories
- Blackboard, E-Podium and smart board, http:// ud.edu.sa
- http://ezp.ud.edu.sa/menu
- http://library.ud.edu.sa
- http://www.oclc.org/woerldcat.en.html
- http://www.classzone.com/books/researchguide.
- http://dictionary.cambridge.org/dictionary/british /criterion?q=criteria
- http://www.merriam-webster.com/
- http://oxforddictionaries.com/words/the-oxfordenglish-dictionary

11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning
- 12- Requirements for Disable facilities:
- On line teaching hours if it is needed
- Extra assignments

Course coordinator:	Dr. Ahmed El-Husani	<mark>Ahmod</mark>
program Coordinator	Dr. Amera Marey	أميرة
Head of the Department	Dr. Amera Marey	أميرة
Date:	2021/2021	





	Course	e specificatio	n		
Cours	e code:		Course name		
BASE	E 309		Human Rights		
	A	- Affiliation			
	ant program:		Electrical power engineering		
Depai	tment offering the program:		Electrical and communication engineering		
Depai	tment offering the course:		Basic Science		
Date	of program operation:		2008-2009		
Date of educa	of approval from the higher mini tion	stry of	27/1/2008		
Date	of course operation		2021-2027		
		ic Information			
Title		Human Rights			
Code	T	BASE 309			
Credit I		0 Cr. hr			
Lecture		0 hr			
Tutorial Total	L	2hr 4hr			
Prerequ	isita	4111			
-	or name/Email	Dr. Abd El-Aziz Ramadan			
mstruct		abdelaziz.Ramadan@sva.edu.eg			
	C Profess	sional information			
		e learning objecti			
oc 1	Understanding the main topics and feature of human rights concerning the engineers and the clients.				
oc 2	Focusing on analyzing and presenting the international institutional framework to deal with human rights issues.				
oc 3	Addressing the role of the non-governmental organizations in the field of protecting human rights.				
	2- program obje	ctives served by	the course:		
Upon th	ne completion of the course the s				
1 1	_		tance of preserving the built		
OP 1		-	onmental aspects to achieve the		

OP 1 environment in its social, economic and environmental aspects to achieve the goals of sustainable development 2030.





OP 2	Developing students' professional skills and the ability to self- and continuous learning.				
OP 3	Students gain experiences in effective communication with the surrounding community.				
OP 4	Provide students with the skills to conduct scientific research				
	3- The relation between the course objectives and the program objectives				
	Course objectives program objectives				
1	oc 1 OP1, OP2, OP3, OP4				
2	oc 2 OP1, OP2, OP3				
3	oc 3 OP1, OP2, OP3				
	4- Learning outcomes of the course (LOs)				
Upon t	he completion of the course, the student should be able to:				
Lo1	The concept of the human rights and the international organizations and the non- governmental organizations in the field of human rights.				
Lo2	Present research issues and share teams while conducting research's				
Lo3	Analyze frame work of the various organizations in protecting the human rights.				
Lo4	Present the case studies concerning the self-learning.				
Lo5	Practice self-learning to in contact with the main issues related to the human rights.				
	5- Program competencies served by the course:				
Upon t	he completion of the Program the student should be able to:				
A1	Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.				
A4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues and risk management principles.				
A5	Practice research techniques and methods of investigation as an inherent part of learning.				
. 7	Function efficiently as an individual and as a member of multi-disciplinary and				

- A7 Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams.
- A10 Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.
 - 6- The relation between the course learning outcomes and the program competencies

Course (LOs)

program competencies





1	Lol	A1, A5
2	Lo2	A4, A7
3	Lo3	A7
4	Lo4	A1
5	Lo5	A10

	7- Course content and the relation betwee	n the cour	se conten	its and the c	ourse LOs
We	Topic	Lectur	Tutori	Practical	course LOs
ek		e hr.	al hr.	hours	
No.					
1	Introducing to the concept of human				Lo3, Lo5
	rights (from its inception to the present	0	2	0	
	time.)				
2	Types of human rights as stated in the	0	2	0	Lo3, Lo5
	Egyptian constitution 1971.		2	0	
3	Human rights in light of the provisions	0	2	0	Lo3, Lo5
	of Islamic law		2	0	
4	Human rights as stated on both Holly	0			Lo1, Lo2,
	Quran and in the prophet Mohamed		2	0	Lo3, Lo4,
	Sunna. (Research as case studies)				Lo5
5	Egyptian human rights during the eras	0	2	0	Lo3, Lo5
	of modern Egypt (one hundred years).		2	0	
6	The changes of human rights since	0			Lo1, Lo2,
	early age of Egyptian kingdom till		2	0	Lo3, Lo4,
	now. (Research as case studies)				Lo5
7	Human rights in Egyptian law.	0	2	0	Lo3, Lo5
8	Midterm		1.0		
9	Statements of human rights as	0			Lo3, Lo5
	specified in various countries in the		2	0	
	world.				
10	Case study of human rights in various	0			Lo1, Lo2,
	countries in the world (Research)		2	0	Lo3, Lo4,
					Lo5
11	Human rights between the individual	0			Lo1, Lo2,
	and society and between state		2	0	Lo3, Lo4,
	sovereignty and international		2	U	Lo5
	protection. (Research)				





12	The conflict between nations sovereignty and international society in relation to human rights concept. (Research)	0	2	0	Lo1, Lo2, Lo3, Lo4, Lo5
13	The loss of Egyptian human rights between inherited family traditions and some ugly society habits. (Research)	0	2	0	Lo1, Lo2, Lo3, Lo4, Lo5
14	Factors influencing the loss of the Egyptian citizen human rights (family old beliefs, ignorance of environmental rules by society and hardship of competent authorities). (Research)	0	2	0	Lo1, Lo2, Lo3, Lo4, Lo5
15	The sodden abrupt changes of western nations policy towards the mean and Arab countries, and relation to human rights. (Research)	0	2	0	Lo1, Lo2, Lo3, Lo4, Lo5
16	Final Exam		2.0		
Total	hours	0	28	0	

8- The Teaching and learning methods and their relation to the Los of the course

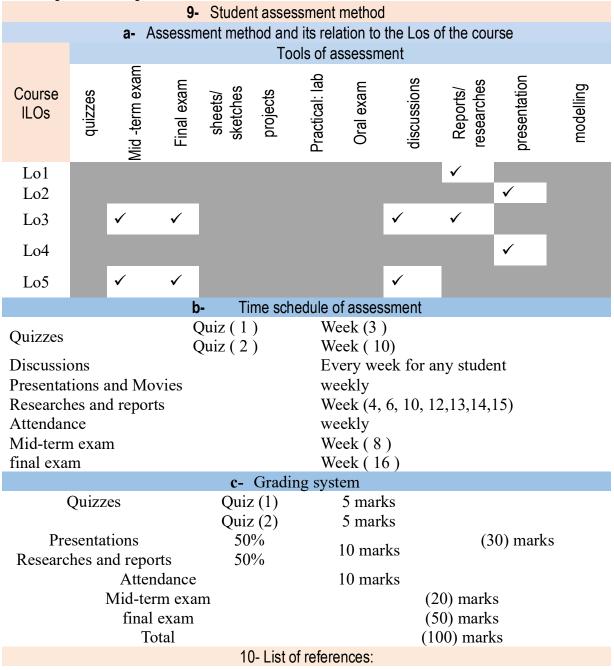
			leac	hing ar	nd Lea	rning l	Vethoo	ds			
Course learning Outcomes (LOs)	On line / face to face lectures Tutorials: sheets/ sketches	projects Problem solvina	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
Lo1	✓						✓	\checkmark			
Lo2	✓								\checkmark		
Lo3	\checkmark							✓		✓	
Lo4	\checkmark								\checkmark		
Lo5	✓				✓					✓	
Notes:											





• The research concerns the cooperative work, the discussion, the site visit and the presentations.

• The Tutorials concerns the brain storming and the problem solving. Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.







a) Course notesb) Requiredbooks	 Lecture notes and handouts Lizabeth A. Stephan, David R. Bowman, William J. Park, Benjamin L. Sill, Matthew W. Ohland, "Thinking like an engineer", Published by Pearson 2018. Harris, C. E., Jr., Pritchard, M. S., & Rabins, M. J. Engineering Ethics. Second edition. Belmont, CA: Wadsworth, 2000.
 c) Recommend books d) Periodicals, Web sites, etc 	Mentioned at time. No periodicals are needed.

