Ministry of Higher Education and Research
Scientific Supervision and Evaluation Authority
Quality Assurance and Academic Accreditation Department
Department of International Academic Accreditation

Academic program description form for colleges
2020-2021

University name: Anbar University
College name: Engineering
Scientific Department: Electrical Engineering
File filling date: 15/11/2020

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The Director of the Division Quality Assurance and University Performance	The Associate Dean for Scientific Affairs	The Dean of the College
Signature 22/11/2020	**Signature 22/11/2020**	**Signature 22/11/2020**

Director of Quality Assurance and University Performance
Signature:
Date October 27, 2020 AD

Academic Program Description Form

Reviewing the performance of higher education institutions
((review of the academic program))

This description of the academic program provides a brief summary of the most important characteristics of the program and the learning outcomes expected of the students to achieve, demonstrating whether he/she has made maximum use of the available opportunities. It is accompanied by a description of each course within the program

The educational institution	University of Anbar
University Department/Center	College of Engineering
Academic Program	Electrical Engineering Department
The name of the final certificate	Bachelor of Electrical Engineering
The academic system	Semester
Accredited Accreditation Program	N/A
external influences	N/A
The date of preparing the description 10/14/2020 AD	15/11/2020 AD

Academic Program Objectives: The academic program in the Electrical Engineering Department aims to:
1.Building the student scientifically and practically and qualifying him in the field of electrical engineering.
2.Building and preparing the student psychologically to play his role as a reliable engineer in his field of specialization.
3.Building students who are able to compete with other engineers for job opportunities and obtain the seats required to complete postgraduate studies.
4.The possibility of applying for external tests by local, regional or international bodies for the purpose of completing study or appointment.
5.Urging the student to be creative and think about specialization projects and keep pace with the development in this field.
6.Providing students with scientific, practical and self-skills that enable them to solve practical problems and deal with them with scientific concepts.

1.Program

Credit hours and units		course name	course code	Study stage Course
experimental	theoretical			
	1	Human Rights	EE1101	First Year
	2	English I	EE1104	First Year
	1	Democracy	EE1104	First Year
	4	Calculus I	EE1201	First Year
	4	Calculus II	EE1202	First Year
	3	Physics I	EE1203	First Year

3	3	Physics II	EE1204	First Year
3	3	Computer Science	EE1205	First Year
2	4	Engineering Drawing	EE1206	First Year
3	3	Chemistry I	EE1207	First Year
	4	Fundamentals of EE I	EE1301	First Year
3	4	Fundamentals of EE II	EE1302	First Year
	3	Arabic Language	EE1104	First Year
	2	English II	EE2105	Second Year
	3	Calculus III	EE2208	Second Year
	4	Calculus IV	EE2209	Second Year
	2	Digital Techniques I	EE2304	Second Year
2	2	Digital Techniques II	EE2305	Second Year
6		EE Lab I	EE2306	Second Year
6		EE Lab II	EE2307	Second Year
	3	Fundamentals of Electronics I	EE2308	Second Year
	3	Fundamentals of Electronics II	EE2309	Second Year
	4	Electric Circuits I	EE2310	Second Year
	4	Electric Circuits II	EE2311	Second Year
3	1	Computer Programming	EE2312	Second Year
	3	DC Machines I	EE2313	Second Year
	3	DC Machines II	EE2314	Second Year
	3	Electro-Magnetics I	EE2315	Second Year
	3	Electro-Magnetics II	EE2316	Second Year
	2	English III	EE3106 E	Third Year
	3	Engineering Economy	EE3210	Third Year
3	3	Engineering Numerical Methods	EE3211	Third Year
	3	Engineering statics	EE3212	Third Year
	3	Electric Power I	EE3317	Third Year
	3	Electric Power II	EE3318	Third Year
	2	Signals and Systems I	EE3319	Third Year
	2	Signals and Systems II	EE3320	Third Year
6		EE Lab III	EE3321	Third Year
6		EE Lab IV	EE3322	Third Year
	4	Computer Networks	EE3323	Third Year
	3	AC-Machines I	EE3324	Third Year
	3	AC-Machines II	EE3325	Third Year
	4	Electronics I	EE3326	Third Year
	4	Electronics II	EE3327	Third Year
	3	Analog Communications and Noise	EE3328	Third Year
	3	Digital Communications	EE3329	Fourth Year
	2	English IV	EE4107	Fourth Year
	2	Administration and Leadership skills	EE4108	Fourth Year

3		EE Lab V	EE4330	Fourth Year
3		EE Lab VI	EE4331	Fourth Year
	3	Control Theory I	EE4332	Fourth Year
	3	Control Theory II	EE4333	Fourth Year
	2	Information Theory	EE4334	Fourth Year
	3	Advanced Communications Systems	EE4335	Fourth Year
	4	Electric Power III	EE4336	Fourth Year
	4	Power Electronics	EE4337	Fourth Year
	3	Engineering Project I	EE4338	Fourth Year
	3	Engineering Project II	EE4339	Fourth Year
	3	Digital Electronics	EE4343	Fourth Year
	3	Power System Analysis	EE4342	Fourth Year
	3	Programable logic controller	EE4348	Fourth Year

1. Planning for Personal Development:
The students' personal development is planned by holding panel discussions with them and asking them for periodic reports and seminars throughout the four stages and for various topics to develop their personal development.

2. Admission criterion (setting regulations related to joining the college or institute):
Central acceptance by the Ministry of Higher Education and Scientific Research.

3. The most important sources of information about the program:
- College website.
- The department's website and e-mail.

Curriculum Skills Outline																		
Please check the boxes corresponding to the individual learning outcomes from the program being evaluated																		
Learning outcomes required from the program																		
General and Transferable Skills (or) Other skills related to employability and personal development				thinking skills				Subject-specific skills				knowledge and understanding				Basic or optional	Course Name	Course code	/ Year Level
D4	**D3**	**D2**	**D1**	**C4**	**C3**	**C2**	**C1**	**B4**	**B3**	**B2**	**B1**	**A4**	**A3**	**A2**	**A1**				
									X						**X**		Human Rights	EE1101	**First Year**
									X								English I	EE1102	
									X								English II	EE1103	**First Year**
									X								Democracy	EE1104	**First Year**
											X				**X**		Calculus I	EE1201	**First Year**

											X				X		Calculus II	EE1202	
											X				X		Physics I	EE1203	First Year
											X				X		Physics II	EE1204	
											X				X		Computer Science	EE1205	First Year
					X			X			X		X				Engineering Drawing	EE1206	
											X				X		Chemistry I	EE1207	First Year
																			First Year
																			First Year
																			First Year
					X					X	X			X	X		Fundamentals of EE I	EE1301	First Year

					X					X	X			X	X		Fundamentals of EE I	EE1302	First Year
								X		X	X			X	X		EE Lab I	EE1303	First Year
									X								Arabic Language	EE2104	Second Year
											X				X		Calculus III	EE2208	Second Year
											X				X		Calculus IV	EE2209	Second Year
					X					X	X			X	X		Digital Techniques I	EE2304	Second Year
					X					X	X			X	X		Digital Techniques II	EE1305	Second Year
								X		X	X			X	X		EE Lab II	EE2306	Second Year

							X		X	X			X	X		EE Lab III	EE2307	**Second Year**
					X				X	X			X	X		Fundamentals of Electronics I	EE2308	**Second Year**
					X				X	X			X	X		Fundamentals of Electronics II	EE2309	**Second Year**
					X				X	X			X	X		Electric Circuits I	EE2310	**Second Year**
					X				X	X			X	X		Electric Circuits II	EE2311	**Second Year**
										X				X		Computer Programming	EE2312	**Second Year**
					X				X	X			X	X		DC Machines I	EE2313	**Second Year**

					X	X				X	X	X		X	X		Electric Power II	EE3318	**Third Year**
																		Third Year
					X					X	X		X	X	X		Signals and Systems I	EE3319	**Third Year**
					X					X	X		X	X	X		Signals and Systems II	EE3320	**Third Year**
								X		X	X			X	X		EE Lab IV	EE3321	**Third Year**
								X		X	X			X	X		EE Lab V	EE3322	**Third Year**
																	Computer Networks	EE3323	**Third Year**
					X					X	X			X	X		AC-Machines I	EE3324	**Third Year**

					X					X	X			X	X		AC-Machines II	EE3325	**Third Year**
					X					X	X			X	X		Electronics I	EE3326	**Third Year**
					X					X	X			X	X		Electronics II	EE3327	**Third Year**
					X					X	X			X	X		Analog Communications and Noise	EE3328	**Third Year**
					X					X	X			X	X		Digital Communications	EE3329	**Third Year**
										X							Administration and Leadership skills	EE4106	**Fourth Year**
									X		X	X		X	X		EE Lab VI	EE4330	**Fourth Year**

									X		X	X		X	X		EE Lab VII	EE4331	**Fourth Year**
					X					X	X			X	X		Control Theory I	EE4332	**Fourth Year**
					X					X	X			X	X		Control Theory II	EE4333	**Fourth Year**
					X					X	X			X	X		Information Theory	EE4334	**Fourth Year**
					X					X	X			X	X		Advanced Communications Systems	EE4335	**Fourth Year**
					X	X				X	X	X		X	X		Electric Power III	EE4336	**Fourth Year**
					X	X				X	X	X		X	X		Power Electronics	EE4337	**Fourth Year**
					X	X	X		X	X	X	X	X	X	X		Engineering	EE4338	**Fourth Year**

																	Project I		
				X	X	X	X	X	X	X	X	X	X	X			Engineering Project II	EE4339	**Fourth Year**
				X				X	X	X			X	X			Digital Electronics	EE4344	**Fourth Year**
				X				X	X	X			X	X			Micro-Processors	EE4341	**Fourth Year**
				X				X	X	X			X	X			Antennas	EE4347	**Fourth Year**

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve.Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering
3. Course Name/Code	Human Rights/ EE1101
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	First Semester / First Year
7. Number of Credit Hours (Total)	15
8. The preparation date of this description	15/6/2021M

9. Course Objectives :

Upgrading the intellectual level of students, represented by demonstrating the importance of human rights when their application is reflected on the individual, society and the state.

10. Learning outcomes and teaching, learning and assessment methods

- Developing the student's intellectual competence in the field of rights and duties, to acquire verbal and actual ability and skill.

A. Teaching and Learning Methods

- Sudden daily tests.
- Exercises and activities in the classroom sometimes .

B. Evaluation Methods

- Attendance.
- Daily engagement.
- Tests (sometimes daily, monthly, final)

C- Thinking skills

- Work on developing the student's intellectual faculty.
- Ensuring the student's personal building at the academic level.
- Drawing ways of intellectual success, to achieve personal construction at the level (family, social, academic, professional).
- Learn the art of dealing with what happens at the aforementioned levels of personal construction.

11. Course Structure

Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	theoretical	The Universal Declaration of Human Rights and its provisions the impact of the study of human rights on the individual, society and the state	Human Rights	1	First
General questions and discussion and test	theoretical	Clarification of the meaning of right, obligation and liability - human rights guarantees before the judiciary	Human Rights	1	Second
General questions and discussion	theoretical	Human Rights Sections in Law and Sharia - Statement of the Rights of God Almighty and Ensuring Human Rights	Human Rights	1	Third
General questions and discussion	theoretical	Sections of the rights of the individual on society, including the right to protect life and to display and mind, the right to protect money and property	Human Rights	1	Fourth
General questions and discussion	theoretical	The right to equality before Sharia and the law - images of the right to equality and justice between individuals	Human Rights	1	Fifth
Monthly exam	theoretical		Human Rights	1	Sixth
Group duties	theoretical	The right to work, learn, express one's opinion and freedom of thought	Human Rights	1	Seventh

Monthly exam	theoretical	Statement of the inviolability of the home and the right of movement of the individual	Human Rights	1	Eighth
General Questions	theoretical	The rights of society over the individual, including the right to freedom of belief and life, and the right to protect presentation, work, and education	Human Rights	1	Ninth
Monthly exam	theoretical	Ensuring equality as for the law and the judiciary, the right to freedom of opinion and thought and the protection of reason	Human Rights	1	Tenth
General Questions	theoretical	Right to property protection, movement	Human Rights	1	Eleventh
Discussion and exam	theoretical	The rights of the individual over the individual, including social rights	Human Rights	1	Twelfth
General questions and discussion	theoretical	Financial rights and the importance of this in ensuring social life	Human Rights	1	Thirteenth
General questions and discussion	theoretical	Finally, emphasizing the importance of commitment to the application of human rights and its impact on the individual, society and the state.	Human Rights	1	Fourteenth
Monthly exam	theoretical		Human Rights	1	Fifteenth

12. Infrastructure	
➢ Human rights and freedoms. Prof. Dr. Mustafa Al-Zalmi. ➢ Some contemporary research published and including human rights and books concerned with the Universal Declaration of Human Rights	Required readings: ▪ Course Books ▪ Other
	Special requirements
Holding some free training courses in the field of human rights, and hosting to provide community service as much as possible.	Social services (e.g. guest lectures, vocational training and field studies)

13. Acceptance	
None	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he made the most of the available learning opportunities. It must be linked to the description of Program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	English I / EE1104
4. Programs in which he enters	
5. Available Attendance Forms	E-presence
6. Semester / Year	Second Semester / First Academic Year
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	14/6/2021
9- Course Objectives:	
A The student acquires the skill of oral communication in English.	
B Clarify the concepts and uses of academic communication with professors of other universities.	
C- The course aims to study the written English language and its impact on academic study.	

D- The course aims to give the student a new background that he can benefit from when doing a project or research regarding his academic specialization.

10. Learning outcomes and teaching, learning and assessment methods

A. Knowledge and understanding

- Understand the basic principles of using tenses and some common phrases.
- The study of English is a study related to what the student needs in his academic career.
- Solve sample questions for some standardized exams
- Work on the Lord of thecurriculum vocabulary prescribed with the reality of life.

