Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Academic Program Description Form

University Name: Al-Mamoun University College

Faculty/Institute: Al-Mamoun University College

Scientific Department: Department of Electrical Engineering Techniques

Academic or Professional Program Name: Electrical Engineering Techniques

Final Certificate Name: Bachelor of Engineering Technology

Academic System: Annual

Description Preparation Date: 1/9/2023

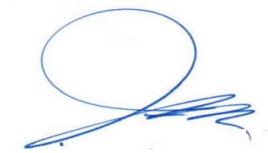
File Completion Date: 1/2/2024

Signature:

Head of Department Name:

Ali Jassim Ghafouri

Date: 15/4/2024



Signature:

Scientific Associate Name:

D. Ali Ghassan Ahmed

Date: 15/4/2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department: D. Muhannad Emad Abdel Sattar

Date: 15/4/2024

Signature:





Approval of the Dean

1. Program Vision

The department seeks to build working and effective engineering competencies that possess engineering, technical and scientific skills in the allocation of electrical energy in order to serve the needs of society and what is required by government and private projects in the country. Thus, it follows the department's strategy in achieving and achieving the aspirations of the department in preparing efficient engineering cadres fortified with science and practical skills to enable them to play their role in economic and social development that drives development and modernization and what the labor market requires.

2. Program Mission

1- Qualifying graduates technically and scientifically in accordance with university standards and requirements and providing them with high skills that enable them to compete globally.

2- Strengthening relations with the private sector through the establishment of exhibitions and workshops as well as opening outlets for work.

Thinking about establishing specialized branches that meet the requirements of the labor market.

3- Keeping pace with global modernity in programs and study plans and focusing on practical aspects such as innovations and experiences.

4- Providing the graduates of the department with the ability to pursue graduate studies and participate in academic work and scientific research.

5- Directing students' graduation research topics to field research that meets the needs of the local community and the purposes of sustainable development.

3. Program Objectives

The academic program aims to graduate students in the field of electrical power technology engineering and prepare them for the following:

1- Working to ensure that the student possesses the technical skills and knowledge required to design, operate and examine electrical power systems and to be able to solve emerging problems in electrical power engineering

2- The student should be able to adapt to different work environments and deal with them through communication skills and the ability to work positively within multidisciplinary teams.

3-The student should be able to integrate academic knowledge with field practice in order to develop the profession of electrical power engineering within the framework of social values and professional ethics

4- The student should be able to continue to develop his knowledge and skills for life and benefit from everything new in the field of electrical power.

4. Program Accreditation

Not found

5. Other external influences

1- Labor market: where many seminars and meetings were held to discuss academic and applied content with employers.

2- Universities and colleges that contain corresponding specializations: through joint work mechanisms that allow communication between the teaching staff and students for the purpose.

3- Coming up with a common vision and developing plans for the development of academic content.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**8**	**23**	**23.5%**	
College Requirements	**0**	**0**	**0**	
Department Requirements	**26**	**164**	**74.5%**	
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	**practical**
First	EET101	DC Electrical Circuits	**3**	**3**
	EET102	Digital Technologies	**3**	**3**
	MES101	Computer Principles	**1**	**2**
	EET103	Differential Mathematics	**3**	**3**
	EET104	Engineering Workshops	–	**4**
	MES102	Human Rights and Democracy	**2**	–
Second	EET201	DC Machines	**3**	**3**
	EET202	Electronic	**3**	**3**
	EET203	Circuit Analysis	**2**	**3**
	EET204	Engineering Mechanics2	**2**	**2**
	EET205	Instruments & Measurements	**2**	**3**
	EET206	Mathematics2	**3**	–
	MME201	Computer Applications	**1**	**2**

	----------	Summer Training	–	–
Third	EET301	Power Engineering	**3**	**3**
	EET302	Power Electronics	**3**	**3**
	EET303	AC Machines	**3**	**3**
	EET304	Electromagnetic fields	**2**	**2**
	EET305	Digital controllers and microprocessor	**2**	**2**
	EET306	Geometric and numerical analyzes	**3**	–
	MME301	Computer Applications	**1**	**2**
	- =======	Summer Training	–	–
Fourth	EET401	Transmission & Distribution Systems	**3**	**3**
	EET402	Marketers & Special Machines	**3**	**2**
	EET403	Power Systems Analysis	**2**	**2**
	EET404	Power Plants	**2**	**2**
	EET405	Analysis of control systems	**2**	**2**
	EET406	High Pressure Technologies	**2**	**2**
	EET407	Project	–	**3**
	EET408	Industrial Management	**2**	–
	MME401	Modeling and simulation	**1**	**2**

8. Expected learning outcomes of the program

Knowledge

A-1 Know and understand electrical circuits and how to connect them.	A-2 Knowing and understanding the types of electric motors and how to connect them.
A -4 Know and understand the electronic circuits of various micro devices and how to design them.	A-3 Know and understand the mechanical and electrical parts of generating stations and how they work

Skills

B-1 Connecting and operating electrical and electronic circuits and electric motors.	B-2 Design and implementation of electrical power systems

B- 3 Protection systems in electrical power systems	B- 4 Diagnosis and treatment of malfunctions in electrical power systems and their accessories.
Ethics	
C1- Instilling the spirit of creativity among students and ensuring that they find innovative solutions to various problems	C2- Developing students' ability to work together as effective teams that produce outstanding results.
C 3 - Develop a sense of responsibility among students and psychological preparation to bear the burdens placed on them	C 4 - Develop the values of keenness and perseverance to complete the work to reach satisfactory results

9. Teaching and Learning Strategies

Academic lectures: They provide a solid foundation on which to develop the knowledge balance of students

Practical laboratories and workshops: which provide all the experiences the student needs to help develop the side Practical skills and the consolidation of the necessary principles to carry out the implementation of practical projects correctly and follow

Occupational safety steps to reduce damage to persons and property

Systematic training: Systematic training aims to provide coexistence between the student and the labor market so that the student can Understand the practical application of the curriculum he has studied.

Presenting scientific problems and asking students to find more than one solution to them in different scientific ways to stimulate the side Creative among students.

Forming work teams whose results are evaluated and their structure changed periodically to develop the spirit of cooperation and motivate students

For all the efforts necessary to work in different circumstances and with several people

10. Evaluation methods

Interactive evaluation: This evaluation process takes place directly between the student and the teacher and is one of the basics of feedback on which faculty members rely to evaluate the teaching and learning process.

Periodic written tests: These tests provide knowledge to the faculty member about the extent to which students follow the academic content and how to interact with the information and moments given by the teacher to students.

Quarterly tests: The middle circle is to assess the student's interest and interaction with the scientific material he received During the semester with both academic and skill sides

Final exams: The final episode is to assess the student's interest and interaction with the scientific material he received During the academic year with both academic and skill aspects.

11. Faculty

Faculty Members

Academic Rank	Specialization		Number of the teaching staff	
	General	Special	Staff	Lecturer
Asst. Prof. Sabah Jaber Khaji	Mechanical	Measurements		Lecturer
Asst. Prof. Qasim Mahdi Wadi	physics	Solid physics		Lecturer
Lecturer. Dr. Hossam Eid Alkareem Asber	electricity	electricity		Lecturer
Lecturer. Ali Jassim Ghafouri	electricity	Connections		Lecturer
Asst Lecturer. Jamal Salim Abdul Rahim	electricity	electricity		Lecturer
Asst Lecturer. Adel Abdel Zahra Abbas	electricity	Automatic control		Lecturer
Asst Lecturer. Sarah Majed Obaid	electricity	Electricity & Computer Connections		Lecturer
Asst Lecturer. Najm Abboud Hammoudi	electricity	Image processing and		Lecturer

		artificial intelligence		
Assit Lecturer. Furqan Tahseen Hussain	Management Informatics	electricity		Lecturer
Asst Lecturer. Talib Hussein Kamel	electricity	Electricity & Electronics		Lecturer
Asst. Prof. Jasim Mohmed Jasim	electricity	electricity	Staff	
Assit Lecturer.Thealfaqar A. Abdul-Jabbar	electricity	electricity	Staff	
Assit Lecturer.Furqan Abdulmunem Abbas	electricity	electricity	Staff	
Assit Lecturer.Ali Kadhem Hamzah	electricity	electricity	Staff	
Asst. Prof. fadhel abass jumaa	electricity	electricity	Staff	
Assit Lecturer.Murtadha Jasim Hasan	electricity	electricity	Staff	
Assit Lecturer.Bahaulddin Makhaiber riga	electricity	Control	Staff	
Prof. salah sabeeh abedalkareem	Mechanical	Mechanical	Staff	
Assit Lecturer.abdalqader mohamed khaled	electricity	Electronic	Staff	
Assit Lecturer.zaid abdulkareem hussein	Calculators	Calculators	**Staff**	
Assit Lecturer.Salam obaid Dhahi	Automatic manufacturing	Automatic manufacturing	Staff	
omar kamil dahham	electricity	electricity	**Staff**	

Professional Development

Mentoring new faculty members

Provide the opportunity for the new faculty member to build a network of relationships and communicate with peers from other departments and colleges. Familiarity of the new faculty member with his rights and duties. Introducing the scientific research programs at the university to enable him to contribute to the research processes in it. Identify the services provided by the university to its employees so that they can benefit from them.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

The academic and professional development plan for faculty members includes such as teaching

methods, quality assurance, evaluation methods, computer and Internet, statistical analysis, authoring and translation of methodological books, student guidance and guidance, use and employment of educational technologies, scientific research, research evaluation, supervision of graduate students, as well as administrative topics related to the roles of members of Faculty members.

The professional development of faculty members is reflected positively on quality assurance standards and areas in higher education as much as the development has had an impact on the information, skills and attitudes of the targets, and the training of faculty members on the quality of education is reflected in the personal elements, teaching, evaluation and guidance and guidance of students.

12. Acceptance Criterion

To enroll a student for the first university degree (Bachelor of Electrical Power Technologies Engineering):

- To meet the admission requirements determined by the Ministry of Higher Education and Scientific Research.
- Must have a certificate of completion of preparatory school or its equivalent.
- To be willing to study in the department of his choice.
- To pass the aptitude test and personal tests
- And tests of readiness to work in the teaching profession
- Pass the medical examination

13. The most important sources of information about the program

- Teaching staff.
- Course.
- Availability of hardware, equipment, materials and software appropriate to the specialization.
- Relevance of learning resources to specialization.
- Good use of learning resources in the educational process.
- Availability of books and periodicals, their diversity, modernity and coverage of all areas of knowledge in the specialization.
- Provide an integrated library in terms of information containers, equipment and

specialized technical personnel to serve the specialization.