11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning

12- Requirements for Disable facilities:

- On line teaching hours if it is needed
- Extra assignments

Course coordinator:	Dr. Abd El-Aziz Ramadan	Can
program Coordinator	Dr. Amera Marey	أميرة
Head of the Department	Dr. Amera Marey	
Date:	2021/2027	





Second level courses (Sophomore)

Second semester (Spring)

No.	Code	Course Name	Instructor			
1	CECE 203	Electric Circuits II	Dr. Ibrahim Ali Mahmoud Abdel Dayem			
2	CECE 213	Electric Circuits Lab	Dr. Ibrahim Ali Mahmoud Abdel Dayem			
3	CECE 209	Digital Logic Design	Dr. Mohamed Mahmoud Ahmed Mohamed El-Ghoboushi			
4	CECE 211	Digital Logic Lab	Dr. Mohamed El-Ghoboushi Mohamed El-Ghoboushi			
5	PHYS 301	Waves,Optics & Atomic Physics	Dr. Dr. Amal Elgawadi			
6	PHYS 311	Optics Lab	Dr. Neven Gamal Rostom			
7	MATH 202	Differential Equations	Dr. Dr. Gamal El-Anani			
8	BASE 303	Engineering Economics	Dr. Abd El-Aziz Ramadan			





Course specification

Course co	ode:	Course name			
CE	ECE 203	Electric circuits (II)			
	Α	- Affiliation			
Relevant	program:	Electrical power engineering			
Departme	ent offering the program:	Electrical and communication			
		engineering			
Departme	ent offering the course:	Electrical and communication			
		engineering			
	rogram operation:	2008-2009			
Date of a education	pproval from the higher minis	stry of 27/1/2008			
	ourse operation	2021-2027			
	-	sic Information			
Title		Electric circuits (II)			
Code		CECE 203			
Credit Ho	ours	3Cr. hr			
Lectures		2hr			
Tutorial		2hr			
Total		4hr			
Prerequis	ite	ECE 202			
Instructor	name/Email	Dr. Ibrahim Ali Mahmoud Abdel Dayem			
		dr.ibrahim@sva.edu.eg			
	<u>C- Profe</u>	ssional information			
	1- Cou	irse learning objectives:			
oc 1	Develop the understanding	regarding power calculations in ac circuits.			
oc 2	Understand the condition of	f resonance circuits.			
oc 3	AC electric circuits and systems with AC power concepts.				
oc 4	Analysis of the concepts of impedance, phase and frequency response.				
	program objectives served by the course:				
Upon the	completion of the course the	student should be able to:			
OP 5	Prepare students for engineering analyses and problem-solving using appropriate mathematical and computational methodologies.				
OP 6	Prepare undergraduate students who can create new ways to meet society's needs by applying fundamentals of engineering sciences to practical				





	problems using design an systems.	nd syntheses of electrical components, circuits, and			
OP 7	Teach students to use exp power engineering applie	perimental and data analysis techniques for electrical cations			
OP 12	Prepare engineers who can work on electrical power systems, including designing and realizing such systems.				
3- The relation between the course objectives and the program objectives					
	Course objectives	program objectives			
1	oc 1	OP5			
2	oc 2	OP6			
3	oc 3	OP7			
4	oc 4	OP12			
4- Learning outcomes of the course (LOs)					
Upon the completion of the course, the student should be able to:					
Lo1	Ability for analysis the relevant topics from the electrical circuit's domain.				

- Lo1 Ability for analysis the relevant topics from the electrical circuit's domain.
- Lo2 Calculates the transient states in the circuits, makes the comments of expected results and presents them in graphical forms.
- Lo3 Use circuit analysis methods to solve electrical circuits problems that involve AC power sources and AC power
- Lo4 Use different software tools for the analysis of AC circuits.

5- Program competencies served by the course:

Upon the completion of the Program the student should be able to:

- 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 Design and implement: elements, modules, sub-systems or systems in
- B3 Design and implement: elements, modules, sub-systems or systems in electrical/electronic/digital engineering using technological and professional tools.
- B4 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.
- Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services.



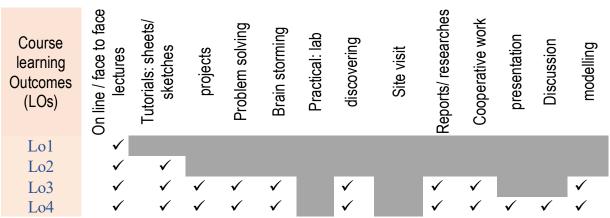


	6- The relation between the course con	e learning	outcomes	and the pro	gram
	Course (LOs)	-	gram com	petencies	
1	Lol	•	B2	•	
2	Lo2		B2, E	84	
3	Lo3		B2, E		
4	Lo4		B2, E		
	7- Course content and the relation between the r				
Week	Topic	Lecture	Tutorial	Practical	course
No.		hr.	hr.	hours	LOs
1	Capacitor and inductors.	2	2	0	Lol
2	First order circuit.	2	2	0	Lol
3	Second order circuit.	2	2	0	Lo1
4	Sinusoidal steady state analysis &	2	2	0	Lol
	Quiz.	2	2	0	
5	Sinusoidal steady state analysis				Lo2
	AC power calculation and	2	2	0	
	analysis.				
6	Balanced three phase circuits.	2	2	0	Lo2
7	Mutual inductance.				Lo2
8	Midterm		1.0		
9	Frequency selective circuits.	2	2	0	Lo1
10	Laplace transform in circuit	2	2	0	Lo2
	analysis.	_	_	0	
11	Passive Filters	2	2	0	Lo4
12	Quiz(2) + solved examples	2	2	0	Lo3
13	Passive Filters	2	2	0	Lo4
14	Active Filters	2	2	0	Lo4
15	General Review				Lo2
14	Final Exam		2.0		
Total h	ours	28	28	0	

8- The Teaching and learning methods and their relation to the Los of the course Teaching and Learning Methods







Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

touoning un		J				essmer	t metho	bd			
		a- As	sessm	ent me	ethod a	nd its re	lation to	o the Los o	f the cours	e	
		_				Tools of	assess	sment			
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ skatchas	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lo1											
Lo2			,				1				1
Lo3	√	√	√	√	√		√		✓		v
Lo4	✓	✓	✓	√ اس	√ Time ee	bodulo	√ of occor	√ ∼	✓	✓	✓
			(hedule					
Quizzes				Quiz (1 Quiz (1	·		eek (3) eek (10				
Discussion	c		Ċ	Zuiz (2	<u>-</u>)			ek for an	v student		
Presentatio		d Mov	vies				eekly		y student		
Sheets and			105				ekly				
Researches			3				eek (2,1	3)			
the Project		- Port	-				eek (4,	·			
Practical m		ing					eek (4,	· ·			
Attendance		U					ekly	,			
Mid-term e	exam					W	eek (7)				





final exam		Week (14)				
	c- Gradin	g system				
quizes	Quiz (1) Quiz (2)	(2.5) marks (2.5) marks				
Discussions Sheets and Sketches	15% 15%					
Researches and reports the Projects	20% 30%	15 marks	(40) marks			
Practical modelling Attendance	20%	(10) marks				
Mid-term exam	1	(15) marks				
final exam Total			0) marks 00) marks			
	10- List of	references:				
a) Course notesb) Required books	 Lecture notes and handouts James W. Nilsson, and Susan A. Riedel, Electric Circuits, 10th edition. Charles K. Alexander & Mathew Sadiku, Fundamental of Electric Circuits, 5th edition 					
c) Recommend booksd) Periodicals, Web sites, etc	Mentioned at time. No periodicals are needed.					
11	Eacilities requi	ed for teaching and les	arning:			
 11- Facilities required for teaching and learning: Appropriate teaching design studios including presentation board, data show Google classroom E- learning 						
·	2- Requireme	nts for Disable facilities	:			
On line teachinExtra assignme	•	needed	1			
Course coordinator:	Dr. Ibrahim Al	r. Ibrahim Ali Mahmoud Abdel Dayem 🥢 🍊				
program Coordinator	Dr. Ehab Moh Rasoul	Dr. Ehab Mohamed Nabil Ismail Abdel				
	Dr. Ibrahim Al 2021/202۲	i Mahmoud Abdel D	ayem 5			





