



Fourth level courses (Senior-1) - First semester (Fall)

No.	Cod	Course Name	Instructor
1	CECE 317	Electric Machine I	Ass. Prof. Dr. Shady Abdel Aleem
2	CECE 431	Digital Control	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul
3	CECE 319	Power Electronics I	Dr. Mostafa Hassan Mostafa Abdel-Gawad
4	CECE 309	Electrical Energy Conversions	Ass. Prof. Dr. Shady Abdel Aleem
5	BASE 306	Research Methods	Dr. Amera Marei
6	BASE 404	Negotiation Skills	Dr. Amera Marei





С	ourse specification						
Course code:	Course name						
CECE 317	Electric Machine I						
	A- Affiliation						
Relevant program:	Electrical power engineering						
Department offering the program:	Electrical and communication engineering						
Department offering the course:	Electrical and communication engineering						
Date of program operation:	2008-2009						
Date of approval from the higher	27/1/2008						
ministry of education							
Date of course operation	202°-202£						
B- <u>Basic Information</u>							
Course Name	Electric Machine I						
Code	CECE 317						
Course Level	Fourth level courses (Senior-1) - First semester (Fall)						
Credit Hours	3Cr. hr						
Lectures	2hr						
Tutorial	2hr						
Lab	2hr						
Total	6hr						
Prerequisite	CECE 203						
Instructor name/Email	Ass. Prof. Dr. Shady Abdel Aleem						
	Shady.Sebai@sva.edu.eg						

C- Professional information

1- Course core

D.C. machines : Theory and design: The generation of e.m.f., Work, Power, Force torque, The magnetic circuit of the dc machine, Armature windings, Armature reaction, Inductance, Energy in magnetic field, Commutation, Methods of excitation, Load characteristics of dc generators and motors, Efficiency, Testing of dc machines, Special dc machines, Construction of dc machines, Mechanical details, Design, Main dimensions, The armature, Design of poles and inter-poles, Design of commutator, Calculation of efficiency, Examples on the design of dc motors and generators

2- Course learning objectives:

oc 1Recognize the DC machines, Theory, design and types, DC Generators and DC Motor
machines, Types of DC Generators and DC Motor machines, Starting a DC Motor.oc 2Analyze different types of DC generators their characteristics, industrial applications, effect
of armature reaction and its assessment.oc 3Make the intrept the various losses in DC machines and there.





- explain the principle of DC motor, electrical characteristics and industrial application, purpose of starter and its design.
- oc 5 analyze the purpose of parallel operation of DC generator.
- oc6 able to understand features and their industrial applications.

3- Learning outcomes of the course (LOs)

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

a. Cognitive Domains (LOs):

- LO1 Recognize the construction of D.C machine, different windings.
- LO2 Recognize the features and their industrial applications.
- LO3 explain the principle of DC motor, electrical characteristics and industrial application, purpose of starter and its design.

b. Psychomotor Domains (LOs):

LO4 Make the intrept the various losses in DC machines and their efficiency.

c. Affective Domains (LOs):

- LO5 Express the different types of DC generators their characteristics, industrial applications, effect of armature reaction and its assessment.
- LO6 Express the purpose of parallel operation of DC generator.

4- Program competencies served by the course:

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

- **Lo13.** Explain the basic electrical power system theory.
- **Lo14.** Merge theories and techniques for calculating short circuit, motor starting, and voltage drop in the projects.
- **Lo15.** Explain the diverse applications of electrical power equipment
- **Lo19.** Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.

Utilize computer program to analyze design problems and interpret numerical data

- **Lo29.** and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems
- **Lo39.** Show accuracy while Designing experiments, as well as analyzing and interpreting experimental results related to electrical and electrical power systems.
- **Lo40.** Apply modern techniques, skills and engineering tools to electrical power engineering
- **Lo41.** Work professionally in multidisciplinary concepts by integrating Electrical power Engineering with Internet of Things, Green Energy and Smart cities concepts.

5- **Program LOs served by the course:**

Course (LOs)

program LOs





LO1	Recognize the construction of D.C machine, different windings.	L012.	Theories and techniques for calculating short circuit, motor starting, and voltage drop.
LO2	Recognize the features and their industrial applications.	Lo13.	Diverse applications of electrical equipment.
LO3	explain the principle of DC motor, electrical characteristics and industrial application, purpose of starter and its design.	L012.	Theories and techniques for calculating short circuit, motor starting, and voltage drop.
LO4	e	Lo26.	Analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical power and machines
LO5	Express the different types of DC generators their characteristics, industrial applications, effect of armature reaction and its assessment.	Lo35.	Test and examine components, equipment and systems of electrical power and machines.
LO6	Express the purpose of parallel operation of DC generator.	Lo35.	Test and examine components, equipment and systems of electrical power and machines.

	6- Course content and the relation betwee	n the cours	e contents	and the cour	se LOs
Week No.	Торіс	Lecture hr.	Tutorial hr.	Practical hours	course LOs
1	Introduction	2	2	2	LO1
2	DC Machinery Fundamentals	2	2	2	LO1
3	DC Generators (principle of operation)	2	2	2	LO1
4	DC shunt generator	2	2	2	LO5
5	DC series generator	2	2	2	LO5





6 7 8	DC compound generator DC compound generator Midterm	2 2	2 2 1.0	2 2	LO4 LO4
8 9	DC Motors	2	1.0 2	2	LO3
10	DC motors (Types)	2	2	2	LO3
11	Solving problem in DC motors (Types)	2	2	2	LO6
12	Starting a DC Motor	2	2	2	LO6
13	End of DC Machines General	2	2	2	LO2
14	Revision	2	2	2	LO2
15	Revision	2	2	2	LO2
16 Tota	Final Exam l hours	28	2.0 28	28	

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

Course learning Outcomes (LOs)	An lina / fara ta fara	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	diconverine Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
LO1		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
LO5		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓	✓	\checkmark	\checkmark	\checkmark	\checkmark
LO4		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓	✓	\checkmark	\checkmark	\checkmark	\checkmark
LO3		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓	✓	\checkmark	\checkmark	\checkmark	\checkmark
LO6		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓	✓	\checkmark	\checkmark	\checkmark	\checkmark
LO2		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓	\checkmark	\checkmark	\checkmark	\checkmark
Notoo:												

Notes:

The research concerns the cooperative work, the discussion 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.

8- 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	Aral avam	discussions	Reports/ researches	presentation	modelling	
LO1	\checkmark	\checkmark	\checkmark	√	\checkmark	\checkmark	\checkmark	\checkmark				
LO5	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	√ √		\checkmark	\checkmark	\checkmark	
LO4	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	
LO3	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	
LO6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark		
LO2	\checkmark	✓	✓	✓	✓	✓		✓	\checkmark	✓		
	b- Time schedule of assessment											
Quizzes Quiz (1) Week (3) Quiz (2) Week (10)												
Discussions Quiz (2) Week (10) Every week for any student												
Presentations and Movies Weekly												
Sheets and Sketches Weekly												
Researches and reports Week (2,3)												
the Projects Week (4,8)												
Practical modelling Week (4,8)												
Attendance Weekly												
Mid-term exam Week (8)												
final exam				-	Cradina	Week (16)						
				с Оц	v		rks					
	quizes Quiz (1) (5) marks Quiz (2) (5) marks											
D	iscuss	ions			15%	(0) 110						
	Sheets and Sketches 20%											
Resear	Researches and reports 20% 5 marks (40) marks											
the Projects 30%												
Practical modelling 20%												
Attendance (10) marks												
			m exam			(15) ma	rks	(60)) morks			
			exam otal) marks)) marks			
			nai	1	0- List of re	ferences		(100	nui no			
a) Co	ourse	notes			ture notes ar							
/		d books				ciples of elec	trical n	nachii	nes and poy	ver elect	ronics.	
<i>o</i>) ite	74110	a coord				John Wiley&			Po		- - - - ,	
c) Re	comn	nend boo	oks		ntioned at tir							
· ·		als, Wel		No	periodicals a	re needed.						
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 examples and topic-specified research

Course coordinator:	Dr. Sabah Ibraheen Hahoud	
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	2
Date:	202٣/202٤	





Course specification									
Course code:	Course code: Course name								
CECE 431	Digital Control								
	A- Affiliation								
Relevant program:	Electrical power engineering								
Department offering the program:	Electrical and communication engineering								
Department offering the course:	Electrical and communication engineering								
Date of program operation:	2008-2009								
Date of approval from the higher mi	ninistry 27/1/2008								
of education									
Date of course operation	202۳-202٤								
B- Basic Information									
Course Name	Course Name Digital Control								
Code CECE 431									
Course Level Fourth level courses (Senior-1) - First semester (Fall)									
Credit Hours 3Cr. hr									
Credit Hours Lectures	2hr								
Tutorial	2hr								
Total	4hr CECE 205								
Prerequisite	CECE 305 Dr. Ebab Mahamad Nabil Jamail Abdal Dagayl								
Instructor name/Email	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul								
~	ihab.nabil@sva.edu.eg								
C-	- Professional information								

1- Course core

D.C. machines : Theory and design: The generation of e.m.f., Work, Power, Force torque, The magnetic circuit of the dc machine, Armature windings, Armature reaction, Inductance, Energy in magnetic field, Commutation, Methods of excitation, Load characteristics of dc generators and motors, Efficiency, Testing of dc machines, Special dc machines, Construction of dc machines, Mechanical details, Design, Main dimensions, The armature, Design of poles and inter-poles, Design of commutator, Calculation of efficiency, Examples on the design of dc motors and generators

2- Course learning objectives:

- oc 1Recognize the practice in control systems design and analysis, almost all of which
involves digital implementation.oc 2Recognize the sampling and quantization, z-transform, and other analysis tools used
- to analyze and design digital control systems. Recognize the state space and input/output representation, modelling and analysis of
- oc 3 Recognize the state space and input/output representation, modelling and analysis o digital control systems.



oc 4

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



Recognize the modern control design methodologies for continuous-time and discrete-time systems that may include but are not limited to: state feedback control, state observer design, observer-based compensator design, LQ optimal control, Kalman filtering, LQG design, internal model-based design, Linear Matrix Inequality based designs, nonlinear observers, feedback linearization, model predictive control; understanding the issues regarding digital controller implementation.

3- Learning outcomes of the course (LOs)

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

a. Cognitive Domains (LOs):

LO1 Explain the conversion from a continuous-time system into a discrete-time system (frequency and time domain techniques) and compute the z-transform of elementary signals and difference equations.

LO2 identify the poles of a second-order system based on the system's transient response (both continuous time and discrete time systems) and determine the stability of a closed-loop system (both continuous time and discrete time systems).

b. Psychomotor Domains (LOs):

LO3 produce the root locus associated with a system's transfer function (both G[s] and G[z]) and Translate design specifications into allowable dominant pole locations in both the s-plane and the z-plane.

LO4 Apply knowledge for Designing the controllers using root locus techniques (both continuous time and discrete time) and incorporate time delay introduced by a zero-order hold and know how to accommodate this delay during a digital controller design.

- LO5 Produce the discrete equivalents of analog transfer functions and apply full-state feedback to achieve acceptable closed-loop behaviour for discrete-time systems.
- LO6 Apply knowledge for designing an estimator and use it to control a discrete-time system and design a digital PID controller based on an existing analog PID controller.
- LO7 Apply knowledge for Transforming between difference equations, block diagrams, and transfer functions associated with discrete systems and compute closed-form expressions for output waveforms from discrete-time systems with inputs.
- LO8 Apply knowledge for degerming the steady-state error in continuous time and discrete time systems and transform discrete-time systems between transfer function and state-space representations and state observer design, observer-based compensator design, LQ optimal control, Kalman filtering, LQG design, internal model-based design, Linear Matrix Inequality based designs, nonlinear observers, feedback linearization, model predictive control; understanding the issues regarding digital controller implementation.

c. Affective Domains (LOs):

None

4- Program LOs served by the course:





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

- **Lo11.** Principles of for electrical equipment and systems.
- **Lo12.** Principles of operation and performance specifications of electrical and electromechanical engineering systems .
- **Lo19.** Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.

Utilize computer program to analyze design problems and interpret numerical data

- **Lo29.** and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.
- **Lo30.** Integrate electrical, electronic, and mechanical components and equipment with transducers, actuators, and controllers in creatively computer-controlled systems.