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Conducting daily sudden and weekly tests continuously.
- Assigning students to exercises and activities in the classroom.
- Work on guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

- Participation in the classroom.
- Submission of activities
- Quarterly and final exams and activities.

C- Thinking skills

C1- Developing the student's ability to work on performing duties and delivering them on time .

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

C4- Opening the way for the student to provide what he sees regarding the material.

Teaching and learning methods

- Exercises
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1 - Developing the student's ability to deal with academic curricula in English.
D2- Developing the student's ability to deal with the Internet.
D3- Developing the student's ability to deal with multiple means.
D4- Developing the student's ability to dialogue and discussion.

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	3	Simple present tense, Present perfect tense, and Present continuous tense	Explanation of the past tense of all kinds to solve complete oral and written questions	Theoretical + Discussion	General questions and discussion
Second	3	Formation of questions: basic rules, Giving orders and instructions in English, How to make a request or order sound more polite?	How the question works and how to ask something from others	Theoretical + Discussion	General written and oral questions

					and discussion
Third	3	Vocabulary1, Writing (basic rules for writing a paragraph)	Give vocabulary in its various forms and teach them how to pronounce and use it. Give the basic rules for writing a paragraph in English	Theoretical + Discussion	discussion
Fourth	3	Writing Unformed letter	Explain how to write a letter	Theoretical + Discussion	Exam I am general questions and discussion
Fifth	3	Reading (3 topics)	Explain external parts and solve related questions	Theoretical + Discussion	General questions and discussion or exam I
Sixth	3	Simple past and past continuous, The past perfect tense, using some likeness and difference phrases	Explain the present tense of all kinds with the solution of complete oral and written questions in **addition to the use of similarities and differences in English**	Theoretical + Discussion	General questions and discussion
Seventh	3	Vocabulary and Writing (academic writing to describe a bar graph)	Give vocabulary in its various forms and teach them how to pronounce and use it. Explain the process of describing the bar graph in writing	Theoretical + Discussion	Discussion with to give collective duties
Eighth	3	Reading (an essay), Simple future, Future continuous and future perfect tense	Explain the future tense of all kinds with the solution of complete oral and written questions **in addition** to reading an article and	Theoretical + Discussion	Monthly exam

			solving related questions		
Ninth	3	Passive voice structures with infinitives, using To, in order to, so as to, and Vocabulary	Explain how to form the unknown and use some phrases grammatically in addition to giving vocabulary in various forms and teaching them how to pronounce and use them	Theoretical + Discussion	General Questions
Tenth	3	Writing (academic writing to describe a pie chart and Line graph)	Explain how to write an academic essay describing a line graph and statistical pie chart	Theoretical + Discussion	General questions and discussion
Eleventh	3	Reading (3 essays related to Electrical Engineering), Grammar (using phrases :Before, across and in front of, almost , because and so), Vocabulary	Read and solve articles related to electrical engineering. With an explanation of the uses of biting phrases orally and in writing in addition tothe weekly singular	Theoretical + Discussion	General Questions
Twelfth	3	Writing a formal Letter, Vocabulary	Give an introduction to radars, their types, range and accuracy	Theoretical + Discussion	General questions and discussion
Thirteenth	3	Writing a summary, Reading	Explain the basics of writing a summary of articles with solving the questions of some articles	Theoretical + Discussion	General Questions
Fourteenth	3	IELTS Writing tutorials	**Give examples of some standardized exam models regarding the work of an essay describing graphs**	Theoretical + Discussion	Group Duties+ discussion
Fifteenth	3	IELTS Reading tutorials	**Give examples of some standardized exam models related to reading articles and**	Theoretical + Discussion	Monthly exam

			solving related questions		

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	▪ **English Lectures by Shireen Ibrahim Mohammed** ▪ **Understanding and Using English Grammar- 4th Edition by Betty S. Azar, Rachel S. Koch, and Stacy A. Hagen** ▪ **IELTS official examples**
special requirements	
Social services (e.g. guest lectures , vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	***No***
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering
3. Course Name/Code	Democracy/ EE 1104
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	First semester / first academic year.
7. Number of Credit Hours (Total)	15
8. The preparation date of this description	15/6/2021M
9. Course Objectives :	Upgrading the intellectual level of students, represented by demonstrating the importance of the concept of freedoms when its application is reflected on the individual, society and the state.

10. Learning outcomes and teaching, learning and assessment methods
➢ Developing the student's intellectual faculty in the field of freedoms and the concept of democracy, to acquire the ability and mental skill to mold words and deeds.
A. Teaching and Learning Methods
➢ Sudden daily tests. ➢ Exercises and activities in the classroom sometimes.
B. Evaluation Methods
➢ Attendance. ➢ Daily engagement. ➢ Tests (sometimes daily, monthly, final)
C- Thinking skills
➢ Work on developing the intellectual faculty of the student. ➢ Ensuring the student's personal building at the academic level. ➢ Drawing ways of intellectual success, to achieve personal construction at the level (family, social, academic, professional). ➢ Learn the art of dealing with what happens at the aforementioned levels of personal construction.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	theoretical	Clauses for preserving freedoms included in the Universal Declaration of Human Rights and the impact of a study	Freedoms and democracy	1	First
General questions and discussion and test	theoretical	Statement of the meaning of freedom and democracy, types and harshest freedoms.	Freedoms and democracy	1	Second
General questions and discussion	theoretical	Freedoms related to the material rights of the individual, including, personal freedom, freedoms	Freedoms and democracy	1	Third
General questions and discussion	theoretical	Freedom of movement, housing and ownership	Freedoms and democracy	1	Fourth
General questions and discussion	theoretical	Freedoms related to the moral rights of the individual, including	Freedoms and democracy	1	Fifth

Monthly exam	theoretical		Freedoms and democracy	1	Sixth
Group duties	theoretical	Freedom of belief, freedom of opinion and expression, and freedom of learning	Freedoms and democracy	1	Seventh
Monthly exam	theoretical	Political freedom - the culture of dialogue and its impact on proving freedom of opinion	Freedoms and democracy	1	Eighth
General Questions	theoretical	From the pictures of the heroes of enslavement to human beings and proving freedom for individuals	Freedoms and democracy	1	Ninth
Monthly exam	theoretical	Proof of women's freedom and adornment in adhering to the teachings of belief and indicating the importance of applying the principle of freedoms between individuals	Freedoms and democracy	1	Tenth
General Questions	theoretical	Commitment to the application of the principle of freedoms between peoples, the importance of commitment to	Freedoms and democracy	1	Eleventh

		the application of freedoms in its reflection on the lives of individuals			
Discussion and exam	theoretical	Individual and international community interest in the application of the principle of freedoms	Freedoms and democracy	1	Twelfth
General questions and discussion	theoretical	Rights and freedoms are interrelated principles The role of the individual, society and the state in establishing freedoms,	Freedoms and democracy	1	Thirteenth
General questions and discussion	theoretical	Negative side factors in the event that the principle of freedoms is not applied	Freedoms and democracy	1	Fourteenth
Monthly exam	theoretical		Freedoms and democracy	1	Fifteenth

13. Acceptance	
There isn't any	Prerequisites
20	Minimum number of students
100	The largest number of students
➢ Human rights and freedoms. Prof. Dr. Mustafa Al-Zalmi. ➢ Some contemporary research published and including the meaning of freedoms and democracy, and books that deal with the Universal Declaration of Human Rights to clarify the favorable side that deals with freedoms and democracy.	Required readings: ▪ Course Books ▪ Other
	Special requirements
Holding some free training courses in the field of human rights, and hosting to provide community service as much as possible.	Social services (e.g. guest lectures, vocational training and field studies)

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	Anbar University / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Calculus I / EE1201
4. Programs in which he enters	
5. Available Attendance Forms	Official Hours / E-Presence
6. Semester / Year	First semester / first academic year.
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	14/6/20 21
9- Course Objectives :	
A AThe student acquires the skill of dealing with mathematical equations and showing the concept of calculus and polar, Cartesian and cylindrical axes .	
B Clarify the methods of solving integrals and numerical sequences.	
C- The course aims to study the applications of integration in calculating the lengths of curves, areas and volumes in different coordinates. and some physical applications	
D- The course aims to give the student a new background that he can benefit from when studying differential equations	

10. Learning outcomes and teaching, learning and assessment methods

A. Knowledge and understanding

- Identify the basic concepts of goals, differential equations and methods of solving integrals .
- Give the student experience in graphs with polar coordinates.
- The student learns how to use integrals to find areas, volumes and lengths of regular objects and irregular .
- Identify sequences, convergence mechanism, divergence, series and methods of testing them.

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests .
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

A4-

Teaching and learning methods
• Exercises and sports problems • Assigning the student some group activities and duties. • Allocate a percentage of grade tofor daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments • Attending lectures and not being absent from them is evidence of the student's commitment to the system and his love for the subject
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	4	**Very**	Limits :d efinitions and its theorems	Theoretical + Discussion	General questions and discussion
Second	4	**Alignments**	Limits involving radicals, infinite functions , and V. , H. asymptote	Theoretical + Discussion	General questions and discussion or exam I
Third	4	Continuity	Continuity: definition and its theorems Derivative definition.	Theoretical + Discussion	General questions and discussion
Fourth	4	Calculus	Rule of differentiation. Chain rule, implicit differentiation higher order derivative.	Theoretical + Discussion	I'm examined.
Fifth	4	Musculoskeletal and minor endings	Applications: related rates. Maximum and minimum, concavity	Theoretical + Discussion	General questions and discussion or exam I
Sixth	4	**Drawing Functions**	Graphs of functions . Mean value, roll's theorem.	Theoretical + Discussion	General questions and discussion
Seventh	4	**Trigonometric functions**	Trigonometric function and their inverse functions	Theoretical + Discussion	General Questions
Eighth	4	**Limited and unlimited integrations**	Integration: definite and indefinite integrals	Theoretical + Discussion	Group duties
Ninth	4	**Methods of integrations**	Rule of integration	Theoretical + Discussion	General Questions
Tenth	4	Area and size	Applications on definite integral: Area. Volumes	Theoretical + Discussion	Monthly exam

Eleventh	4	Measuring Length	Applications of define integral; length of a plane curves.	Theoretical + Discussion	General Questions
Twelfth	4	Surface areas	The area of surface of revolution	Theoretical + Discussion	Discussion and exam I
Thirteenth	4	Theories	Mean value theorem, the fundamental theorem	Theoretical + Discussion	General Questions
Fourteenth	4	Logarithmic functions	The functions ln(x), exp(x) and their inverse	Theoretical + Discussion	Group Duties+ discussion
Fifteenth			Spring break	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	(1) CalculusTomas, 1990 (2) Calculus and Analytic Geometric,Durfee . W.H,1971New York
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	None
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Calculus II /EE1202
4. Programs in which he enters	
5. Available Attendance Forms	Official Hours / E-Presence
6. Semester / Year	Second Semester / First Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	14/6/20 21
9- Course Objectives :	
A. AThe student acquires the skill of dealing with mathematical equations and showing the concept of calculus and polar, Cartesian and cylindrical axes .	
B. Clarify the methods of solving integrals and numerical sequences .	
C- The course aims to study the applications of integration in calculating the lengths of curves, areas and volumes in different coordinates. and some physical applications	
D- The course aims to give the student a new background that he can benefit from when studying differential equations	

10. Learning outcomes and teaching, learning and assessment methods

A. Knowledge and understanding

- Identify the basic concepts of goals, differential equations and methods of solving integrals.
- Give the student experience in graphs with polar coordinates .
- The student learns how to use integrals to find areas, volumes and lengths of regular objects and irregular.
- Identify sequences, convergence mechanism, divergence, series and methods of testing them.

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills

C1- Developing the student's ability to work on performing duties and delivering them on time .

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

A4-

Teaching and learning methods
• Exercises and sports problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments • Attending lectures and not being absent from them is evidence of the student's commitment to the system and his love for the subject
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	4	**Hybrid functions, calculus**	Transcendental functions: derivatives and integrals.	Theoretical + Discussion	General questions and discussion
Second	4	**Calculus of hybrid functions**	The derivatives and integrals of the hyperbolic functions.	Theoretical + Discussion	General questions and discussion or exam I
Third	4	Methods for solving integrals	Techniques of integrations, integration by parts .	Theoretical + Discussion	General questions and discussion
Fourth	4	Trigonometric functions	Trigonometric integrals, Eliminating squar roots	Theoretical + Discussion	I'm examined.
Fifth	4	Methods of replacing trigonometric functions	The method of trigonometric substitution	Theoretical + Discussion	General questions and discussion or exam I
Sixth	4	**Integration of Rational Functions**	. Integration rational function by partial fractions	Theoretical + Discussion	General questions and discussion
Seventh	4	**Numerical sequences**	Sequences and infinite series : convergence and divergence .	Theoretical + Discussion	General Questions
Eighth	4	**Addition of geometric sequences**	Geometric series :P-series ,the test for convergence or divergence .	Theoretical + Discussion	Group duties
Ninth	4	**Examination of sequences by the method of integrals**	The integral test ,ratio test ,root test .	Theoretical + Discussion	General Questions
Tenth	4	Composite sequences	Comparison test , alternating series .	Theoretical + Discussion	Monthly exam

Eleventh	4	Exponential sequences	Absolute and conditional convergence ,power series	Theoretical + Discussion	General Questions
Twelfth	4	Polar axes	Polar coordinates	Theoretical + Discussion	Discussion and exam I
Thirteenth	4	Drawing polar axes	Graphs in polar coordinates	Theoretical + Discussion	General Questions
Fourteenth	4	Finding polar areas	Area in polar coordinates	Theoretical + Discussion	Group Duties+ discussion
Fifteenth		General replay	**REVIEW**	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	(1) CalculusTomas, 1990 (2) Calculus and Analytic Geometric,Durfee. W.H.,1971New York
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	**EE1201**
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar \ College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Physics I \ EE1203
4. Programs in which he enters	There isn't any
5. Available Attendance Forms	Blended learning
6. Semester / Year	First Semester / First Academic Year
7. Number of Credit Hours (Total)	45 hours
8. The preparation date of this description	14/6/2021