	Со	urse specification			
Course c	ode:	Course name			
CECE 2	13	Electric circuits lab			
		A- Affiliation			
	program:	Electrical power engineering			
Departm	ent offering the program:	Electrical and communication			
		engineering			
Departm	ent offering the course:	Electrical and communication			
		engineering			
	program operation:	2008-2009			
Date of a education	approval from the higher n	ninistry of 27/1/2008			
Date of c	course operation	2021-2027			
	<u>I</u>	B-Basic Information			
Title		Electric circuits lab			
Code		CECE 213			
Credit H	ours	1 Cr. hr			
Lectures		0hr			
lab		2hr			
Total		2hr			
Prerequis		Conc. with CECE 203			
Instructo	r name/Email	Dr. Ibrahim Ali Mahmoud Abdel Dayem, Eng. Aliaa Mosa Freej			
		dr.ibrahim@sva.edu.eg, aliaa.mousa@sva.edu.eg			
	C- P	rofessional information			
		Course learning objectives:			
oc 1	To be able to know differ	rent electrical terms and define them with examples			
oc 2	To be able to describe the basic principles, laws and theorems of electrical circuits				
oc 3	To be able to analyze and	d different types of basic electrical circuits			
oc 4	Test circuits analyze data and compare measured performance to theory a				
	2- program	n objectives served by the course:			
Upon the	e completion of the course	the student should be able to:			
OP 5	-				





OP 6	needs by applying funda	Prepare undergraduate students who can create new ways to meet society's needs by applying fundamentals of engineering sciences to practical problems using design and syntheses of electrical components, circuits, and systems.					
OP 7	Teach students to use ex power engineering appli	perimental and data analysis techniques for electrical cations					
OP 12	2 Prepare engineers who designing and realizing s	can work on electrical power systems, including such systems.					
		the course objectives and the program objectives					
	Course objectives	program objectives					
1	oc 1	OP5					
2	oc 2	OP5					
3	oc 3	OP6					
4	oc 4	OP7, OP12					
	4- Learni	ng outcomes of the course (LOs)					
Upon	the completion of the course	e, the student should be able to:					
Lol	Uses the proper concept circuit's domain	Uses the proper concepts for analysis of relevant topics from the electrical					
Lo2	-	Provides experiments concerning the electric circuits with the use of proper instrumentation and explain the results					
Lo3	Calculates the transient s results and presents them	tates in the circuits, makes the comments of expected in graphical forms					
Lo4	Use circuit analysis meth AC power sources and A	nods to solve electrical circuits problems that involve C power					
Lo5	Use different software to	ols for the analysis of AC circuits					
	5- Program	competencies served by the course:					
Upon	the completion of the Progra	am the student should be able to:					
В5	B5 Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services.						
	6- The relation between	the course learning outcomes and the program competencies					
	Course (LOs)	program competencies					
1	Lo1	B5					
2	Lo2	B5					
3	Lo3 B5						





4	Lo4 B5													
5	Lo5							B5	5					
	7-	7- Course content and the relation between the course contents and the course LOs							S					
Week		Topic Lecture Tutorial Practical								al	cour	se		
No.								hr.	hr.		hours		LO	
1		lesistors		e Colo	or Co	de.		2	2		0		LO	
2		hm's La						2	2		0		LO	
3		eries Re						2	2		0		LO	
4		eries dc						2	2 2 2		0		LO	
5		arallel F						2 2	2		0		LO	
6		arallel c									0		LO	
7		eries-Pa	rallel d	c Circ	cuits.			2	2		0		LO	3
8		lidterm							1.0					
9		hevenin						2	2		0		LO	2
		laximur						2	-		U			
10		lorton's	Theore	m and	l Cur	rent		2	2		0		LO	3
		ources.									-			
11		1ethods		ysis.				2	2		0		LO	
12		ests of c						2	2		0		LO	
13		Capacito						2	2		0		LO	
14		ctive Fi						2	2 2		0		LO	
15	R	L-L and	R-L-C (Circui	ts wi	th a		2	2		0		LO	3
		c Sourc		ge										
16		inal Exa	am						2.0					
Total h								28	28		0			
	8-	The Te	eaching a	and lea	arning				relation to			the co	ourse	
						Tea	aching	and Lea	arning Me		3			
Cours learnir	-	On line / face to face lectures	Futorials: sheets/ sketches	cts	Problem solving	rming	II: lab	ering	isit	Reports/ researches	Cooperative work	ation	sion	ling
Outcom (LOs	ies	e / face to lectures	orials: she sketches	projects	blem s	Brain storming	Practical: lab	discovering	Site visit	ts/ res	oerativ	presentation	Discussion	modelling
(,	On lin	Tuto ;		Prol	Bra	P	đ		Repor	Cool	pr		<u> </u>





Lo1 \checkmark \checkmark \checkmark \checkmark \checkmark \checkmark	
Lo2 \checkmark \checkmark \checkmark \checkmark \checkmark \checkmark	
Lo3 \checkmark \checkmark \checkmark \checkmark \checkmark \checkmark \checkmark	
Lo4 \checkmark \checkmark \checkmark \checkmark \checkmark \checkmark \checkmark	
$Lo5 \checkmark \checkmark \checkmark \checkmark \qquad \checkmark \checkmark \qquad \checkmark \checkmark \checkmark \qquad \checkmark \checkmark \checkmark$	

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

leaching an	u icui	ning n	9-				ent meth	nod			
	a- Assessment method and its relation to the Los of the course										
							of asses				
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lo1		✓	✓	✓	✓	✓	√	\checkmark		√	
Lo2		 ✓ 	√	✓	√	√	√	√		√	
Lo3		√	√	√	√	√	~	v		\checkmark	
Lo4 Lo5		\checkmark	√	√	√	√	√	√		\checkmark	
L03		v	v	v b-	Time	schedul	v le of ass	essment		v	
Quizzes				Quiz Quiz	(1)	Schedul		Comment			
Discussion	ıs			•	(-)	E	very we	ek for any	student		
Presentatio	ons ar	nd Mo	vies				eekly	•			
Sheets and	l Sket	ches				W	eekly				
Researches		repor	ts								
the Project		1.				W	eekly				
Practical n		ling					1-1				
Attendance Mid-term							eekly /eek (7)			
final exam							eek (14				
					c-		ng syste				
quizes				uiz (1) uiz (2)		(0) m (0) m	arks	(60)) mark	S	





Discussions Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exam final exam Total	20% 70% 0% 40 marks 10% 0% (10) marks (10) marks (10) marks (100) marks
 a) Course notes b) Required books c) Recommend books d) Periodicals, Web sites, etc 	 10- List of references: Lecture notes and handouts James W. Nilsson, and Susan A. Riedel, Electric Circuits, 10th edition. Charles K. Alexander & Mathew Sadiku, Fundamental of Electric Circuits, 5th edition Mentioned at time. No periodicals are needed.
	cilities required for teaching and learning: ng design studios including presentation board, data

• E- learning

12- Requirements for Disable facilities:

• On line teaching hours if it is needed

• Extra assignments

Course coordinator:	Dr. Ibrahim Ali Mahmoud Abdel Dayem	SÞ
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	1-1-1
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	SÞ
Date:	2021/2021	

Course specification





Course of		Course nat	me		
CECE 2	09	Digital	Logic Design II		
		A- Affiliation			
	t program:		power engineering		
Departm	ent offering the program	Electrical	and communication		
		engineerin	0		
Departm	ent offering the course:		and communication		
		engineerin	-		
	program operation:	2008-2009			
Date of a educatio	approval from the highe n	ministry of 27/1/2008			
Date of	course operation	2021-2021	ť		
		B-Basic Information			
Title		Digital Logic Design II			
Code		CECE 209			
Credit H	lours	3Cr. hr			
Lectures		2hr			
Tutorial		2hr			
Total		4hr			
Prerequi		CECE 201			
Instructo	or name/Email	Dr. Mohamed Mahmoud Ahmed Mohamed El-			
		Ghoboushi			
		mohammed.ghaboushy@s	va.edu.eg		
	<u>C-</u>	Professional information			
		 Course learning objectives: 			
oc 1	To study the basic phile	sophy underlying the variou	us number systems, negative		
001	number representation	binary.			
oc 2	Arithmetic, binary cod	es and error detecting and c	orrecting binary codes.		
oc 3	To study the combinational logic design of various logic and switching device and their realization.				
oc 4 To study the sequential logic circuits design both in synchronous a synchronous modes.					
	2- progr	am objectives served by the	e course:		
Upon the	1 0	se the student should be abl			
OP 5	1	engineering analyses and and computational meth	nd problem-solving using odologies.		