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

	Course (LOs)		program competencies
LO1	Explain the conversion from a continuous- time system into a discrete-time system (frequency and time domain techniques) and compute the z-transform of elementary signals and difference equations.	Lo11.	Principles of for electrical equipment and systems.
LO2	identify the poles of a second-order system based on the system's transient response (both continuous time and discrete time systems) and determine the stability of a closed-loop system (both continuous time and discrete time systems).	Lo12.	Principles of operation and performance specifications of electrical and electromechanical engineering systems .
LO3	produce the root locus associated with a system's transfer function (both $G[s]$ and $G[z]$) and Translate design specifications into allowable dominant pole locations in both the s-plane and the z-plane.	Lo19.	Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.
LO4	Apply knowledge for Designing the controllers using root locus techniques (both continuous time and discrete time) and incorporate time delay introduced by a zero-order hold and know how to accommodate this delay during a digital controller design.	Lo29.	Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.





LO5

Produce the discrete equivalents of analog transfer functions and apply full-state feedback to achieve acceptable closed-loop behaviour for discrete-time systems.

LO6

Apply knowledge for designing an estimator and use it to control a discrete-time system and design a digital PID controller based on an existing analog PID controller.

LO7

Apply knowledge for Transforming between difference equations, block diagrams, and transfer functions associated with discrete systems and compute closed-form expressions for output waveforms from discrete-time systems with inputs.

LO8 Apply knowledge for determing the steadystate error in continuous time and discrete time systems and transform discrete-time systems between transfer function and statespace representations and state observer design, observer-based compensator design, LQ optimal control, Kalman filtering, LQG design, internal model-based design, Linear Matrix Inequality based designs, nonlinear observers, feedback linearization, model predictive control; understanding the issues regarding digital controller implementation. Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.

Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.

Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of

electrical and electric power generation, control, and distribution systems.

Lo29.

Lo30.

Integrate electrical, electronic, and mechanical components and equipment with transducers, actuators, and controllers in creatively computer-controlled systems.





	5- Course content and the relation between	the course	contents a	nd the cours	e LOs
Week No.	Торіс	Lecture hr.	Tutorial hr.	Practical hours	course LOs
1	Introduction: Issues relating to digital control; Design process.	2	2	0	LO1
2	Focuses on sample Theory: Sampling Theory; Aliasing; Zero-Order Hold (ZOH); z-Transform and Difference Equations.	2	2	0	LO1
3	Focuses on difference Equation. Representation of Sample Data Systems: Pulse Transfer Function Representation; State Space Representation+ Quiz (1).	2	2	0	LO1
4	Quiz (1) +Focuses on analysis of Sampled Data Systems: Stability; Sensitivity and Robustness; Controllability/ Observability.	2	2	0	LO2
5	Focuses on Pole/Zero Cancellation. Design of Discrete-Time Controller, Input/Output Approach: Emulating Continuous-Time Controller.	2	2	0	LO2
6	Focuses on Invariant Methods; Direct Design. Design of Discrete-Time Controller.	2	2	0	LO3
7	Polynomial Approach: Problem Formulation.				LO3
8	Midterm		1.0		
9	Focuses on Pole Placement Design; Model Matching Problem. Design of Discrete-Time Controller.	2	2	0	LO4
10	State Space Approach: State Feedback.	2	2	0	LO4
11	Focuses on State Estimation (Observer).	2	2	0	LO5
12	Quiz (2) +Observer Based Compensator.	2	2	0	LO5
13	Focuses on LQ Optimal Control. LQG Control+	2	2	0	LO6
14	Focuses on Special Topics: LMI formulations of control, feedback linearization, nonlinear observers.	2	2	0	LO7
15	Focuses on model predictive control will be shown toward the end of the course.	2	2	0	LO8
16	Final Exam		2.0		
Total	hours	28	28	0	

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

Course learning Outcome s (LOs)	n line / face to face lectures	utorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	Discovering / self learning Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
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LO1	\checkmark										
LO2	\checkmark	\checkmark									
LO3	\checkmark			\checkmark							
LO4	\checkmark	_ ✓									
LO5	\checkmark										
LO6	\checkmark										
LO7	✓	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓	\checkmark	\checkmark	\checkmark	\checkmark
LO8	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓	✓	\checkmark	\checkmark	\checkmark	\checkmark

Notes:

The research concerns the cooperative work, the discussion 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.

			7-	Stude	ent asses	sment	metho	d			
	a- A	ssessme	nt meth	nod and				he 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		✓			\checkmark		\checkmark		✓	-	\checkmark
LO3 LO4	▼ √	v √	✓ ✓	▼ √	▼ √		v v	\checkmark	▼ ✓	\checkmark	v √
LO4 LO5	• ✓	• ✓	• √	• ✓	• •		✓	• ✓	↓	• ✓	↓
LO6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
LO7	\checkmark	\checkmark	\checkmark	\checkmark	✓		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
CS(1.8)	\checkmark	\checkmark	\checkmark	\checkmark	✓		~	\checkmark	\checkmark	\checkmark	\checkmark
						schedu	e of as	sessment			
Quizzes											
Discussions Presentatior Sheets and Researches the Projects Practical mo Attendance Mid-term ex	ns and l Sketch and re odelling	Quiz (1) Week (3) Quiz (2) Week (10) Every week for any student Movies weekly es weekly									





final exam		Week (16)				
	c- Grading	l system				
quizes	Quiz(1) Quiz(2)	(5) marks (5) marks				
Discussions	15%					
Sheets and Sketches	20%					
Researches and reports	20%	5 marks	(40) marks			
the Projects	30%					
Practical modelling Attendance Mid-term exam final exam Total	20%		60) marks 00) marks			
10- List of references:						
a) Course notesb) Required books	Lecture notes	and handouts ALI," Digital Control	Engineering Analysis			
c) Recommend books	Mentioned at	time.				
d) Periodicals, Web sites, etc	No periodical	s are needed.				
11 ₋ E	cilities require	d for teaching and le	arning			
	-	•	•			
 Appropriate teachin Google classroom E- learning 	ig design studio	s including presentation	on board, data show			
C	Doquiromont	s for Disable facilities				

12- Requirements for Disable facilities:

• On line teaching hours if it is needed

 Extra examples and topic-specified research 							
Course coordinator:	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	Ś					
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul						
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem						
Date:	202٣/202٤						





Course specification					
Course code:	Course name				
CECE 319	Power Electronics I				
A- Affiliation					
Relevant program:	Electrical power engineering				
Department offering the program					
Department offering the course:	Electrical and communication engineering				
Date of program operation:	2008-2009				
Date of approval from the higher	27/1/2008				
ministry of education					
Date of course operation	202۳-202٤				
B-Basic Information					
Course Name	Power Electronics I				
Code	CECE 319				
Course Level	Fourth level courses (Senior-1) - First semester (Fall)				
Credit Hours	3Cr. hr				
Lectures	2hr				
Tutorial	2hr				
Lab	2hr				
Total	6hr				
Prerequisite	CECE 302				
Instructor name/Email	Dr. Abalah Reda				
	<u>abdullah.reda@sva.edu.eg</u>				

<u>C-Professional information</u>

1- Course core

Introduction to power electronics, Power diodes, Thyristors: Construction, Characteristics -application in rectifier circuits (converters), Firing circuits, Power transistors as switches, Phase shift controls, Phase controlled rectifiers static switches

2- Course learning objectives:

- oc 1 Recognize the power electronics, Power diodes, Thyristors.
- oc 2 Recognize the Characteristics -application in rectifier circuits (converters).
- oc 3 Recognize the circuits, Power transistors as switches, Phase shift controls.
- oc 4 Recognize the Phase controlled rectifiers-static switches.

3- Learning outcomes of the course (LOs)

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

a. Cognitive Domains (LOs):





LO1	Identify students with the power electronics, Power diodes, Thyristors.								
LO2	Recognize the Characteristics -application in rectifier circuits (converters).								
b. Psyc	chomotor Domains (LOs):								
LO3	Prepare students for design the circuits, Power transistors as switches, Phase shift controls.								
LO4	Obtain the characteristics-application in rectifier circuits (converters).								
LO5	Apply knowledge for Firing the Phase controlled rectifiers-static switches								
c. Affective Domains (LOs):									
-	- None								
4- Program LOs served by the course:									
Upon the completion of the Program the student should be able to:									
Lo15.	Explain the diverse applications of electrical power equipment.								
Lo19.	Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.								
Lo29.	Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems								
Lo30.	Integrate electrical, electronic, and mechanical components and equipment with								
5-	The relation between the course learning outcomes and the program competencies								
	Course (LOs) program competencies								
LO1	Identify students with the power electronics, Power diodes, Lo15. Explain the diverse applications of electrical power equipment.								

Thyristors. Solve complex engineering problems LO2 Recognize the Characteristics and solve problems in the field of Lo19. application in rectifier electrical and electrical power circuits (converters). engineering. Utilize computer program to analyze LO3 Prepare students for design problems and interpret numerical the design circuits, data and test and examine components, Power transistors as Lo29. equipment and systems of electrical and switches, Phase shift electric power generation, control, and controls. distribution systems





LO4 LO5		Obtain the characteristics- application in rectifier circuits (converters). Apply knowledge for Firing the Phase controlled rectifiers- static switches	Lo29. Lo30.	design data a equip electr distrib Integr mecha with contro	n problems and test ar ment and ic power pution syst rate elect anical con transduc	s and interp nd examine systems of generation, tems trical, ele nponents a cers, act creatively	nd equipment uators, and
	6- Cou	rse content and the relation bet	ween the		-		a l Os
Week	0- 000	Topic		ecture	Tutorial	Practical	course LOs
No.		Τορίς	L	hr.	hr.	hours	course LOS
1	Introdu	ction: Power electronics compone	ont	2	2	2	LO1,2
2		s on half wave (uncontrol			Z	2	LO1,2 LO2
2		ed rectifier with resistative (R) loa		2	2	2	102
3		s on half wave (uncontrol				2	LO2
5	controll			2	2	2	LOZ
		nce (RL) load.		_	_		
4			vave			2	LO1
	resistati	rolled) controlled rectifier v ve- inductance (RL) load with g diode.	with free	2	2		
5	Focuse	s on full wave (uncontrol ed rectifier with resistative (R) loa		2	2	2	LO1
6		s on full wave (uncontrol				2	LO3
v	controll		/	2	2	2	LOJ
		nce (RL) load.		-	-		
7		on full wave (uncontrol	led)	2	2	2	LO3
	controll	ed rectifier with resistat	ive-				-
		nce (RL) load with free wheat	ling				
0	diode.				1.0		
8	Midtern		lad)		1.0	2	LO4
9	Focuse	s on full wave (uncontrol ed rectifier with resistative (R) loa	/	2	2	2	LO4
10	Focuse					2	LO4
10	controll			2	2	-	LOT
		nce (RL) load.		-	-		
11		on full wave (uncontrol	led)			2	LO5
	controll	ed rectifier with resistat	ive-	2	2		-
		nce (RL) load with free wheat	ling	2	2		
	diode.						
12		s on full wave (controlled) contro		2	2	2	LO5
	rectifier load	with resistative- inductance (1	KL)	2	2		
	IOau						





13	Review on full wave (controlled) controlled			2	LO5
	rectifier with resistative- inductance (RL)	2	2		
	load				
14	Focus on full wave (controlled) controlled			2	LO5
	rectifier with resistative- inductance (RL)	2	2		
	load with free whealing diode.				
15	Reviews on full wave (controlled) controlled			2	LO5
	rectifier with resistative- inductance (RL)	2	2		
	load with free whealing diode.				
16	Final Exam		2.0		
Total hour	s	20	20	20	
7	- The Teaching and learning methods and	their rela	tion to the L	os of the co	ourse
	Teaching and	Learning	g Methods		
			-		

Course learning Outcomes (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	Discovering / Self learning	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	\checkmark
LO5	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Notoo:													

Notes:

The research concerns the cooperative work, the discussion 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.