9. Course Objectives :

A. Learn the basic concepts of physical laws and how to apply them B. Learn some physical laws that are important in the stability and movement of bodies C. Learn the types and types of renewable energies in the era of modern physics and development D. Learn modern mathematical methods to solve physical problems

10. Learning outcomes and teaching, learning and assessment methods
Teach the student how to apply physical problems and ways to solve them in reality
Introducing the student to some problems in electrical systems and their relationship in physics
Introducing the student to the importance of using laws to find some important variables for any system or body
Learn how to prove physical laws with practical experiments and achieve them theoretically and practically
Evaluation methods
Learn how to deal with physical theories and methods of deducing and applying them practically
Learn how to use a computer, if possible, to solve a physical problem
How to solve a physical problem that actually exists in reality and solve it with a physical law
Teaching and learning methods
• Solving exercises for electrical physics • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods

Participation in the classroom. Delivery of activities . Quarterly tests , activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises and writing programs. C3- Developing the student's ability to dialogue and discussion
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion		Basic concepts	3	First
General questions and discussion or exam I	Theoretical + Discussion		Power Systems Collector	3	Second
General questions and discussion	Theoretical + Discussion		Power System Collector	3	Third
General questions and discussion or exam I	Theoretical + Discussion		Centers and center of gravity	3	Fourth
General questions and	Theoretical + Discussion		Centers and center of gravity	3	Fifth

discussion					
General questions and discussion or exam I	Theoretical + Discussion		Stability	3	Sixth
General questions and discussion	Theoretical + Discussion		Stability	3	Seventh
General questions and discussion or exam I	Theoretical + Discussion		Stability	3	Eighth
General questions and discussion	Theoretical + Discussion		Friction	3	Ninth
General questions and discussion or exam I	Theoretical + Discussion		Friction	3	Tenth

General questions and discussion	Theoretical + Discussion		Friction	3	Eleventh
General questions and discussion or exam I	Theoretical + Discussion		Fixed moments	3	Twelfth
General questions and discussion	Theoretical + Discussion		Linear motion	3	Thirteenth
General questions and discussion or exam I	Theoretical + Discussion		Angular motion	3	Fourteenth
General questions and discussion	Theoretical + Discussion		Moment of inertial	3	Fifteenth

12. Infrastructure	
R.D. Knight, Physics for Scientists and Engineers, 2nd ed., Pearson 2008	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g. guest lectures, vocational training and field studies)

13. Acceptance	
EE1201	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar \ College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Physics II \EE1204
4. Programs in which he enters	There isn't any
5. Available Attendance Forms	Blended learning
6. Semester / Year	Second Semester / First Academic Year
7. Number of Credit Hours (Total)	45 hours
8. The preparation date of this description	14/6/2021
9. Course Objectives : A. Learn the basic concepts of physical laws and how to apply them B. Learn some physical laws that are important in the stability and movement of bodies c. Learn the types and types of renewable energies in the era of modern physics and development	

d. Learn modern mathematical methods to solve physical problems

10. Learning outcomes and teaching, learning and assessment methods
Teaching the student how to apply physical problems and ways to solve them in reality
Introducing the student to some problems in electrical systems and their relationship in physics
Introducing the student to the importance of using laws to find some important variables for any system or body
Learn how to prove physical laws with practical experiments and achieve them theoretically and practically
Evaluation methods
Learn how to deal with physical theories and methods of deducing and applying them practically
Learn how to use a computer if possible to solve a physical problem
How to solve a physical problem that actually exists in reality and solve it with a physical law
Teaching and learning methods
• Solving exercises for electrical physics • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
Participation in the classroom. Delivery of activities . Quarterly tests , activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises and writing programs.

C3- Developing the student's ability to dialogue and discussion

d. General and transferable skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	3	Electric charge and electric field		Theoretical + Discussion	General questions and discussion
Second	3	Coulomb's law		Theoretical + Discussion	General questions and discussion or exam I
Third	3	Electric Field of a Continuous Charge Distribution and Due to a Charged Rod		Theoretical + Discussion	General questions and discussion
Fourth	3	Electric Field Lines and Motion of Charged Particles in a Uniform Electric Field		Theoretical + Discussion	General questions and discussion or exam I
Fifth	3	Electric Flux		Theoretical + Discussion	General questions and discussion
Sixth	3	Gauss's Law		Theoretical + Discussion	General questions and discussion or exam I

Seventh	3	Application of Gauss's Law to Various Charge Distributions and Conductors in Electrostatic Equilibrium		Theoretical + Discussion	General questions and discussion
Eighth	3	Formal Derivation of Gauss's Law		Theoretical + Discussion	General questions and discussion or exam I
Ninth	3	Potential Difference and Electric Potential and Potential Differences in a Uniform Electric Field		Theoretical + Discussion	General questions and discussion
Tenth	3	Electric Potential and Potential Energy Due to Point Charges and Obtaining the Value of the Electric Field from the Electric Potential		Theoretical + Discussion	General questions and discussion or exam I
Eleventh	3	Electric Potential Due to Continuous Charge Distributions and Electric Potential Due to a Charged Conductor		Theoretical + Discussion	General questions and discussion
Twelfth	3	Definition of Capacitance and Calculating Capacitance		Theoretical + Discussion	General questions and discussion or exam I
Thirteenth	3	Combinations of Capacitors And Energy Stored in a Charged		Theoretical +	General questions and

				Discussion	discussion
Fourteenth	3	Capacitors with Dielectrics and Electric Dipole in an Electric Field		Theoretical + Discussion	General questions and discussion or exam I
Fifteenth	3	Electric Current And Resistance		Theoretical + Discussion	General questions and discussion

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	R.D. Knight, Physics for Scientists and Engineers, 2nd ed., Pearson 2008
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	

13. Acceptance	
Prerequisites	***EE1201***
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	computer science/EE1205
4. Programs in which he enters	
5. Available Attendance Forms	Blended learning
6. Semester / Year	First Semester / First Academic Year
7. Number of Credit Hours (Total)	90
8. The preparation date of this description	14/6/2021
9- Course Objectives :	
A. Understand the main principles of computer systems B. Study of operating systems for computer systems C. Theoretical study and some applications in the laboratory D. Design of some electrical circuits using the computer	

10. Learning outcomes and teaching, learning and assessment methods

Ability to handle generators, motors and transformers
Ability to analyze and study DC machines
Ability to infer and solve problems related to machines
Know the types of converters and methods of conversion from one type to another

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	3	Introduction to computer system	Computer science	Theoretical + Discussion	General questions and discussion
Second	3	Introduction to computer system		Theoretical + Discussion	General questions and discussion or exam I
Third	3	Algorithms and flowcharts		Theoretical + Discussion	General questions and discussion
Fourth	3	Introduction to visual baisic-programming language		Theoretical + Discussion	I'm examined.
Fifth	3	Introduction VB language		Theoretical + Discussion	General questions and discussion or exam I
Sixth	3	Input & output statement		Theoretical + Discussion	General questions and discussion
Seventh	3	Control statements. (F, switch)		Theoretical + Discussion	General Questions
Eighth	3	Control statements. (F, switch)		Theoretical + Discussion	Group duties
Ninth	3	Loops. (for ,while, do....while)		Theoretical + Discussion	General Questions
Tenth	3	string processing		Theoretical + Discussion	Monthly exam
Eleventh	3	string processing		Theoretical + Discussion	General Questions

Twelfth	3	Subscripted variables (one and two dimension array)		Theoretical + Discussion	Discussion and exam I
Thirteenth	3	Subscripted variables (one and two dimension array)		Theoretical + Discussion	General Questions
Fourteenth	3	Subscripted variables (one and two dimension array)		Theoretical + Discussion	Group Duties+ discussion
Fifteenth	3	Loops. (for ,while, do....while)		Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	▪ ***For programming in the language of Visual Basic*** ***Blender: Awad Nassour***
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	No
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	Anbar University / College of Engineering
2. University Department / Center	Department of Electrical Engineering
3. Course Name/Code	Engineering Drawing / EE1206
4. Programs in which he enters	
5. Available Attendance Forms	Blended learning
6. Semester / Year	First Semester / First Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	14/6/2021
9- Course Objectives:	

10. Learning outcomes and teaching, learning and assessment methods

Raising and developing the student's mental and expressive skills in the language of drawing.

Training on accuracy in measurements and drawing speed.

Raising and improving the student's ability to visualize and imagine in representing objects geometrically.

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.

Submission of activities

Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student’s ability to dialogue and discussion.

Teaching and learning methods
• Exercises and practical problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
d. General and transferable skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Engineering drawing	Introduction to Engineering Drawing and Design, Drawing Tools	4	First
General questions and discussion or exam I	Theoretical + Discussion	Engineering drawing	Lines in engineering drawing	4	Second
General questions and discussion	Theoretical + Discussion	Engineering drawing	Geometric line, panel layout	4	Third
I'm examined.	Theoretical + Discussion	Engineering drawing	Engineering Operations	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	Engineering drawing	Exercises in engineering processes	4	Fifth
General questions and discussion	Theoretical + Discussion	Engineering drawing	Projection theory	4	Sixth
General Questions	Theoretical + Discussion	Engineering drawing	Drawing projections	4	Seventh
Group duties	Theoretical + Discussion	Engineering drawing	Exercises in drawing projections	4	Eighth
General Questions	Theoretical + Discussion	Engineering drawing	Midterm Exam	4	Ninth

Monthly exam	Theoretical + Discussion	Engineering drawing	Exercises in drawing projections	4	Tenth
General Questions	Theoretical + Discussion	Engineering drawing	Dimensional mode	4	Eleventh
Discussion and exam I	Theoretical + Discussion	Engineering drawing	Exercises in drawing projections	4	Twelfth
General Questions	Theoretical + Discussion	Engineering drawing	Holographic projection	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	Engineering drawing	Exercises in measured drawing	4	Fourteenth
Monthly exam	Theoretical + Discussion	Engineering drawing	Assembly	4	Fifteenth

12. Infrastructure	
Abdul Rasoul Al - Khafaf Engineering Drawing Iraq University of Technology Second Edition	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
There isn't any	Prerequisites

20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program..

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Chemistry/ EE1207
4. Programs in which he enters	
5. Available Attendance Forms	Official Hours / E-Presence
6. Semester / Year	First Semester / First Academic Year
7. Number of Credit Hours (Total)	90
8. The preparation date of this description	14/6/2021
9- Course Objectives :	
A. Understand the structure of an atom, write and balance chemical equations, label inorganic compounds, and perform calculations that illustrate the relationship of mass to chemical reactions.	
B. Understand the term oxidation and reduction and extraction of oxidative number, knowledge of the basics of chemical bond.	

C- Theoretical study and conducting some experiments in the laboratory

10. Learning outcomes and teaching, learning and assessment methods

- Knowledge of technical terminology.
- Knowledge of research methodology.
- Knowledge of the principles and theories of matter
- Knowledge of modern methods and techniques

B - Subject-specific skills

B1 – Ability to interact with sources and references

B2 – Ability to evaluate correctly

B3- Ability to infer and compare

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom and daily tests.
Presentation of activities in the laboratory
Quarterly and non-semester tests.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

C4- Developing the spirit of cooperation and teamwork as a team

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	3	Define the structure of the atom			General questions and discussion
Second	3	Write and balance chemical equations			General questions and discussion or exam I
Third	3	Carry out chemical calculations			General questions and discussion
Fourth	3	Understand the concept of oxidation-reduction, calculate oxidation numbers			I'm examined.
Fifth	3	Apply the ideal gas law in solving problems			General questions and discussion or exam I
Sixth	3	Solve problems in chemical thermodynamics and calorimetry			General questions and discussion
Seventh	3	Predict the electronic structure of atoms and ions from quantum theory			General Questions
Eighth	3	Describe the principles of chemical bonding			Group duties
Ninth	3	Predict the geometry of the electron pairs and the shape of molecules using VSEPR theory			General Questions

Tenth	3	Describe the valence bond theory, predict the hybridization of atoms			Monthly exam
Eleventh	3	Enthalpy of Chemical Reactions. Calorimetry. Standard Enthalpy of Formation and Reaction.			General Questions
Twelfth	3	Electron Configuration. Development of the Periodic Table. Periodic Classification of the Elements. Periodic Variation in Physical Properties			Discussion and exam I
Thirteenth	3	Ionization Energy.Electron Affinity Lewis Dot Symbols. The Ionic Bond.			General Questions
Fourteenth	3	The Concept of Resonance. Exceptions to the Octet Rule.			Group Duties+ discussion
Fifteenth	3	Valence Bond Theory. Hybridization of Atomic Orbital's. Hybridization in Molecules Containing Double and Triple Bonds. Delocalized Molecular Orbital's.			Monthly exam

12. Infrastructure

Required readings: ▪ Course Books ▪ Other	-Essentials of General Chemistry By D.D.Ebbing,S.D.Gammon,and R.O.Ragsdale,2003 , Houghton Mifflin Company,New York. - Chang R.,Chemistry, McGraw Hill 9th ed., 2007
Special requirements	

13. Acceptance	
Prerequisites	None
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Fundamentals of EE 1 / EE1301
4. Programs in which he enters	
5. Available Attendance Forms	Blended learning
6. Semester / Year	First Semester / First Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	14/6/2021
9- Course Objectives:	

10. Learning outcomes and teaching, learning and assessment methods

a. Graduating qualified engineers in the field of electrical engineering

B. Adding full knowledge about electrical engineering circuits

c. Ability to conduct scientific research

d. Dealing accurately with future work problems.

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.

- Exercises and activities in the classroom.

- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.