OP 6	Prepare undergraduate students who can create new ways to meet society's needs by applying fundamentals of engineering sciences to practical problems using design and syntheses of electrical components, circuits, and systems.					
OP 7						
OP 12	Prepare engineers who can work on electrical power systems, including designing and realizing such systems.					
	3- The relation between the course objectives and the program objectives					
	Course objectives program objectives					
1	oc 1 OP5					
2	oc 2 OP5					
3	oc 3 OP6, OP12					
4	oc 4 OP7, OP12					
	4- Learning outcomes of the course (LOs)					
Upon	the completion of the course, the student should be able to:					
Lo1	Understand various types of number systems and their conversions.					
Lo2	Simplify the Boolean expressions and apply the Boolean theorems through logical gates					
Lo3	3 Design and implement variety of logical devices using combinational circuits concepts.					
Lo4	Demonstrate and compare the construction of programmable logic devices and different types of ROM					
Lo5	Analyze sequential circuits like registers and counters using flip-flops.					
	5- Program competencies served by the course:					
Upon	the completion of the Program the student should be able to:					
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					
В3	Design and implement: elements, modules, sub-systems or systems in electrical/electronic/digital engineering using technological and professional tools.					
B4	Estimate and measure the performance of an electrical/electronic/digital system					





В5	1	Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services.										
	6- The relation between the course learning outcomes and the program											
		competencies										
	Course (LOs)	program competencies										
1	Lo1	B2										
2	Lo2	B2										
3	Lo3	B2, B3										
4	Lo4	B3, B4										
5	Lo5											

	7- Course content and the relation between the course contents and the course LOs										
We	Topic	Lectu	Tutori	Practical	course						
ek		re hr.	al hr.	hours	LOs						
No.											
1	Half adder and full adder description	2	2	0	LO1						
2	Ripple carry and look ahead adder description	2	2	0	LO1						
3	Look ahead carry adder + Solved examples+ Quiz (1).	2	2	0	LO1						
4	Comparator description	2	2	0	LO2						
5	comparator+ solved examples.	2	2	0	LO3						
6	Decoder and Encoder	2	2	0	LO3						
7	Multiplexer.				LO3						
8	Midterm		1.0								
9	Design Exercises	2	2	0	LO2						
10	Sequential circuits and latches	2	2	0	LO3						
11	Sequential circuits and latches	2	2	0	LO5						
12	Quiz(2) + solved examples	2	2	0	LO4						
13	Flip Flop	2	2	0	LO5						
14	Shift Registers	2	2	0	LO5						
15	Memory				LO3						
14	Final Exam		2.0								
Total	hours	28	28	0							





	8- The Teaching and learning methods and their relation to the Los of the course Teaching and Learning Methods												ł	
le	Course earning Dutcom es (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
	Lol	\checkmark												
	Lo2	\checkmark	\checkmark											
	Lo3	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark			\checkmark
	Lo4	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	· ✓
	Lo5	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	Lo6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Ν	lotos.							_		-				

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line. 9. Student assessment method

	9- Student assessment method										
	a-	Assessn	nent m	ethod a	nd its re	elation to	the Los	s of the co	ourse		
					T	ools of as	sessm	ent			
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lo1											
Lo2											
Lo3	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark		\checkmark
Lo4	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo5	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
				I	o- Tim	e schedu	le of as	sessmen	t		
Quizzes Qu				Quiz (Quiz (/	,	Week (3) Week (10)				
	DiscussionsEvery week for any studentPresentations and Moviesweekly										





Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exam final exam		weekly Week (2,3) Week (4,8) Week (4,8) weekly Week (7) Week (14)	
	c- Grading s	· · · · ·	
Quizes Discussions Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exar final exam Total	Quiz (1) Quiz (2) 15% 20% 20% 30% 20%	(5) marks (5) marks 5 marks (10) marks (15) marks (60	(40) marks)) marks 0) marks
 Course notes Required books Recommend books Periodicals, Web sites ate 	FloydDigital des	and handouts damentals, 11th edit ign principles and pr prentice hall, 2005. time.	ion by Thomas l, ractices- 4th ed, john

sites, etc

11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning





12-	Rec	uirement	s for	Disable	facilities:
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- On line teaching hours if it is needed
- Extra assignments

Course coordinator:	Dr. Mohamed Mahmoud Ahmed Mohamed El- Ghoboushi
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem
Date:	201/2025





	C	Course specif	ïcation					
Course co	de:		Course name					
CECE 21	[Digital Logic Design Lab					
		A- Affiliat						
Relevant	program:		Electrical power engineering					
Departme	nt offering the program	n:	Electrical and communication					
			engineering					
Departme	nt offering the course:		Electrical and communication					
		engineering						
	ogram operation:	2008-2009						
Date of ap	proval from the higher	27/1/2008						
education								
Date of co	ourse operation		2021-2027					
<u>B-Basic Information</u>								
Title		Digital Logic I	Design Lab					
Code		CECE 211	5					
Credit Ho	urs	1Cr. hr						
Lectures		0hr						
Tutorial		2hr						
Total		2hr						
Prerequisi	ite	Conc. with CE	ECE 203					
-	name/Email	Dr. Mohamed	ed Mahmoud Ahmed Mohamed El-					
		Ghoboushi						
		mohammed.gh	aboushy@sva.edu.eg					
	<u>C-</u>	Professional in						
	1	I- Course learnii	ng objectives:					
1	To understand numbe	er representation	and conversion between different					
oc 1	representation in digi							
oc 2	To analyze logic proce logic circuits.	esses and impler	nent logical operations using combinational					
oc 3	To understand characte	eristics of memory	/ and their classification.					
	To verify the theory	retical concept	s through laboratory and simulation					
oc 4	experiments.	- P	6 · j ····					
	-	ram objectives s	erved by the course:					
TT d	1 C.1							

Upon the completion of the course the student should be able to:





OP 5	Prepare students for engineering analyses and problem-solving using appropriate mathematical and computational methodologies.								
OP 6	Prepare undergraduate students who can create new ways to meet society's needs by applying fundamentals of engineering sciences to practical problems using design and syntheses of electrical components, circuits, and systems.								
OP 7	Teach students to use experimental and data analysis techniques for electrical power engineering applications								
OP 12	Prepare engineers who can work on electrical power systems, including designing and realizing such systems.								
	 The relation between the course objectives and the program objectives 								
	Course objectives program objectives								
1	oc 1 OP12								
2	oc 2 OP5, OP12								
3	oc 3 OP6, OP12								
4	oc 4 OP7, OP12								
	4- Learning outcomes of the course (LOs)								
Upon the	completion of the course, the student should be able to:								
Lo1	Explain the Concept of Number Systems.								
Lo2	Construct the Combinational Logic Circuits.								
Lo3	Develop the Synchronous Sequential Circuits.								
Lo4	Develop the Asynchronous Sequential Circuits.								
Lo5	Construct the Programmable Logic Devices.								
	5- Program competencies served by the course:								
Upon the	completion of the Program the student should be able to:								
В3	Design and implement: elements, modules, sub-systems or systems in electrical/electronic/digital engineering using technological and professional tools.								
B4	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								
В5	Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services.								
6-	The relation between the course learning outcomes and the program competencies								