- Subscribe to electronic databases in the field of specialization.

- The existence of an electronic system for managing educational content and the availability of electronic materials.

-Availability of an electronic search system About information in the library in addition to electronic libraries

14. Program Development Plan

- Employing new teaching methods.

- Employing new means that serve the curriculum.

- Employing innovative reinforcement methods to enhance students.

- Participate in the evaluation and development of the curriculum and analyze it into its various elements.

- Familiarity with the skills and techniques of rapid access to knowledge and information such as computers, the Internet and others.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
first	EET101	DC Electrical Circuits	optional	/	/		/	/	/	/	/	/	/	/	
	EET102	Digital Technologies	optional	/		/	/	/	/			/		/	
	MES101	Computer Principles	optional	/	/	/			/	/	/		/	/	/
	EET103	Differential Mathematics	optional	/	/	/		/	/	/			/	/	/
	EET104	Engineering Workshops	optional		/	/		/	/	/	/			/	/
	MES102	Human Rights and Democracy	optional			/	/		/		/	/			/
second	EET201	DC Machines	optional	/	/	/			/	/	/		/	/	/
	EET202	Electronic	optional		/		/		/	/	/	/		/	/
	EET203	Circuit Analysis	optional	/		/			/	/		/	/	/	
	EET204	Engineering Mechanics2	optional			/	/		/		/	/			/
	EET205	Instruments & Measurements	optional		/	/		/	/	/	/			/	/
	EET206	Mathematics2	optional	/	/	/			/	/	/		/	/	/
	MME201	Computer Applications	optional		/		/		/	/	/	/		/	/
	--	Summer Training	optional	/		/			/	/		/	/	/	
Third	EET301	Power Engineering	optional			/	/		/		/	/			/

	EET302	Power Electronics	optional		/	/		/	/	/	/			/	/
	EET303	AC Machines	optional	/	/	/		/	/	/			/	/	/
	EET304	Electromagnetic fields	optional	/	/		/	/	/	/	/	/	/	/	
	EET305	Digital controllers and microprocessor	optional		/	/		/	/	/	/			/	/
	EET306	Geometric and numerical analyzes	optional	/	/	/		/	/	/			/	/	/
	MME301	Computer Applications	optional		/	/									
	-	Summer Training	optional			/									
Fourth	EET401	Transmission & Distribution Systems	optional		/	/		/	/	/	/			/	/
	EET402	Marketers & Special Machines	optional	/		/	/	/	/			/		/	
	EET403	Power Systems Analysis	optional	/	/		/	/	/	/	/	/	/	/	
	EET404	Power Plants	optional	/	/	/			/	/	/		/	/	/
	EET405	Analysis of control systems	optional	/	/	/			/	/	/		/	/	/
	EET406	High Pressure Technologies	optional			/	/		/		/	/			/
	EET407	Project	optional		/	/		/	/	/	/			/	/
	EET408	Industrial Management	optional		/	/		/	/	/	/			/	/
	MME401	Modeling and simulation	optional		/	/		/	/	/	/			/	/

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:	
DC Electrical Circuits	
2. Course Code:	
EET101	
3. Semester / Year:	
ONE YEAR	
4. Description Preparation Date:	
12/2/2024	
5. Available Attendance Forms:	
Weekly (theoretical + practical)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
90 hr/sem\8 unit	
7. Course administrator's name (mention all, if more than one name)	
Name: DR. omar khamil Ass.talip hussain Email: omar.k.hamil@almamonuc.edu.iq Talip.h.hussain@almamonuc.edu.iq	
8. Course Objectives	
Course Objectives	General goal // Develop a thorough understanding of the scientific principles that govern DC electrical circuits, including voltage, current, resistance, and power relationships. Special (Behavioral) goals // 1- To apply scientific laws, such as Ohm's law and Kirchhoff's laws, to accura analyze and solve electrical circuits. 2-To explore the scientific properties and behavior of circuit components, including resistors understand their impact on circuit performance. 3- To enhance problem-solving skills by scientifically analyzing complex circuit configurations proposing appropriate solutions.
9. Teaching and Learning Strategies	
Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Understanding and Comprehension	Definitions and units	Discussion strategy	Oral and written test
2	3	Understanding and Comprehension	phasors, Sinusoidsfor circuit elements	Discussion strategy	Oral and written test
3	3	Understanding and Comprehension	Impedance admittance ، impedance combinations	Discussion strategy	Oral and written test
4	3	Understanding and Comprehension	steady Sinusoidal state analysis Kirchhoff's laws,) Mesh analysis Nodal ،analysis Superposition's theorem, Thevenin's theorem, Norton's theorem, source transformations	Discussion strategy	Oral and written test
5	3	Understanding and Comprehension	Source free series andparallel RLC circuits	Discussion strategy	Oral and written test
6	3	Understanding and Comprehension	Step response of aseries and a parallel RLC circuits	Discussion strategy	Oral and written test
7	3	Understanding and Comprehension	General second - order circuits	Discussion strategy	Oral and written test
8	3	Understanding and Comprehension	Three-phase circuits: (wye -wye, delta-delta, wye delta,	Discussion strategy	Oral and written test
9	3	Understanding and Comprehension	circuit Advanced analysis using Laplace transform	Discussion strategy	Oral and written test
10	3	Understanding and Comprehension	Definitions and units	Discussion strategy	Oral and written test
11	3	Understanding and Comprehension	phasors, Sinusoidsfor circuit elements	Discussion strategy	Oral and written test
12	3	Understanding and Comprehension	Impedance admittance ، impedance combinations	Discussion strategy	Oral and written test
13	3	Understanding and Comprehension	steady Sinusoidal state analysis Kirchhoff's laws,) Mesh analysis Nodal ،analysis Superposition's theorem, Thevenin's theorem, Norton's theorem, source transformations	Discussion strategy	Oral and written test

14	**3**	Understanding and Comprehension	Source free series andparallel RLC circuits	Discussion strategy	Oral and written test
15	**3**	Understanding and Comprehension	Step response of aseries and a parallel RLC circuits	Discussion strategy	Oral and written test
16	**3**	Understanding and Comprehension	General second - order circuits	Discussion strategy	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	**10**	**10**	**10**	**10**	**50**	**100**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Fundamentals of Electric Circuits, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education
Main references (sources)	
Recommended books and references (scientific journals, reports…)	DC Electrical Circuit Analysis: A Practical Approach Copyright Year: 2020, dissidents.
Electronic References, Websites	Browse the Google network using the desired subject key

Course Description Form

1. Course Name:
Digital Technologies
2. Course Code:
EET102
3. Semester / Year:
ONE YEAR
4. Description Preparation Date:
05/02/2024
5. Available Attendance Forms:
Weekly (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
90 hours/6 unit
7. Course administrator's name (mention all, if more than one name)
Name: Abd Alqader mohammed Khaled

Lina Ali Karim
Email: sagadss.m.abdkader@almamonuc.edu.iq

8. Course Objectives

General goal //
The subject of digital technologies aims to teach the student during the academic year an idea of atomic structure
Special (Behavioral) goals //
And energy levels and conductivity of metals in addition to semiconductors a internal elements of the circuit from
Resistors, amplifiers, inductors, types and applications in the field of digital scier and understanding of electronic circuits and the most important
The electronic elements involved in the designs of these circles and to develop t student's mind and enable him to visualize
Practical in the transfer of information and the foundations of the establishment various electrical circuits, and therefore the goal that we envisage It is t consolidation of the principles and theoretical foundations that are adopted in t establishment of any electrical circuit Electronic and absolute understanding

9. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**3**	Understanding Comprehension	**Introduction to number**	Discussion strategy	Oral and written test
2	**3**	Understanding Comprehension	**system**	Discussion strategy	Oral and written test
3	**3**	Understanding Comprehension	**number General**	Discussion strategy	Oral and written test
4	**3**	Understanding	**Numbers base conversion**	Discussion strategy	Oral and written test

		Comprehension			
5	**3**	Understanding Comprehension	**Arithmatic operation**	Discussion strategy	Oral and written test
6	**3**	Understanding Comprehension	**Binary code**	Discussion strategy	Oral and written test
7	**3**	Understanding Comprehension	**Boolean algepra**	Discussion strategy	Oral and written test
8	**3**	Understanding Comprehension	**Basic theorem properties**	Discussion strategy	Oral and written test
9	**3**	Understanding Comprehension	**Boolean functions**	Discussion strategy	Oral and written test
10	**3**	Understanding Comprehension	**Logic gates**	Discussion strategy	Oral and written test
11	**3**	Understanding Comprehensio	**DigitalLogic gates**	Discussion strategy	Oral and written test
12	**3**	Understanding Comprehension	**Karanough Maps**	Discussion strategy	Oral and written test
13	**3**	Understanding Comprehension	**AND implementation**	Discussion strategy	Oral and written test
14	**3**	Understanding Comprehension	**O R impelementation**	Discussion strategy	Oral and written test
15	**3**	Understanding Comprehension	**Arithmatic operation**	Discussion strategy	Oral and written test
16	**3**	Understanding Comprehension	**Half and full adder).**	Discussion strategy	Oral and written test
17	**3**	Understanding Comprehension	**Code conversion**	Discussion strategy	Oral and written test
18	**3**	Understanding Comprehension	**Encoder**	Discussion strategy	Oral and written test
19	**3**	Understanding Comprehension	**Decoder**	Discussion strategy	Oral and written test
20	**3**	Understanding Comprehension	**MALTIPLEXER d**	Discussion strategy	Oral and written test
21	**3**	Understanding Comprehension	**Demultiplexer.**	Discussion strategy	Oral and written test
22	**3**	Understanding Comprehension	**Sequential logic**	Discussion strategy	Oral and written test
23	**3**	Understanding Comprehension	**Flip flop types**	Discussion strategy	Oral and written test
24	**3**	Understanding Comprehension	**master slave FF**	Discussion strategy	Oral and written test
25	**3**	Understanding Comprehension	**COUNTERS**	Discussion strategy	Oral and written test
26	**3**	Understanding Comprehension	**SHIFT REGISTER**	Discussion strategy	Oral and written test
27	**3**	Understanding Comprehension	**MULTIVIBRATOR**	Discussion strategy	Oral and written test
28	**3**	Understanding Comprehension	**RS,T Flip Flop**	Discussion strategy	Oral and written test
29	**3**	Understanding Comprehension	**D,JK Flip Flop**	Discussion strategy	Oral and written test
30	**3**	Understanding and Comprehension	**Microprocessor**	Discussion strategy	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total

10	**10**	**10**	**10**	**10**	**50**	**100**

12. Learning and Teaching Resources	
Required textbo (curricular books, if any)	1- "Fundamentals of Electric Circuits", Charles K. Alexander, Matthew N. O. Sadiku, 4th ed. 2- "A Textbook of Electrical Technology", B.L. Theraja and A.K. Theraja, 2005
Main references (sources)	- College library to obtain additional sources for curricula Tuition. - Horoscope on scientific websites Recent developments in the article.
Recommended books and references (scientific journals, reports…)	Browse the Google network using the desired subject key
Electronic Referenc Websites	Browse the Google network using the desired subject key

Course Description Form

1. Course Name:
Fundamentals of Computer
2. Course Code:
MES101
3. Semester / Year:2023-2024
ONE YEAR
4. Description Preparation Date:9-2-2024
12/2/2024
5. Available Attendance Forms: (Weekly (theoretical and practical))
Weekly (theoretical + practical)
6. Number of Credit Hours (Total) :
90 / Number of Units (Total) :4

7. Course administrator's name (mention all, if more than one name)

Name: Dr. shayma Ashor hmdaoy
Email: shaymaashor1111@ almamonuc.edu.iq

8. Course Objectives

Course Objectives	**General goal //** **The student gets to know the basic parts of the computer and how use them.** **Special (Behavioral) goals //** **The student will be familiar with the computer operating system and skills of entering, outputting, storing and transferring data** **The student will learn to use the most important Office applications**

9. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy.