Submission of activities

Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

d. General and transferable skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Foundations of Electrical Engineering 1	Introduction, Basic Definitions,	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	KCL, KVL	4	Second
General questions and discussion	Theoretical + Discussion	=	Conservation of power, Series and Parallel	4	Third
I'm examined.	Theoretical + Discussion	=	connection of elements, Ohm's Law	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	, delta and star transformation	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Node Voltage Method	4	Sixth
General Questions	Theoretical + Discussion	=	Node Voltage Method	4	Seventh
Group duties	Theoretical + Discussion	=	Not Current Method	4	Eighth
General Questions	Theoretical + Discussion	=	Source Transformation	4	Ninth

Monthly exam	Theoretical + Discussion	=	Thevenin Theorem, Norton Theorem	4	Tenth
General Questions	Theoretical + Discussion	=	Maximum Power Transfer	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	, Principle of Superposition	4	Twelfth
General Questions	Theoretical + Discussion	=	Principle of Superposition	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Principle of Superposition	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Principle of Superposition	4	Fifteenth

12. Infrastructure

Laboratory sheet prepared by department lecturers	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance

EE1201	Prerequisites
20	Minimum number of students

100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Fundamentals of EE II/ EE1302
4. Programs in which he enters	
5. Available Attendance Forms	Blended learning
6. Semester / Year	Second Semester / First Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	14/6/2021

9- Course Objectives :

10. Learning outcomes and teaching, learning and assessment methods
A. Graduating qualified engineers in the field of electrical engineering B. Adding full knowledge about electrical engineering circuits C. Ability to conduct scientific research D. Dealing accurately with future work problems .
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises. C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods
• Exercises and practical problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Foundations of Electrical Engineering 2	Capacitors, Inductors,	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Series and Parallel connection	4	Second
General questions and discussion	Theoretical + Discussion	=	=	4	Third
General questions and discussion	Theoretical + Discussion	=	AC circuit Analysis	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	=	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Sinusoidal Review, Complex Numbers	4	Sixth
General Questions	Theoretical + Discussion	=	=	4	Seventh
Group duties	Theoretical + Discussion	=	Sinusoidal Circuits, Impedance and Admittance	4	Eighth

General Questions	Theoretical + Discussion	=	Series and Parallel connection and phase relation in Sinusoidal Circuits	4	Ninth
Monthly exam	Theoretical + Discussion	=	Phasor Diagram, More Sinusoidal Circuits	4	Tenth
General Questions	Theoretical + Discussion	=	=	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Instantaneous, Average, Apparent Power and Power Factor and reactive power	4	Twelfth
General Questions	Theoretical + Discussion	=	=	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Complex Power and Power Triangle	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	RMS Values+ Maximum Power Transfer in sinusoidal circuits	4	Fifteenth

12. Infrastructure

Electric circuits by Nilson	Required readings: ▪ Course Books ▪ Other
	Special requirements

	Social services (e.g. guest lectures, vocational training and field studies)

13. Acceptance	
EE1202	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering
3. Course Name/Code	Arabic Language / EE 1104
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	Second semester / first academic year.
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	15/6/2021M
9. Course Objectives: Upgrading the linguistic level of students, and building his intellectual sophistication in explaining the importance of the Arabic language in his life as his mother tongue.	

10. Learning outcomes and teaching, learning and assessment methods
➢ Developing the student's intellectual talent in the field of Arabic language, to acquire verbal and actual ability and skill.
A. Teaching and Learning Methods
➢ Sudden daily tests. ➢ Exercises and activities in the classroom sometimes.
B. Evaluation Methods
➢ Attendance. ➢ Daily engagement. ➢ Tests (sometimes daily, monthly, final)
C- Thinking skills
➢ Work on developing the student's intellectual faculty. ➢ Ensuring the student's personal building at the academic level.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	theoretical	Arabic grammar, its importance and place in the language	Arabic grammar	3	First
General questions and discussion and test	theoretical	Hamza at the beginning of the speech and during it	Arabic grammar	3	Second
General questions and discussion	theoretical	Connecting and cutting positions	Arabic grammar	3	Third
General questions and discussion	theoretical	Punctuation or punctuation marks and how to draw them during speech	Arabic grammar	3	Fourth
General questions and discussion	theoretical	Dictionary and ways to detect the meanings of words in dictionaries	Dictionaries	3	Fifth
Monthly exam	theoretical			3	Sixth
Group duties	theoretical	The rules of the number and the countable and the ruling on distinguishing and formulating the	Arabic grammar	3	Seventh

		number - the definition of the number and the method of reading it			
Monthly exam	theoretical	Literature / Characteristics of Arabic literature	Literature	3	Eighth
General Questions	theoretical	Historical eras of Arabic literature	Literature	3	Ninth
Monthly exam	theoretical	The novel and its elements	Literature	3	Tenth
General Questions	theoretical	Truth and metaphor	Rhetoric	3	Eleventh
Discussion and exam	theoretical	Arts of rhetoric	Rhetoric	3	Twelfth
General questions and discussion	theoretical	Arts of rhetoric	Communication	3	Thirteenth
General questions and discussion	theoretical	Poetry / poets of the pendants and some contemporary poets.	Poetry and poets	3	Fourteenth
Monthly exam	theoretical			3	Fifteenth

12. Infrastructure	
▪ Lectures in the Arabic language. ▪ Lectures on Arabic literature, rhetoric, dictionaries, poetry and poets	Required readings: ▪ Course Books ▪ Other
	Special requirements
Holding some free training courses in the field of Arabic language.	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he made the most of the available learning opportunities. It must be linked to the description of Program.

1. Educational institution	Anbar University / College of Engineering
2. University Department / Center	Department of Electrical Engineering
3. Course Name/Code	English II / EE2105
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester / First Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	23/6/2021
9- Course Objectives:	

10. Learning outcomes and teaching, learning and assessment methods

A. Raising the level of student proficiency in the English language.
B. Developing the student's ability to read and write in English.
c. The student should be able to acquire new vocabulary.
d. The student should know the extent to which he can speak English fluently.

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation during the lecture.
Submission of activities
Quarterly and final exams and activities.

C- Thinking skills
C1- Developing the student's ability to work on performing duties and delivering them on time .
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

● Active participation in the classroom is a guide to student commitment and responsibility. ● Commitment to the deadline in submitting assignments and research. ● Quarterly and final exams express commitment and achievement of knowledge and skills. ● Apps, exercises and daily assignments
d. General and transferable skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	4	**What is engineering The story of engineering**	English 2	Theoretical + Discussion	General questions and discussion
Second	4	**Fields of engineering**	=	Theoretical + Discussion	General questions and discussion or exam I
Third	4	**Vocabulary practice**	=	Theoretical + Discussion	General questions and discussion
Fourth	4	**What is electricity**	=	Theoretical + Discussion	I'm examined.
Fifth	4	**Grammar review**	=	Theoretical + Discussion	General questions and discussion or exam I
Sixth	4	**Verb Tenses**	=	Theoretical + Discussion	General questions and discussion
Seventh	4	**Exercises**	=	Theoretical + Discussion	General Questions

Eighth	4	**Electrical conductors/passages**	=	Theoretical + Discussion	Group duties
Ninth	4	**Inventions**	=	Theoretical + Discussion	General Questions
Tenth	4	**Exercises/ passages**	=	Theoretical + Discussion	Monthly exam
Eleventh	4	**Relative clauses**	=	Theoretical + Discussion	General Questions
Twelfth	4	**Prepositions**	=	Theoretical + Discussion	Discussion and exam I
Thirteenth	4	**Language skills**	=	Theoretical + Discussion	General Questions
Fourteenth	4	**presentations**	=	Theoretical + Discussion	Group Duties+ discussion
Fifteenth	4	**Computers**	=	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	▪ **Soars, J. and Soars, L., 2003. New Headway-Pre-Intermediate. Oxford University.** ▪ **Understanding and Using English Grammar- 4th Edition by Betty S. Azar, Rachel S. Koch, and Stacy A. Hagen**
special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	

13. Acceptance	
Prerequisites	EE1104
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar – College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE2208 / Calculus III
4. Programs in which he enters	Matlab
5. Available Attendance Forms	E- presence
6. Semester / Year	First Semester - Second Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	23/6/2021
9. Course Objectives:	
• Expand the student's potential in mathematics to help him solve • engineering problems facing him in his field of specialization	

10. Learning outcomes and teaching, learning and assessment methods

- Recognize the basic concepts of vectors and expand them
- Functions with two or more variables and their applications
- Bilateral and tripartite integrations and multiple applications

Teaching and learning methods

- Sudden daily and weekly continuous tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

- Participation during the lecture.
- Submission of activities
- Quarterly tests, activities and activities.

C- Thinking skills

- Develop the student's ability to work on performing duties and deliver them on time.
- Try to apply concepts by solving different types of exercises.

Teaching and learning methods

- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
  Apps, exercises and daily assignments

- General and transferable skills (other skills related to employability and personal development).
- Develop the student's ability to dialogue, discuss, solve various problems and deal with them

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	4	Brief Review	Brief Review	Theoretical + Discussion	General questions and discussion
Second	4	Vectors	Vectors: Dot and Cross Product, Equations of Lines and Planes	Theoretical + Discussion	General questions and discussion or exam
Third	4	Vectors	Vector Function, Velocity and Acceleration	Theoretical + Discussion	General questions and discussion
Fourth	4	Vectors	Curvature and the Unit Normal Vectors	Theoretical + Discussion	examination
Fifth	4	Vectors	Functions of several variables	Theoretical + Discussion	General questions and discussion or exam I
Sixth	4	Vectors	Determinants	Theoretical + Discussion	General questions and discussion
Seventh	4	Vectors	Differentiation	Theoretical + Discussion	General Questions
Eighth	4	Functions of two or more variables	Partial Differentiation	Theoretical + Discussion	Duties
Ninth	4	Functions of two or more variables	Partial Differentiation: Function of Two or More Variables and the Chain Rule,	Theoretical + Discussion	General Questions
Tenth	4	Functions of two or more variables	Partial Differentiation Applications	Theoretical + Discussion	Monthly exam
Eleventh	4	Functions of two or more variables	Maximum, Minimum and Saddle Points	Theoretical + Discussion	General Questions
Twelfth	4	Multiple Integral	Multiple Integral: Double and Triple Integral, Area and Volume	Theoretical + Discussion	Discussion and exam

Thirteenth	4	Multiple Integral	Double Integral in Polar Form	Theoretical + Discussion	General Questions
Fourteenth	4	Multiple Integral	Triple Integrals in Rectangular Coordinates	Theoretical + Discussion	Duties + discussion
Fifteenth	4	Multiple Integral	Surface Integrals	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	CALCULUS Advanced Engineering Mathematics
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	

13. Acceptance	
Prerequisites	***EE1202***
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar – College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Calculus IV/EE2209
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester - Second Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	23/6/2021
9. Course Objectives :	
• Expand the student's potential in mathematics to help him solve engineering problems facing him in his field of specialization	

10. Learning outcomes and teaching, learning and assessment methods

• Learn about the basic concepts of differential equations and ways to solve and expand them • Fourier Series Applications • Laplace Applications
Teaching and learning methods
• Sudden daily and weekly continuous tests. • Trainings and activities. • Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
• Participation during the lecture. • Submission of activities • Quarterly tests, activities and activities.
C- Thinking skills
• Develop the student's ability to work on performing duties and deliver them on time. • Try to apply concepts by solving different types of exercises.
Teaching and learning methods
• Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation during the lecture is a guide to the student's commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

- Develop the student's ability to dialogue, discuss, solve various problems and deal with them

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	4	First Order Differential equations	First Order: Variable Separable and Homogenous Differential equations	Theoretical + Discussion	General questions and discussion
Second	4	First Order Differential equations	Linear, Bernoulli and Exact Differential Equations	Theoretical + Discussion	General questions and discussion or exam
Third	4	First Order Differential equations	Second Order: Homogeneous Differential equations	Theoretical + Discussion	General questions and discussion
Fourth	4	Second Order Differential equations	Second Order: Non Homogeneous Differential equations	Theoretical + Discussion	examination
Fifth	4	Higher Order Differential equations	Higher Order Differential equations	Theoretical + Discussion	General questions and discussion or exam I
Sixth	4	Laplace Transform	Laplace Transform: Definition, Properties	Theoretical + Discussion	General questions and discussion
Seventh	4	Laplace Transform	Inverse Laplace Transform: Properties and Partial Fractions	Theoretical + Discussion	General Questions
Eighth	4	Laplace Transform	Solution of Differential Equations Using Laplace Transform	Theoretical + Discussion	Duties
Ninth	4	Laplace Transform	Applications: Solution of Electric Circuits Using Laplace Transform	Theoretical + Discussion	General Questions
Tenth	4	Laplace Transform	Applications: Solution of Electric Circuits Using Laplace Transform	Theoretical + Discussion	Monthly exam
Eleventh	4	Fourier Series	Fourier Series: Periodic and non Periodic Functions, Euler Formulas	Theoretical + Discussion	General Questions
Twelfth	4	Fourier Series	Even and Odd functions, Half Range , Expansion(Fourier Sine and Fourier Cosine)	Theoretical + Discussion	Discussion and exam

Thirteenth	4	Fourier Series	Complex Fourier Series (Exponential)	Theoretical + Discussion	General Questions
Fourteenth	4	Fourier Series	Applications of Fourier Series in Electric Circuits	Theoretical + Discussion	Duties + discussion
Fifteenth	4	Fourier Series	Partial Differentiation: Function of Two or More Variables	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	CALCULUS Advanced Engineering Mathematics
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	

13. Acceptance	
Prerequisites	***EE2208***
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE2304 /Digital Techniques I
4. Programs in which he enters	
5. Available Attendance Forms	E-presence
6. Semester / Year	First Semester / Second Academic Year
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	23/6/2021
9. Course Objectives: A - Benefiting from the absolute technical expertise on electrical engineering systems and graduating qualified engineers	
B – To interact professionally and professionally in the contemporary business environment through effective communication and teamwork	

C - Clarification of the concept of logical circuits of all kinds
D- The course aims to give the student a new background that can be used when studying these circles