	Course (LOs)	program competencies					
1	Lol		B.	3			
2	Lo2	B3					
3	Lo3		B	4			
4	Lo4		B	4			
5	Lo5		B	5			
7	 Course content and the relation betw 	een the cou	urse conten	ts and the co	ourse LOs		
Week	Торіс	Lecture	Tutorial	Practical	course LOs		
No.	-	hr.	hr.	hours			
1	Basic Electronic instruments and measurements, oscilloscope.	2	2	0	LO1		
2	Lab report outline and results presentation.	2	2	0	LO1		
3	Inverters.	2	2	0	LO1		
4	AND gates .	2	2	0	LO2		
5	OR gates .	2	2	0	LO3		
6	NAND gates .	2	2	0	LO3		
7	NOR gates.	2	2	0	LO3		
8	Midterm		1.0				
9	XOR gates .	2	2	0	LO2		
10	XNOR gates .	2	2	0	LO3		
11	Combinational circuits.	2	2	0	LO5		
12	Test circuits	2	2	0	LO4		
13	Half adder and full adder description	2	2	0	LO5		
14	Ripple carry and look ahead adder description	2	2	0	LO5		
15	Look ahead carry adder	2	2	0	LO3		
14	Final Exam	_	2.0		200		
Total ho		28	28	0			

8- The Teaching and learning methods and their relation to the Los of the course Teaching and Learning Methods





Course learning Outcomes (LOs)	 On line / face to face 	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
Lo1	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	
Lo2	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	
Lo3	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	
Lo4	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	
Lo5	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

U	9- Student assessment method										
	a- Assessment method and its relation to the Los of the course										
						Tools of	assess	ment			
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/	sketcnes projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lo1		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	
Lo2		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	
Lo3		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	
Lo4		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	
Lo5		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	
					b- Tim	ne sched	ule of a	ssessmen	t		
b Time schedule of assessmentQuizzesQuiz(1) Quiz(2)DiscussionsEvery week for any studentPresentations and MoviesweeklySheets and SketchesweeklyResearches and reportsweeklythe ProjectsweeklyPractical modellingImage: Sheets and Sketches											





Attendance Mid-term exam		weekly Week (7)				
final exam	c- Gradir	Week (14)				
Quizes Discussions Sheets and Sketches Researches and reports the Projects Practical modelling	Quiz (1) Quiz (2) 20% 70% 0% 10% 0%	(0) marks (0) marks 40 marks	(60) marks			
Attendance Mid-term exan final exam Total	• • •	(10) marks (10) marks	(40) marks (100) marks			

	10- List of references:
a) Course notes	Lecture notes and handouts
b) Required books	 Digital fundamentals, 11th edition by Thomas l,
	Floyd
	 Digital design principles and practices- 4th ed,
	john f. wakerly, prentice hall, 2005.
c) Recommend books	Mentioned at time.
d) Periodicals, Web	No periodicals are needed.
sites, etc	
11_ F	Facilities required for teaching and learning:

11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning
- 12- Requirements for Disable facilities:
- On line teaching hours if it is needed
- Extra assignments





Course coordinator:	Dr. Mohamed Mahmoud Ahmed Mohamed El- Ghoboushi	200
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	151
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	5
Date:	2021/2021	





Course specification

Course	e code:	Course name							
PHYS 3	301	Optics, waves, and introduction to modern							
physics									
		A- Affiliation							
	t program:	Electrical power engineering							
Departm	ent offering the program:	Electrical and communication							
Departm	engineering								
	ent offering the course: program operation:	Basic Science 2008-2009							
	approval from the higher ministry								
educatio		01 27/1/2008							
	course operation	2021-2027							
		Basic Information							
Title		Optics, waves, and introduction to modern							
THE		physics							
Code		PHYS 301							
Credit H	Hours	3Cr. hr.							
Lecture	s	2hr							
Tutorial		2hr							
Total		4hr							
Prerequ		PHYS 102							
Instruct	or name/Email	Dr. Dr. Amal Elgawadi							
		dr.amal@sva.edu.eg							
	<u>C- Prof</u>	fessional information							
	1- Co	ourse learning objectives:							
oc 1	÷	of the basic optics principles such as the nature of n, polarization, and geometric optics.							
oc 2	To solve problems of these p	physical principles.							
oc 3	Develop an intuition (feeling	g) and knowledge of the physical world.							
oc 4	Most important to know how	w scientists and engineers make up physics models applications, in technology, engineering, medical							
oc 5	Simply show that basic scient engineering) are two faces of	nce (e.g. Physics) and technology (e.g. f the same coin.							





2- program objectives served by the course:

Upon the completion of the course the student should be able to:

OP 1 Understanding some of the basics of optics, waves, and modern physics as a background beneficial to electricity and electronics programs.

3- The relation between the course objectives and the program objectives

	Course objectives	program objectives
1	oc 1	OP1
2	oc 2	OP1
3	oc 3	OP1
4	oc 4	OP1
5	oc 5	OP1
	4- Learning c	utcomes of the course (LOs)

Upon the completion of the course, the student should be able to:

- Lo1 Students should demonstrate the ability to understand the basics of physics related to several branches in engineering.
- Lo2 Students will demonstrate the ability to revise and improve such texts.
- Lo3 Students will demonstrate the ability to research a topic, develop an argument, and organize supporting details.
- Lo4 Edit and revise effectively, recognizing the two as distinct activities and developing strategies for generating critical distance when rereading.
- Lo5 Develop a claim that matters in the context of a continuing discussion, writing with a sense of intellectual purpose and stake.
- Lo6 Creating engineering designs a process of thinking, not just delivering information

5- Program competencies served by the course:

Upon the completion of the Program the student should be able to:

- A2 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
- A4 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues and risk management principles





6- The relation between the course learning outcomes and the program competencies

	b- The relation between the course learning outco	mes and t	ne progra	in compet	encies
	Course (LOs)	program	competer	ncies	
1	Lo1		A2		
2	Lo2		A2		
2 3	Lo3		A2		
4	Lo4		A4		
5	Lo5		A4		
6	Lo6		A4		
	7- Course content and the relation between the c	ourse con	tents and	the course	e LOs
Week	Торіс	Lectur	Tutori	Practic	course
No.		e hr.	al hr.	al hours	LOs
1	Introduction to the course, grading policy, etc. The nature of light. Introduction of the classical particle and wave models of light. Introduction of the modern models of the dual nature of light. Fizeau's measurement	2	2	0	Lo1: Lo6
2	of the speed of light. Introduction to ray optics approximation (or Geometrical Optics). Longitudinal versus transverse wave motions. The wavelength and the amplitude. Reflection of light. Refraction of light. Introduction to microscopic picture for a light in a medium. Index of refraction. Snell's law of refraction.	2	2	0	Lo1: Lo6
3	Prism and some definitions. Dispersion of light or wavelengths. Refraction in a Prism. Introduction to the electromagnetic spectrum. Introduction to the origin of some electromagnetic waves (absorption and emission). Total internal reflection. Critical angle of total internal reflection. Fiber optics and Fiber Optics. Some applications for total internal reflection. Physical optics or wave optics. Revisions	2	2	0	Lo1: Lo6 Lo1:
4	from physics (1): Sinusoidal nature of Simple harmonic motion "SHM." Constructing the trigonometric Functions.	2	2	0	LoI: Lo6





5	Superposition of waves. Brief introduction of the Young's double slit experiment. Conditions for interference. Diffraction of light. Relationship: Diffraction to Interference. Waves in interference, details of the Young's double slit interference. Conditions for constructive and distractive	2	2	0	Lo1: Lo6
6	interference. Intensity distribution of double slit interference pattern. Revision from physics "1": particle in simple harmonic motion. Introduction of the electromagnetic wave				Lo1: Lo6
	nature of light. The average light intensity of double-slit interference at a point. Multiple-slit interference patterns. Change of phase due to reflection. Phase reversal. Interference in thin films. Effect of phase reversal. Newton's rings.	2	2	0	
7	Diffraction patterns and polarization. The f-number, the depth of field, and diffraction. Diffraction simple analogy. Edge diffraction due to lens aperture. Introduction to diffraction patterns. Diffraction pattern created by a ball, a penny, or a slit. Some daily life examples of diffraction. Nature of light and ray optics. Huygens's principle. Fresnel and Fraunhofer diffraction approximations. Diffraction patterns from Narrow slits.	2	2	0	Lo1: Lo6
8	Midterm		1.0		
9	Intensity of single-slit diffraction patterns. Difference between interference and diffraction patterns. Relationship: Diffraction to Interference. Intensity of two-slit diffraction patterns. Multiple-slit interference pattern. Resolution of single- slit and circular apertures. Rayleigh resolution criteria. The diffraction grating.	2	2	0	Lo1: Lo6