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	Discussion strategy	Oral and written test

1st	**3**	**Understanding and Comprehension**	**Introduction** Definition of the computer, components.	**Discussion strategy**	Oral and written test
2nd,3rd	**3**	**Understanding and Comprehension**	**Method of operation, simple diagram of the components and units of the computer. Phase's computers and the development of computers and the data and information,**	**Discussion strategy**	Oral and written test
,4th, 5th	**3**	**Understanding and Comprehension**	**Fundamentals of Computer** Fields use of computers, Computer components, Types of Computers, Computer software. Devices of input and output.	**Discussion strategy**	Oral and written test
6th, 7th,	**3**	**Understanding and Comprehension**	**Desktop, Mouse, my computer-icons, close window, stand by. Folders Size and cascade,**	**Discussion strategy**	Oral and written test
8th, 9th	**3**	**Understanding and Comprehension**	**Window Operating System** windows folder construction, construction choose file or 'older find, file or folder copy past	**Discussion strategy**	Oral and written test
10th , 11th	**3**	**Understanding and Comprehension**	**Microsoft PowerPoint** Introduction. The creating for PowerPoint slides. Using and modifying the design templates. Editing of the PowerPoint cells. Inserting pictures, text and tables in the presentation slides. Setup the auto showing of the presentation sides. Printing and printing setup to the PowerPoint slides.	**Discussion strategy**	Oral and written test
, 12th, 13th	**3**	**Understanding and Comprehension**	**Microsoft Word** Introduction. Create new file, setup new page + save the files.	**Discussion strategy**	Oral and written test

			Coordinating the cells and the worksheet window. Editing the cells. Columns and tables borders and shading. Inserting graphics, text, and entering formulas inside the program window. Printing and printing setup		
, 14th, 15th,	**3**	**Understanding and Comprehension**	**Microsoft Excel** Introduction. Menus and toolbars. Coordinating the cells and the worksheet window. Editing the cells. Operations of the calculating by using Microsoft Excel program. Drawing the charts by using Microsoft Excel program. Printing and printing options.	**Discussion strategy**	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Series of lectures delivered by the lecturer**
Main references (sources)	**1-Introduction to excel 2010 by Stephen) Moffat, the mouse training company, bookboon.com** **2-Micro Soft office PowerPoint by Torben Lage Frandsen, bookboon.com**
Recommended books and references (scientific journals, reports…)	**Internet and Computing Core Certification Guide , Microsoft® Office 2013, IC³ Courseware Development Team: Sue Wong, Irina Heer, Kelly Hegedus, Kevin Yulo**
Electronic References, Websites	Browse the Google network using the desired subject key

Course Description Form

13. Course Name:	
Human Rights and Democracy	
14. Course Code:	
MES102	
15. Semester / Year:	
ONE YEAR	
16. Description Preparation Date:	
1−10−2024	
17.Available Attendance Forms:	
Weekly (theoretical)	
18.Number of Credit Hours (Total) / Number of Units (Total)	
30 Hours / 2 units	
19. Course administrator's name (mention all, if more than one name)	
Name: Arrak Ghanim Mahammed Email: arak.g.ghanim@ almamonuc.edu.iq	
20. Course Objectives	
Course Objectives	General goal // The module aims to provide students with a comprehensive understanding of the historical developmen human rights and their significance in contemporary society. Special (Behavioral) goals // To familiarize students with the concept and characteristics of human rights, enabling them to analyze evaluate various human rights issues and challenges. To explore the different generations of human rights, their evolution over time, and the implications individuals and communities. To examine the role of human rights in ancient civilizations and Abrahamic religions, highlighting contributions and influences of these historical contexts. To investigate the international and regional recognition of human rights through the study of key chart conventions, and declarations, enabling students to comprehend the global framework for human ri protection and promotion.
21. Teaching and Learning Strategies	
Strate	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	3	Understanding and Comprehension	• **Historical Development of Human Rights.**	Discussion strateg	Oral and written test
Week 2	3	Understanding and Comprehension	• **Concept and Characteristics of Human Rights. Importance and Relevance of Human Rights.**	Discussion strateg	Oral and written test
Week 3	3	Understanding and Comprehension	• **Examination of Human Rights in Ancient Societies.**	Discussion strateg	Oral and written test
Week 4	3	Understanding and Comprehension	• **Exploration of Human Rights in Judaism, Christianity, and Islam.**	Discussion strateg	Oral and written test
Week 5	3	Understanding and Comprehension	• **Analysis of International Human Rights Instruments and Treaties.**	Discussion strateg	Oral and written test
Week 6	3	Understanding and Comprehension	• **Examination of Regional Human Rights Systems and Mechanisms.**	Discussion strateg	Oral and written test
Week 7	3	Understanding and Comprehension	• **In-depth Analysis of the Universal Declaration**	Discussion strateg	Oral and written test

			of Human Rights (1948).		
Week 8	3	Understanding and Comprehension	• **Comparative Analysis of Constitutional Safeguards for Human Rights.**	Discussion strateg	Oral and written test
Week 9	3	Understanding and Comprehension	• **Analysis of the Iraqi Constitution of 2005 and its Impact on Human Rights.**	Discussion strateg	Oral and written test
Week 10	3	Understanding and Comprehension	• **Focus on Genocide as a Violation of Human Rights.**	Discussion strateg	Oral and written test
Week 11	3	Understanding and Comprehension	• **Understanding the Phenomenon of Financial and Administrative Corruption.**	Discussion strateg	Oral and written test
Week 12	3	Understanding and Comprehension	• **Importance of the Right to Water as a Human Right**	Discussion strateg	Oral and written test
Week 13	3	Understanding and Comprehension	• **Examination of Terrorism and its Threat to Human Rights.**	Discussion strateg	Oral and written test
Week 14	3	Understanding and Comprehension	• **Exploration of Current Human Rights Challenges and Debates**	Discussion strateg	Oral and written test
Week 15	3	Understanding and Comprehension	• **Recap of Key**	Discussion strateg	Oral and written test

			Concepts and Themes Covered in the Module. Discussion on the Importance of Upholding and Promoting Human Rights in Today's Society.		

23. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily and monthly exams, and homework.

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1 "Human Rights in the Arab World: Issues and Challenges," written by: Ali Hegazy and Jamal Shaat Edition: Second Edition, 2017. 2 "Principles of Human Rights, Modern Concepts and Issues, written by: Ahmed Al-Majali and Ghass Hamdan, Edition: First Edition, Year: 2019.
Main references (sources)	Kamel Mahmoud. Edition: Human Rights and Democracy Edition, written by: Mustafa I, year: 7112 7. "An and Medieval Times", written by: Nabil Rizk. Edition: A History of Human Rights in the third edition, year: 3. "Iraq."
Recommended books and references (scientific journals, reports…)	. "Human Rights and Democracy," written by Mustafa Kamel Mahmoud, edition: first edition, year 2015. 2 "The History of Human Rights in Ancient and Medieval Times," written by: Nabil Rizk. Edition: Third ed year 2012. 3. "Human Rights in Iraq: Reality and Challenges," written by
Electronic Referenc Websites	Browse the Google network using the desired subject key

Course Description Form

25. Course Name:	
Mathematics (I)	
26. Course Code:	
EET 103	
27. Semester / Year:	
– ONE YEAR	
28. Description Preparation Date:	
2024–2–13	
29.Available Attendance Forms:	
Weekly (theoretical and practical)	
30.Number of Credit Hours (Total) / Number of Units (Total)	
90 hours, number of units: 6	
31. Course administrator's name (mention all, if more than one name)	
Name: Salam Obaid Dhahi Email: Salam.o.obaid@almamonuc.edu.iq	
32. Course Objectives	
Course Objectives	General goal // aim of this course is to give an introductory course on basics of analysis to teach general concepts such as Slopes, Limits, Continuity, Matrix, solving equatic complex number, Logarithmic, Exponential and Hyperbolic functions…… Special (Behavioral) goals // this module is to encourage students' participation in the exercises, while at the same t refining and expanding their critical thinking skills. This will be achieved through class interactive tutorials and by considering types of simple experiments involving sc sampling activities that are interesting to the students
33. Teaching and Learning Strategies	
Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy.