10. Learning outcomes and teaching, learning and assessment methods A. Knowledge and understanding
- Recognize the basic concepts of logical circuits - Give the student experience in the properties of logical circuits - Identify the types of gates and digital circuits
B- Subject-specific skills B1- Scientific reports B2- Graduation Research
Teaching and learning methods
1- Theoretical lectures. 2- Discuss the topic of the lecture and solve some exercises 3- Performing tests and discussing their results
Evaluation methods
Participation during the lecture Presentation of activities Quarterly and final exams and activities
C- Thinking skills C1- Developing the student's ability to work on performing duties and delivering them on the scheduled date C2- Try to apply concepts by solving different types of exercises
C3- Developing the student's ability to solve and discuss
Teaching and learning methods

- Sudden daily and weekly continuous tests - Trainings and activities. - Guiding students in some sources that contain examples and exercises and benefiting from them
Evaluation methods
Participation during the lecture Presentation of activities Quarterly and final exams and activities
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology D2- Developing the student's ability to deal with the Internet D3- Developing the student's ability to deal with multiple means D4- Developing the student's ability to dialogue and discussion

11. Course Structure

Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Decimal Numbers 9s' and 10s' complement	Numbers system and codes	3	First
General questions and exam I	Theoretical + Discussion	Binary Numbers Binary Arithmetic	Numbers system and codes	3	Second
General questions and discussion	Theoretical + Discussion	1s' and 2s' complements	Numbers system and codes	3	Third
I'm examined.	Theoretical + Discussion	Decimal-to-Binary conversion	Numbers system and codes	3	Fourth
General questions and discussion	Theoretical + Discussion	Octal Numbers	Numbers system	3	Fifth
Question & Discussion	Theoretical + Discussion	Hexadecimal Numbers	Numbers system	3	Sixth
General questions	Theoretical + Discussion	Binary coded Decimal (BCD)	Numbers system	3	Seventh
Group duties	Theoretical + Discussion	The inverter the AND gate the or gate	Logic gates	3	Eighth
General questions	Theoretical + Discussion	The NAND gate the NOR gate	Logic gates	3	Ninth

Monthly exam	Theoretical + Discussion	Boolean operations logic Expression	Boolean Algebra	3	Tenth
General Questions	Theoretical + Discussion	Rules and laws of Boolean algebra	Boolean Algebra	3	Eleventh
General Questions	Theoretical + Discussion	Demorgans' Theorems	Boolean Algebra	3	Twelfth
Discussion and exam	Theoretical + Discussion	Boolean Expressions for gate networks	Boolean Algebra	3	Thirteenth
Group duties	Theoretical + Discussion	Simplification of Boolean algebra	Boolean Algebra	3	Fourteenth
Monthly exam	Theoretical + Discussion	The Karnaugh map	Boolean Algebra	3	Fifteenth

12. Infrastructure	
Floyd – digital fundamentals Digital logic design	Required readings: ▪ Course Books ▪ Other
	Special requirements
Practical application of graduation research projects	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
No	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	Anbar University / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE1302 /Digital Techniques II
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester / Second Academic Year
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	23/6/2021

9. Course Objectives: A - Benefiting from the absolute technical expertise on electrical engineering systems and graduating qualified engineers
B – To interact professionally and professionally in the contemporary business environment through effective communication and teamwork
C - Clarification of the concept of logical circuits of all kinds
D- The course aims to give the student a new background that can be used when studying these circles

10. Learning outcomes and teaching, learning and assessment methods A. Knowledge and understanding
- Recognize the basic concepts of logical circuits - Give the student experience in the properties of logical circuits - Identify the types of gates and digital circuits
B- Subject-specific skills B1- Scientific reports B2- Graduation Research
C. Conducting applications in the laboratory
Teaching and learning methods
1- Theoretical lectures using the blackboard 2- Discuss the topic of the lecture and solve some exercises 3- Performing tests and discussing their results
Evaluation methods
Participation during the lecture Presentation of activities Quarterly and final exams and activities

C- Thinking skills C1- Developing the student's ability to work on performing duties and delivering them on the scheduled date C2- Try to apply concepts by solving different types of exercises
C3- Developing the student's ability to solve and discuss
Teaching and learning methods
- Sudden daily and weekly continuous tests - Trainings & Activities - Guiding students in some sources that contain examples and exercises and benefiting from them
Evaluation methods
Participation in the lecture Presentation of activities Quarterly and final exams and activities
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology D2- Developing the student's ability to deal with the Internet D3- Developing the student's ability to deal with multiple means D4- Developing the student's ability to dialogue and discussion

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Whole. Half Mosque Total Collector	Composite Digital Circuits	3	First
General questions and exam I	Theoretical + Discussion	Comparative and Comparative	Composite Digital Circuits	3	Second
General questions and discussion	Theoretical + Discussion	code and decode	Composite Digital Circuits	3	Third
I'm examined.	Theoretical + Discussion	Generators/Stoichiometric Testers	Composite Digital Circuits	3	Fourth
General questions and discussion	Theoretical + Discussion	Dispensers and their uses	Composite Digital Circuits	3	Fifth
Question & Discussion	Theoretical + Discussion	Swings and their types	Adjacent Circuits	3	Sixth
General questions	Theoretical + Discussion	Swings and their types	Successive circuits	3	Seventh
Group duties	Theoretical + Discussion	Table of inverse and conversions	Applications of successive circuits	3	Eighth
General questions	Theoretical + Discussion	Types of records and offsets	Records	3	Ninth

Monthly exam	Theoretical + Discussion	Memory element	Synchronous counters	3	Tenth
General Questions	Theoretical + Discussion	Types of memory	Asynchronous counters	3	Eleventh
General Questions	Theoretical + Discussion	Temporary Sequential Circuit Design	Successive circuits	3	Twelfth
Discussion and exam	Theoretical + Discussion	Design & Shapes	Non-successive circuits	3	Thirteenth
Group duties	Theoretical + Discussion	Types of integrated circuits	Integrated Circuits	3	Fourteenth
Monthly exam	Theoretical + Discussion	Types of integrated circuits	Integrated Circuits	3	Fifteenth

12. Infrastructure	
Floyd – digital fundamentals Digital logic design	Required readings: ▪ Course Books ▪ Other
	Special requirements
Practical application of graduation research projects	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE2304	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Department of Electrical Engineering
3. Course Name/Code	EE Lab I / EE2306
4. Programs in which he enters	
5. Available Attendance Forms	Traditional+ E- presence
6. Semester / Year	First Semester / Second Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	23/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
A. Understand the main principles of DC machines B. Study the components of machines, winding methods, types of generators and motors, how to control it and draw mathematical relations. D. Understand the main principles of the work of electronic circuits E. Study the components of electronic circuits and the relationship between the incoming and outgoing signals. F. Conducting applications in the laboratory
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Electrical Lab 2	Full wave rectifier (bridge rectifier)	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Full wave rectifier (center tape transformer)	4	Second
General questions and discussion	Theoretical + Discussion	=	Calculation for ripple factor and filter	4	Third
I'm examined.	Theoretical + Discussion	=	Calculation for ripple factor and filter	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Zener diode regulator circuit	4	Fifth
General questions and discussion	Theoretical + Discussion	=	RC –circuit analysis (square wave)	4	Sixth
General Questions	Theoretical + Discussion	=	R C -circuit analysis (sine wave	4	Seventh
Group duties	Theoretical + Discussion	=	Discussion for reports	4	Eighth
General Questions	Theoretical + Discussion	=	Building up voltage of shunt generator I	4	Ninth

Monthly exam	Theoretical + Discussion	=	Building up voltage of shunt generator II	4	Tenth
General Questions	Theoretical + Discussion	=	Characteristic of separately exited generator I	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Characteristic of separately exited generator II	4	Twelfth
General Questions	Theoretical + Discussion	=	Characteristic of shunt exited generator I	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Characteristic of shunt exited generator II	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Characteristic of series exited generator I	4	Fifteenth

12. Infrastructure

Laboratory sheet prepared by department lecturers	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE2308 & EE2313	Prerequisites
	Minimum number of students
	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE Lab II /EE2307
4. Programs in which he enters	
5. Available Attendance Forms	Traditional
6. Semester / Year	Second Semester / Second Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	23/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
A. Understand the main principles of DC machines B. Study the components of machines, winding methods, types of generators and motors, how to control it and draw mathematical relations. D. Understand the main principles of the work of electronic circuits E. Study the components of electronic circuits and the relationship between the incoming and outgoing signals. F. Conducting applications in the laboratory
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Electrical Lab 3	Separation of mechanical eddy current & hysteresis losses I	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Separation of mechanical eddy current & hysteresis losses II	4	Second
General questions and discussion	Theoretical + Discussion	=	Separation of mechanical eddy current & hysteresis losses III	4	Third
I'm examined.	Theoretical + Discussion	=	Speed control of DC shunt motor I	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Speed control of DC shunt motor II	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Speed control of DC shunt motor III	4	Sixth
General Questions	Theoretical + Discussion	=	Speed control of DC shunt motor III	4	Seventh
Group duties	Theoretical + Discussion	=	C.B transistor characteristic (manually	4	Eighth

General Questions	Theoretical + Discussion	=	C.C transistor characteristic (manually)	4	Ninth
Monthly exam	Theoretical + Discussion	=	C.B transistor characteristic (x-y mode)	4	Tenth
General Questions	Theoretical + Discussion	=	Hybrid parameter for bipolar transistor (hoe,hfe)	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Hybrid parameter for bipolar transistor(hre,hie)	4	Twelfth
General Questions	Theoretical + Discussion	=	Discussion for reports	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Characteristic of compound exited generator I	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Characteristic of compound exited generator II	4	Fifteenth

12. Infrastructure

Laboratory sheet prepared by department lecturers	Required readings: ▪ Course Books ▪ Other
	Special requirements

	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE2309 & EE2314	Prerequisites
	Minimum number of students
	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Fundamentals of Electronics I / EE2308
4. Programs in which he enters	
5. Available Attendance Forms	E- Presence
6. Semester / Year	First Semester / Second Academic Year
7. Number of Credit Hours (Total)	60
8. The history of preparation of this description	23/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
a. Graduating qualified engineers in the field of electrical engineering B. Adding full knowledge about electrical engineering circuits c. Ability to conduct scientific research d. Dealing accurately with future work problems.
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the lecture Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises. C3- Developing the student's ability to dialogue and discussion.
Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D. General and transferable skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student’s ability to deal with the Internet.

D3- Developing the student’s ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Foundations of Electronics 1	BJT-stability	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Bias techniques for stability	4	Second
General questions and discussion	Theoretical + Discussion	=	Bias techniques for stability	4	Third
I'm examined.	Theoretical + Discussion	=	Voltage-divider CE	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Feedback-bias CE	4	Fifth
General questions and discussion	Theoretical + Discussion	=	CB & Common Collector	4	Sixth
General Questions	Theoretical + Discussion	=	BJT equivalent circuit	4	Seventh
Group duties	Theoretical + Discussion	=	AC equivalent circuit – RE model	4	Eighth
General Questions	Theoretical + Discussion	=	RE-model CB	4	Ninth
Monthly exam	Theoretical + Discussion	=	RE model – CE	4	Tenth

General Questions	Theoretical + Discussion	=	RE model – CE	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Hybrid – parameters	4	Twelfth
General Questions	Theoretical + Discussion	=	AC –equivalent CE	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	AC –equivalent CB, CC	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Mid-year Examination	4	Fifteenth

12. Infrastructure	
Electronic Devices by Robert L. Boylestad	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE1301 & EE1302	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Department of Electrical Engineering
3. Course Name/Code	Fundamentals of Electronics II/ EE2309
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester / Second Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	23/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
a. Graduating qualified engineers in the field of electrical engineering b. Adding full knowledge about electrical engineering circuits c. Ability to conduct scientific research d. Dealing accurately with future work problems.
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Trainings and activities. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises. C3- Developing the student’s ability to dialogue and discussion.
Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the lesson is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

d. General and transferable skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student’s ability to deal with the Internet.

D3- Developing the student’s ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Foundations of Electronics 2	FET equivalent Circuit	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	FET equivalent Circuit	4	Second
General questions and discussion	Theoretical + Discussion	=	FET equivalent Circuit	4	Third
I'm examined.	Theoretical + Discussion	=	Multi-Two stage amplifier	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Multi-Two stage amplifier	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Class-C amplifier	4	Sixth
General Questions	Theoretical + Discussion	=	Class-C amplifier	4	Seventh
Group duties	Theoretical + Discussion	=	Tuned amplifier	4	Eighth
General Questions	Theoretical + Discussion	=	SCR &UJT	4	Ninth
Monthly exam	Theoretical + Discussion	=	Introduction to semiconductor laser	4	Tenth

General Questions	Theoretical + Discussion	=	Introduction to semiconductor laser	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Basic IC biasing techniques	4	Twelfth
General Questions	Theoretical + Discussion	=	Basic IC biasing techniques	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Final Examination	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Final Examination	4	Fifteenth

12. Infrastructure	
Electronic Devices by Robert L. Boylestad	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE2308	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	Anbar University / College of Engineering
2. University Department / Center	Department of Electrical Engineering
3. Course Name/Code	Electric Circuits I / EE2310
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	First Semester / Second Academic Year
7. Number of Credit Hours (Total)	60
8. The history of preparation of this description	23/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods

a. Benefiting from the technical expertise applied to electrical engineering systems and graduating qualified engineers, or to continue advanced studies in electrical engineering. Especially in the field of electronic engineering.
b. To interact professionally and professionally in the contemporary business environment through effective communication, leadership and responsible teamwork through research and innovation in the field of electronic device manufacturing.
c. Maintain the desire to innovate and engage in lifelong learning in response to emerging technologies, social developments, and contemporary issues

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.

- Trainings and activities.

- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation during the lecture.

Submission of activities

Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student’s ability to dialogue and discussion.