10	How a diffraction grating is made. Transmission and a reflection grating.				Lo1: Lo6
	Calculation of the wavelength of monochromatic light using a diffraction	2	2	0	
	grating. The intensity maxima in a diffraction grating pattern.				
11	Classification of the material based on the atomic periodic system. Diffraction of X-				Lo1: Lo6
	rays by crystals. Macroscopic and	2	2	0	L00
12	microscopic crystal structures. Bragg's law. Polarization of light waves. Background:				Lo1:
	Electromagnetic wave nature of light.				Lo6
	Polarization by selective absorption. Malus's law of the intensity of polarized	2	2	0	
	light by selective absorption. Polarization by reflection.				
13	An application of polarization: optical				Lo1:
	stress analysis. Application of polarization in photography. Polarization by scattering.	2	2	0	Lo6
14	Ray optics (geometrical optics). Image				Lo1:
	formation by reflection (mirrors) and by refraction (lenses). Concave and convex	2	2	0	Lo6
15	(divergence) mirrors. The radius of curvature and cementer of				Lo1:
15	curvature. Sign conventions of the radius				Lof
	of curvature for mirrors and lenses. Types of geometrical images: real and virtual				
	images				
16	Final Exam	2.0			
Total h	ours	28	28	0	





8- The Teaching and learning methods and their relation to the Los of the course													
				Tea	ching a	and Le	arning	Metho	ods				
Course learning Outcome s (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
Lo1	✓	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo2	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo3	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo4	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo5	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Lo6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark

Notes: The research applied through the Arduino photonics projects. Arduino is an open-source electronics platform based on easy-to-use hardware and software. The brainstorming takes place during the lectures and through the projects and the homework

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

una iourni	ig mo										
	9- Student assessment method										
	 Assessment method and its relation to the Los of the course 										
	Tools of assessment										
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lo1	\checkmark	✓	\checkmark		\checkmark		\checkmark	\checkmark	✓		\checkmark
Lo2	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	✓		\checkmark
Lo3	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	✓		\checkmark
Lo4	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	✓		\checkmark
Lo5	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	✓		\checkmark
Lo6	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	✓		\checkmark
				b	- Time	e schedule	e of as	sessmer	it		
Quizzes				Quiz(1 Quiz(2	,		ek (3 ek (1	,			





Discussions Presentations and Movies Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exam final exam	c- Grading	Every week for any weekly Week (2,3) Week (4,8) Week (4,8) weekly Week (7) Week (14)	y student			
quizes	Quiz(1)	(5) marks				
Discussions	Quiz(2) 15%	(5) marks				
Sheets and Sketches	20%					
Researches and reports the Projects	20% 30%	10 marks	(50) marks			
Practical modelling	20%					
Attendance		(10) marks				
Mid-term exa final exam	m	(20) marks	50) marks			
Total		(100) marks				
a) Cauraa mataa	10- List of re Lecture notes an					
a) Course notesb) Required books			ohn W. Jewett and Raymond			
	A. Serway	-				
c) Recommend booksd) Periodicals, Web sites,	Mentioned at tin No periodicals a					
etc	No periodicais a	are needed.				
Appropriate teach	· · · · ·	ed for teaching and learni cluding presentation bo	-			
 Google classroom 		fruing presentation be	ard, data show			
• E- learning	10					
• On line teachin	-	ts for Disable facilities:				
On line teachinExtra assignme	g hours if it is needec nts	1				
Course coordinator:	Dr. Amal Elgawadi	i	(12+ Jo)			
program Coordinator	Dr. Ehab Mohamed	d Nabil Ismail Abdel R	asoul			
Head of the Department	Dr. Ibrahim Ali Ma	Iahmoud Abdel Dayem				
Date:	2021/2025					





Course specification							
Course code: Course na	ame						
PHYS 311 Optics	s Lab						
A- Affiliation							
	power engineering						
	and communication						
engineeri							
Department offering the course: Basic Sci							
Date of program operation: 2008-200							
Date of approval from the higher ministry of 27/1/2008 education	8						
Date of course operation 2021-202	2						
<u>B-Basic Information</u>							
TitleOptics LabCodePHYS 311							
Credit Hours 1Cr. hr							
Lectures 0hr							
lab 2hr							
Total 2hr							
Prerequisite Concurrent PHYS							
	even Gamal Rostom						
<u>neveen.kamal@sv</u> C- Professional informatio	-						
1- Course learning objectiv							
oc 1 Formulate the optics.							
oc 2 Apply the wave nature of light in the life scier							
oc 3 Develop and appropriate experiment discus interferences of light.	sion of models and theories of						
oc 4 Application of reflection and refraction of light	nt in industrial application.						
oc 5 Apply analytics Apply the laws of refraction o	of light.						
oc 6 Application of diffraction of light in industrial	Application of diffraction of light in industrial application.						
oc 7 Application of interference of light in the indu							
2- program objectives served by t							
Upon the completion of the course the student should be	able to:						
OP 1 Optics.							



Lo2

Ministry of higher education High valley institute for engineering and technology Electrical power engineering program



OP 2 Wave nature of light. OP 3 An overview of interference of light with different surfaces and materials. OP 4 Introduction to laws of reflection, refraction and diffraction of light. OP 5 Refraction of light. OP 6 Diffraction grating. OP 7 Single and double slit. The relation between the course objectives and the program objectives program objectives Course objectives 1 OP1 oc 12 oc 2OP2 3 OP3 oc 3 4 oc 4 OP4 5 oc 5 OP5 6 oc 6 OP6 7 oc 7 OP7 4- Learning outcomes of the course (LOs)

Upon the completion of the course, the student should be able to:

Lo1 The student Identify the basic fundamental in optics wave nature of light; an overview of interference of light with different surfaces and materials; introduction to reflection, refraction and diffraction of light) and solve complex engineering problems.

The student evaluates the reaction of light to predict refractive index of a prism. Solve the different problem of combustion. Analyze application of interference

- of light. Identify various industrial processes such as the solar panels industry
- Lo3 The student can express his opinion by oral presentation and flexible model recalling the final configuration of masses
- Lo4 Conduct models to Employ, measuring instruments, and lab tools to determine the amount of salt

5- Program competencies served by the course:

Upon the completion of the program the student should be able to:

A2 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.





A4	Utilize contemporary technologie guidelines, health and safety re- management principles.	quirements	s, environi	nental issu	ues and risk			
	6- The relation between the course learning outcomes and the program competencie							
	Course (LOs)	pr	ogram com	petencies				
1	Lol		A2					
2	Lo2		A2					
3	Lo3		A2, A	4				
4	Lo4		A4					
	7- Course content and the relation betw	veen the cou	urse conten	ts and the co	ourse LOs			
Week	Торіс	Lecture	Tutorial	Practical	course LOs			
No.		hr.	hr.	hours				
1	Introduction to optics.	0	0	2	Lo1			
2	Wave nature of light.	0	0	2	Lo1			
3	Photoelectric effect.	0	0	2	Lo1			
4	Verification of inverse square law.	0	0	2	Lo1			
5	Newtons rings.	0	0	2	Lo1			
6	Single slit.	0	0	2	Lo1			
7	Revision.	0	0	2	Lo1			
8	Midterm		1.0					
9	Double slit.	0	0	2	Lo2			
10	Refractive index of prism.	0	0	2	Lo2			
11	Thin film interference	0	0	2	Lo2			
12	Fresnel.	0	0	2	Lo2			
13	Fraun hofer diffraction.	0	0	2	Lo3, Lo4			
14	Intensity distribution.	0	0	2	Lo3, Lo4			
15	Revision.	0	0	2	Lo2, Lo3,			
		U			Lo4			
14	Final Exam		2.0					
Total h	iours	0	0	28				

8- The Teaching and learning methods and their relation to the Los of the course Teaching and Learning Methods





lear Outc	urse ning omes Os)	On line / face to face	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
L	o1	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	
L	o2	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	
L	o3	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	
L	o4	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving. Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