	Combining different strategies

34. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1		Understanding and Comprehension	• Introduction to Differential Calculus. • Limits and Continuity. Differentiation Rules: Power Rule, Product Rule, Quotient Rule, Chain Rule.	Discussion strategy	Oral and written test
Week 2		Understanding and Comprehension	• Derivatives of Trigonometric and Exponential Functions • Derivatives of Logarithmic and Inverse Trigonometric Functions Implicit Differentiation	Discussion strategy	Oral and written test
Week 3		Understanding and Comprehension	• Related Rates • Optimization Problems in Engineering Curve Sketching: Critical Points, Inflection Points, Concavity	Discussion strategy	Oral and written test
Week 4		Understanding and Comprehension	• L'Hôpital's Rule and Indeterminate Forms Linear Approximation and Differentials	Discussion strategy	Oral and written test
Week 5		Understanding and Comprehension	• Applications of Differentiation in Engineering: Rates of Change, Velocity, Acceleration Motion Problems: Position, Velocity, and Acceleration Functions	Discussion strategy	Oral and written test

Week 6		Understanding and Comprehension	• Optimization of Engineering Systems: Maximum and Minimum Problems Optimization with Constraints	Discussion strategy	Oral and written test
Week 7		Understanding and Comprehension	• Applications of Differentiation in Engineering: Marginal Analysis, Cost and Revenue Optimization Linearization and Error Analysis	Discussion strategy	Oral and written test
Week 8		Understanding and Comprehension	• Implicit Differentiation and Higher Derivatives Related Rates with Engineering Applications	Discussion strategy	Oral and written test
Week 9		Understanding and Comprehension	• Transcendental Functions: Derivatives of Exponential and Logarithmic Functions Applications of Transcendental Functions in Engineering	Discussion strategy	Oral and written test
Week 10		Understanding and Comprehension	• Review of Differentiation Techniques Higher Derivatives and Acceleration in Engineering	Discussion strategy	Oral and written test
Week11		Understanding and Comprehension	• Taylor Series Expansion and Applications Linear Approximation and Estimation in Engineering	Discussion strategy	Oral and written test
Week 12		Understanding and Comprehension	• Introduction to Differential Equations First-Order Differential Equations: Separable Equations, Linear Equations	Discussion strategy	Oral and written test
Week 13		Understanding and Comprehension	Applications of Differential Equations in Engineering: Growth and Decay, RC Circuits	Discussion strategy	Oral and written test
Week 14		Understanding and Comprehension	• Higher-Order Differential Equations and Engineering Applications Spring-Mass Systems: Modeling	Discussion strategy	Oral and written test

			and Analysis		
Week 15		Understanding and Comprehension	• Systems of Differential Equations in Engineering: Electrical Circuits, Control Systems • Phase Plane Analysis: Stability and Classification Review and Exam Preparation	Discussion strategy	Oral and written test

35. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

36. Learning and Teaching Resources

Required textbooks (curricular books any)	K.A. Stroud and Dexter J. Booth, "Engineering Mathematics," edition, Palgrave Macmillan, 2013.
Main references (sources)	
Recommended books and references (scientific journals, reports…)	E. Kreyszig, "Advanced Engineering Mathematics," 10th editi Wiley, 2011.
Electronic References, Websites	Browse the Google network using the desired subject key

Course Description Form

37.	Course Name:
workshop	
38.	Course Code:
EET104	
39.	Semester / Year:
ONE YEAR	
40.	Description Preparation Date:
12/2/2024	
41.Available Attendance Forms:	
Weekly (theoretical and practical)	
42.Number of Credit Hours (Total) / Number of Units (Total)	
30 Hours / 2 units	
43.	Course administrator's name (mention all, if more than one name)
Name: Hossam Abdel Karim Asber Email: Housam.a.asper @hotmail.com	
44.	Course Objectives

Course Objectives	**The student will be able to:** 1. **Recognizes electronic component** 2. **uses electronic components to build and solder simple circuit** 3. **Examination of electronic circuits and their components.**
45.	Teaching and Learning Strategies
Strategy	General goal // The learning and teaching strategies for the Electrical and Mechanical Workshop module Special (Behavioral) goals // 1. Lectures: The module may include lectures delivered by the instructor to introduce and explain the theoretical concepts, principles, and procedures related to electrical and mechanical workshop practice. Lectures can provide an overview of the topics, highlight key points, and provide examples and case studies. 2. Practical Demonstrations: Hands-on practical demonstrations ca

	be conducted by the instructor to show students the proper usage of tools and equipment, safety precautions, and step-by-step procedures f various workshop tasks. This allows students to observe and understar the practical aspects of the subject. 3. Laboratory Sessions: Laboratory sessions provide students with the opportunity to apply their theoretical knowledge and practice their skills in a controlled workshop environment. Students can work on assigned tasks, conduct experiments, perform measurements, and troubleshoot electrical and mechanical systems under the guidance of the instructor. 4. Group Discussions: Group discussions can be facilitated to encourage active participation and collaboration among students. Students can discuss and analyze case studies, share their experiences, and exchange ideas and perspectives on workshop-related topics. This promotes critical thinking, problem-solving, and peer learning. 5. Workshops and Work-Based Learning: Organizing workshops an incorporating work-based learning experiences can enhance the practical skills of students. This may involve site visits to real-world electrical and mechanical workshops, where students can observe professional practices, interact with industry experts, and gain hands- experience in a professional setting. 6. Assignments and Projects: Assignments and projects can be assigned to students to further deepen their understanding of the subje matter. This may include tasks such as designing electrical installations troubleshooting circuits, creating wiring diagrams, or conducting research on specific workshop-related topics. These assignments promote independent learning, research skills, and practical applicatio of knowledge.

46. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**3**	Understanding and Comprehension	**Principles of Industrial Safety in Electrical Workshops.**	Discussion strategy	Oral and written test
2	**3**	Understanding and Comprehension	**Different Types of Welding Irons (with different capacities) and Spot Welding**	Discussion strategy	Oral and written test

3	**3**	Understanding and Comprehension	**Electric Circuits and Transformer Operation.**	Discussion strategy	Oral and written test
4	**3**	Understanding and Comprehension	**Electrical Installations and Types of Wiring (Surface and Concealed)**	Discussion strategy	Oral and written test
5	**3**	Understanding and Comprehension	**Welding**	Discussion strategy	Oral and written test
6	**3**	Understanding and Comprehension	**Parallel Wiring of Two Lamps with a Switch and Socket**	Discussion strategy	Oral and written test
7	**3**	Understanding and Comprehension	**Drawing a Staircase Lamp (Two-Way Switch) Circuit**	Discussion strategy	Oral and written test
8	**3**	Understanding and Comprehension	**Introduction to Electrical Relays, Types, Uses, Thermal Overload Relays, Time Delay Relays**	Discussion strategy	Oral and written test
9	**3**	Understanding and Comprehension	**Operation of Single-Face Motor with an Air Pick-Up and Push Button**	Discussion strategy	Oral and written test
10	**3**	Understanding and Comprehension	**Introduction to Workshop Safety**	Discussion strategy	Oral and written test
11	**3**	Understanding and Comprehension	**Turning Process and Instrumentation Measures**	Discussion strategy	Oral and written test
12	**3**	Understanding and Comprehension	**Cutting Tools in Turning**	Discussion strategy	Oral and written test
13	**3**	Understanding and Comprehension	**Practical Exercise - Horizontal Turning**	Discussion strategy	Oral and written test
14	**3**	Understanding and Comprehension	**Turning Different Shapes**	Discussion strategy	Oral and written test
15	**3**	Understanding and Comprehension	**Introduction to Filing Process**	Discussion strategy	Oral and written test
16	**3**	Understanding and Comprehension	**Practical Exercise - Filing Process**	Discussion strategy	Oral and written test

47. Course Evaluation
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

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48. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Lectures
Main references (sources)	1-Industrial maintenance, by Er.H. P.Garg publisher. 2-Industrial engineering and managemen Dr.B. Kumar, Tenth Edition, Khanna publisher.
Recommended books and references (scientific journals, reports…)	There are many references, magazines and books
Electronic References, Websites	Browse the Google network using the desired subject key

Course Description Form

1. Course Name:
Computer Programming 2
2. Course Code:
MME201
3. Semester / Year:2023-2024
second Year
4. Description Preparation Date:
9−2−2024
5. Available Attendance Forms:
(Weekly (theoretical and practical))
6. Number of Credit Hours (Total) :
90 Hr. /4 Unit
7. Course administrator's name (mention all, if more than one name)

Name: Dr. shayma Ashor hmdaoy
Email: shaymaashor1111@ almamonuc.edu.iq

8. Course Objectives

Course Objectives	**General goal //** **Building programming imagination to solve engineering problems and applicati** **and simulate engineering problems.** **Special (Behavioral) goals //** **At the end of the course, the student will be able to identify the programm** **imagination** **At the end of the course, the student will be able to determine the specific crit** **for simulate engineering problems**

9. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

2nd .1st	**3**	**Understanding and Comprehension**	**Software Engineering** Introduction, Structural and Functional Modelling, Software Development Life cycle. Requirements determination, feasibility analysis, final specifications, hardware and software study system (design – implementation – evaluation– modification). Role of systems analyst – attributes of a systems analyst – tools used in system analysis	**Discussion strategy**	**Oral and written test**
3rd,4th,	**3**	**Understanding and Comprehension**	**Data and Information** Types of information: operational, tactical, strategic and statutory – why do we need information systems – management structure – requirements of information at different levels of management – functional allocation of management – requirements of information for various functions – qualities of information – small case study	**Discussion strategy**	Oral and written test
5th, 6th	**3**	**Understanding and Comprehension**	**Algorithms and Flowcharts** Introduction, Symbols, Types of flowchart, Exercise.	**Discussion strategy**	Oral and written test
7th,8th	**3**	**Understanding and Comprehension**	**Introduction to Visual studio.** Introduction to Visual studio. Platform, Environment, Menu Bar, Toolbars, Tool Box, Project explorer, Properties window, Form designer, Form layout. Design time and run time	**Discussion strategy**	Oral and written test

9th,10th	**3**	**Understanding and Comprehension**	**Toolbox and objects** : Graphical User Interface, Command Buttons, Label, text box, check box, option, list box, Timer.	**Discussion strategy**	Oral and written test
11th	**3**	**Understanding and Comprehension**	**Constants, Variable and Procedures** Constants and Variable, Arrays, Arithmetic operators, Expressions - Events, Properties, Methods - Procedures and Functions – Menus.	**Discussion strategy**	Oral and written test
12th,13th 14th,15th	**3**	**Understanding and Comprehension**	**Control Flow Statements**: **Condition Statement: If-Then, Select Case**. **Loop statement: For-Next, Do-while, Do-Loop While, Exit Loop**. **Exit and stop statements**	**Discussion strategy**	Oral and written test
16th,17th, 18th	**3**	**Understanding and Comprehension**	**Test phase Debugging , Error Handling**	**Discussion strategy**	Oral and written test
19th,20th,21th	**3**	**Understanding and Comprehension**	**Advance objects Mashed edit control – Chart controls – Rich text box – Slider – Tabbed Dialog – Multiple forms – common dialog control**.	**Discussion strategy**	Oral and written test
22th	**3**	**Understanding and Comprehension**	**Creating executable file Creating executable file by Package & Deployment Wizard**	**Discussion strategy**	Oral and written test
23th,24th,25th	**3**	**Understanding and Comprehension**	**Applications**: **Create the applications for Fluid calculation**,	**Discussion strategy**	Oral and written test