Teaching and learning methods
• Exercises and practical problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Electrical circuits 1	Analysis of three-phase circuits	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Analysis of three-phase circuits	4	Second
General questions and discussion	Theoretical + Discussion	=	Analysis of three-phase circuits	4	Third
I'm examined.	Theoretical + Discussion	=	Analysis of three-phase circuits	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Analysis of three-phase circuits	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Analysis of three-phase circuits	4	Sixth
General Questions	Theoretical + Discussion	=	Mutual inductance and transformers	4	Seventh
Group duties	Theoretical + Discussion	=	Mutual inductance and transformers	4	Eighth
General Questions	Theoretical + Discussion	=	Mutual inductance and transformers	4	Ninth
Monthly exam	Theoretical + Discussion	=	Mutual inductance and transformers	4	Tenth

General Questions	Theoretical + Discussion	=	Mutual inductance and transformers	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Operational Amplifier	4	Twelfth
General Questions	Theoretical + Discussion	=	Operational Amplifier	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Operational Amplifier	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Two port networks	4	Fifteenth

12. Infrastructure	
Electric Circuit, 6th Edition by Nilsson & Riedel	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE1301 & EE130 2	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Electric Circuits II / EE2311
4. Programs in which he enters	
5. Available Attendance Forms	E-presence
6. Semester / Year	Second Semester / Second Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	23/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods

a. Benefiting from the technical expertise applied to electrical engineering systems and graduating qualified engineers, or to continue advanced studies in electrical engineering. Especially in the field of electronic engineering.
b. To interact professionally and professionally in the contemporary business environment through effective communication, leadership and responsible teamwork through research and innovation in the field of electronic device manufacturing.
c. Maintain the desire to innovate and engage in lifelong learning in response to emerging technologies, social developments, and contemporary issues

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.

- Exercises and activities.

- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation during the lecture.

Submission of activities

Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Electrical circuits 2	Time domain solutions of first order circuits	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Time domain solutions of first order circuits	4	Second
General questions and discussion	Theoretical + Discussion	=	Time domain solutions of second order circuits	4	Third
I'm examined.	Theoretical + Discussion	=	Time domain solutions of second order circuits	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Time domain solutions of second order circuits	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Time domain solutions of second order circuits	4	Sixth
General Questions	Theoretical + Discussion	=	Frequency domain analysis and bode plots. Network analysis in the s-domain	4	Seventh

Group duties	Theoretical + Discussion	=	Frequency domain analysis and bode plots. Network analysis in the s-domain	4	Eighth
General Questions	Theoretical + Discussion	=	Frequency domain analysis and bode plots. Network analysis in the s-domain	4	Ninth
Monthly exam	Theoretical + Discussion	=	Frequency domain analysis and bode plots. Network analysis in the s-domain	4	Tenth
General Questions	Theoretical + Discussion	=	Frequency domain analysis and bode plots. Network analysis in the s-domain	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Active Filters	4	Twelfth
General Questions	Theoretical + Discussion	=	Active Filters	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Final exam	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Final exam	4	Fifteenth

12. Infrastructure

Electric Circuit, 6th Edition by Nilsson & Riedel	Required readings: ▪ Course Books ▪ Other

	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE2310	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

Course Description

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Computer Programming /EE2312
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester / Second Academic Year
7. Number of Credit Hours (Total)	90
8. The preparation date of this description	23/6/2021
9- Course Objectives :	
A. The student must be familiar with the use of programming in MATLAB. B. The student must be familiar with the design using the Matlab. C. The student learns to design digital and electronic circuits using EWB D. Design some systems and know their response	

10. Learning outcomes and teaching, learning and assessment methods

a. Ability to handle generators, motors and transformers
b. Ability to analyze and study DC machines
c. Ability to infer and solve problems related to machines
d. Know the types of converters and methods of conversion from one type to another
e. Conducting applications in the laboratory

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities during the lecture .
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation during the lecture.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation during the lecture is a guide to the student's commitment and responsibility.

- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	3	Introduction to computer system	Matlab	Theoretical + Discussion	General questions and discussion
Second	3	Introduction to computer system		Theoretical + Discussion	General questions and discussion or exam I
Third	3	Algorithms and flowcharts		Theoretical + Discussion	General questions and discussion
Fourth	3	Introduction to visual baisic-programming language		Theoretical + Discussion	I'm examined.
Fifth	3	Introduction VB language		Theoretical + Discussion	General questions and discussion or exam I
Sixth	3	Input & output statement		Theoretical + Discussion	General questions and discussion
Seventh	3	Control statements. (F, switch)		Theoretical + Discussion	General Questions
Eighth	3	Control statements. (F, switch)		Theoretical + Discussion	Group duties
Ninth	3	Loops. (for ,while, do....while)		Theoretical + Discussion	General Questions
Tenth	3	string processing		Theoretical + Discussion	Monthly exam
Eleventh	3	string processing		Theoretical + Discussion	General Questions

Twelfth	3	Subscripted variables (one and two dimension array)		Theoretical + Discussion	Discussion and exam I
Thirteenth	3	Subscripted variables (one and two dimension array)		Theoretical + Discussion	General Questions
Fourteenth	3	Subscripted variables (one and two dimension array)		Theoretical + Discussion	Group Duties+ discussion
Fifteenth	3	Loops. (for ,while, do....while)		Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	Essential Matlab for scientists and Engineers".
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	There isn't any
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	DC Machines I/ EE2313
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	First Semester / Second Academic Year
7. Number of Credit Hours (Total)	90
8. The preparation date of this description	23/6/2021
9- Course Objectives :	
A. Understand the main principles of DC machinery.	
B. Studying the components of machines, winding methods, types of generators and motors, how to control it, and drawing mathematical relations.	
C- Theoretical study and conducting some applications in the laboratory	

10. Learning outcomes and teaching, learning and assessment methods

a. Ability to handle generators, motors and transformers
b. Ability to analyze and study DC machines
c. Ability to infer and solve problems related to machines
d. Know the types of converters and methods of conversion from one type to another

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation during the lecture.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation during the lecture is a guide to the student's commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.

- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	3	Principle of operation of generators		Theoretical + Discussion	General questions and discussion
Second	3	Principle of operation of motors		Theoretical + Discussion	General questions and discussion or exam I
Third	3	constrictions		Theoretical + Discussion	General questions and discussion
Fourth	3	Armature windings		Theoretical + Discussion	I'm examined.
Fifth	3	Armature winding schemes		Theoretical + Discussion	General questions and discussion or exam I
Sixth	3	Main field		Theoretical + Discussion	General questions and discussion
Seventh	3	Types of excitations of DC machine		Theoretical + Discussion	General Questions
Eighth	3	Tutorial problem		Theoretical + Discussion	Group duties
Ninth	3	Armature reaction		Theoretical + Discussion	General Questions
Tenth	3	Process of armature reaction		Theoretical + Discussion	Monthly exam
Eleventh	3	Voltage builds up		Theoretical + Discussion	General Questions
Twelfth	3	Commutation process		Theoretical + Discussion	Discussion and exam I

Thirteenth	3	losses		Theoretical + Discussion	General Questions
Fourteenth	3	Generator operation		Theoretical + Discussion	Group Duties+ discussion
Fifteenth	3	External characteristics		Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	Electrical technology B. L. Theraja Design of Electrical Machines , V.N. Mittle Arvind Mitta
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	***EE1301/EE1302/EE1204***
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	DC Machines II/ ***EE2314***
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester / Second Academic Year
7. Number of Credit Hours (Total)	90
8. The preparation date of this description	23/6/2021
9- Course Objectives :	
A. Understand the main principles of DC machinery.	
B. Studying the components of machines, winding methods, types of generators and motors, how to control it, and drawing mathematical relations.	
C- Theoretical study and conducting some applications in the laboratory	

10. Learning outcomes and teaching, learning and assessment methods

a. Ability to handle generators, motors and transformers
b. Ability to analyze and study DC machines
c. Ability to infer and solve problems related to machines
d. Know the types of converters and methods of conversion from one type to another

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Trainings and activities.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation during the lecture.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation during the lecture is a guide to the student's commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.

- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	3	Motor operation			General questions and discussion
Second	3	Mechanical characteristic			General questions and discussion or exam I
Third	3	Mode of operation			General questions and discussion
Fourth	3	Speed control of DC motor (1)			I'm examined.
Fifth	3	Speed control of DC motor (1)			General questions and discussion or exam I
Sixth	3	Starting of DC motor			General questions and discussion
Seventh	3	Breaking of DC motor			General Questions
Eighth	3	Tutorial problem			Group duties
Ninth	3	Single phase transformers			General Questions
Tenth	3	Equivalent circuit of transformer			Monthly exam
Eleventh	3	Three –phase transformer			General Questions
Twelfth	3	Δ-Δ, Δ -Y, Y-Δ, Y-Y			Discussion and exam I
Thirteenth	3	, T-trans., V-trans.			General Questions
Fourteenth	3	Tutorial problem			Group Duties+ discussion
Fifteenth	3	Tutorial problems			Monthly exam

12. Infrastructure					
Required readings: ▪ Course Books ▪ Other			Electrical technology B. L. Theraja Design of Electrical Machines , V.N. Mittle Arvind Mitta		
Special requirements					
Social services (e.g. guest lectures, vocational training and field studies)			Practical application in graduation research projects.		

13. Acceptance	
Prerequisites	***EE2313***
Minimum number of students	20
The largest number of students	100

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Electro-Magnetics II / EE2316
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester / Second Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	23/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
a. Preparing engineering staff in the field of electrical engineering b. Preparing qualified engineers in the implementation of projects and maintenance c. Providing engineering consultations and expertise. d. Instilling professional ethics in the hearts of graduates to spare them corruption and deviation.
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Trainings and activities. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation during the lecture. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

d. General and transferable skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Areas 2	The steady magnetic field	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Biot- savat law	4	Second
General questions and discussion	Theoretical + Discussion	=	Amperes circuital law & their applications	4	Third
I'm examined.	Theoretical + Discussion	=	Magnetic flux & magnetic flux density	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	CURL	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Stoke's theorem	4	Sixth
General Questions	Theoretical + Discussion	=	The scalar &vector magnetic potential	4	Seventh
Group duties	Theoretical + Discussion	=	Magnetic forces & derivation of the steady magnetic field laws	4	Eighth

General Questions	Theoretical + Discussion	=	Time varying field &Maxwell's equation, Faraday's law	4	Ninth
Monthly exam	Theoretical + Discussion	=	Moving conductor in a magnetic field & general case of induction	4	Tenth
General Questions	Theoretical + Discussion	=	Displacement current & conduction current	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Maxwell's equations in point form	4	Twelfth
General Questions	Theoretical + Discussion	=	Maxwell's equations in integral form	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Boundary condition	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Boundary condition	4	Fifteenth

12. Infrastructure

Engineering electromagnetic/ Seventh edition By: William H. Hayt	Required readings: ▪ Course Books ▪ Other
	Special requirements

	Social services (e.g. guest lectures, vocational training and field studies)

13. Acceptance	
EE2315	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Electro-Megnetics1 / EE2315
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	First Semester / Second Academic Year
7. Number of Credit Hours (Total)	60
8. The history of preparation of this description	23/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
A. Preparing engineering staff in the field of electrical engineering B. Preparing qualified engineers in the implementation of projects and maintenance C. Providing engineering consultations and expertise. D. Instilling professional ethics in the hearts of graduates to spare them corruption and deviation.
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Trainings and activities. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation during the lecture. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises. C3- Developing the student’s ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

d. General and transferable skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student’s ability to deal with the Internet.

D3- Developing the student’s ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Electro-Megnetics1	Vector analysis &coordinate system	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Vector analysis &coordinate system	4	Second
General questions and discussion	Theoretical + Discussion	=	Coulomb's law & electric field intensity	4	Third
I'm examined.	Theoretical + Discussion	=	Coulomb's law & electric field intensity	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Coulomb's law & electric field intensity	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Electric flux density, Gauss's law &divergence	4	Sixth
General Questions	Theoretical + Discussion	=	Electric flux density, Gauss's law &divergence	4	Seventh
Group duties	Theoretical + Discussion	=	Electric flux density, Gauss's law &divergence	4	Eighth
General Questions	Theoretical + Discussion	=	Energy, potential, gradient & dipole	4	Ninth

Monthly exam	Theoretical + Discussion	=	Energy, potential, gradient & dipole	4	Tenth
General Questions	Theoretical + Discussion	=	Energy, potential, gradient & dipole	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Current, conductor, dielectrics & capacitance	4	Twelfth
General Questions	Theoretical + Discussion	=	Current, conductor, dielectrics & capacitance	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Current, conductor, dielectrics & capacitance	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Poisson's &Laplace's equations	4	Fifteenth

12. Infrastructure	
Engineering electromagnetic/ Seventh edition By: William H. Hayt	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g. guest lectures, vocational training and field studies)

13. Acceptance	
EE1201, EE1202 & EE1204	Prerequisites
20	Minimum number of students
100	The largest number of students

Course Description Form

Review the performance of higher education institutions
((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar – College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE3106 -English III
4. Programs in which he enters	
5. Available Attendance Forms	E-presence
6. Semester / Year	Second Semester – Third Year
7. Number of Credit Hours (Total)	30
8. The preparation date of this description	22-6-2021

9. Course Objectives:

A. Raising the level of student proficiency in the English language.

B. Developing the student's ability to read and write in English.

C. The student should be able to acquire new vocabulary. D. The student should know the extent to which he can speak English fluently.

10. Learning outcomes and teaching, learning and assessment methods
A. Knowledge and understanding
B- Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them
Evaluation methods
Participation in the classroom. Submission of activities Quarterly and final exams and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises. C3- Developing the student’s ability to dialogue and discussion.
Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
  Allocate a percentage of the grade for daily assignments and tests

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
  Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student’s ability to deal with the Internet.