			9-	Studer	nt asse	ssment	metho	b			
a- Assessment method and its relation to the Los of the course											
					lc	ols of a	ssessn	nent			
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lol	\checkmark	√	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark		\checkmark	
Lo2	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark		\checkmark	
Lo3	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark		\checkmark	
Lo4	\checkmark	\checkmark	\checkmark	✓		\checkmark	\checkmark	\checkmark		\checkmark	
				b-	Time	schedu	le of as	sessmen	t		
Quizzes				Quiz(1) Quiz(2)			eek (3) eek (1				
Discussion	Discussions Every week for any student										
Presentations and Movies weekly											
Sheets and Sketches weekly											
Researche		l reports					eek (2,3				
the Project	IS					We	eek (4	,8)			





Practical modelling Attendance		Week (4,8) weekly			
Mid-term exam		Week(7)			
final exam	c- Grading	Week (14)			
	Quiz (1)	(15) marks			
quizes	Quiz (1)	(15) marks			
Discussions	5%	(10) 110110			
Sheets and Sketches	45%	10 mortes			
Researches and reports	10%	10 marks	(60) marks		
lab	10%				
Attendance		(10) marks			
Mid-term exa	n	(10) marks	0)		
final exam			0) marks		
Total	10- List of r		00) marks		
a) Course notes		s and handouts			
b) Required books	SVA academ				
c) Recommend books	Mentioned a	t time.			
d) Periodicals, Web	No periodica	ls are needed.			
sites, etc					
	-	<i></i>			
		for teaching and learn			
	hing design stud	lios including presen	itation board, data		
show					
Google classroomE- learning	11				
0	2- Requirements	for Disable facilities:			
	ng hours if it is				
Extra assignm	-				
C					
Course coordinator:	Dr. Neven Gam	al Rostom	C-B		
program Coordinator Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul					
Head of the Department Dr. Ibrahim Ali Mahmoud Abdel Dayem					
Date: 2021/2021					
Duto.	202 1202 1				





Course specification							
Course code:	Course name						
MATH202	Differential Equations						
	A- Affiliation						
Relevant program:	Electrical power engineering						
Department offering the pro-	•						
	engineering						
Department offering the con							
Date of program operation:	2008-2009						
Date of approval from the h education	igher ministry of 27/1/2008						
Date of course operation	2021-2027						
	B-Basic Information						
Title	Differential Equations						
Code	MATH202						
Credit Hours	3Cr. hr						
Lectures	2hr						
Tutorial	2hr						
Total	4hr						
Prerequisite	MATH 201						
Instructor name/Email	Dr. Gamal El-Anani						
	gamalanany@sva.edu.eg						
	<u>C-Professional information</u>						
	1- Course learning objectives:						
oc 1 Explain concepts of	f ordinary differential equations						
oc 2 Explain concepts of	f mathematical of first order differential equations						
oc 3 Apply knowledge problems.	of mathematics to solve of second order differential equation						
oc 4 Explain Concepts	of power series solutions.						
00.0	Search and analyze data, to Deal with design situations within solving design problems based on the analytical process for Laplace transforms.						
oc 6 Demonstrate meth transforms	6 Demonstrate methodologies of solving engineering problems with Laplace						
to solve engineerin							
2-	program objectives served by the course:						





Upon the completion of the course the student should be able to:

- **OP 1** The concept of ordinary differential equations.
- **OP 2** Methods of solution and applications of first order differential equations
- **OP 3** Methods of solution and applications of second order differential equations
- OP 4 Power series solutions
- OP 5 Laplace transforms
- **OP 6** Solutions of first order linear systems by Laplace transforms.
- OP 7 Theory of integration with applications including areas, volumes, lengths, moments, center of mass and work

3- The relation between the course objectives and the program objectives

	Course objectives	program objectives					
1	oc 1	OP1					
2	oc 2	OP2					
3	oc 3	OP3					
4	oc 4	OP4					
5	oc 5	OP5					
6	oc 6	OP6					
7	oc 7	OP7					
	4- Learning outcomes of the course (LOs)						

Upon the completion of the course, the student should be able to:

- Lo1 Explain concepts and theories of mathematics and sciences, appropriate to differential equations, function and practice.
- Lo2 Demonstrate methodologies of solving engineering problems, data collection and interpretation.
- Lo3 Select appropriate solutions for engineering problems based on analytical thinking
- Lo4 Apply knowledge of mathematics to solve engineering problems.
- Lo5 Apply knowledge of linear algebraic equations, iterative methods, and infinite series to solve engineering problems.
- Lo6 Prepare and present technical reports about application of matrices to solve engineering problems.
- Lo7 Effectively manages tasks, time, and resources, when solving mathematics problems, and in exams.
- Lo8 Apply knowledge of mathematics to solve differential problems
 - 5- Program competencies served by the course:





Upon the completion of the Program the student should be able to:

A1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.

Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective

A2 interpret data, assess and evaluate findings, and use statistical analyses and object engineering judgment to draw conclusions.

6-	The relation	between the	course le	earning	outcomes	and the	program	competencies
----	--------------	-------------	-----------	---------	----------	---------	---------	--------------

	Course (LOs)	program competencies
1	Lo1	A1, A2
2	Lo2	A1, A2
3	Lo3	A1, A2
4	Lo4	A1
5	Lo5	A1
6	Lo6	A1, A2
7	Lo7	A1
8	Lo8	A1

	7- Course content and the relation betwee	n the cour	se conten	ts and the c	ourse LOs
We	Торіс	Lectur	Tutori	Practical	course LOs
ek		e hr.	al hr.	hours	
No.					
1	Covers mathematical formulation of ordinary differential equations	2	2	0	Lo1, Lo8
2	Methods of solution and applications of first order differential equations	2	2	0	Lo1, Lo8
3	Methods of solution and applications of second order differential equations	2	2	0	Lo1, Lo8
4	Laplace transforms	2	2	0	Lo2
5	Solutions of first order linear systems by Laplace transforms	2	2	0	Lo2
6	Functions and limits,	2	2	0	Lo3
7	Differentiation with applications including maxima and minima				Lo3
8	Midterm		1.0		
9	Maxima and minima	2	2	0	Lo3





10	Theory of integration with applications including areas.	2	2	0	Lo4, Lo5
11	Volumes.	2	2	0	L06, L07
12	Lengths.	2	2	0	L06, L07
13	Moments.	2	2	0	Lo6, Lo7
14	Center of mass and work	2	2	0	L06, L07
15	Revision				
16	Final Exam		2.0		
Tota	l hours	28	28	0	

8- The Teaching and learning methods and their relation to the Los of the course

				Tead	ching a	and Le	arning	Metho	ods				
Course learning Outcom es (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
Lo1	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo2	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo3	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo4	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo5	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo7	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo8	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Mataa													

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving. Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

9- Student assessment method

a- Assessment method and its relation to the Los of the course

Tools of assessment





Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling		
Lo1	\checkmark	√	\checkmark	\checkmark				\checkmark	\checkmark	\checkmark			
Lo2	\checkmark	\checkmark	\checkmark	\checkmark				\checkmark	\checkmark	\checkmark			
Lo3	\checkmark	\checkmark	\checkmark	\checkmark				\checkmark	\checkmark	\checkmark			
Lo4	\checkmark	\checkmark	\checkmark	\checkmark				\checkmark	\checkmark	\checkmark			
Lo5	√	~	√	✓				√	√	√			
Lo6	√ √	\checkmark	\checkmark	\checkmark				√	\checkmark	\checkmark			
Lo7 Lo8	v v	v √	✓	v V				v √	v √	▼ √			
LUG	•	•	•	•	b- Time	e schedu	le of as	•		•			
Ouimees			(Quiz (´			ek (3)		•				
Quizzes				Quiz (2	,		ek (10)					
Discussic	ons					Eve	Every week for any student						
Presenta			ovies				ekly						
Sheets a			4				weekly Week (2,3)						
Research the Proje		na repor	τs				Week (2,3) Week (4,8)						
Practical		lelling					eek (4,3)						
Attendar		ening					ekly	0)					
Mid-terr		ım					eek (7)					
final exa	ım						eek (14						
						ing syste							
	quiz	zes			iz(1)	(5) marks(5) marks							
D	-			-	iz(2)	(5) ma	rks					
		sions Sketche	20		25% 50%								
		and repo			25%		10 mar	ks		(50) marł	7 8		
		ojects	1105		0%		i o mai	KS	,	(50) man	20		
		nodellin	g		0%								
			ndance			(10) ma	rks					
		Mid-te		m		(2	20) ma						
			exam					· · ·	50) mar				
		T	otal		10 1:-+	af mafa m		(1	00) ma	rks			
	01170	notas				of refere es and h		G					
a) C	ouise	e notes		Lett		s anu m	anuout	5					