	8- Student assessment method										
a-	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	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
LO2	./	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
LOZ	v	•	•								
LO2 LO3	v √	• ✓	✓	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	✓ ✓	√ √	√ √	√ √	✓ ✓	√ √	√ √	√ √	\checkmark	\checkmark	\checkmark





	b- Time so	hedule of assessment	t
Quizzes Discussions Presentations and Movies Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exam final exam	Quiz (1) Quiz (2)	Week (3) Week (10) Every week for any weekly Week (2,3) Week (2,3) Week (4,8) Week (4,8) weekly Week (8) Week (16)	
	c- Grading		
quizes Discussions Sheets and Sketches	Quiz(1) Quiz(2) 15% 20%	(5) marks (5) marks	
Researches and reports the Projects Practical modelling Attendance Mid-term exam final exam Total	20% 30% 20%	5 marks (10) marks (15) marks	(40) marks (60) marks (100) marks
a) Course notesb) Required books	Circuit Behaza Microe Thom Hall, 9 Donald Analys 2009.	and handouts . Sedra, Kenneth C. s.", 8th Edition, Oxf ad Rzavi, "Fundame electronics", 3nd ed as L. Floyd, "Electr th edition. 1 Neamen, "Microe sis & Design", 4th e	ition, John Wiley. onic Devices", Prentice
 c) Recommend books d) Periodicals, Web sites, etc 	Mentioned at No periodicals		

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 examples and topic-specified research

Course coordinator:	Dr. Abdallah Reda
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem
Date:	202٣/202٤







Course specification

Course code:	Course name
CECE 309	Electrical Energy Conversions
A- Aff	iliation
Relevant program:	Electrical power engineering
Department offering the program:	Electrical and communication engineering
Department offering the course:	Electrical and communication engineering
Date of program operation:	2008-2009
Date of approval from the higher ministry	27/1/2008
of education	
Date of course operation	202۳-202٤

B-Basic Information

Course Name	Electrical Energy Conversions
Code	CECE 309
Course Level	Fourth level courses (Senior-1) - First semester (Fall)
Credit Hours	3Cr. hr
Lectures	2hr
Tutorial	2hr
Total	4hr
Prerequisite	Electric Circuits II
Instructor name/Email	Dr. Abdallah Reda
	Abdukkah.reda@sva.edu.eg
-	Dr. Abdallah Reda

<u>C-Professional information</u>

1- Course core

Covers magnetic circuits, single phase transformer and equivalent circuit, three phase transformers, basic concepts of electromechanical energy conversion, DC and AC machine

2- Course learning objectives:

- oc 1 Recognize the magnetic circuit and its components.
- oc 2 Recognize the Converting magnetic circuits.
- oc 3 Recognize the basic concepts of electromechanical energy conversion, DC and AC.
- oc 4 Recognize the single-phase transformer and equivalent circuit, three-phase transformers, and basic concepts of electromagnetic circuit, DC and AC machines.

3- Learning outcomes of the course (LOs)

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

a. Cognitive Domains (LOs):





LO1	Recognize the magnetic circuit and its components.			
LO2	Recognize the basic concepts of electromagnetic energy conversion.			
b. Psychomotor Domains (LOs):				
LO3	Apply knowledge to Convert the magnetic circuits in simplest form.			
LO4	Apply knowledge to Design single phase transformer and equivalent circuit, three-phase transformers, and basic concepts of electromagnetic circuit, DC and AC machines.			
LO5	Apply knowledge to Obtain the parameters of single-phase transformer and equivalent circuit, three-phase transformers, and basic concepts of electromagnetic circuit, DC and AC machines.			
c. Affective Domains (LOs):				

None

4- Program LOs served by the course:

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

- Lo13. Explain the basic electrical power system theory.
- Lo15. Explain the diverse applications of electrical power equipment.
- Explain the basic power system design concepts for underground, cable tray, Lo16. grounding, and lighting systems.
- Solve complex engineering problems and solve problems in the field of electrical Lo19. and electrical power engineering.
- Lo29. Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.
- Lo30. Integrate electrical, electronic, and mechanical components and equipment with transducers, actuators, and controllers in creatively computer-controlled systems.
- To design, simulate and practice the techniques of hardware and software tools Lo31. in Power systems, Power Electronics and Renewable Energy systems.

5- The relation between the course learning outcomes and the program LOs

	Course (LOs)		program LOs
LO1	Recognize the magnetic circuit and its	Lo13.	Explain the basic electrical power system theory.
	components.	Lo15.	Explain the diverse applications of electrical power equipment.
LO2	Recognize the basic concepts of electromagnetic energy conversion.	Lo16.	Explain the basic power system design concepts for underground, cable tray, grounding, and lighting systems.
LO3	Apply knowledge to Convert the magnetic circuits in simplest form.	Lo19.	Solve complex engineering problems and solve problems in the field of





				electrica enginee		elect	rical	power			
LO4	LO4 Apply knowledge to Design single phase			design numeric compon of ele	numerical data and test and examine components, equipment and systems						
Appry knowledge to Design single phase transformer and equivalent circuit, three-phase transformers, and basic concepts of electromagnetic circuit, DC and AC machines.			Lo30.	generation, control, and distrib							
LO5	single three-	y knowledge to Obtain the parameters of e-phase transformer and equivalent circuit, -phase transformers, and basic concepts of romagnetic circuit, DC and AC machines.	Lo31.	To desi techniqu tools	ed system gn, simulues of h in Pownics and	ulate an ardware ver sys	and so tems,	oftware Power			
		6- Course content and the relation betw	ween the	course co	ntents and	d the cou	rse LOs				
We No		Торіс			torial hr.	Practical hours	cour	rse LOs			
1		Introduction: Magnetic Fields		2	2	0	LO1				
2		Magnetic field quantities		2	2	0	LO1				
3	Focuses on Analogy between electric a magnetic circuits +Firing effect+ Solv examples+ Quiz (1).			2	2	0	LO1				
4		Quiz (1) +Focuses on Eddy currents losse Inductance (self & matual).	es+	2	2	0	L	.02			
5		Focuses on Inductance in case of two coupl coils + solved examples.	ed	2	2	0	L	.02			
6		Focuses on Introduction in transformers a general types of transformers + Volta relation (transformer at no load).		2	2	0	L	.02			
7		Practical Transformers and its equivale	ent				L	.02			

No.	Ιορις	Lecture hr.	lutorial hr.	hours	course LOS
1	Introduction: Magnetic Fields	2	2	0	LO1
2	Magnetic field quantities	2	2	0	LO1
3	Focuses on Analogy between electric and magnetic circuits +Firing effect+ Solved examples+ Quiz (1).	2	2	0	LO1
4	Quiz (1) +Focuses on Eddy currents losses+ Inductance (self & matual).	2	2	0	LO2
5	Focuses on Inductance in case of two coupled coils + solved examples.	2	2	0	LO2
6	Focuses on Introduction in transformers and general types of transformers + Voltage relation (transformer at no load).	2	2	0	LO2
7	Practical Transformers and its equivalent circuits.				LO2
8	Midterm		1.0		
9	Focuses on Practical Transformers and its equivalent circuits and solved examples in voltage regulation.	2	2	0	LO3
10	Equivalent circuits of Practical Transformers and solved examples in voltage regulation.	2	2	0	LO2





11	Focuses on transformer tests.	2	2	0	LO5
12	Quiz (2) + solved examples in transformer tests.	2	2	0	LO4
13	Focuses on solved examples on practical transformer and voltage regulation	2	2	0	LO5
14	Focuses on Special Topics: transformer tests.	2	2	0	LO5
15	Focuses on solved examples in transformers.				LO2
16	Final Exam		2.0		
Total hours	1	28	28	0	

Total hours

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

					cacinity	y anu L	earning met	liuus				
Course learning Outcomes (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	Discovering self learning Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
LO1	✓											
LO3	✓	\checkmark										
LO2	✓	\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
Matea												

Notes:

The research concerns the cooperative work, the discussion 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.

methods will be of	1 11110.										
8- Student assessment method											
a-	Asses	sment i	metho	d and i	ts relatio	on to the L	os of t	he 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						
LO3	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark						✓
LO2	\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
b- Time schedule of assessment											





A :	Quiz(1)	Week (3)				
Quizzes	Quiz (2)	Week (10)				
Discussions		Every week for any stu	dent			
Presentations and Movies Sheets and Sketches		Weekly				
Researches and reports	Weekly Week (2,3)					
the Projects	Week (2,3) Week (4,8)					
Practical modelling		Week (4,8)				
Attendance		Weekly				
Mid-term exam		Week (8)				
final exam	o Gradina	Week (16)				
	c- Gradinç Quiz (1)	j system (5) marks				
Quizzes	Quiz (2)	(5) marks				
Discussions	15 ` `					
Sheets and Sketches	20%					
Researches and reports	20%	5 marks	(40) marks			
the Projects Practical modelling	30% 20%					
Attendance	2070	(10) marks				
Mid-term exam		(15) marks				
final exam			(60) marks			
Total			(100) marks			
	10- List of	references:				
a) Course notes	Lecture notes ar					
b) Required books			ngineering Addison, Wesley			
/ 1	Publish					
			onversion, McGraw-Hill.			
			on, W est Publishing Company.			
c) Recommend booksd) Periodicals, Web sites, etc	Mentioned at tir No periodicals a					
u) i chouleais, web sites, etc	No periodicais a	ne needed.				
11- F	acilities require	d for teaching and	learning:			
 Appropriate teaching 	g design studios ir	cluding presentation b	ooard, data show			
Google classroom						
• E- learning						
12	2- Requirement	s for Disable facilit	es:			
On line teaching	hours if it is ne	eded				
• Extra examples and topic-specified research						

Extra examples and topic specifica research					
Course coordinator:	Dr. Abdallah Reda				
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	1-1			
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	6Þ			
Date:	202٣/202٤				





Course specification					
Course code:	Course name				
BASE306	Research Methods				
A- Affi	liation				
Relevant program: Electrical power engineering					
Department offering the program:	Electrical and communication engineering				
Department offering the course:	Basic Science				
Date of program operation:	2008-2009				
Date of approval from the higher ministry	27/1/2008				
of education					
Date of course operation	202 ^r -202 ^ε				
<u>B-Basic Inf</u>	ormation				
Course Name	Research Methods				
Code	BASE306				
Course Level	Fourth level courses (Senior-1) - First				
	semester (Fall)				
Credit Hours	3Cr. hr				
Lectures	2hr				
Tutorial	2hr				
Total	4hr				
Prerequisite	-				
Instructor name/Email	Dr. Amera Marei				
	amira.morai@sva.edu.eg				
<u>C- Professional information</u>					

1- Course core

Develops the skills to produce effective persuasive writing with a focus on organization, content, analysis of readings, critical thinking. Provides training in the use and integration of sources, library and online research.

2- Course learning objectives:					
oc 1	Recognize the science and its characteristics and science goals Methods of obtaining knowledge scientific research steps				
oc 2	Recognize the Problem concept, Problem selection and identification, Research hypotheses and their formulation, Search Plan				
oc 3	Recognize the ways to get knowledge				
oc 4	Produce the research hypotheses and their applications				
oc 5	Produce and prepare the research tool				
oc 6	recognize the notes- questionnaire- the interview-the exams				

Nutrition of the second	THO ING & ST	Ministry of higher edu High valley institute for engineeri Electrical power engineerin	ing and technology				
oc 7		Utilize the study for different c	characteristics of research tools				
oc 8		Recognize the experimental Historical method and compara	method -Anthropological method - ative research				
		3- Learning outcomes of the	e course (LOs)				
-	-	of the course, the student should b mains (LOs):	be able to:				
-		None					
b. I	Psychomotor	Domains (LOs):					
LO1		on organization, content, analys	ffective persuasive writing with a focus sis of readings, and critical thinking. and integration of sources, library, and				
LO2	Apply a knowledge of Scientific Research, Problem Meaning, how choose a problem, a research plane						
LO3	O3 Utilize contemporary technologies, codes of practice and standa quality guidelines, health and safety requirements, environme issues, and risk management principles						
c. A	Affective Dor	nains (LOs):					
LO4		express his opinion by oral presentinal configuration of masses.	ntation and flexible model recalling the				
LO5		Communicate effectively with appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.					
LO6	O6 express his opinion by oral presentation and flexible model recalling final configuration of masses.						
4	- Program	n LOs served by the course:					
Upon the	e completion	of the Program the student should	be able to:				
Lo24.		Conduct techniques and methods of investigation as researches and reports.					
Lo36.		Practice self-learning and other					
5- The relation between the course learning outcomes and the program LOs							
	С	ourse (LOs)	program LOs				
LO1	Apply a knowledge to produce effective persuasive writing with a focus on organization, content, analysis of readings, and critical thinking. Provides training in the Conduct techniques and methods of investigation as researches and reports.						





	use and integration of sources, library, and online research		
LO2	Apply a knowledge of Scientific Research, Problem Meaning, how to choose a problem, a research plane	Lo24.	Conduct techniques and methods of investigation as researches and reports.
LO3	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles	Lo24.	Conduct techniques and methods of investigation as researches and reports.
LO4	express his opinion by oral presentation and	Lo36.	Practice self-learning and other learning strategies
LO5	Communicate effectively with appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	Lo36.	Practice self-learning and other learning strategies
LO6	express his opinion by oral presentation and flexible model recalling the final configuration of masses.	Lo36.	Practice self-learning and other learning strategies

	4- Course content and the relation	tion between	the course	contents and the co	ourse LOs
Week	Торіс	Lecture	Tutorial	Practical hours	course LOs
No.		hr.	hr.		
1	Science and Scientific Research	2	2	0	LO1
2	Fundamentals of scientific research	2	2	0	LO1
3	Ways to gain knowledge	2	2	0	LO5,LO6
4	Research hypotheses and their formulation	2	2	0	LO2
5	Scientific research tools	2	2	0	LO2
6	Steps to configure the research tool	2	2	0	LO2
7	characteristics of the research tool				LO4
8	Midterm		1.0		
9	Research Methods	2	2	0	LO2