26th,27th,28th	**3**	**Understanding and Comprehension**	**Trial and error calculation, Enthalpy**	**Discussion strategy**	Oral and written test
,29th,30th	**3**	**Understanding and Comprehension**	**calculation, non–linear equations, and matrix inverse**	**Discussion strategy**	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books any)	Learn Visual Basic Step by Step
Main references (sources)	Complete Reference for VB
Recommended books and references (scientific journals, reports…)	Master VB
Electronic References, Websites	Browse the Google network using the desired subject key

Course Description Form

1. Course Name:
DC Machine
2. Course Code:
EET201
3. Semester / Year:
second Year
4. Description Preparation Date:
11/2/2024
5. Available Attendance Forms:
(Weekly (theoretical and practical))
6. Number of Credit Hours (Total) / Number of Units (Total)
180 Hours / 9 units

7. Course administrator's name (mention all, if more than one name)

Name: Furqan A. Abbas, Thealfaqar A. Abdul-Jabbar
Email: Furqan.aldhahir94@ almamonuc.edu.iq ,
zulifqeralobeidi@ almamonuc.edu.iq

8. Course Objectives

Course Objectives	**General goal //** **The course aims to teach DC machines/second stage.** **Special (Behavioral) goals //** **Study of magnetic circuits.** **Study of dc generation.** **Study the types of dc generator.** **Study the parts of the dc generator** **Study connecting generators in parallel** **Study the characteristics of the dc generator** **Study of the induced current in dc generator** **Study of the characteristics of the motor and methods of controlling it**

9. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6	Understanding Comprehension	Introduction to magnetic circuit	Discussion strategy	Oral and written test
3-4	6	Understanding and Comprehension	Identifying the DC generation	Discussion strategy	Oral and written test
5-6	6	Understanding and Comprehension	Identifying the DC generator	Discussion strategy	Oral and written test

			winding		
7-8	6	Understanding and Comprehension	Identifying the Parts of DC Generator	Discussion strategy	Oral and written test
9	6	Understanding and Comprehension	Identifying the Mathematical operations to calculate the voltage generat in a DC generat	Discussion strategy	Oral and written test
10-14	6	Understanding and Comprehension	Identifying the lecture parallel connection of dc generator	Discussion strategy	Oral and written test
15-19	6	Understanding and Comprehension	Identify the characteristics of dc generator	Discussion strategy	Oral and written test
20-21	6	Understanding and Comprehension	Parts of dc motor	Discussion strategy	Oral and written test
22-26	6	Understanding and Comprehension	Characteristics of dc motor	Discussion strategy	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	ELECTRICAL MACHINES I and II by B Theraja
Main references (sources)	ELECTRICAL MACHINES I and II by B Theraja ECTRICAL MACHINES by S K Sahdev
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Browse the Google network using the desired subject key

Course Description Form

1. Course Name:
Electrical Circuit Analysis
2. Course Code:
EET203
3. Semester / Year:2023-2024
second Year
4. Description Preparation Date:
9-2-2024
5. Available Attendance Forms:
(Weekly (theoretical and practical))
6. Number of Credit Hours (Total) :
180Hr. /7 Unit
7. Course administrator's name (mention all, if more than one name)
Name: ass.lu. najem abod Email: najem.a.sphy@ almamonuc.edu.iq
8. Course Objectives

Course Objectives	**General goal //** **The objective of this course is to give the student basic and detailed informat about the elements of electrical circuits.** **Special (Behavioral) goals //** **At the end of the course, the student will be able to identify the the theories t are used in the analysis of electrical circuits and the effect of alternating curren the case of single phase and three phases and their** **.practical application.**

9. Teaching and Learning Strategies	
Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy

	A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Understanding and Comprehension	Definitions and units	Discussion strategy	Oral and written test
3	2	Understanding and Comprehension	phasors, Sinusoids for circuit elements	Discussion strategy	Oral and written test
4	2	Understanding and Comprehension	Impedance admittance ، impedance combinations	Discussion strategy	Oral and written test
5-8	8	Understanding and Comprehension	steady Sinusoidal state analysis Kirchhoff's laws,) Mesh analysis Nodal analysis Superposition's theorem, Thevenin's theorem, Norton's theorem, source transformations	Discussion strategy	Oral and written test

9-10	4	Understanding and Comprehension	Source free series and parallel RLC circuits	Discussion strategy	Oral and written test
11-12	4	Understanding and Comprehension	Step response of a series and a parallel RLC circuits	Discussion strategy	Oral and written test
13-14	4	Understanding and Comprehension	General second - order circuits	Discussion strategy	Oral and written test
15-19	10	Understanding and Comprehension	Three-phase circuits: (wye -wye, delta-delta, wye delta,	Discussion strategy	Oral and written test
20-23	8	Understanding and Comprehension	circuit Advanced analysis using Laplace transform	Discussion strategy	Oral and written test

10. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

11. Learning and Teaching Resources

Required textbooks (curricular books any)	Introductory circuit analysis by Robert L.BolestadFundamental of electrical engineering by Theraja
Main references (sources)	Complete Reference for VB
Recommended books and references (scientific journals, reports…)	www.EEEdocument.com http://www.electronics-tutorials.ws
Electronic References, Websites	Browse the Google network using the desired subject key

Course Description Form

1. Course Name:
electronic
2. Course Code:
EET202
3. Semester / Year:
second Year
4. Description Preparation Date:
11/2/2024
5. Available Attendance Forms:
(Weekly (theoretical and practical))
6. Number of Credit Hours (Total) / Number of Units (Total)
180 Hours / 9 units
7. Course administrator's name (mention all, if more than one name)
Name: Furqan T. Abbas Email: Furqan.aldhahir94@ almamonuc.edu.iq ,
8. Course Objectives

Course Objective	**General goal //** **The course aims to teach electronic/second stage.** **Special (Behavioral) goals //** **The aim of the subject of electrical foundations is to learn the student during academic year the idea of atomic composition and levels of energy and metal deliv in addition to the semiconductors and the internal elements of the department resistors and spaces and researches and types and applications in the field electronic science and understanding of electronic circuits and the most import electronic elements in the designs of these departments and the development of m And the student can from the practical perception in the transmission of informat and the foundations of the establishment of various electrical circuits and therefore purpose of the teaching of this article is to consolidate the principles and theoret foundations that depend on the establishment of any department electronic understand absolutely.**

9. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	6	Understanding and Comprehension	**Semiconductors materi and PN junction.**	Discussion strat	Oral and written test
3-4	6	Understanding and Comprehension	**Diode applications.**	Discussion strat	Oral and written test
5-6	6	Understanding and Comprehension	**Special diodes.**	Discussion strat	Oral and written test
7-8	6	Understanding and Comprehension	**Bipolar transistors (characteristics and biasing).**	Discussion strat	Oral and written test
9	6	Understanding and Comprehension	**Field effect transistors (characteristics and biasing).**	Discussion strat	Oral and written test
10-14	6	Understanding and Comprehension	**Small signal amplifier.**	Discussion strat	Oral and written test
15-19	6	Understanding and Comprehension	**Power amplifiers.**	Discussion strat	Oral and written test
20-21	6	Understanding and Comprehension	**Thyristor.**	Discussion strat	Oral and written test
22-26	6	Understanding and Comprehension	**Other semiconductor devices (Diac, Triac, SCR).**	Discussion strat	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

12. Learning and Teaching Resources

" .1Fundamentals of Electric Circuits", Charles	ELECTRICAL MACHINES I and II by E

Alexander, Matthew N. O. Sadiku, 4th ed. " Textbook of Electrical Technology", B.L. Theraja a A.K. Theraja, 2005	Theraja
College Library for additional resources for curriculum. See the scientific websites to see latest developments in the article. All the scien journals that are relevant to the broad concept electronic physics.	ELECTRICAL MACHINES I and II by B Theraja ECTRICAL MACHINES by S K Sahdev
Community-based facilities (include for example, guest Lectures , internship , field studies)	
Electronic References, Websites	Browse the Google network using the desired subject key

Course Description Form

49. Course Name:
Engineering Mechanics/2
50. Course Code:
EET204
51. Semester / Year:
second Year
52. Description Preparation Date:
5/ 2 / 2024
53.Available Attendance Forms:
Weekly (theoretical and practical)
54.Number of Credit Hours (Total) / Number of Units (Total)
120(60)theoretical +(60) practical
55. Course administrator's name (mention all, if more than one name)
Name: Qudama Khamees Hammad Email: qudama.k@almamonuc.edu.iq
56. Course Objectives
General goal // To discussed undammed one –degree –of- freedom vibration of a rigid body using the equation of

motion and energy method
Special (Behavioral) goals //

1- To study the analysis of undammed forced vibration and viscous damped forced vibration
3- To introduce the concept of electrical analogs to study vibrational motion.
4. To the basic principles of thermodynamic
5- To study the important definitions temperature - pressure - the amount of heat - energy - work - enthalpy and units of measurement and conversions
6 –To study the first law of thermodynamic and its applications.
7- To study the energy equation of closed and open systems.
8- To study the second law of thermodynamics and its applications in closed and open systems
9 - To learn the courses (otto, diesl and brighton cycye)
10.To study combustion processes.
11 - Introduction to fluid mechanics and the distinction between solid, liquids and gases.
12.To study Fluid properties.
13.To study Fluid movement.
14.To study Equation of continuity.
15 –To study Energy equation and its applications.
16 –To study Heat transfer in the stable state by connecting through the walls

57. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

58. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1+2	**4**	Understanding and Comprehension	**Introduction (Vibration of freedom, D3 –Enablin to pass professio organized by local undamped free**	Discussion strate	Oral and written test
3+4+5	6	Understanding and Comprehension	**Damped free vibration for single degree of freedom system**	Discussion strate	Oral and written test
6+7	4	Understanding and Comprehension	**Damped free vibration for two degree of freedom system**	Discussion strate	Oral and written test
8+9	4	Understanding and Comprehension	**Harmonically forced vibration for single**	Discussion strate	Oral and written test

			degree of freedom system		
10	4	Understanding and Comprehension	**Introduction (temperature,pressure,heat ,energy, work, enthalpy, and their**	Discussion strate	Oral and written test
11+12	4	Understanding and Comprehension	**The first law of thermodynamics and its application**	Discussion strate	Oral and written test
13+14+	6	Understanding and Comprehension	**The second law of thermodynamics and its application on closed and open system**	Discussion strate	Oral and written test
16	2	Understanding and Comprehension	**Cycle**	Discussion strate	Oral and written test
17+18	4	Understanding and Comprehension	**Otto , Diesel and Brighton cycle**	Discussion strate	Oral and written test
19+20	4	Understanding and Comprehension	**Fuels and combustion**	Discussion strate	Oral and written test
21+22	4	Understanding and Comprehension	**Fluid properties, Fluid static's**	Discussion strate	Oral and written test
23+24	4	Understanding and Comprehension	**Fluid flow , fluid Measurements**	Discussion strate	Oral and written test
25+26	4	Understanding and Comprehension	**Turbines (impulse, fracice and reaction) centrifugal and axial pumps)**	Discussion strate	Oral and written test
27+28	4	Understanding and Comprehension	**Viscous effect**	Discussion strate	Oral and written test
29+30	4	Understanding and Comprehension	**Steady state heat transfer by conduction(in plane walls, Heat transfer conduction (simple approach**	Discussion strate	Oral and written test

59. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

60. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**1**- Engineers Dynamics , J.L.MERIAM I L.G.KRAIGE 2-Thermodynamics an engineering approach Yunus A cengel Michael A boles 3-Fundamentals of thermodynamics Eighth edition, Sonntag ,Borgnakke 4--Fluid mechanics Frank M. White
Main references (sources)	1- Engineers Dynamics , J.L.MERIAM I L.G.KRAIGE 2-Thermodynamics an engineering approach Yunus A cengel Michael A boles 3-Fundamentals of thermodynamics Eighth edition, Sonntag ,Borgnakke 4-Fluid mechanics Frank M. White
Recommended books and references (scientific journals, reports…)	Thermodynamics an engineering approach Yunus cengel Michael A boles
Electronic References, Websites	Browse the Google network using the desired subject key

Course Description Form

61. Course Name:
AC Machines
62. Course Code:
EET303
63. Semester / Year:
Third Year
64. Description Preparation Date:
10/2/2024
65.Available Attendance Forms:
Theoretical and Practical (6) hours per week
66.Number of Credit Hours (Total) / Number of Units (Total)
180 hours (6 hours * 30 lectures per week)
67. Course administrator's name (mention all, if more than one name)
Name: Karrar Saad Faraj Email: mkarar1994@ almamonuc.edu.iq

68. Course Objectives

Course Objectives	**General goal //** • **Giving the student an advanced scientific base on machines to enable him work in this field with high efficiency and increase his knowledge of types machines.** **Special (Behavioral) goals //** • **Training students on preparing and writing scientific and research reports** • **Knowing how to follow scientific developments in the field of controll electrical machines and applying them to reality.**

69. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

70. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	6	Understanding and Comprehensio n	Basic construction of electrical machines.	Discussion strategy	Oral and written test
2nd	6	Understanding and Comprehensio n	Theory of an ideal transformer.	Discussion strategy	Oral and written test
3rd,4th	6	Understanding and Comprehensio n	Practical transformer.	Discussion strategy	Oral and written test
5th, 6th	6	Understanding and Comprehensio n	Equivalent circuit of a loaded transformer.	Discussion strategy	Oral and written test
7th	6	Understanding and Comprehensio n	Transformer tests.	Discussion strategy	Oral and written test
8th	6	Understanding and Comprehensio n	Efficiency of a transformer	Discussion strategy	Oral and written test
9th	6	Understanding and Comprehensio	Parallel operation of single-phase transformer.	Discussion strategy	Oral and written test

		n			
10th,11th	6	Understanding and Comprehension	Three-phase transformer.	Discussion strategy	Oral and written test
12th	6	Understanding and Comprehension	Three-phase induction motors.	Discussion strategy	Oral and written test
13th	6	Understanding and Comprehension	Equivalent circuit of induction motor.	Discussion strategy	Oral and written test
14th	6	Understanding and Comprehension	Power relations.	Discussion strategy	Oral and written test
15th ,16th	6	Understanding and Comprehension	Methods of starting of induction motors.	Discussion strategy	Oral and written test
17th	6	Understanding and Comprehension	Induction motor tests.	Discussion strategy	Oral and written test
18th	6	Understanding and Comprehension	Speed control of induction motors.	Discussion strategy	Oral and written test
19th, 20th	6	Understanding and Comprehension	Single-phase induction motors.	Discussion strategy	Oral and written test
21th	6	Understanding and Comprehension	Alternators	Discussion strategy	Oral and written test
22th, 23th	6	Understanding and Comprehension	Methods of determination of voltage regulation.	Discussion strategy	Oral and written test
24th , 25th	6	Understanding and Comprehension	Parallel operation of alternators.	Discussion strategy	Oral and written test
26th	6	Understanding and Comprehension	Synchronous motor.	Discussion strategy	Oral and written test
27th	6	Understanding and Comprehension	Effect of changing field excitation at constant load.	Discussion strategy	Oral and written test
28th	6	Understanding and Comprehension	Power relations.	Discussion strategy	Oral and written test
29th	6	Understanding and Comprehension	V curves for Synchronous motor.	Discussion strategy	Oral and written test
30th	6	Understanding and Comprehension	Hunting.	Discussion strategy	Oral and written test

71. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

72. Learning and Teaching Resources

Required textbooks (curricular boo if any)	Lectures by Mr. Karrar Saad Faraj
Main references (sources)	V.K.Mehata principle of electrical machine
Recommended books and references (scientific journals, reports…)	B.L.THERAJA Electrical machine technology
Electronic References, Websites	IEEE sites Browse the Google network using the desired subject key

Course Description Form

73. Course Name:
computer applications3
74. Course Code:
MME301
75. Semester / Year:
Third Year
76. Description Preparation Date:
12−2−2024
77.Available Attendance Forms:
Theoretical and Practical (3) hours per week
78.Number of Credit Hours (Total) / Number of Units (Total)
3 Hours / 4 Units
79. Course administrator's name (mention all, if more than one name)
Name: Zaid Abdulkareem Hussein Email: zaid.a.hussein@almamonuc.edu.iq

80. Course Objectives

Course Objectives	**General goal //** • **Identify and learn the MATLAB program** **Special (Behavioral) goals //** • **Dealing with matrices and vectors** • **Solve polynomial problems and linear equations** • **How to use conditional and recursive sentences** • **Input and output statements** • **Functions and subprograms** • **Graphs**

81. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

82. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name		
1	3	Understanding Comprehension	**Get to know the program interf and the applications used**	Discussion strategy	Oral and written test
2	3	Understanding and Comprehension	**Mathematical functions, Logical Operators, Relational**	Discussion strategy	Oral and written test
3	3	Understanding Comprehension	**Matrix operations, transpose and inverse of Matrix**	Discussion strategy	Oral and written test
4-5	3	Understanding and Comprehension	**manipulating polynomials, derivatives roots, eigen values**	Discussion strategy	Oral and written test
6-7	3	Understanding and Comprehension	**Solve System of Linear Equations by Gauss Elimination Method**	Discussion strategy	Oral and written test
8-9-10	3	Understanding and Comprehension	**Create in an M-file, function calling in MATLAB Programming with MATTAB, Use of Built-in Functions, Input Output, Structured Programming, Nesting and Indentation**	Discussion strategy	Oral and written test
11	3	Understanding and	**Dealing with Errors and Pitfalls** .	Discussion	Oral and written test

		Comprehension	**Syntax Errors. Incompatible vector sizes. Name hiding. Logic and Rounding Error.**	strategy	
12-13	3	Understanding and Comprehension	**Graphics** **two-dimensions plots, Log-log and semi-log plots, Histograms plots.** **Linear Regression, Curve fitting**	Discussion strategy	Oral and written test
14-15-	3	Understanding and Comprehension	**Functions: if, else, else if, while, for, switch, break** **Loop function: for-next ,do-while…end**	Discussion strategy	Oral and written test
17-18-19-26	3	Understanding and Comprehension	**One and two dimensions** **Interpolation by algebraic polynomials** **Roots Finding of Nonlinear Equations (Bisection and Newton Raphson method**.)	Discussion strategy	Oral and written test
20-21-22-	3	Understanding and Comprehension	**Numerical Integration by Trapezoidal Rule and Simpson's Rule**	Discussion strategy	Oral and written test
23-24-25-	3	Understanding and Comprehension	**Ordinary differential equations (Numerical Solutions using Modified Euler and Runge Kutta Methods(** **Calculate the Laplace Transform and inverse Laplace Transform**	Discussion strategy	Oral and written test
27-28 29-30	3	Understanding Comprehension	**What Is the Optimization Toolbox? Unconstrained and constrained Optimization. Multi-objective Optimization. Large-Scale Algorithms**	Discussion strategy	Oral and written test

83. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

84. Learning and Teaching Resources

Main references (sources)	MATLAB for engineers, Holly Moore, Pearson Publishing, 2009.
Recommended books and references (scientific journals, reports…)	Matlab4engineers.com
Electronic References, Websites	www.MathWorks.com sites Browse the Google network using the desired sub key

Course Description Form

1. Course Name:
Digital controllers and microprocessors
2. Course Code:
EET305
3. Semester / Year:
Third Year
4. Description Preparation Date:
2024/2/11
5. Available Attendance Forms:
Theoretical and Practical (4) hours per week
6. Number of Credit Hours (Total) / Number of Units (Total)
120 hours (4 hours * 12 lectures per week)
7. Course administrator's name (mention all, if more than one name)
Name: hussam asper Email: Housam.a.asper@almamonuc.edu.iq

8. Course Objectives	
Course Objectives	**General goal //** **Training students on the basics of how microcontrollers work.** **Special (Behavioral) goals //** **Building logic circuits and learning about microcomputers (its parts, programming and applications).**

9. Teaching and Learning Strategies	
Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy. Combining different strategies

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	**4**	Understanding and Comprehension	**Introduction to microcomputer, Microprocessor comparison with Process controller, introduction About the microprocessor and its basic design.**	Discussion strategy	Oral and written test
2	**4**	Understanding and Comprehension	**Microprocessor architecture and its programming form.**	Discussion strategy	Oral and written test
3	**4**	Understanding and Comprehension	**Addressing phases when writing a program.**	Discussion strategy	Oral and written test
4	**4**	Understanding and Comprehension	**Instructions group**	Discussion strategy	Oral and written test
5-6-7	**4**	Understanding and Comprehension	**Microprocessor connection with Surrounding devices and commands Input and output.**	Discussion strategy	Oral and written test
8	**4**	Understanding and Comprehension	**Introduction to process controllers, their types, and applications.**	Discussion strategy	Oral and written test