b) Required books	 Mary Attenborough, Engineering Mathematics, McGraw - HILL Book Company Europe, 1994. Anthony croft, Robert Davison, Engineering Mathematics A modern Foundation for Electrical, Electronic & Control Engineering, Addison - Wesley - Publishing Company, 1992
c) Recommend	Swokowski, E, Olinick ,M and Pence, D., Calculus, PWS
books	Publishing Company - Boston, 1994
d) Periodicals,	Web Sites related to Mathematics and Mathematical engineering as:
Web sites,	www.math.hmc.edu,
etc	www.tutorial.math.lamar.edu,
	www.web.mit.edu
	11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning

12- Requirements for Disable facilities:

• On line teaching hours if it is needed

	Estua	
•	Extra	assignments.

Course coordinator:	Dr. Gamal El-Anani	<mark>Gamal</mark>
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	1
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	60
Date:	2021/2021	





Course specification							
Course code:			Course name				
BASE 303			Engineering Economics				
A- Affiliation							
Relevant progr			Electrical power engineering				
	fering the program	1:	Electrical and communication engineering				
	fering the course:		Basic Science				
Date of progra			2008-2009				
	al from the higher	r ministry	27/1/2008				
of education Date of course	operation		2021-2021				
Date of course	operation	R-Rasic In					
B-Basic Information							
Title Engineerin			g Economics				
Code BASE 303							
Credit Hours 3Cr. hr							
Lectures		2hr					
Tutorial		2hr					
Total		4hr					
Prerequisite Instructor nam		Math 102	-Aziz Ramadan				
msu uctor nam			Ramadan@sva.edu.eg				
			al information				
			earning objectives:				
1	Explain pre-invest	tment phase	e, project investment phase and operation				
oc 1	phase.	1					
oc 2	Explain Bar char	t.					
oc 3	Apply fixed asset	ts costs, cu	rrent assets costs, pre operation costs.				
oc 4	Derivation of equ	uation of ca	ash future value				
oc 5	Derivation of equ	uation of ca	ash net present of expected future cash flow				
006	Calculation of the	e internal r	ate of return.				
	2- prog	ram objectiv	ves served by the course:				
Upon the comp	pletion of the cours	se the stude	ent should be able to:				
OP 1	Phases of engine	ering proje	cts/operation				
OP 2	Project activity v	ersus time	plan				
OP 3	Project total inve	estment cos	ts				
	-						





- OP 4 Derivation of equation of cash future value
- OP 5 Derivation of equation of cash net present of expected future cash flow
- OP 6 calculation of the internal rate of return.

3- The relation between the course objectives and the program objectives

Course o	bjectives	program objectives				
1	oc 1	OP1				
2	oc 2	OP2				
3	oc 3	OP3				
4	oc 4	OP4				
5	oc 5	OP5				
6	oc 6	OP6				
 Learning outcomes of the course (LOs) 						

Upon the completion of the course, the student should be able to:

Lo1	Develop cash flow engineering-economic models of costs and benefits of projects							
Lo2	Compare the costs and benefits of alternative and mutually exclusive projects using time value of money approaches, including present worth, annual worth, payback period, and Internal Rate of Return (IRR)							
Lo3	Assess the effect of inflation and taxation on costs and benefits of projects, as well as developing numerical methods to account for their impact							
Lo4	Assess the elements which may affect the decision-making process for public sector projects							
Lo5	Develop a strategy to account for uncertainty and risk through the use of sensitivity analysis and probability distribution							
	Program competencies served by the course:							
Upon the co	ompletion of the Program the student should be able to:							
A2	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
 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.





A6	 A6 Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements. 6- The relation between the course learning outcomes and the program competencies 								
0-	Course (LOs) program competencies								
1		program		162					
1	Lol		A2						
2	Lo2		A3						
3 4	Lo3 Lo4		A3 A3						
4 5	L04 L05		AS A6						
J 7		the course		nd the cours					
Week		Lecture	Tutorial	Practical					
No.	Торіс	hr.	hr.	hours	course LOs				
1	Phases of engineering			nours	Los				
1	Phases of engineering projects/operation.	2	2	0	LUI				
2	Project activity versus time plan	2	2	0	Lo2				
23	Project total investment costs; fixed	2	2	0	Lo2 Lo2				
5	assets costs, current assets costs, pre	2	2	0	L02				
	operation costs.		2	0					
4	Derivation of equation of cash future	_	_	_	Lo3				
•	value	2	2	0	200				
5	Derivation of equation of cash net	2	2	0	Lo3				
	present of expected future cash flow	2	2	0					
6	Derivation of equation of cash net	2	2	0	Lo3				
	present of expected future cash flow	2	2	0					
7	calculation of the internal rate of	2	2	0	Lo3				
	return.								
8	Midterm		1.0						
9	The payback periods.	2	2	0	Lo4				
10	The payback periods.	2	2	0	Lo4				
11	The payback periods.	2	2	0	Lo4				
12	Factory break-even point (BEP).	2	2	0	Lo5				
13	Factory break-even point (BEP).	2	2	0	Lo5				
14	Factory break-even point (BEP).	2	2	0	Lo5				
15	Revision	2	2	0	Lo5				
16 Total ha	Final Exam	20	2.0	0					
Total ho	urs	28	28	0					





8-	The Te	eaching a	and lea	arning	methe	ods ar	nd thei	r rela	tion to th	ne Los	of the c	ourse	
		Teaching and Learning Methods											
Course learning Outcomes (LOs)	 On line / face to face lectures 	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	discovering	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
Lo1	\checkmark		\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo2	\checkmark		\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo3	\checkmark		\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo4	\checkmark		\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Lo5	\checkmark		\checkmark	\checkmark	\checkmark		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	
Notes:													

Notes:

The research concerns the cooperative work, the discussion, the site visit and the presentations. The Tutorials concerns the brain storming and the problem solving.

Online lectures used as hybrid learning, but in case of totally on-line learning all the used teaching and learning methods will be on line.

9- Student assessment method											
a- Assessment method and its relation to the Los of the course											
Tools of assessment											
Course ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
Lol	✓	✓	✓					✓	√	✓	
Lo2	✓	√	√					√	√	√	
Lo3	\checkmark	~	\checkmark					\checkmark	\checkmark	\checkmark	
Lo4	\checkmark	\checkmark	\checkmark					\checkmark	\checkmark	\checkmark	
Lo5	\checkmark	\checkmark	\checkmark					\checkmark	\checkmark	\checkmark	
				ł)- Tir	ne sche	edule o	fassessn	nent		
Quizzes				Quiz (1)			eek (3				
			(Quiz(2)			eek (1	,			
Discussions Every week for any student											
Presentati Sheets an			/Ies			WE	ekly				
Researche			ts			We	eek (2,	3)			





the Projects Practical modelling Attendance Mid-term exam final exam		weekly Week(7) Week(14)	
	c- Gra	ding system	
quizes	Quiz(1) Quiz(2)	(5) marks (5) marks	
Discussions	25%		
Sheets and Sketches	0%		
Researches and reports	75%	10 marks	(50) marks
the Projects	0%		
Practical modelling	0%		
Attendance		(10) marks	
Mid-term exam		(20) marks	
final exam		、 ,	(50) marks
Total			(100) marks

10- List of references:
Lecture notes and handouts
Digital Park, Chan S. Contemporary engineering
economics. Vol. 4. Upper Saddle River, NJ: Prentice
Hall, 2002.
Mentioned at time.
No periodicals are needed.

11- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show
- Google classroom
- E- learning
- 12- Requirements for Disable facilities:
- On line teaching hours if it is needed
- Extra assignments