					<u> </u>
10	Research Categories	2	2	0	LO2
11	The study Community and samples	2	2	0	LO2,4
12	Steps to prepare the research and write the report	2	2	0	LO2
13	Organizing the research and writing its report	2	2	0	LO2
14	Qualities of a good researcher	2	2	0	LO2
15	Revision	2	2	0	LO2
16	Final Exam		2.0		
Total	hours	28	28	0	

	7-The	e Teaching	g and learni	-				<mark>tion to th</mark> g Method		of the	e cour	se	
Course learning Outcomes (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	Discovering / Self learning	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
LO5	\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.





	a-	Asses	sment m		<mark>Student as:</mark> and its rela Tools of a:	tion to	the Los	<mark>hod</mark> s of the cours	e		
Cour se ILOs	quizzes	Mid -term exam	Final exam	sheets/ sketches	projects	Practical: lab	Oral exam	discussions	Reports/ researches	presentation	modelling
LO1 LO2 LO3 LO4 LO5 LO5	✓ ✓ ✓ ✓	\checkmark	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓		✓ ✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓	√ √ √
						me sch	edule c	of assessment			
Quizzes Discussions Presentations and Movies Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exam final exam				Quiz(1) Quiz(2)			Week (3 Week (Every w weekly Week (4 Week (4 Week (4 Week (4 Week (4 Week (4 Week (4)	10) eek for any st 2,3) 4,8) 4,8) 8)	udent		
						ding sy		(5)	- 1		
quizes Discussions Sheets and Sketches Researches and reports the Projects Practical modelling					Quiz (1 Quiz (2 15% 20% 20% 30% 20%			arks arks arks	(50) marks	S	
Attendance Mid-term exam final exam Total					2070		(10) n (20) n				





	T , , 11 1 ,
a) Course notes	Lecture notes and handouts
b) Required books	Murdoch-Eaton, Deborah, et al. "What do
/ 1	medical students understand by research and
	research skills? Identifying research
	opportunities within undergraduate projects."
	Medical Teacher 32.3 (2010): e152-e160.
c) Recommend books	The Research Methods Knowledge Base, 5th
	Edition, by William M. K. Trochim (Author),
	James P. Donnelly
d) Periodicals, Web sites, etc	Sites.
	https://www.educatorstechnology.com/2017
	/04/12-of-best-research-methodology.html
	/ 04/ 12-01-Dest-research-methodology.ntm

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 examples and topic-specified research

Course coordinator:	Dr. Amera Marei	- <u>ē</u> _
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	1
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	6Þ
Date:	202٣/202٤	





(Course specification		
Course code:	Course name		
BASE 404	Negotiation Skills		
	A- Affiliation		
Relevant program:	Electrical power engineering		
Department offering the program:	Electrical and communication engineering		
Department offering the course:	Basic science		
Date of program operation:	2008-2009		
Date of approval from the higher	27/1/2008		
ministry of education			
Date of course operation	202۳-202 ٤		
В	-Basic Information		
Course Name	Negotiation Skills		
Code	BASE 404		
Course Level	Fourth level courses (Senior-1) - First semester (Fall)		
Credit Hours	3Cr. hr		
Lectures	3hr		
Tutorial	Ohr		
Total	3hr		
Prerequisite	-		
Instructor name/Email	Dr. Amera Marei		
	amira.morai@sva.edu.eg		
C- Professional information			
	1- Course core		
	students conduct and review negotiations. Workshop format earning. Exercises, live and field examples, individual and small		

integrating intellectual and experiential learning. Exercises, live and field examples, individual and small group reviews.

	2- Course learning objectives:
oc 1	explain how to get general overview, what are negotiations and why do we need them? What do business teams negotiate?
	Recognize how apply the following :-
oc 2	 Preparation and planning. Definition of ground rules. Clarification and justification. Bargaining and problem-solving. Closure and implementation.
oc 3	Recognize the following points:-





	 The negotiating process is continual, not an individual event. Think positive, Prepare, Think about the best & worst outcome before the negotiations begin, Be articulate & build value. Give & take Recognize the concepts of the following:-
oc 4	 Planning for conflict, Planning for cooperation, Negotiation steps. Model of the schematic structure. The most famous negotiation strategies. The main important things in the negotiation plan. Negotiating climate. Good preparation for negotiation. Tactics in the negotiation process. Elements of tactics
	Recognize how to apply :-
oc 5	 Negotiation policies. Characteristics and specifications of a professional negotiator. Principles of negotiation
	Recognize the basic of :-
oc 6	 Basic negotiation skills. Qualities of a successful negotiator, Positional characteristics. Personal characteristics, Effective negotiator behaviors. The cultural dimension in the negotiation process. The impact of the cultural dimension on the negotiation process. explain the basic of the following:-
oc 7	 Collective bargaining is the process by which working people, through their unions, negotiate contracts with their employers to determine their terms of employment, including pay, benefits, hours, leave, job health and safety policies, ways to balance work and family, and more. Collective bargaining is a way to solve workplace problems. It is also the best means for raising wages in America. Indeed, through collective bargaining, working people in unions have higher wages, better benefits, and safer workplaces.
oc 8	 differentiate between the four Dimensions of Culture to Consider in International Negotiations: Power Distance. Individualism/Collectivism, Masculinity/Femininity.





Uncertainty Avoidance

3- Learning outcomes of the course (LOs)

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

a. Cognitive Domains (LOs):

LO1 Identifies the basic skills to produce effective persuasive writing with a focus on organization, content, analysis of readings, and critical thinking. Provides training in the use and integration of sources, library, and online research.

b. Psychomotor Domains (LOs):

none

c. Affective Domains (LOs):

- LO2 Communicate effectively with a systematic framework for understanding negotiation.
- LO3 Express how to expand the size of the pie by creating value in negotiations, gain problem-solving techniques for distributing value and strengthening relationships.
- LO4 Explain the heighten awareness of their strengths and weaknesses as a negotiator
- LO5 Communicate effectively with experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.
- LO6 Express through an oral presentation and a flexible model recalling the final configuration of masses.

4- Program LOs served by the course:

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

- **Lo7.** State the factors affecting the engineering projects.
- **Lo33.** Communicate to convey ideas verbally, numerically, graphically, and using symbols effectively with a range of audiences.
- **Lo34.** Use creative, innovative and flexible thinking.
- **Lo35.** Acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
 - 5- The relation between the course learning outcomes and the program LOs

Co	urse (LOs)	program LOs							
LO1	Communicate effectively with a systematic framework for understanding negotiation.	Lo7.	State enginee		factors projects.	affecting	the		
LO2	Express how to expand the size of the pie by creating value in negotiations, gain problem-solving techniques	Lo33.	numeri	cally, s effe	graphica	ey ideas verb Illy, and u vith a rang	ising		





	for distributing value and strengthening relationships.		
LO3	Explain the heighten awareness of their strengths and weaknesses as a negotiator	Lo34.	Use creative, innovative and flexible thinking.
LO4	Communicate effectively with experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	Lo35.	Acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
LO5	Express through an oral presentation and a flexible model recalling the final configuration of masses.	Lo35.	Acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
LO6	Communicate effectively with a systematic framework for understanding negotiation.	Lo35.	Acquire entrepreneurial and leadership skills to anticipate and respond to new situations.

	4- Course content and the relation betweer	the course	e contents	and the course L	.Os
Week	Торіс	Lecture	Tutorial	Practical hours	course
No.		hr.	hr.		LOs
1	Negotiation Skills	3	0	0	LO1,2
2	General overview	3	0	0	LO2,3
3	What do business teams negotiate?	3	0	0	LO5, 6
4	Stages of negotiation	3	0	0	LO2,4
5	Preparation and planning	3	0	0	LO2,4
6	Negotiation strategies	3	0	0	LO2,4
7	Planning the negotiation process	3	0	0	LO4
8	Midterm		1.0		
9	The importance of negotiation science	3	0	0	LO2,4
10	Characteristics and skills of a successful negotiator	3	0	0	LO2,4
11	Collective negotiations in the field of work	3	0	0	Lo2, Lo5
12	The impact of cultural differences on the negotiation process	3	0	0	LO2,4
13	Salary negotiation skills	3	0	0	LO2,4





14	Essential Salary Negotiation Tips	3	0	0	LO2,4
15	Revision	3	0	0	LO2,4
16	Final Exam		2.0		
Total	hours	42	0	0	

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

				icu	oning c		ining means	, uo			
Course learning Outcome s (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	Discovering / self learninɑ 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	\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
LO6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Mataa											

Notes:

The research concerns the cooperative work, the discussion 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.

			-		ent asses			-			
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	\checkmark	
LO2	\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	





LO6 🗸 🗸 🗸	✓	 ✓ 	✓ ✓				
		schedule of assessment					
	ıiz(1) ıiz(2)	Week (3) Week (10)					
Discussions Presentations and Movies Sheets and Sketches	()	Every week for any s weekly weekly	tudent				
Researches and reports Attendance Mid-term exam final exam		Week (2,3) weekly Week (8) Week (16)					
	c- Grading	g system					
quizes Discussions	Quiz(1) Quiz(2) 30%	(5) marks (5) marks					
Sheets and Sketches Researches and reports	35% 35%	10 marks	(50) marks				
Attendance Mid-term exam final exam Total		(10) marks (20) marks (50) marks (100) marks					
	10- List of	references:					
a) Course notesb) Required books	Lecture notes and handouts Gammie, Bob, Elizabeth Gammie, and Erica Cargill. "Persona skills development in the accounting curriculum." Accountin Education 11.1 (2002): 63-78.						
c) Recommend books	Rebel Talent: by Francesca		he Rules at Work and in Life,				
d) Periodicals, Web sites, etc	Sites:	https://www.pon.har	vard.edu/daily/negotiation- negotiation-reading-list/				
11. Fa	cilities requir	ed for teaching and I	earning:				
 In Facilities required for teaching and learning: Appropriate teaching design studios including presentation board, data show 							

- 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 examples and topic-specified research •

Course coordinator:	Dr. Amera Marei
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem
Date:	202٣/202٤







Fourth level courses (Senior-1) Second semester (Spring)

No.	Cod	Course Name	Instructor				
1	CECE 318	Electric Machine II	Ass. Prof. Dr. Shady Abdel Aleem				
2	CECE 320	Power Electronics II	Dr. Mostafa Hassan Mostafa Abdel-Gawad				
		Transmission &	Dr. Ehab Mohamed Nabil Ismail				
3 CECE 430 I		Distribution of Electrical	Abdel Rasoul				
		Energy					
4	CECE 322	Power System Analysis I	Dr. Ehab Mohamed Nabil Ismail				
	0101 522		Abdel Rasoul				
5	ENGR 303	General Mechanical Engineering-	Prof. Dr. Al-Desouki Ibrahim Saleh				
U		Applied Thermodynamics	Eid				
6	BASE 401	Communication Skills	Dr. Amera Marei				





Course specification						
Course code:	Course name					
CECE 318	Electric Machine II					
	A- Affiliation					
Relevant program:	Electrical power engineering					
Department offering the program: Electrical and communication engineering						
Department offering the course:	Electrical and communication engineering					
Date of program operation: 2008-2009						
Date of approval from the higher	27/1/2008					
ministry of education						
Date of course operation	202۳-202٤					
<u>B-B</u>	asic Information					
Course Name	Electric Machine II					
Code	CECE 318					
Course Level	Fourth level courses (Senior-1) - Second semester					
	(Spring)					
Credit Hours	3Cr. Hr					
Lectures	2hr					
Tutorial	2hr					
Lab	2hr					
Total	6hr					
Prerequisite	CECE 317					
Instructor name/Email	Dr. Sabah Mohamed					
	Shabah.mohamedi@sva.edu.eg					
C- Professional information						

<u>C-Professional information</u>

1- Course core

Transformers : Theory and design : Fundamental concepts, Mutual inductance, Electric and magnetic circuits, Power transformers, Phasor diagrams, Magnetizing current and core loss, Equivalent circuits, Transformers at load, Efficiency, Voltage regulation, Three phase transformers, Three phase transformer connections, Three phase to two phase connections, Auto transformer, Voltage regulation in auto transformers, Tap changers, On load tap changers, Harmonics, Transformers testing, Transformer design, Main dimensions, Magnetic cores, Transformer windings, Insulation, Cooling, Calculation of transformer characteristics, Examples on transformer design.