9	**4**	Understanding and Comprehension	**Process controller architecture**	Discussion strategy	Oral and written test
10	**4**	Understanding and Comprehension	**Introduction to development tools programming**	Discussion strategy	Oral and written test
11	**4**	Understanding and Comprehension	**Introduction to programming and applications on her**	Discussion strategy	Oral and written test
12–13	**4**	Understanding and Comprehension	**Connecting ports to the process controller**	Discussion strategy	Oral and written test
14–15	**4**	Understanding and Comprehension	**Advanced software applications**	Discussion strategy	Oral and written test
16	**4**	Understanding and Comprehension	**Introduction to the logical ruler The programmer**	Discussion strategy	Oral and written test
17	**4**	Understanding and Comprehension	**Operations and processing capacity for the ruler Programmed logic**	Discussion strategy	Oral and written test
18	**4**	Understanding and Comprehension	**Memory system and ports Input and output**	Discussion strategy	Oral and written test
19	**4**	Understanding and Comprehension	**Input and output system Logical**	Discussion strategy	Oral and written test
20	**4**	Understanding and Comprehension	**Input and output system Analogue**	Discussion strategy	Oral and written test
21	**4**	Understanding and Comprehension	**Special tasks for**	Discussion strategy	Oral and written test

			input ports And directing		
22	**4**	Understanding and Comprehension	**Programmable logic controller programming**	Discussion strategy	Oral and written test
23	**4**	Understanding and Comprehension	**Relays and timers And counters**	Discussion strategy	Oral and written test
24	**4**	Understanding and Comprehension	**Mathematical operations and commands Data control**	Discussion strategy	Oral and written test
25-26	**4**	Understanding and Comprehension	**Complete system programming and implementation the job**	Discussion strategy	Oral and written test
27-28-29-30	**4**	Understanding and Comprehension	**Logic governor applications Industrial coder**	Discussion strategy	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	---------
Main references (sources)	Floyd "Digital Electronics" Fifth Edition 2003.
Recommended books and references (scientific journals, reports…)	Muhammad Hadi Al-Salami, "Iraqi Engineer's Guide to Electronics." And the Arduino", deposit number in the Iraqi Books and Documents House, 2008.
Electronic References, Websites	sites Browse the Google network usi the desired subject key

Course Description Form

1. Course Name:
Engineering and numerical analyses
2. Course Code:
EET306
3. Semester / Year:
third Year
4. Description Preparation Date:
05/02/2024
5. Available Attendance Forms:
Weekly (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
(45 Hr. / 6Unit)
7. Course administrator's name (mention all, if more than one name)
Name: Abd Alqader mohammed khaled Email: sagadss.a.alkader@almamonuc.edu.iq
8. Course Objectives
General goal // Teaching the student the basic topics of digital signal processing, Special (Behavioral) goals // engineering and numerical analyzes and their uses in Electrical Power Systems
9. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy.

10. Course Structure

Week	Hour	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

	s				
1	**3**	Understanding and Comprehens	**First & second order D.E.**	Discussion strategy	Oral and written test
2-4	**9**	Understanding and Comprehens	**Fourier seriers andFou transform**	Discussion strategy	Oral and written test
5-7	**9**	Understanding and Comprehens	**Laplace transfor**	Discussion strategy	Oral and written test
8	**3**	Understanding and Comprehens	**Errors**	Discussion strategy	Oral and written test
9-11	**9**	Understanding and Comprehens	**Matrx operations**	Discussion strategy	Oral and written test
12-14	**9**	Understanding and Comprehens	**Root finding**	Discussion strategy	Oral and written test
15-17	**9**	Understanding and Comprehens	**Interpolation&curve fitting**	Discussion strategy	Oral and written test
18-20	**9**	Understanding and Comprehens	**Numerical**	Discussion strategy	Oral and written test
21-24	**12**	Understanding and Comprehens	**Differentiation &**	Discussion strategy	Oral and written test
25-27	**9**	Understanding and Comprehens	**Integration**	Discussion strategy	Oral and written test
28-30	**9**	Understanding and Comprehens	**Initial value problem**	Discussion strategy	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Advansed Engineering Mathematics Numerical Analysis
Main references (sources)	Differential Equations & Linear Algebra Stephen W. Goode
Recommended books and references (scientific journals, reports…)	Schaum's Outline of Theory and Problems of Laplace Transform
Electronic References, Websites	sites Browse the Google network usi the desired subject key

Course Description Form

1. Course Name:	
Power electronics	
2. Course Code:	
EET302	
3. Semester / Year:	
third Year	
4. Description Preparation Date:	
05/02/2024	
5. Available Attendance Forms:	
Weekly (theoretical + practical)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
(180 Hr. / 9Unit)	
7. Course administrator's name (mention all, if more than one name)	
Name: mrtth hasen Email: mrtth.h@almamonuc.edu.iq	
8. Course Objectives	
General goal // Preparing an engineer capable of designing, implementing and maintaining electrical systems. Special (Behavioral) goals // He has a good knowledge in the design of machines and control panels. Also, He h experience in the methods of manufacturing electronic boards and protection devices in power systems,	
9. Teaching and Learning Strategies	
Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Understanding and Comprehension	**Introduction to po electronics.**	Discussion strategy	Oral and written test
2-4	9	Understanding and Comprehension	**Thyristor fundamental application. .**	Discussion strategy	Oral and written test
5-7	9	Understanding and Comprehension	**Thyristors family.**	Discussion strategy	Oral and written test
8	3	Understanding and Comprehension	**Thyristor ratings.**	Discussion strategy	Oral and written test
9-11	9	Understanding and Comprehension	**AC to DC converters**	Discussion strategy	Oral and written test
12-14	9	Understanding and Comprehension	**.**	Discussion strategy	Oral and written test
15-17	9	Understanding and Comprehension	**Introduction to po electronics.**	Discussion strategy	Oral and written test
18-20	9	Understanding and Comprehension	**Thyristor fundamental application. .**	Discussion strategy	Oral and written test
21-24	12	Understanding and Comprehension	**Thyristors family.**	Discussion strategy	Oral and written test
25-27	9	Understanding and Comprehension	**Thyristor ratings.**	Discussion strategy	Oral and written test
28-30	9	Understanding and Comprehension	**AC to DC converters**	Discussion strategy	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Tota
10	10	10	10	10	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	POWER ELECTRONIC DEVICE LANDER
Main references (sources)	POWER ELECTRONIC DRIVE HAROON
Recommended books and references (scientific journals, reports…)	Internet sites and library
Electronic References, Websites	sites Browse the Google network usi the desired subject key

Course Description Form

1. Course Name:	
Analysis of electrical control systems	
2. Course Code:	
EET405	
3. Semester / Year:	
fourth Year	
4. Description Preparation Date:	
11/2/2024	
5. Available Attendance Forms:	
Weekly (theoretical + practical)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
(120 Hr. / 6Unit)	
7. Course administrator's name (mention all, if more than one name)	
Name: Bahaulddin Mkhaiber Rija Email: engbaha.b.maghbeer@almamonuc.edu.iq	
8. Course Objectives	
Course Objectives	**General goal //** **During the school year, the student learns an idea about control systems and their types, in addition to electrical circuits.** **Special (Behavioral) goals //** **Learn and understand the error rate and its stability.** **Learn and understand the foundations of command and control systems.** **Learn and understand the foundations of establishing a control system**
9. Teaching and Learning Strategies	
Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	12	Understanding and Comprehension	Introduction to Control System	Discussion strategy	Oral and written test
2	12	Understanding and Comprehension	Transfer Function.	Discussion strategy	Oral and written test
3	12	Understanding and Comprehension	Laplace transform	Discussion strategy	Oral and written test
4	12	Understanding and Comprehension	Inverse of Laplace Transform	Discussion strategy	Oral and written test
5	12	Understanding and Comprehension	Modeling & Transfer Function	Discussion strategy	Oral and written test
6	12	Understanding and Comprehension	Reduction of Block Diagram	Discussion strategy	Oral and written test
7	12	Understanding and Comprehension	Time Domain Analysis.	Discussion strategy	Oral and written test
8	12	Understanding and Comprehension	Mason Gain Formula	Discussion strategy	Oral and written test
9	12	Understanding and Comprehension	Types of Controllers	Discussion strategy	Oral and written test
10	12	Understanding and Comprehension	State space Representations	Discussion strategy	Oral and written test
11	12	Understanding and Comprehension	First &Second Order systems	Discussion strategy	Oral and written test
12	12	Understanding and Comprehension	Operational Amplifiers	Discussion strategy	Oral and written test
13	12	Understanding and Comprehension	Transient & Steady state Response	Discussion strategy	Oral and written test
14	12	Understanding and Comprehension	Step &Impulse	Discussion strategy	Oral and written test

			Response		
15	12	Understanding and Comprehension	Steady state Errors	Discussion strategy	Oral and written test
16	12	Understanding and Comprehension	Routh Stability Criterion	Discussion strategy	Oral and written test
17	12	Understanding and Comprehension	Root Locus Method.	Discussion strategy	Oral and written test
18	12	Understanding and Comprehension	Root Locus Method.	Discussion strategy	Oral and written test
19	12	Understanding and Comprehension	Root Locus Method.	Discussion strategy	Oral and written test
20	12	Understanding and Comprehension	Polar Plots	Discussion strategy	Oral and written test
21	12	Understanding and Comprehension	Polar Plots	Discussion strategy	Oral and written test
22	12	Understanding and Comprehension	Polar Plots	Discussion strategy	Oral and written test
23	12	Understanding and Comprehension	Nyquist Stability	Discussion strategy	Oral and written test
24	12	Understanding and Comprehension	Frequency Domai Analysis.	Discussion strategy	Oral and written test
25	12	Understanding and Comprehension	Compensator Lead Network	Discussion strategy	Oral and written test
26	12	Understanding and Comprehension	Compensator Lag Network	Discussion strategy	Oral and written test
27	12	Understanding and Comprehension	PID Controllers.	Discussion strategy	Oral and written test
28	12	Understanding and Comprehension	State Space Theory.	Discussion strategy	Oral and written test
29	12	Understanding and Comprehension	Bode Diagrams	Discussion strategy	Oral and written test
30	12	Understanding and Comprehension	Lag – Lead Compensation	Discussion strategy	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Ogata, Modern control engineering, 5. ed., Internat. ed. Boston: Pearson, 2010
Main references (sources)	
Recommended books and references (scientific journals, reports…)	D. Xue, D. P. Atherton, and Y. Chen, Linear feedb control. Philadelphia, PA: SIAM, 2007. E. Umez-Eronini, System dynamics and control. Pac Grove, CA: PWS Publ, 1999 C. L. Phillips and J. Parr, Feedback control systems, 5. Internat. ed. Boston; Munich : Pearson, 2011. N. Nise, Control Systems Engineering, 6th ed. New Yo NY: John Wiley & Sons, Inc., 2000
Electronic References, Websites	sites Browse the Google network using desired subject key

Course Description Form

85. Course Name:	
High pressure techniques	
86. Course Code:	
EET406	
87. Semester / Year:	
fourth Year	
88. Description Preparation Date:	
11 / 2 / 2024	
89.Available Attendance Forms:	
Weekly (theoretical + practical)	
90.Number of Credit Hours (Total) / Number of Units (Total)	
(120 Hr. / 6Unit)	
91. Course administrator's name (mention all, if more than one name)	
Name: jamal Saleem abdulraheem Email: jamal.s.alibadi@almamonuc.edu.iq	
92. Course Objectives	
General goal //	…..
Teaching the student the Objectives of the study material	…..
Special (Behavioral) goals //	

The program aims to study high pressure techniques theoretically and practically	

93. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy.

94. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding and Comprehension	introduction	Discussion strategy	Oral and written test
2-3	2	Understanding and Comprehension	Insulation Materials	Discussion strategy	Oral and written test
4-5	2	Understanding and Comprehension	High Voltage Generation	Discussion strategy	Oral and written test
6	2	Understanding and Comprehension	Series Resonant Circuits	Discussion strategy	Oral and written test
7	2	Understanding and Comprehension	DC voltage	Discussion strategy	Oral and written test
8	2	Understanding and Comprehension	Alternating voltage	Discussion strategy	Oral and written test
9	2	Understanding and Comprehension	Impulse voltage	Discussion strategy	Oral and written test
10-11	2	Understanding and Comprehension	Measurement of High Voltages	Discussion strategy	Oral and written test
12	2	Understanding and Comprehension	Electrostatic Voltmeter	Discussion strategy	Oral and written test
13-14	2	Understanding and Comprehension	Voltage Dividers	Discussion strategy	Oral and written test
15-16	2	Understanding and Comprehension	Peak Voltage Measurement	Discussion strategy	Oral and written test
17	2	Understanding and Comprehension	High Voltage Test	Discussion strategy	Oral and written test
18-19	2	Understanding and Comprehension	Sample Test	Discussion strategy	Oral and written test

20	**2**	Understanding and Comprehension	Routine Test	Discussion strategy	Oral and written test
21–22	**2**	Understanding and Comprehension	Type test	Discussion strategy	Oral and written test
23	**2**	Understanding and Comprehension	All topics related to the curriculum	Discussion strategy	Oral and written test
24–25	**2**	Understanding and Comprehension	Insulation Materials	Discussion strategy	Oral and written test
26–27	**2**	Understanding and Comprehension	Series Resonant Circuits	Discussion strategy	Oral and written test
28–30	**2**	Understanding and Comprehension	Alternating voltage	Discussion strategy	Oral and written test

95. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

96. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Advansed Engineering in High pressu techniques
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	sites Browse the Google network usi the desired subject key

Course Description Form

1. Course Name:
Modeling and Simulation
2. Course Code:
MME401
3. Semester / Year:
fourth Year
4. Description Preparation Date:
14−2−2024
5. Available Attendance Forms:
Weekly (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
3 HOURS / 4 UNITS
7. Course administrator's name (mention all, if more than one name)
Name: Zaid Abdulkareem Hussein Email: zaid.a.hussein@almamonuc.edu.iq
8. Course Objectives

Course Objectives	**General goal //** **This material aims to help the student to model power systems.** **Special (Behavioral) goals //** **Electrical methods to know their behavior under different influences.** **using MATLAB**

9. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Understanding and Comprehension	**tools of simulation, approaches simulation, planning of calculation plant simulation.**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Modeling of permanent magnet motor (PMDC).**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Modeling of permanent magnet motor (PMDC) WITH PID**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Modeling of separately excited motor IN MATLAM**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Modeling of separately excited DC motor. WITH PID IN MATLAB**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Modeling of shunt DC motor IN MATLAB**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Modeling of shunt DC motor with PID controller WITH PID IN MATLAB**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Modeling of series DC motor IN MATLAB**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Modeling of series DC motor with PID controller IN MATLAB**	Discussion strate	Oral and written test
		Understanding and Comprehension	**three-winding distribution IN MATLAB**	Discussion strate	Oral and written test
12,1 14,1	3	Understanding and Comprehension	**Speed control of multiple (MASTER/SLAVES) IN MATLAB**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Simulation of power in single-phase**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Simulation of power factor correction.**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Simulation of short transmission line model.**	Discussion strate	Oral and written test
	3	Understanding and Comprehension	**Simulation of medium transmission line model.**	Discussion strate	Oral and written test

	3	Understanding and Comprehension	**Simulation of long transmission line model.**	Discussion strate	Oral and written test
21,22 23,24 5	3	Understanding and Comprehension	**Basic generator control loops: modeling of Load frequency control (LFC).**	Discussion strate	Oral and written test
26,27 28,29	3	Understanding and Comprehension	**Basic generator control loops: modeling of Automatic Generation Control (AGC).**	Discussion strate	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books any)	Simulation Modeling and Analysis
Main references (sources)	**A.M.Law Kelton, "Simulation Modeling and Analysis" , 2006, ISBN-10: 0073294411**
Recommended books and references (scientific journals, reports…)	**W.David Kelton, "Simulation with Arena", 2006 , ISBN-10: 0073259896**
Electronic References, Websites	sites Browse the Google network using the desired sub key

Course Description Form

1. Course Name:
Machine drive and special machine
2. Course Code:
EET402
3. Semester / Year:
fourth Year
4. Description Preparation Date:
11/2/2024
5. Available Attendance Forms:
Weekly (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)

(150 Hr. / 8Unit)

7. Course administrator's name (mention all, if more than one name)

Name: Bahaulddin Mkhaiber Rija
Email: engbaha724@almamonuc.edu.iq

8. Course Objectives

Course Objectives	**General goal //** **Teaching the student the basic Electrical power electronics an Electrical machines and Special machines** **Special (Behavioral) goals //** **To enable him to work with high professionalism with the con boards of electrical stations and production plants and design con systems.for that**

9. Teaching and Learning Strategies

Strategy	Brainstorming strategy Modeling learning strategy Group work or cooperative learning strategy Discussion strategy Project strategy A strategy for problem solving or problem-based learning Story strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1,2	6	Understanding and Comprehension	AC voltage controllers: Single phase controllers	Discussion strategy	Oral and written test
3,4	6	Understanding Comprehension	AC voltage controllers: Three phase controllers.	Discussion strategy	Oral and written test
5	6	Understanding Comprehension	Single phase	Discussion strategy	Oral and written test

			Cycloconverters		
6	6	Understanding Comprehension	Three phase controllers Cycloconverters	Discussion strategy	Oral and written test
7	6	Understanding Comprehension	DC motors drive.	Discussion strategy	Oral and written test
8,9		Understanding Comprehension	Reduction of Output harmonic	Discussion strategy	Oral and written test
10,11	6	Understanding Comprehension	Induction motors drive	Discussion strategy	Oral and written test
12,13	6	Understanding Comprehension	cloconverters motor drive	Discussion strategy	Oral and written test
14,15	6	Understanding Comprehension	Resonant pulse inverter	Discussion strategy	Oral and written test
16,17	6	Understanding Comprehension	Multilevel inverters	Discussion strategy	Oral and written test
18,19	6	Understanding Comprehension	DC power supplies.	Discussion strategy	Oral and written test
20,21	6	Understanding Comprehension	AC power supplies	Discussion strategy	Oral and written test
22,23 24		Understanding Comprehension	Programmable logic devices	Discussion strategy	Oral and written test
25	6	Understanding Comprehension	Permanent magnetic motor	Discussion strategy	Oral and written test
26	6	Understanding Comprehension	Stepper motor	Discussion strategy	Oral and written test
27	6	Understanding Comprehension	Reluctance motor	Discussion strategy	Oral and written test
28	6	Understanding Comprehension	Brushless DC motor	Discussion strategy	Oral and written test
29	6	Understanding Comprehension	Hysterics motor	Discussion strategy	Oral and written test
30	6	Understanding Comprehension	Linear induction motor	Discussion strategy	Oral and written test

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

Daily Preparation	Daily Exam	Oral Exam	Report	Monthly Exam	Written Exam	Total
10	10	10	10	10	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Power electronics circuits, devices, and applications by Muhammad harun rashid
Main references (sources)	
Recommended books and references (scientific journals, reports…)	1. Power electronics: converters, applications, and design by ned mohan 2. A textbook of electrical technology theraja
Electronic References, Websites	sites Browse the Google network using the desired subject key

Course Description Form

1. Course Name:	
Machine drive and special machine	
2. Course Code:	
EET402	
3. Semester / Year:	
fourth Year	
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11/2/2024	
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Weekly (theoretical + practical)	
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(150 Hr. / 8Unit)	
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Name: Bahaulddin Mkhaiber Rija Email: engbaha724@almamonuc.edu.iq	
8. Course Objectives	
Course Objectives	**General goal //** **Teaching the student the basic Electrical power electronics an Electrical machines and Special machines** **Special (Behavioral) goals //**

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10. Course Structure

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3,4	6	Understanding Comprehension	AC voltage controllers: Three phase controllers.	Discussion strategy	Oral and written test
5	6	Understanding Comprehension	Single phase Cycloconverters	Discussion strategy	Oral and written test
6	6	Understanding Comprehension	Three phase controllers Cycloconverters	Discussion strategy	Oral and written test
7	6	Understanding Comprehension	DC motors drive.	Discussion strategy	Oral and written test
8,9		Understanding Comprehension	Reduction of Output harmonic	Discussion strategy	Oral and written test
10,11	6	Understanding Comprehension	Induction motors drive	Discussion strategy	Oral and written test
12,13	6	Understanding Comprehension	cloconverters	Discussion strategy	Oral and written test

			motor drive		
14,15	6	Understanding Comprehension	Resonant pulse inverter	Discussion strategy	Oral and written test
16,17	6	Understanding Comprehension	Multilevel inverters	Discussion strategy	Oral and written test
18,19	6	Understanding Comprehension	DC power supplies.	Discussion strategy	Oral and written test
20,21	6	Understanding Comprehension	AC power supplies	Discussion strategy	Oral and written test
22,23 24		Understanding Comprehension	Programmable logic devices	Discussion strategy	Oral and written test
25	6	Understanding Comprehension	Permanent magnetic motor	Discussion strategy	Oral and written test
26	6	Understanding Comprehension	Stepper motor	Discussion strategy	Oral and written test
27	6	Understanding Comprehension	Reluctance motor	Discussion strategy	Oral and written test
28	6	Understanding Comprehension	Brushless DC motor	Discussion strategy	Oral and written test
29	6	Understanding Comprehension	Hysterics motor	Discussion strategy	Oral and written test
30	6	Understanding Comprehension	Linear induction motor	Discussion strategy	Oral and written test

11. Course Evaluation

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