D3- Developing the student’s ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion

11. Headquarters structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	English 3	Auxiliary verb, social expression and vocabularies	2	First
General questions and discussion or exam I	Theoretical + Discussion	=	Simple and continuous Present, number and dates	2	Second
General questions and discussion	Theoretical + Discussion	=	Present passive, sport leisure	2	Third
I'm examined.	Theoretical + Discussion	=	Exam	2	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Simple and continuous past, art and literature	2	Fifth
General questions and discussion	Theoretical + Discussion	=	Past passive, give opinion	2	Sixth
General Questions	Theoretical + Discussion	=	Modal verb, obligation and permissions	2	Seventh
Group duties	Theoretical +	=	Report about Nationality words and information	2	Eighth

	Discussion				
General Questions	Theoretical + Discussion	=	Future forms, the weather	2	Ninth
Monthly exam	Theoretical + Discussion	=	Exam	2	Tenth
General Questions	Theoretical + Discussion	=	Questions with like, verb pattern, signs and sounds	2	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Describing foods and cities	2	Twelfth
General Questions	Theoretical + Discussion	=	Present perfect and phrasal verb	2	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Present perfect passive, vocabularies	2	Fourteenth
Monthly exam	Theoretical + Discussion	=	Exam	2	Fifteenth

12. Infrastructure	
New Headway Plus Intermediate edition by: Liz and Joan Soars	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
English 2 EE*2106 /*	Prerequisites
10	Minimum number of students
50	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Engineering Economy / EE3210
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	Second Semester / Third Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	21/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
A. Understand the basic principles of engineering analytics B. Mathematics study theoretical and analytical study C. Solving engineering problems by mathematical and analytical methods D. Linking electrical engineering topics to engineering analysis and solving its problems
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.
Teaching and learning methods
• Exercises and practical problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Engineering Economics	*Introduction: Investment Explained.*	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	*Interest and Financial Mathematics.*	4	Second
General questions and discussion	Theoretical + Discussion	=	*Single Payment. Uniform Series. Arithmetic Gradient*	4	Third
I'm examined.	Theoretical + Discussion	=	*Nominal and Effective Interest Rates*	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	*Present Worth Analysis. Present Worth Analysis.*	4	Fifth
General questions and discussion	Theoretical + Discussion	=	*Investment in Bonds.*	4	Sixth
General Questions	Theoretical + Discussion	=	*Use computer software (MS Excel) to perform basic economic analyses*	4	Seventh
Group duties	Theoretical + Discussion	=	*Rate of Return Analysis3*	4	Eighth

General Questions	Theoretical + Discussion	=	*Analysis of Public Projects. The Benefit-Cost-Analysis*	4	Ninth
Monthly exam	Theoretical + Discussion	=	*Depreciation Analysis using Computer software (MS Excel)*	4	Tenth
General Questions	Theoretical + Discussion	=	*Income Taxes. After tax analysis*	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	*Effects of Inflation, Loans*	4	Twelfth
General Questions	Theoretical + Discussion	=	*Breakeven Analysis*	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	*Breakeven Analysis*	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	*Breakeven Analysis*	4	Fifteenth

12. Infrastructure

Leland Blank and Anthony Tarquin, Engineering Economy, McGraw-Hill, 6th ed., 2005.	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE2208 EE2209	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	Anbar University / College of Engineering
2. University Department / Center	Department of Electrical Engineering
3. Course Name/Code	Engineering Numerical methods /EE3211
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	Second Semester / Third Academic Year
7. Number of Credit Hours (Total)	45
8. The history of preparation of this description	22/6/2021

9. Course Objectives: A - Benefiting from the absolute technical expertise on electrical engineering systems and graduating qualified engineers

B – To interact professionally and professionally in the contemporary business environment through effective communication and teamwork
C - Clarification of the concept of numerical methods of all kinds
D_ The course aims to give the student a new background that can be used when studying these methods

10. Learning outcomes and teaching, learning and assessment methods A. Knowledge and understanding
- Recognize the basic concepts of numerical methods - Give the student experience in the properties of numerical methods - Identify the types of methods Numerical methods
B- Subject-specific skills B1- Scientific reports B2- Graduation Research
Teaching and learning methods
1- Theoretical lectures using the patient 2- Discuss the topic of the lecture and solve some exercises 3- Performing tests and discussing their results
Evaluation methods
Classroom participation Presentation of activities Monthly and final tests and activities
C- Thinking skills C1- Developing the student's ability to work on performing duties and delivering them on the scheduled date

C2- Try to apply concepts by solving different types of exercises
C3- Developing the student's ability to solve and discuss
Teaching and learning methods
- Sudden daily and weekly continuous tests - Exercises and activities in the classroom - Guiding students in some sources that contain examples and exercises and benefiting from them
Evaluation methods
Classroom participation Presentation of activities Monthly and final tests and activities
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology D2- Developing the student's ability to deal with the Internet D3- Developing the student's ability to deal with multiple means D4- Developing the student's ability to dialogue and discussion

11. Course Structure

Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Error analysis	Numerical methods	3	First
General questions and exam I	Theoretical + Discussion	Roots of nonlinear algebraic equations.	Numerical methods	3	Second
General questions and discussion	Theoretical + Discussion	Roots of nonlinear algebraic equations.	Numerical methods	3	Third
I'm examined.	Theoretical + Discussion	Solution of linear and transcendental simultaneous equation	Numerical methods	3	Fourth
General questions and discussion	Theoretical + Discussion	Solution of linear equations	Numerical methods	3	Fifth
Question & Discussion	Theoretical + Discussion	Matrix and vector manipulation	Numerical methods	3	Sixth
General questions	Theoretical + Discussion	Matrix and vector manipulation	Numerical methods	3	Seventh
Group duties	Theoretical + Discussion	Curve fitting and interpolation	Numerical methods	3	Eighth

General questions	Theoretical + Discussion	Curve fitting and interpolation	Numerical methods	3	Ninth
Monthly exam	Theoretical + Discussion	Numerical integration	Numerical methods	3	Tenth
General Questions	Theoretical + Discussion	Numerical integration	Numerical methods	3	Eleventh
General Questions	Theoretical + Discussion	Numerical differentiation	Numerical methods	3	Twelfth
Discussion and exam	Theoretical + Discussion	Numerical differentiation	Numerical methods	3	Thirteenth
Group duties	Theoretical + Discussion	Solution of differential equations	Numerical methods	3	Fourteenth
Monthly exam	Theoretical + Discussion	Solution of differential equations	Numerical methods	3	Fifteenth

12. Infrastructure	
1. Applied numerical analysis, Curtis F. Gerald and Patrick O. Wheatley 2. Numerical methods with Fortran 77. A practical Introduction I. V. Atkinson. 3. Numerical analysis, purna Chandra Biswal	Required readings: ▪ Course Books ▪ Other
	Special requirements
Practical application of graduation research projects	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
It doesn't have to	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Electric Power I – EE3317
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	First Semester / Third Academic Year
7. Number of Credit Hours (Total)	30
8. The preparation date of this description	22/6/2021

9- Course Objectives:
A Introducing the student to the ability system and extracting its variables to prepare him to be an engineer capable of designing and calculating all requirements.

10. Learning outcomes and teaching, learning and assessment methods
A. Knowledge and understanding - Identify the basic concepts of the power system. - Give the student experience in dealing with the constants of the system.
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises. C3- Developing the student’s ability to dialogue and discussion.

Teaching and learning methods
• Exercises and sports problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Introduction, general background	Introduction, general background	3	First
General questions and discussion or exam I	Theoretical + Discussion	Elements of power system	Elements of power system	3	Second
General questions and discussion	Theoretical + Discussion	Load factor, capacity factor	Load factor, capacity factor	3	Third
I'm examined.	Theoretical + Discussion	Transmission line constants, resistance	Transmission line constants, resistance	3	Fourth
General questions and discussion or exam I	Theoretical + Discussion	Inductance	Inductance	3	Fifth
General questions and discussion	Theoretical + Discussion	=	=	3	Sixth
General Questions	Theoretical + Discussion	=	=	3	Seventh
Group duties	Theoretical + Discussion	Capacitance	Capacitance	3	Eighth
General Questions	Theoretical + Discussion	=	=	3	Ninth

Monthly exam	Theoretical + Discussion	=	=	3	Tenth
General Questions	Theoretical + Discussion	Performance of T.L, short T. L	Performance of T.L, short T. L	3	Eleventh
Discussion and exam I	Theoretical + Discussion	=	=	3	Twelfth
General Questions	Theoretical + Discussion	Medium T. L	Medium T. L	3	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	=	3	Fourteenth
Monthly exam	Theoretical + Discussion	Long T. L	Long T. L	3	Fifteenth

12. Infrastructure	
(Elements of power systems analysis by Stevenson Modern power system	Required readings: ▪ Course Books ▪ Other
	Special requirements
Practical application in graduation research projects.	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
None	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Electric Power II/ EE 3318
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	Second Semester / Third Academic Year
7. Number of Credit Hours (Total)	30
8. The preparation date of this description	22/6/2021

9- Course Objectives:
A. Introducing the student to the ability system and extracting its variables to prepare him to be an engineer capable of designing and calculating all requirements.

10. Learning outcomes and teaching, learning and assessment methods
A. Knowledge and understanding - Identify the basic concepts of the power system. - Give the student experience in dealing with the constants of the system
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Power flow through T. L	Power flow through T. L	3	First
General questions and discussion or exam I	Theoretical + Discussion	=	=	3	Second
General questions and discussion	Theoretical + Discussion	=	=	3	Third
I'm examined.	Theoretical + Discussion	=	=	3	Fourth
General questions and discussion or exam I	Theoretical + Discussion	Corona	Corona	3	Fifth
General questions and discussion	Theoretical + Discussion	=	=	3	Sixth
General Questions	Theoretical + Discussion	Overhead T.L insulators	Overhead T.L insulators	3	Seventh
Group duties	Theoretical + Discussion	=	=	3	Eighth
General Questions	Theoretical + Discussion	=	=	3	Ninth
Monthly exam	Theoretical + Discussion	Sag and stress calculations	Sag and stress calculations	3	Tenth

General Questions	Theoretical + Discussion	=	=	3	Eleventh
Discussion and exam I	Theoretical + Discussion	Economic operation	Economic operation	3	Twelfth
General Questions	Theoretical + Discussion	=	=	3	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	=	3	Fourteenth
Monthly exam	Theoretical + Discussion	=	=	3	Fifteenth

12. Infrastructure	
(Elements of power systems analysis by Stevenson Modern power system	Required readings: ▪ Course Books ▪ Other
	Special requirements
Practical application in graduation research projects.	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
None	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Signals Systems I / EE3319
4. Programs in which he enters	
5. Available Attendance Forms	E- Presence
6. Semester / Year	First Semester / Third Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	22/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
A. Understand the basic principles of engineering analytics B. Mathematics study theoretical and analytical study C. Solving engineering problems by mathematical and analytical methods D. Linking electrical engineering topics to engineering analysis and solving its problems
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion
Teaching and learning methods
• Exercises and practical problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Signals & Systems 1	Fourier series-trigonometric	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Fourier series-trigonometric	4	Second
General questions and discussion	Theoretical + Discussion	=	Fourier series-trigonometric	4	Third
I'm examined.	Theoretical + Discussion	=	Fourier series-exponential	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Fourier series of discrete data application	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Fourier transform	4	Sixth
General Questions	Theoretical + Discussion	=	Fourier transform	4	Seventh
Group duties	Theoretical + Discussion	=	Fourier transform and applications	4	Eighth
General Questions	Theoretical + Discussion	=	Fourier transform and applications	4	Ninth

Monthly exam	Theoretical + Discussion	=	Laplace transform-one-sided	4	Tenth
General Questions	Theoretical + Discussion	=	Laplace transform	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Laplace transform	4	Twelfth
General Questions	Theoretical + Discussion	=	Laplace transform	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Inverse Laplace transform-	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Inverse Laplace transform and applications	4	Fifteenth

12. Infrastructure	
Advance Engineering Mathematic by Wiley.	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE2208 EE2209	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Signals Systems II/ EE3320
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	Second Semester / Third Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	1/9/2017

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
A. Understand the basic principles of engineering analytics B. Mathematics study theoretical and analytical study C. Solving engineering problems by mathematical and analytical methods D. Linking electrical engineering topics to engineering analysis and solving its problems
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises. C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods
• Exercises and practical problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Signals & Systems II	2-transform-z-transform	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	2-transform-z-transform	4	Second
General questions and discussion	Theoretical + Discussion	=	2-transform-z-transform	4	Third
I'm examined.	Theoretical + Discussion	=	2-transform-z-transform	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Inverse -z-transform	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Inverse -z-transform	4	Sixth
General Questions	Theoretical + Discussion	=	Inverse -z-transform	4	Seventh
Group duties	Theoretical + Discussion	=	Inverse -z-transform	4	Eighth
General Questions	Theoretical + Discussion	=	Inverse -z-transform and applications	4	Ninth

Monthly exam	Theoretical + Discussion	=	Complex variables,	4	Tenth
General Questions	Theoretical + Discussion	=	Matrix analysis	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Matrix analysis	4	Twelfth
General Questions	Theoretical + Discussion	=	Partial differential equation	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Partial differential equation	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Examples & problems	4	Fifteenth

12. Infrastructure	
Advance Engineering Mathematic by Wiley.	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE2208 EE2209	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE Lab III / EE3321
4. Programs in which he enters	
5. Available Attendance Forms	Traditional
6. Semester / Year	First Semester / Third Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	22/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
A. Understand the main principles of the work of alternating current machines B. Study the components of machines, winding methods, types of generators and motors, how to control it and draw mathematical relations. D. Understand the main principles of the work of electronic circuits E. Study the components of electronic circuits and the relationship between the incoming and outgoing signals. F. Conducting applications in the laboratory
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student’s ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student’s ability to deal with the Internet.