2- Course learning objectives:

oc 1

Recognize the Transformers: Conserving Energy Resources, Power factor correction, Theory and design, Transformer Construction, Core Type Transformer, Shell Type Transformer, and Core Shell Type Transformers.





oc 2	Recognize the transformer Principal operation, Turns and Voltage Ratio, Power and Current, Reflected Impedance, Step-Down Transformer, Step-Up Transformer.
oc 3	Recognize the Practical Transformers, Equivalent circuits, Power transformers, Transformer Taps, Phasor Diagram (Lag & Lead & Unit PF) Transformers at load, Examples of Per Unit System, Base value of transformers, Transforming to per unit, Efficiency, Voltage regulation.
oc 4	Recognize the autotransformer, Construction, Continuation, Types of Autotransformers, Principle of Operation, Comparing autotransformer with two winding transformer, Theory, VA rating of auto-transformers, Conversion of Two-Winding Transformer into Autotransformer.
oc 5	Recognize the parallel operation of a transformer, Reasons for Parallel Operation, Necessary Conditions for Parallel Operation, Load Share.
006	Recognize the three phase transformers, Power in Three-phase Transformers, Three phase transformer connections (Y-Y & Δ - Δ & Δ -Y & Y- Δ Connection), Three phases to two phase connections, Transformers testing, Calculation of transformer characteristics, and Examples on transformer design.

3- Learning outcomes of the course (LOs)

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

a. Cognitive Domains (LOs):

-	
LO1	Recognize the Transformers: Conserving Energy Resources, Power factor correction, Theory and design, Transformer Construction, Core Type Transformer, Shell Type Transformer, and Core Shell Type Transformers.
LO2	Determine The Transformer Principle, Turns and Voltage Ratio, Power and Current, Reflected Impedance, Step-Down Transformer, Step-Up Transformer.
b. Psychon	notor Domains (LOs):
LO3	Apply knowledge to Sketch the Practical Transformers, Equivalent circuits, Power transformers, Transformer Taps, Phasor Diagram (Lag & Lead & Unit PF) Transformers at load, Examples of Per Unit System, Base value of transformers, Transforming to per unit, Efficiency, Voltage regulation.
LO4	Apply knowledge to Calculate characteristics 'of Autotransformer, Construction, Continuation, Types of Autotransformers, Principle of Operation, Comparing autotransformer with two winding transformer, Theory, VA rating of auto-transformers, Conversion of Two-Winding Transformer Into Autotransformer.
LO5	Apply knowledge to Obtain Parallel operation of a transformer, Reasons for Parallel Operation, Necessary Conditions For Parallel Operation, Load Share.
a Affaativ	Domains (I Os):

c. Affective Domains (LOs):

- LO6 Express the Design Three phase transformers, Power in Three-phase Transformers, Three phase transformer connections (Y-Y & Δ - Δ & Δ -Y & Y- Δ Connection), Three phases to two phase connections, Transformers testing, Calculation of transformer characteristics, and Examples on transformer design.
- 4- Program LOs served by the course:





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

Lo13.	Explain the basic electrical power system theory.
Lo14.	Merge theories and techniques for calculating short circuit, motor starting, and voltage drop in the projects.
Lo15.	Explain the diverse applications of electrical power equipment.
Lo19.	Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.
Lo29.	Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.
Lo39.	Show accuracy while Designing experiments, as well as analyzing and interpreting experimental results related to electrical and electrical power systems.
Lo40.	Apply modern techniques, skills and engineering tools to electrical power engineering
Lo41.	Work professionally in multidisciplinary concepts by integrating Electrical power Engineering
5 Th 1	

5-The relation between the course learning outcomes and the program LOs

	Course (LOs)	program LOs			
	Recognize the Transformers: Conserving Energy Resources, Power factor correction,	Lo13.	Explain the basic electrical power system theory.		
LO1	Theory and design, Transformer Construction, Core Type Transformer, Shell Type Transformer, and Core Shell Type Transformers.	Lo14.	Merge theories and techniques for calculating short circuit, motor starting, and voltage drop in the projects.		
LO2	Determine The Transformer Principle, Turns and Voltage Ratio, Power and Current, Reflected Impedance, Step-Down Transformer, Step-Up Transformer.	Lo15.	Explain the diverse applications of electrical power equipment.		
LO3	Apply knowledge to Sketch the Practical Transformers, Equivalent circuits, Power transformers, Transformer Taps, Phasor Diagram (Lag & Lead & Unit PF) Transformers at load, Examples of Per Unit System, Base value of transformers, Transforming to per unit, Efficiency, Voltage regulation.	Lo29.	Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.		





Apply knowledge to Calculate characteristics 'of Autotransformer, Construction, Continuation, Types of Autotransformers, of Operation, Principle Comparing LO4 autotransformer with two winding transformer, Theory, VA rating of autotransformers, Conversion of Two-Winding Transformer Into Autotransformer.

Apply knowledge to Obtain Parallel operation of a transformer, Reasons for Parallel Operation, Necessary Conditions For **Lo29**. Parallel Operation, Load Share.

Express the Design Three phase transformers, Power in Three-phase Transformers, Three phase transformer connections (Y-Y & Δ - Δ &

LO6 Δ-Y & Y-Δ Connection), Three phases to two phase connections, Transformers testing, Calculation of transformer characteristics, and Examples on transformer design. Utilize computer program to analyze design problems and interpret numerical data and test and examine

Lo29. components, equipment and systems of electrical and electric power generation, control, and distribution systems.

Utilize computer program to analyze design problems and interpret numerical data and test and examine

29. components, equipment and systems of electrical and electric power generation, control, and distribution systems.

Show accuracy while Designing experiments, as well as analyzing and

Lo39. interpreting experimental results related to electrical and electrical power systems.

Apply modern techniques, skills and

- **Lo40.** engineering tools to electrical power engineering
- Lo41. Work professionally in multidisciplinary concepts by integrating Electrical power Engineering





6-Course content and the relation between the course contents and the course Los

Week					
weeк No.	Торіс	Lecture	Tutorial	Practical hours	course Los
		hr.	hr.	nours	LOI
1	Introduction: Conserving Energy Resources, Power				LO1
	factor correction, Theory and design, Transformer Construction, Core Type Transformer, Shell Type	2	2	2	
	Transformer, Core Shell Type Transformers,				
2	The Transformer Principle, Turns and Voltage Ratio,			2	LO1
2	Power and Current, Reflected Impedance, Step-	2	2	2	LOI
	Down Transformer, Step-Up Transformer.	_	_		
3	Practical Transformers, Equivalent circuits, Power			2	LO1
	transformers, Transformer Taps, Phasor Diagram	2	2		201
	(Lag & Lead & Unit PF) Transformers at load.				
4	Quiz (1) + Examples of Per Unit System, Base value	2	2	2	LO2
	of transformers, Transforming to per unit.	2	2		
5	Focuses on Transformer efficiency, Voltage	2	2	2	LO3
	regulation.	-	-		
6	Focuses on Autotransformer, Construction,			2	LO3
	Continuation, Types of Autotransformers, Principle				
	of Operation, Comparing autotransformer with two winding transformer. Theory, VA arting of outo	2	2		
	winding transformer, Theory, VA rating of auto- transformers, Conversion of Two-Winding				
	Transformer into Autotransformer.				
7	Parallel operation of a transformer, Reasons for	2	2	2	LO3
,	Parallel Operation, Necessary Conditions for	-	-	2	LOJ
	Parallel Operation, Load Share.				
8	Midterm		1.0		
9	Focuses on Three phase transformers, Power in			2	LO4
	Three-phase Transformers, Three phase transformer	2	2		
	connections (Y-Y & Δ - Δ & Δ -Y & Y- Δ Connection).			_	
10	Three phases to two phase connections,	2	2	2	LO4
11	Transformers testing.			2	
11	Focuses on Calculation of transformer characteristics, Examples on transformer design.	2	2	2	LO5
12	Quiz (2) + Examples on transformer design.	2	2	2	LO6
12	Focuses on Examples of Per Unit System, Base value			2	LO6
15	of transformers, Transforming to per unit.	2	2	2	LOO
14	Focuses on Solved examples Phasor Diagram (Lag			2	LO 3
	& Lead & Unit PF) Transformers at load.	2	2	_	
15	Focuses on Applications of auto-transformer and	2	2	2	LO5
	transforming to per unit examples.	Z	Z		-
16	Final Exam		2.0		
Total	hours	28	28	28	





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

		Teaching and Learning Methods											
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	\checkmark
LO2	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
LO3	\checkmark	\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 Notes:	\checkmark	\checkmark	✓	~	✓	✓	~		✓	√	~	✓	~

The research concerns the cooperative work, the discussion 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.

8-S	8-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	\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
					b- Time	e schedu	le of as	sessment			
QuizzesQuiz (1) Quiz (2)Week (3) Week (10)DiscussionsEvery week for any student weekly											
Presentation Sheets and S Researches	Sketch	es				we	ekly ekly eek (2,3)			





the Projects		Week (4,8)					
Practical modelling		Week (4,8)					
Attendance	weekly						
Mid-term exam	Week (8)						
final exam		Week (16)					
	c- Grading	system					
quizes	Quiz(1)	(5) marks					
quizes	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				
Iotal			(100) marks				

	10- List of references:						
a)	Course notes	Lecture notes and handouts					
b)	b) Required books P.C.SEN," Principles of electrical machines and power electro second edition, John Wiley& Sons						
c)	Recommend books	Mentioned at time.					
d)	Periodicals, Web sites,	No periodicals are needed.					
	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 examples and topic-specified research

Course coordinator:	Dr. sabah mohamed
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem
Date:	202*/202 ٤







		Course specification				
Course co	ode:	Course name				
CECE 320)	Power Electronics II				
		A- Affiliation				
Relevant	program:	Electrical power engineering				
Departme	ent offering the prog	ram: Electrical and communication engineering				
Departme	ent offering the cour					
Date of p	rogram operation:	2008-2009				
	pproval from the hig	her 27/1/2008				
	of education	202# 202/				
Date of co	ourse operation	202°-202 [£]				
		B-Basic Information				
Course Na	me	Power Electronics II				
Code		CECE 320				
Course Lev	vel	Fourth level courses (Senior-1) - Second semester (Spring)				
Credit Hou	urs	3Cr. hr				
Lectures		2hr				
Tutorial		2hr				
Lab		2hr				
Total		6hr				
Prerequisit	te	CECE 319				
-	name/Email	Dr. Abdallah Reda				
		Abdallah.reda@sva.edu.eg				
	<u>(</u>	C- Professional information				
		1- Course learning objectives:				
oc 1	identify students with	h the power electronics, Ac voltage controllers.				
oc 2	Recognize the Characteristics The single-phase ac Thyristors controller (R-load & RL load).					
oc 3	Recognize the Three-phase controller, Phase control of ac controllers, Integral cyc					
oc 4 recognize the Thyristors commutation techniques: Natural commutation, Force commutation, Main principles, Circuits, Dc choppers: The single Thyristors chopper, Two Thyristors chopper, Inverters: Single phase circuits, Bridge inverter circuits, D drives, Ac drives.						
	2	- Learning outcomes of the course (LOs)				
Upon the completion of the course, the student should be able to:						

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

a. Cognitive Domains (LOs):

LO1 Identify students with the power electronics, Ac voltage controllers.





LO2 Recognize the single-phase ac Thyristors controller (R-load & RL-load) characteristics.

b. Psychomotor Domains (LOs):

- LO3 Prepare students for design the Three phase controller, Phase control of ac controllers, Integral cycle control
- LO4 Apply acknowledge to Obtain the Thyristors commutation techniques: Natural commutation, Forced commutation, Main principles, Circuits, Dc choppers.

c. Affective Domains (LOs):

LO5 Communicate effectively with single Thyristors chopper, Two Thyristors chopper, Inverters: Single phase circuits, Bridge inverter circuits, Dc drives, Ac drives.

3- Program LOs served by the course: :

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

- **Lo15.** Explain the diverse applications of electrical power equipment.
- **Lo19.** Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.
- **Lo29.** Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.
- **Lo30.** Integrate electrical, electronic, and mechanical components and equipment with transducers, actuators, and controllers in creatively computer-controlled systems.
- **Lo31.** To design, simulate and practice the techniques of hardware and software tools in Power systems, Power Electronics and Renewable Energy systems.
- **Lo39.** Show accuracy while Designing experiments, as well as analyzing and interpreting experimental results related to electrical and electrical power systems.
- **Lo40.** Apply modern techniques, skills and engineering tools to electrical power engineering
- **Lo41.** Work professionally in multidisciplinary concepts by integrating Electrical power Engineering with Internet of Things, Green Energy and Smart cities concepts.

4- The relation between the course learning outcomes and the program LOs

Со	urse (LOs)	program LOs				
LO1	Identify students with the power electronics, Ac voltage controllers.	Lo15.	Explain the diverse applications of electrical power equipment.			
LO2	Recognize the single-phase ac Thyristors controller (R- load & RL-load) characteristics.	Lo15.	Explain the diverse applications of electrical power equipment.			





LO3	control	 Lo19. Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering. Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.
LO4	Obtain the Thyristors commutation techniques: Natural commutation, Forced commutation, Main principles Circuits Do	 Lo30. Integrate electrical, electronic, and mechanical components and equipment with transducers, actuators, and controllers in creatively computer-controlled systems. Lo31. To design, simulate and practice the techniques of hardware and software tools in Power systems, Power Electronics and Renewable Energy systems.
LO5	with single Thyristors chopper, Two Thyristors chopper, Inverters: Single phase circuits, Bridge inverter circuits, Dc drives, Ac drives	 Lo39. Show accuracy while Designing experiments, as well as analyzing and interpreting experimental results related to electrical and electrical power systems. Lo40. Apply modern techniques, skills and engineering tools to electrical power engineering Lo41. Work professionally in multidisciplinary concepts by integrating Electrical power Engineering with Internet of Things, Green Energy and Smart cities concepts.
	5- Course content and the relation betw	ween the course contents and the course LOs
Week No.	Торіс	Lecture hr. Tutorial Practical course LOs hr. hours
1	Introduction: Ac voltage controllers.	2 2 2 LO1
2	Focuses on the single-phase ac Thyristors contro (R-load characteristics).	troller 2 2 LO2





3	Focuses on the single-phase ac Thyristors controller (RL-load characteristics).	2	2	2	LO2
4	Quiz (1) + Focuses on design the Three phase			2	LO1
	controller, Phase control of ac controllers, Integral cycle control	2	2		
5	Focuses on Thyristors commutation techniques:	2	2	2	LO1
6	Natural commutation, Forced commutation. Focuses on Main principles, Circuits, Dc choppers.	2	2	2	LO3
7	Focuses on single Thyristors chopper, Two	2	2	2	LO3
0	Thyristors chopper. Midterm		1.0		
8 9		2	-	2	LO4
-	Focuses on Two Thyristors chopper, Inverters.	2	2	_	
10	Focuses on Single phase circuits.	2	2	2	LO4
11	Focuses on Single phase circuits, Bridge inverter circuits, Dc drives, Ac drives.	2	2	2	LO5
13	Quiz (2) + Focuses on design the Three phase			2	LO1
	controller, Phase control of ac controllers, Integral	2	2		
	cycle control				
14	Review on main principles, Circuits, Dc choppers.	2	2	2	LO3
15	Review on single Thyristors chopper, Two	2	2	2	LO3
	Thyristors chopper.				
16	Final Exam		2.0		
Total ho	purs	20	20	20	

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

				Т	eachin	g and L	earning	Metho	ds				
Course learning Outcomes (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	Discovering / Self learning	Site visit	Reports/ researches	Cooperative work	presentation	Discussion	modelling
LO1	✓	\checkmark	\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
LO4	✓	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
LO5	✓	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Notos:													

Notes:

6-

The research concerns the cooperative work, the discussion 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.

7- Student assessment method						
а-	Assessment method and its relation to the Los of the course					
Course ILOs	Tools of assessment					





	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	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
LO2	√	√	√	√	~	~	√	√	√	√	√
LO3	√	\checkmark	\checkmark	\checkmark	√	√	√	√	√	√	√
LO4 LO5	v √	v √	v √	v √	v √	v √	v √	v √	v √	v √	v √
105	·		·		b- Tim	ne schedu	le of as	sessment			·
Quizzes Discussions Presentations Sheets and S Researches a the Projects Practical moo Attendance Mid-term exa final exam	sketches and repor delling			Quiz (Quiz (1) 2)		eek (3) eek (10 very wee eekly eekly eek (2,3 eek (2,3 eek (2,3 eek (4,8 eekly eek (4,8 eekly eek (8) eek (16)) ek for any s 8) 8) 3)	tudent		
					Quiz (1)			marks			
Shee Resea	the Proje	ons sketches nd reports ects			Quiz (2) 15% 20% 20% 30%			marks narks		(40) mark	S
Pra	ictical mo	Attene Mid-terr final o	n exarr	1	20%			marks marks	(60) mark: (100) mark		
					10- List						
/	ourse n equired			Le	Circ 201	el S. Sed cuits", 6 1.	lra, Kei th Edit	ts nneth C. S ion, Oxfo Fundamer	ord Unive	rsity Pre	ess,

 Behazad Rzavi, "Fundamentals of Microelectronics", 2nd edition, John Wiley, 2013.





- Thomas L. Floyd, "Electronic Devices", Prentice Hall, 9th edition, 2011.
- Donald Neamen, "Microelectronics: Circuit Analysis & Design", 4th edition, Mcgraw Hill, 2009.
- c) Recommend booksd) 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 examples and topic-specified research

Course coordinator: program Coordinator Head of the Department Date:

Dr. Abdallah Reda Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul Dr. Ibrahim Ali Mahmoud Abdel Dayem 202^{+/}202[±]







Course specification

Course code:	Course name			
CECE 430	Transmission & Distribution of Electrical Energy			
	A- Affiliation			
Relevant program:	Electrical power engineering			
Department offering the progra	m: Electrical and communication engineering			
Department offering the course:	Electrical and communication engineering			
Date of program operation:	2008-2009			
Date of approval from the highe	r 27/1/2008			
ministry of education				
Date of course operation	202۳-202٤			
	B-Basic Information			
Course Name	Transmission & Distribution of Electrical Energy			
Code	CECE 430			
Course Level	Fourth level courses (Senior-1) - Second semester (Spring)			
Credit Hours	3Cr. hr			
Lectures	2hr			
Tutorial	2hr			
Total				
Prerequisite	CECE 309			
Instructor name/Email	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul			
	ihab.nabil@sva.edu.eg			

<u>C-Professional information</u>

1- Course core

Introduction, Representation of power systems, Parameters of transmission lines, Models of transmission lines, Series impedance, Electrical capacitance, Representation of capacitance in parallel with transmission lines, Voltage and current relationships in transmission lines, Operation characteristics, Symmetrical components, Unsymmetrical faults on transmission lines, Introduction to underground cables, Design of transmission lines, Mechanical design, High- voltage dc overhead transmission lines, Insulated electrical cables, Determination of faults in underground cables, Design of electrical distribution systems, Substations, Introduction to power system planning.

2- Course learning objectives:

oc 1	recognize the knowledge of the main elements of power systems
oc 2	explain the definition of the parameters of the transmission lines such as series impedance, electrical capacitance.
oc 3	describe the models of transmission lines based on the line length and how can they be calculated.
oc 4	recognize the representation of capacitance in parallel with transmission lines.





oc 5	Describe the voltage and current relationships in transmission lines and operation characteristics.
oc6	recognize the Extra High Voltage Transmission lines.
oc7	recognize the A.C distribution System
	3- Learning outcomes of the course (LOs)
Upon the co	ompletion of the course, the student should be able to:
a. Cog	nitive Domains (LOs):
LO1	Identify the different types of transmission systems
LO2	recognize the electrical characteristics of transmission lines
LO3	recognize the different models that can be used with transmission lines
b.	Psychomotor Domains (LOs):
LO4	Apply knowledge for Identifying the relation between the electrical quantities at the sending and receiving ends of a transmission line
LO5	Apply knowledge for calculating the power loss and voltage drop in distribution networks
c- Affe	ective Domains (LOs):
LO6	communicate effectively with the different types of transmission systems
	4- Program LOs served by the course:
Upon the co	ompletion of the Program the student should be able to:
Lo13.	Explain the basic electrical power system theory.
Lo15.	Explain the diverse applications of electrical power equipment.
Lo16.	Explain the basic power system design concepts for underground, cable tray, grounding, and lighting systems.
Lo17.	define the Basics of low voltage power systems
Lo19.	Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.
Lo29.	Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.
Lo30.	Integrate electrical, electronic, and mechanical components and equipment with transducers, actuators, and controllers in creatively computer-controlled systems.
Lo31.	To design, simulate and practice the techniques of hardware and software tools in Power systems, Power Electronics and Renewable Energy systems.
Lo39.	Show accuracy while Designing experiments, as well as analyzing and interpreting experimental results related to electrical and electrical power systems.
Lo40.	Apply modern techniques, skills and engineering tools to electrical power engineering





Work professionally in multidisciplinary concepts by integrating Electrical power Lo41. Engineering with Internet of Things, Green Energy and Smart cities concepts. 1- The relation between the course learning outcomes and the program competencies **Course (LOs)** program competencies Explain the basic electrical power different Lo13. Identify the system theory. types of transmission LO1 Lo15. Explain the diverse applications of systems electrical power equipment. Lo16. Explain the basic power system design concepts for underground, cable tray, recognize the electrical LO2 characteristics grounding, and lighting systems. of transmission lines Lo17. define the Basics of low voltage power systems Lo16. Explain the basic power system design recognize the different concepts for underground, cable tray, models that can be used LO3 grounding, and lighting systems. with transmission lines define the Basics of low voltage power Lo17. systems Lo19. Solve complex engineering problems and solve problems in the field of and electrical electrical power Apply knowledge for engineering. Identifying the relation Utilize computer program to analyze Lo29. between the electrical LO4 problems and design interpret quantities at the sending numerical data and test and examine and receiving ends of a components, equipment and systems of transmission line electrical and electric power generation, control, and distribution systems. Lo30. Integrate electrical, electronic, and mechanical components and equipment transducers, with actuators, and controllers in creatively computer-Apply knowledge for calculating the power controlled systems. LO5 loss and voltage drop in Lo31. To design, simulate and practice the distribution networks techniques of hardware and software tools in Power systems, Power Electronics and Renewable Energy systems.





		Lo39.	Show accuracy while Designing experiments, as well as analyzing and interpreting experimental results related to electrical and electrical power systems.
LO6	communicate effectively with the different types of transmission systems	Lo40.	Apply modern techniques, skills and engineering tools to electrical power engineeringWorkprofessionallyin multidisciplinaryconceptsby
		Lo41.	multidisciplinary concepts by integrating Electrical power Engineering with Internet of Things, Green Energy and Smart cities concepts.

	5- Course content and the relation between	n the cours	e contents	and the cou	rse LOs
Week No.	Торіс	Lecture hr.	Tutorial hr.	Practical hours	course LOs
1	Introduction: Introduction to a power system.	2	2	0	LO1
2	Focuses on Electrical transmission line parameters	2	2	0	LO1
3	Focuses on Inductance and inductive reactance.				LO1
	Capacitance and capacitive reactance. Equivalent circuits for transmission line such as short, medium, and long length.	2	2	0	
4	Quiz (1) + Surge Impedance Loading (SIL) of the transmission line.	2	2	0	LO2
5	Networks connected in series and parallel. Voltage, current, and power relations of the transmission line.	2	2	0	LO3
6	Focuses on Extra High Voltage Transmission.	2	2	0	LO3
7	Focuses on Mechanical design of an overhead transmission line.				LO4
8	Midterm		1.0		
9	Mechanical design factors affecting overhead Line Conductor motion caused by fault currents	2	2	0	LO5
10	Focuses on Design of electrical distribution system	2	2	0	LO6
11	Focuses on Distribution system planning and automation.	2	2	0	LO6
12	Design of Load characteristics. Application of distribution transformers.	2	2	0	LO6
13	Focuses on Focuses on Design of sub transmission lines and distribution substation.	2	2	0	LO6
14	Quiz (2) + Design consideration of primary and secondary substations.	2	2	0	LO6





15	Focuses on Application of capacitors to distribution systems. Distribution system voltage regulation and protection.	2	2	0	LO6
16	Final Exam		2.0		
Total	hours	28	28	0	

Teaching and Learning Methods On line / face to face Reports/ researches Tutorials: sheets/ sketches Discovering / self Cooperative work **Problem solving** Brain storming Course Practical: lab presentation Discussion Site visit modelling projects learning lectures learning Outcomes (LOs) LO1 LO2 \checkmark √ LO3 \checkmark \checkmark \checkmark √ √ LO4 ✓ LO5 **~** ✓ √ √ LO5

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

Notes:

The research concerns the cooperative work, the discussion 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.

	7- Student assessment method										
	a- A	Assessme	ent metl	hod and	d its relation	on to the L	.os of	the course			
					Т	ools of as	sessn	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
LO5	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	b- Time schedule of assessment										





Discussions Presentations and Movies Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exam final exam	Quiz (2)	Week (10) Every week for any st weekly Week (2,3) Week (4,8) Week (4,8) weekly Week (8) Week (16)	udent			
		g system				
quizes	Quiz(1) Quiz(2)	(5) marks (5) marks				
Discussions	15%					
Sheets and Sketches	20%					
Researches and reports	20% 30%	5 marks	(40) marks			
the Projects Practical modelling	20%					
Attendance	20,0	(10) marks				
Mid-term exam		(15) marks				
final exam Total			(60) marks			
Total	10. List of	(100) marks 10- List of references:				
a) Course notes						
 b) Required books c) Recommend books d) Periodicals, Web sites, etc 	 Lecture notes and handouts Mohamed E. El-Hawary," Electrical Power System Design and Analysis - The Transmission Subsystem". William D. Stevenson, "Elements Of Power System Analysis" 4th Edition, Mc Graw Hill India, 2014 (Text Book) J. Duncan Glover, Mulukutla S. Sarma and Thomas Overbye, "Power Systems Analysis and Design, 5th Edition", CL Engineering, 2012 Colin Bayliss and Brian Hardy, "Transmission and Distribution Electrical Engineering, Fourth Edition" Newnes, 2012 John Grainger, William Stevenson Jr. "Power System Analysis", McGraw-Hill Education, 1994. 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 examples and topic-specified research

Course coordinator:	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem
Date:	202٣/202٤







Course specification						
Course code:	Course name					
CECE 322	Power System Analysis I					
	A- Affiliation					
Relevant program:	Electrical power engineering					
Department offering the program:	Electrical and communication engineering					
Department offering the course:	Electrical and communication engineering					
Date of program operation:	2008-2009					
Date of approval from the higher m	ninistry 27/1/2008					
of education						
Date of course operation	202۳-202٤					
<u>B</u> .	3-Basic Information					
Course Name Code Course Level	Power System Analysis I CECE 322 Fourth level courses (Senior-1) - Second semester (Spring)					
Credit Hours Lectures Tutorial Lab Total Prerequisite Instructor name/Email	3Cr. Hr 2hr 2hr 2hr 4hr CECE 317 Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul ihab.nabil@sva.edu.eg					
<u>C- Pro</u>	rofessional information					

1- Course core

Symmetrical components: Synthesis of unsymmetrical phasor diagrams from their symmetrical components, The symmetrical components of unsymmetrical systems, Power in terms of symmetrical components, Positive, negative and zero phase sequence networks, Unsymmetrical faults : Shunt faults, Series faults, Network matrices: Network topology, System admittance and system impedance matrices, Load flow solutions and control: Load flow equations, The Gauss- Seidel method, Newton-Raphson method and approximations, De-coupled methods, Regulating transformers

2- Course learning objectives:

oc 1	Recognize the power system operation under both normal and abnormal conditions.
oc 2	analyze power systems under normal operation and fault conditions.

oc 3 explain commercial software packages to study the normal operation of power systems.





oc 4	Recognize the experiments behaviour by using the power system simulator.								
004	3- Learning outcomes of the course (LOs)								
Upon the compl	•								
	Upon the completion of the course, the student should be able to: a. Cognitive Domains (LOs):								
LO1	Describe power flow equations in both rectangular and polar forms.								
LOI	Explain the transformation from phase domain to symmetrical components domain								
LO2	and vice versa.								
LO3	Identify the power system parameters from normal units to per unit and vice versa.								
b. Psychon	notor Domains (LOs):								
LO4	Solve power flow equations using Gauss-Seidel, Newton-Raphson and Fast-Decoupled methods.								
LO5	Apply symmetrical components' method to analyze unsymmetrical three-phase circuits.								
LO6	Solve the power systems under symmetrical and unsymmetrical faults.								
LO7	Use power system simulator, collect, analyze and interpret results.								
LO8	Apply modern techniques, skills and numerical modelling methods to power system analysis								
c. Affective	e Domains (LOs):								
-	none								
	4- Program LOs served by the course:								
Upon the compl	etion of the Program the student should be able to:								
Lo13.	Explain the basic electrical power system theory.								
Lo14.	Merge theories and techniques for calculating short circuit, motor starting, and voltage drop in the projects.								
Lo15.	Explain the diverse applications of electrical power equipment.								
Lo16.	Explain the basic power system design concepts for underground, cable tray, grounding, and lighting systems.								
Lo17.	define the Basics of low voltage power systems.								
Lo19.	Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.								

- **Lo29.** Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.
- **Lo31.** To design, simulate and practice the techniques of hardware and software tools in Power systems, Power Electronics and Renewable Energy systems.
 - 5- The relation between the course learning outcomes and the program LOs





(Course (LOs)	program LOs				
	Describe power flow	Lo13.	Explain the basic electrical power system theory.			
LO1	equations in both rectangular and polar forms.	Lo14.	Merge theories and techniques for calculating short circuit, motor starting, and voltage drop in the projects.			
1.00	Explain the transformation from phase domain to	Lo15.	Explain the diverse applications of electrical power equipment.			
LO2	symmetrical components domain and vice versa.	Lo16.	Explain the basic power system design concepts for underground, cable tray, grounding, and lighting systems.			
LO3	Convert power system parameters from normal units	Lo16.	Explain the basic power system design concepts for underground, cable tray, grounding, and lighting systems.			
100	to per unit and vice versa.	Lo17.	define the Basics of low voltage power systems.			
LO4	Solve power flow equations using Gauss-Seidel, Newton- Raphson and Fast-Decoupled methods.	Lo19.	Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.			
LO5	Apply symmetrical components' method to analyze unsymmetrical three- phase circuits.	Lo29.	Utilize computer program to analyze design problems and interpret numerical data and test and examine components, equipment and systems of electrical and electric power generation, control, and distribution systems.			
LO6	Analyze power systems under symmetrical and unsymmetrical faults.	Lo31.	To design, simulate and practice the techniques of hardware and software tools in Power systems, Power Electronics and Renewable Energy systems.			
LO7	Use measuring instruments, and laboratory equipment to practice power system simulator experiments, collect, analyze and interpret results.	Lo31.	To design, simulate and practice the techniques of hardware and software tools in Power systems, Power Electronics and Renewable Energy systems.			





	6- Course content and the relation between	n the cours	se contents	and the co	urse Los
Week No.	Торіс	Lecture hr.	Tutorial hr.	Practical hours	course Los
1	Introduction: Modern Power System Overview.	2	2	2	LO1
2	Characteristics of power system faults. Nature of faults. Types of faults. Causes of faults	2	2	2	LO2
3	Theory of symmetrical components and connection of phase sequence networks during faults.	2	2	2	LO3
4	Symmetrical components of a three-phase power system. Balanced three-phase voltage and current phasors. Symmetrical components of unbalanced voltage or current phasors.	2	2	2	LO3
5	Apparent power in symmetrical component terms. Sequence components of unbalanced three- phase impedances. Sequence components of balanced three-phase.	2	2	2	LO4
6	Analysis of balanced and unbalanced faults in the sequence reference frame + Quiz (1).	2	2	2	LO5
7	Balanced three-phase to earth short-circuit faults Unbalanced one-phase to earth short-circuit faults	2	2	2	LO5
8	Midterm		1.0		
9	Unbalanced phase-to-phase or two-phase short- circuit faults. Unbalanced two-phase to earth short- circuit faults	2	2	2	LO5
10	The admittance model and network calculation. Branch and node admittances. Mutually coupled branches in Ybus.	2	2	2	LO6
11	An equivalent admittance networks. Modification of Ybus.	2	2	2	LO6
12	The impedance Model and network calculations. The bus admittance and impedance matrices Thevenin s theorem and Zbus.	2	2	2	LO5
13	Modification of an existing Zbus. Direct determination of Zbus. Calculation of Zbus element	2	2	2	LO7
14	from Ybus. Power-flow solution. The power-flow problem. The Gauss-Seidel method	2	2	2	LO7
15	The Newton-Raphson method. The Newton- Raphson power-flow solution.	2	2	2	LO7
16	Final Exam		2.0		
Total	hours	28	28	28	





7- 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 Tutorials: sheets/ Discovering / Self **Problem solving Brain storming** Course Practical: lab presentation Discussion projects learning Site visit modelling lectures sketches learning Outcomes (LOs) ✓ ✓ ✓ √ LO1 √ √ √ √ √ √ √ ✓ ✓ ~ ✓ ✓ √ LO2 √ √ ✓ √ √ √ ✓ √ ✓ LO3 √ √ √ ✓ ✓ ✓ √ √ √ ~ ✓ ✓ LO4 √ ~ ✓ √ √ ✓ √ ✓ √ LO5 √ ✓ ✓ ✓ √ √ √ √ LO6 √ √ ✓ LO7 √ ✓ √ √ √ ✓ ✓ LO8 √

Notes:

The research concerns the cooperative work, the discussion 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.

			8-	Stud	ent asse	essment	metho	d			
	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	\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
LO7	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
LO8	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
					b- Tim	e schedu	le of ass	sessment			
Quizzes		Quiz (1) Week (3) Quiz (2) Week (10)									
Discussions					,		•	, k for any s	tudent		





Presentations and Movies Sheets and Sketches Researches and reports the Projects Practical modelling Attendance Mid-term exam final exam	c- Grading s	Weekly Weekly Week (2,3) Week (4,8) Week (4,8) Weekly Week (8) Week (16)	
Quizzes	Quiz(1) Quiz(2)	(5) marks (5) marks	
Discussions Sheets and Sketches	15% 20% 20%	5 marks	(40) morks
Researches and reports the Projects	30%	STITIALKS	(40) marks
Practical modelling Attendance Mid-term exam	20%	(00)	
final exam Total			(60) marks (100) marks
	10- List of re	eferences:	
a) Course notes	Lecture notes a		
b) Required books		Grainger, William D M ANALYSIS".	. Stevenson, and Jr.,"POWER
			stems Modelling and Fault
	Analysi		C C
c) Recommend books		adat, "Power Systen lition, 2010.	n Analysis", PSA Publishing,
		· ·	and T. J. Overbye, "Power
	System	Analysis and Desig	gn", Cengage Learning,
1) D 1 1 1 X 1 4		lition, 2012.	
d) Periodicals, Web sites, etc	No periodicals	are needed.	
11	- Facilities required	for teaching and learnin	g:

- 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 examples and research in specific topic

Course coordinator:

Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul







program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul	-
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem	
Date:	202٣/202٤	





Course specification

Course code:		Course name	
ENGR 303 G	General Mechanical Engineering- Applied Thermodynamics		
	A- Affiliat	ion	
Relevant program:		Electrical power engineering	
Department offering the progra	m:	Electrical and communication	
		engineering	
Department offering the course	:	Basic Science	
Date of program operation:		2008-2009	
Date of approval from the highe	er ministry of	27/1/2008	
education			
Date of course operation202°-20.		202۳-202٤	
	B-Basic Inform	mation	
Course Name	General Mechan Thermodynamic	ical Engineering- Applied	
Code	ENGR 303	5	
Course Level	Fourth level courses (Senior-1) - Second semester (Spring)		
Credit Hours	3Cr. hr	ises (semer r) second semester (spring)	
Lectures	2hr		
Tutorial	2hr		
Total	4hr		
Prerequisite	PHYS102 -MATH 201		
Instructor name/Email	Prof.Dr. Al -Des	ouki Ibrahim Saleh Eid	
	eldesuki.eid@sva.edu.eg		
C- Professional information			
∇ - 1 1 010551011a1 111101 111autott			

1- Course core

Working fluid, The ideal gas, The first law of thermodynamics, Reversible processes, Irreversible processes. The second law of thermodynamics, Thermal cycles, Steam cycles, Entropy, fuel and combustion. Heat transfer by conduction, Forced convection, Heat transfer by radiation, Heat exchangers. Power generation plants, Heat cycles, Analysis and presentation on charts for pure substances, Steam units, Boilers, Steam turbines, Condensers, Pumps. Gas and combined units and operation of the gas turbine, Air compressors, Compound cycles, Heat recovery boilers from turbine exhaust gases. Diesel engine units, Performance and operation of diesel engines. Hydro-electric energy generation plants, Performance and operation of hydro-turbines.

2- Course learning objectives:

- oc 1 Recognize the Fundamentals of Working fluid, The ideal gas, The first law of thermodynamics
- oc 2 apply the Reversible processes, Irreversible processes.
- oc 3 Conduct, develop and appropriate experiment discussion of The second law of thermodynamics





- oc 4 Recognize the application of Thermal cycles, Steam cycles, Entropy, fuel and combustion
- oc 5 analyze data, to deal with center of Heat exchangers
- oc6 used to apply the analytics of Power generation plants, Heat cycles.
- oc7 Recognize the application of Steam units, Boilers, Steam turbines Condensers, Pumps.
- oc8 Recognize the gas and combined units and operation of the gas turbine,
- co9 Recognize the application of Air compressors, Compound cycles, Heat recovery boilers from turbine exhaust gases.

3- Learning outcomes of the course (LOs)

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

a. Cognitive Domains (LOs):

- LO1 Recognize the thermodynamics basic definitions, and standard international units.
- LO2 Recognize the thermal properties of pure substance
- LO3 Identify the thermal properties of pure substance at various temperature and pressures
- LO4 recognize the pressure and volume of ideal gas at different situation.

b. Psychomotor Domains (LOs):

- LO5 Applying the first and second lows of thermodynamics to several application
- LO6 Calculate the efficiency of the gas and steam power cycle
- LO7 Draw the PV & TS diagrams for various gas and steam power cycle.

c. Affective Domains (LOs):

- None

4- Program LOs served by the course:

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

- **Lo1.** Identify, formulate basic science and mathematics.
- **Lo2**. Simulate, analyze and interpret data.
- **Lo19.** Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.

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

Co	urse (LOs)		program competencies
LO1	Applying the first andsecond lowsofthermodynamicstoseveral application	Lo1.	Identify, formulate basic science and mathematics.





LO2	Calculate the efficiency Lo of the gas and steam power cycle	L o1. Identify, formulate basic science and mathematics.
LO3	Draw the PV & TS diagrams for various gas and steam power cycle.	Simulate, analyze and interpret data.
LO4	Applying the first and second lows of thermodynamics to several application	Simulate, analyze and interpret data. Lo2.
LO5	Calculate the efficiency	Lo19. Solve complex engineering problems and solve problems in the field of electrical and electrical power engineering.
LO6	Draw the PV & TS diagrams for various gas and steam power cycle.	Solve complex engineering problems and solve problems in the field of Lo19. electrical and electrical power engineering.
LO7	Applying the first and second lows of thermodynamics to L several application	Solve complex engineering problems and solve problems in the field of Lo19. electrical and electrical power engineering.



LO1 LO2

√

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



	6	- Course	e content ar	nd the r	elation	betwee	en the o	course	contents	and the cour	se LO	Ds	
Wee k		Торіс					L	ecture hr.	Tutorial hr.	I Practical hours	C	ourse	LOs
No. 1		ng fluid, The dynamics,	e ideal gas, Th	e first la	w of			2	2	0		LO1	,2
2			es, Irreversib	le proces	sses.			2	2	0		LO1	,3
3	The see	cond law of	thermodynan	nics,				2	2	0		LO5	,6
4	combu	stion.	eam cycles, E					2	2	0		LO2	,4
5	transfe	r by radiatio	onduction, For on, Heat excha	ingers.	vection,	Heat		2	2	0		LO2	,4
6			plants, Heat c					2	2	0		LO2	·
7	•	<u>^</u>	ntation on ch	arts for p	oure sub	stances,						LO ₄	1
8	Midter		G 1		1	P		-	1.0				
9			rs, Steam turb			-		2	2	0		LO2	-
10			units and ope	eration of	f the gas	s turbine,		2	2	0		LO2	
11		npressors,						2	2	0	LO2,5		
12	-	ound cycles,						2	2	0		LO7	
13	Heat re	•						2	2	0		LO6	, 7
14	boilers	from turbin	e exhaust gas	es				2	2	0		LO	6
15	Revisio	on										LO1	:7
16	Final I	Exam							2.0				
Total	hours							28	28	0			
		7- The 1	Teaching an	d learn	ing me	ethods a	and the	ir relati	on to the	Los of the co	ourse)	
					Tead	ching ai	nd Lea	rning M	ethods				
lear Outc	urse ning omes Os)	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

LO3 √ √ √ ✓ LO4 ~ √ √ LO5 √ √ √ L06 √ √ √ ~ LO7 ~ \checkmark ~ \checkmark 1 \checkmark

Notes: The research concerns the cooperative work, the discussion 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.





	8- Student assessment method										
i	a- Assessment method and its relation to the Los of the course Tools of assessment										
		E		S			556551116	7110			
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	 ✓ ✓ ✓ ✓ ✓ ✓ ✓ 	✓ ✓ ✓ ✓	 ✓ ✓ ✓ ✓ ✓ 	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓		* * * *	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	√ √ √ √
				Quiz (e of ass Week (3	essment			
Quizzes Discussions Presentations Sheets and S Researches a the Projects Practical mod Attendance Mid-term exam final exam	ketche ind rep elling	s		Quiz (2)		Week (1 Every we weekly weekly Week (2, Week (2, Week (4, weekly Week (1	0) eek for any s ,3) ,8) ,8)	student		
				1		g syster					
quizes Discussions Sheets and Sketches Researches and reports the Projects			Quiz (1) (5) marks Quiz (2) (5) marks 15% 20% 20% 5 marks (40) marks 30%				0) marks				
Practical modelling Attendance Mid-term exam final exam Total				20%		(10) m (15) m	narks (⁽	60) marks 00) marks			
/	irse no uired	otes books		Leo Ho		and har , Therm	ndouts odynam	iics, McGra chanics, 5t			





c) Recommend books New York, ISBN 07-062191-9. Y. A. Cengel, "Thermodynamics" FIFTH EDITION, British,						
c) Recommend books	1. A. Cenger, Thermodynamics Therm EDITION, British,					
d) Periodicals, Web sit	tes, No periodicals are needed.					
etc						
	11- Facilities required for teaching and learning:					
Appropriate teachGoogle classroomE- learning	ing design studios including presentation board, data show					
	12- Requirements for Disable facilities:					
• On line teachin	ng hours if it is needed					
• Extra examples	s and research in specific topic					
Course coordinator: P	Prof.Dr. Al -Desouki Ibrahim Saleh Eid					
program Coordinator Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul						
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem					
Date: 2	02٣/202٤					





Course	specification
Course	specification

Course code:		Course name		
BASE 401		Communication Skills		
	A- Aff	ïliation		
Relevant program:		Electrical power engineering		
Department offering the prog	ram:	Electrical and communication engineering		
Department offering the cours	se:	Basic Science		
Date of program operation:		2008-2009		
Date of approval from the high	her ministry	27/1/2008		
of education				
Date of course operation		202۳-202٤		
	<u>B-Basic In</u>	formation		
Course Name	Communicatio	on Skills		
Code	BASE 401			
Course Level	Fourth level courses (Senior-1) - Second semester (Spring)			
Credit Hours	3Cr. Hr			
Lectures	3hr			
Tutorial	Ohr			
Total	3hr			
Prerequisite	-			
Instructor name/Email	Dr. Amera Ma	urei		
	<u>amira.morai(</u>	<u>a)sva.edu.eg</u>		
<u>C- Professional information</u>				

1- Course core

Advanced technical communication skills, with emphasis on writing strategies for technical documents, oral presentations, and visual aids and Ethics of the engineering proficiency with emphasis on each departmental ethical and professional Licensure topics.

	2- Course learning objectives:
oc 1	Recognize the meaning of communication, Its importance, and types of Communication
oc 2	declare self-concept, The concept of communication with oneself, ways of communicating with oneself and steps to communicate with oneself. focus
oc 3	used to reading attributes, reading methods, Factors affecting reading, Distractions in reading.
oc 4	Recognize the spoken verbal communication, Speaking and diction skills, and presentation skills.





oc 5Recognize the Characteristics of nonverbal communication, The concept of non-
verbal communication, Types of nonverbal communicationoc 6Recognize the importance of discussion, styles of interlocutors, Attributes of the
persuasive interviewer, and discussion skillsoc 7able to succeed in the interview, how to write C.V, cover letter, and recommendation
letter.

3- Learning outcomes of the course (LOs)

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

- a. Cognitive Domains (LOs):
- None

b. Psychomotor Domains (LOs):

None

c. Affective Domains (LOs):

LO1	Express using the basic skills to produce effective persuasive writing with a focus on organization, content, analysis of readings, and critical thinking. Provides training in the use and integration of sources, library, and online research.
LO2	Communicate effectively with the Basics of Scientific Research, Problem Meaning, how to choose a problem, and a research plane.
LO3	Express utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles
LO4	Eexpress his opinion through an oral presentation and flexible model recalling the final configuration through of masses.
LO5	Communicate effectively using appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.
LO6	express his opinion through an oral presentation and a flexible model recalling the final configuration of masses.

4- Program LOs served by the course:

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

- **Lo33.** Communicate to convey ideas verbally, numerically, graphically, and using symbols effectively with a range of audiences.
- **Lo34.** Use creative, innovative and flexible thinking.
- **Lo35.** Acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
- **Lo36.** Practice self-learning and other learning strategies.
 - 5- The relation between the course learning outcomes and the program LOs





Со	urse (LOs)		program LOs
LO1	Express using the basic skills to produce effective persuasive writing with a focus on organization, content, analysis of readings, and critical thinking. Provides training in the use and integration of sources, library, and online research.	Lo33.	Communicate to convey ideas verbally, numerically, graphically, and using symbols effectively with a range of audiences.
LO2	Communicate effectively with the Basics of Scientific Research, Problem Meaning, how to choose a problem, and a research plane.	Lo34.	Use creative, innovative and flexible thinking.
LO3	Express utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles	Lo35.	Acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
LO4	Eexpress his opinion through an oral presentation and flexible model recalling the final configuration through of masses.	Lo35.	Acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
LO5	Communicate effectively using appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses	Lo36.	Practice self-learning and other learning strategies.





	and objective engineering judgment to draw conclusions.		
LO6	express his opinion through an oral presentation and a flexible model recalling the final configuration of masses.	Lo36.	Practice se learning stra

Practice self-learning and other learning strategies.

	6- 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	Introduction to Communication Skills	2	2	0	LO1,2				
2	Communication with oneself	2	2	0	LO1,3				
3	Methods of communication with oneself	2	2	0	LO6				
4	Reception Skills	2	2	0	LO2,4				
5	Reading Skills	2	2	0	LO2,4				
6	Distractions in reading	2	2	0	LO2,4				
7	Reading attributes				LO4				
8	Midterm		1.0						
9	Transmitter skills	2	2	0	LO2,4				
10	Writing Skills	2	2	0	LO2,4				
11	Non-verbal communication	2	2	0	Lo2, Lo5				
12	Discussion and persuasion skills	2	2	0	LO2,4				
13	Distractions in discussion and persuasion skills	2	2	0	LO2,4				
14	Communication in the work environment	2	2	0	LO2,4				
15	Revision				LO2:5				
16	Final Exam		2.0						
Total	hours	28	28	0					

	7- Tł	ne Teaching	and lea				eir relation to		os of th	ne cour	se	
Course learning Outcome s (LOs)	On line / face to face lectures	Tutorials: sheets/ sketches	projects	Problem solving	Brain storming	Practical: lab	Discovering / Self learning 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	\checkmark	

HOME AND	rative Fr	High	n valley	institu	te for e	gher educat ngineering ngineering p	and technol	ogy			3
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	
LO6	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	

Notes: The research concerns the cooperative work, the discussion 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.

8- 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	✓	√		
LO2	✓	√	~	√	√		√	√	~	√		
LO3	√ √	\checkmark	√ √	\checkmark	\checkmark		\checkmark	\checkmark	√	\checkmark		
LO4 LO5	▼ √	v √	 ✓ 	✓ ✓	∨		V V	v √	▼ √	v √		
LO5 LO6	• ✓	• ✓	• √	• •	↓		✓	↓	• ✓	↓		
					b- Time	schedul	e of as	sessment				
Quizzes	Quiz(1)						Week (3)					
Discussions Presentations Sheets and SI Researches a the Projects Practical mode Attendance Mid-term exar final exam	ketches nd repo elling	;		Quiz (2)		Eve wee Wee Wee Wee Wee Wee	ekly ek (2,3) ek (4,8) ek (4,8) ek (4,8) ek (4,8) ek (16) ek (16)	for any stuc	lent			
	c- Grading system Quiz (1) (5) marks											
Sheets	quizesQuiz (1) Quiz (2)Discussions50%Sheets and Sketches25%			uiz(2) 50% 25%	(5) marks (5) marks 10 marks							
th	Researches and reports25%the Projects0%Practical modelling0%			0%		10 ma						
	Ättendance						(10) ma	arks				





Mid-term exam final exam Total	(20) marks (50) marks (100) marks
	10- List of references:
a) Course notes	Lecture notes and handouts
b) Required books	Hargie, Owen, Ed. The handbook of communication skills.
, <u>-</u>	Psychology Press, 1997.
c) Recommend books	Crucial Conversations: Tools for Talking When Stakes Are High
	by Kerry Patterson, Joseph Grenny, Ron McMillan, and Al
	Switzler.
	Communication Skills Training: A Practical Guide to Improving
	Your Social Intelligence, Presentation, Persuasion, and Public
	Speaking by Ian Tuhovsky.
d) Periodicals, Web sites,	No periodicals are needed.
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 amples and topic-specified research						
Course coordinator:	Dr. Amera Marei					
program Coordinator	Dr. Ehab Mohamed Nabil Ismail Abdel Rasoul					
Head of the Department	Dr. Ibrahim Ali Mahmoud Abdel Dayem					
Date:	202٣/202٤					