D3- Developing the student’s ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Electrical Lab 3	The (BJT) transistor as an amplifier	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	The (FET) transistor as an amplifier	4	Second
General questions and discussion	Theoretical + Discussion	=	Multistage amplifier RC coupled	4	Third
I'm examined.	Theoretical + Discussion	=	Multistage amplifier direct coupled	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Darlington pairs	4	Fifth
General questions and discussion	Theoretical + Discussion	=	The combination of CE & CC Amplifier	4	Sixth
General Questions	Theoretical + Discussion	=	Current series negative Feedback amplifier	4	Seventh
Group duties	Theoretical + Discussion	=	Voltage shunt negative Feedback amplifier	4	Eighth

General Questions	Theoretical + Discussion	=	Open test for single Phase transformer	4	Ninth
Monthly exam	Theoretical + Discussion	=	Open test for single Phase transformer	4	Tenth
General Questions	Theoretical + Discussion	=	short test for single Phase transformer	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	short test for single Phase transformer	4	Twelfth
General Questions	Theoretical + Discussion	=	Back-to-Back test on two single phase transformers	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Back-to-Back test on two single phase transformers	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Load test on small single-phase transformer	4	Fifteenth

12. Infrastructure	
Laboratory sheet prepared by department lecturers	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE3324 and EE3326	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EELab IV / EE3321
4. Programs in which he enters	
5. Available Attendance Forms	Traditional
6. Semester / Year	Second Semester / Third Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	22/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
A. Understand the main principles of DC machines B. Study the components of machines, winding methods, types of generators and motors, how to control it and draw mathematical relations. D. Understand the main principles of the work of electronic circuits E. Study the components of electronic circuits and the relationship between the incoming and outgoing signals. F. Conducting applications in the laboratory
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Electrical Lab 4	Operational amplifier	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Op- amplifier- summer & comparator	4	Second
General questions and discussion	Theoretical + Discussion	=	The differential amplifier	4	Third
I'm examined.	Theoretical + Discussion	=	Active filter low – pass filter (LPF),	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Active filter High – pass filter (HPF)	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Active filter Band pass filter (BPF)	4	Sixth
General Questions	Theoretical + Discussion	=	Frequency Response (BJT) Low & high frequency	4	Seventh
Group duties	Theoretical + Discussion	=	Parallel operation of two single phase transformer	4	Eighth

General Questions	Theoretical + Discussion	=	Parallel operation of two single phase transformer	4	Ninth
Monthly exam	Theoretical + Discussion	=	Parallel operation of three phase transformer	4	Tenth
General Questions	Theoretical + Discussion	=	Parallel operation of three phase transformer	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	load test of 3-phase Induction motor	4	Twelfth
General Questions	Theoretical + Discussion	=	load test of 3-phase Induction motor	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	load test of 3-phase Induction motor (by computer)	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	load test of 3-phase Induction motor (by computer)	4	Fifteenth

12. Infrastructure	
Laboratory sheet prepared by department lecturers	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE3325 and EE3327	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar – College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE3323/Computer Networks
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	First Semester -Third Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	22/6/2021
9. Course Objectives: 1- Study the foundations of computer networks 2- Layers of the Internet network with its protocols 3- Study the foundations of digital and analog signal 4- Study the fields of signal transmission 5- Study of means of connection to networks 6 - Study of network security and encryption methods	

10. Learning outcomes and teaching, learning and assessment methods

- 1- Knowledge of the foundations of computer networks and their types
- 2- Studying the layers of the Internet network with its protocols
- 3- Knowledge of the basics of digital and analog signal
- 4- Studying the fields of wired and wireless signal transmission
- 5- Studying the means of connection to networks of all kinds
- 6 - Study of network security and methods of encryption and decryption

Teaching and learning methods

- Theoretical explanation with the use of the interrogation method .
- Exercises and activities in the classroom.
- Discussions within the theoretical class

Evaluation methods

- Participation and activity in the classroom.
- Daily, quarterly and final tests .

C- Thinking skills
Preparation and design according to specifications and requirements

Teaching and learning methods

- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments
- Quarterly and final exams express commitment and achievement of knowledge and skills.
  Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

- Developing the student's ability to dialogue, discuss, solve and deal with various problems

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	4	Data communication	Network Topologies, network types	Theoretical + Discussion	General questions and discussion
Second	4	Network protocol and standard	networks, reference model	=	General questions and discussion or exam
Third	4	Network protocol and standard	OSI and its layers	=	General questions and discussion
Fourth	4	Network protocol and standard	TCP / IP and its layers	=	examination
Fifth	4	Transmission medium	Types of transmission medium wire and wireless	=	General questions and discussion or exam I
Sixth	4	Network interfaces	Types of connecting devices	=	General questions and discussion
Seventh	4	Network interfaces	routing, switching	=	General Questions
Eighth	4	Types of networks	local area Networks	=	Duties
Ninth	4	Types of networks	Wide area Networks	=	General Questions
Tenth	4	Types of networks	wireless Network, bridging and routing.	=	Monthly exam

Eleventh	4	Network security	message confidentiality and integrity,	=	General Questions
Twelfth	4	Network security	Message authentication, and nonrepudiation, Digital Signature	=	Discussion and exam
Thirteenth	4	Cryptography	Symmetric key (AES, DES	=	General Questions
Fourteenth	4	Cryptography	Asymmetric key (RSA, Diffie hillman.)	=	Duties + discussion
Fifteenth	4	Cryptography	Public and private key definitions and details	=	Monthly exam

12. Infrastructure	
Required readings: Basic lectures ▪ Course Books ▪ Other	1-Data Communication And Computer Networking", Behrou Feourozon . 2-"Computer Networks Fifth Edition "Andrew S. Tanenbaum, David J. Wetherall
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	

13. Acceptance	
Prerequisites	None
Minimum number of students	20
The largest number of students	50

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	AC Machines I/EE3324
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	First / Third academic year
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	22/6/2021
9. Course Objectives:	
Introducing the student to the basics of alternating current machines and developing the skill of finding industrial solutions to most of the problems that he may be exposed to in the field of work, as well as preparing the student to be able to deal with all malfunctions and how to choose motors according to the type of case and calculate efficiency, in addition to understanding the basics and skills of dealing with electrical transformers and generators.	

Preparing engineering staff in the field of electrical engineering
Preparing qualified engineers in the implementation of projects and maintenance Providing engineering consultancy and expertise.
Instilling professional ethics in the hearts of graduates to spare them corruption and deviation

10. Learning outcomes and teaching, learning and assessment methods
Dealing with induction machines and transformers of all kinds Conducting practical experiments in accordance with the methodological data Dealing with expected problems in the field of work
Teaching and learning methods
- Sudden daily and weekly continuous tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Daily exams Participation inside the hall Semi-semester and monthly exams
C- Thinking skills Intellectual questions that include industrial problems and how to solve them Choosing the type and size of motors for different working conditions
Teaching and learning methods
• Exercises • Assigning the student some group activities and duties. Allocate a percentage of the grade for daily assignments and tests
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research.

- Quarterly and final exams express commitment and achievement of knowledge and skills.
  Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

- Developing the student's ability to deal with technical means.
- Developing the student's ability to deal with the Internet.
- Developing the student's ability to deal with multiple means.
- Develop the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	3	**Single phase winding**	**Single phase theory**	Theoretical + Discussion	General questions and discussion
Second	3	**Double field theory**	**Double field theory**	Theoretical + Discussion	General questions and discussion or exam I
Third	3	**Types of 1 phase motor**	**All Types of 1 phase motor**	Theoretical + Discussion	General questions and discussion
Fourth	3	**Starting torque of single Phase motor**	**Main equations of Starting torque**	Theoretical + Discussion	I'm examined.
Fifth	3	**Capacitor type motor**	**Capacitor motor theory**	Theoretical + Discussion	General questions and discussion or exam
Sixth	3	**Three phase induction motor construction**	**Introduction of three phase induction motor**	Theoretical + Discussion	General questions and discussion
Seventh	3	**Rotating field for three phases**	**Rotating field**	Theoretical + Discussion	General Questions
Eighth	3	**Equivalent circuit of 3 phase motor**	**Exact and approximate Equivalent circuit**	Theoretical + Discussion	Group duties
Ninth	3	**Torque -speed in 3 phase motors**	**Torque -speed characteristic curve**	Theoretical + Discussion	General Questions
Tenth	3	**Starting torque, maximum torque, full load torque**	**Torque ratios**	Theoretical + Discussion	Monthly exam

Eleventh	3	**Slip on 3 phase motors**	**Slip on 3 phase motors**	Theoretical + Discussion	General Questions
Twelfth	3	**Mechanical load on rotor**	**Mechanical torque**	Theoretical + Discussion	Discussion and exam I
Thirteenth	3	**Circle calculation of three of 3 phase motor**	**Circle diagram**	Theoretical + Discussion	General Questions
Fourteenth	3	**Speed control of three phase induction motor**	**Speed control**	Theoretical + Discussion	Group Duties+ discussion
Fifteenth	3	**Starting of three phase induction motor**	**Starting Methods**	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	➢ A.C Electrical machines B.L THERAJA ➢ Advanced problems in electrical machines B.L THERAJA
Special requirements	
Social services (e.g., guest lectures, vocational training and field studies)	Practical application in graduation research projects

13. Acceptance	
Prerequisites	None
Minimum number of students	15
The largest number of students	40

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	AC Machines II /EE3325
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	Second / Third academic year
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	22/6/2021
9. Course Objectives :	
Introducing the student to the basics of alternating current machines and developing the skill of finding industrial solutions to most of the problems that he may be exposed to in the field of work, as well as preparing the student to be	

able to deal with all malfunctions and how to choose motors according to the type of case and calculate efficiency, in addition to understanding the basics and skills of dealing with electrical transformers and generators.
Preparing engineering staff in the field of electrical engineering
Preparing qualified engineers in the implementation of projects and maintenance Providing engineering consultancy and expertise.
Instilling professional ethics in the hearts of graduates to spare them corruption and deviation

10. Learning outcomes and teaching, learning and assessment methods
Dealing with induction machines and transformers of all kinds Conducting practical experiments in accordance with the methodological data Dealing with expected problems in the field of work
Teaching and learning methods
- Sudden daily and weekly continuous tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Daily exams Participation inside the hall Semi-semester and monthly exams
C- Thinking skills Intellectual questions that include industrial problems and how to solve them Choosing the type and size of motors for different working conditions
Teaching and learning methods
• Exercises • Assigning the student some group activities and duties. Allocate a percentage of the grade for daily assignments and tests
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility.

• Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). - Developing the student's ability to deal with technical means. - Developing the student's ability to deal with the Internet. - Developing the student's ability to deal with multiple means. - Develop the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	3	**Synchronous motor construction**	**Introduction of Synchronous motor**	Theoretical + Discussion	General questions and discussion
Second	3	**Principle of operations**	**Principle of operations**	Theoretical + Discussion	General questions and discussion or exam
Third	3	**Loaded syn. motor**	**Synchronous motor under load**	Theoretical + Discussion	General questions and discussion
Fourth	3	**Loaded syn. motor**	**Synchronous motor under load**	Theoretical + Discussion	I'm examined.
Fifth	3	**Over –under excitation effect on syn. motor**	**Effect of excitation**	Theoretical + Discussion	General questions and discussion or exam
Sixth	3	**Alternator constructions & winding**	**Introduction of Alternator**	Theoretical + Discussion	General questions and discussion
Seventh	3	**Induced e.m.f**	**Induced e.m.f**	Theoretical + Discussion	General Questions
Eighth	3	**Armature reaction effect &synchronous impedance**	**Armature reaction**	Theoretical + Discussion	Group duties
Ninth	3	**Loaded alternator**	**Loaded alternator**	Theoretical + Discussion	General Questions

Tenth	3	**Regulation of alternator**	**Voltage Regulation**	Theoretical + Discussion	Monthly exam
Eleventh	3	**Regulation techniques**	**Regulation techniques**	Theoretical + Discussion	General Questions
Twelfth	3	**Transformer theory**	**Transformer**	Theoretical + Discussion	Discussion and exam I
Thirteenth	3	**Equivalent circuit and phasor diagram of transformer**	**Equivalent circuit and phasor diagram**	Theoretical + Discussion	General Questions
Fourteenth	3	**Power calculation and efficiency of transformer**	**Power calculation**	Theoretical + Discussion	Group Duties+ discussion
Fifteenth	3	**Power calculation and efficiency of transformer**	**Power calculation**	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	➢ A.C Electrical machines B.L THERAJA ➢ Advanced problems in electrical machines B.L THERAJA
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects

13. Acceptance	
Prerequisites	None
Minimum number of students	15
The largest number of students	40

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar – College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE3326/ Electronics I
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	First Semester - Third Year
7. Number of Credit Hours (Total)	60 hours
8. The preparation date of this description	
9. Course Objectives: Study of the basic components of electronic circuits in addition to design and analysis	
and frequency response to those circuits	

10. Learning outcomes and teaching, learning and assessment methods

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities

C- Thinking skills

1- Developing the student's ability to work on performing duties and delivering them on time.
2- Try to apply concepts by solving different types of exercises.
3- Developing the student's ability to dialogue and discussion

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
  Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

1- Developing the student's ability to deal with the means of technology.
2- Developing the student's ability to deal with the Internet.
3- Developing the student's ability to deal with multiple means.
4- Developing the student's ability to dialogue and discussion.

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	4	Frequency Response	:(low, high frequency response) of BJT	Theoretical + Discussion	General questions and discussion
Second	4	Frequency Response	:(low, high frequency response) of FET	Theoretical + Discussion	General questions , discussion and exam
Third	4	Frequency Response, and effects	Multistage amplifier	Theoretical + Discussion	General questions and discussion
Fourth	4	BJT and MOSFET amplifier.	app1ication	Theoretical + Discussion	General questions and discussion
Fifth	4	Multistage and Compound Amplifiers	Cascade, Darlington	Theoretical + Discussion	Monthly exam
Sixth	4	Current Source Circuits,	Current Mirror Circuits, CMOS Circuit	Theoretical + Discussion	General questions and discussion
Seventh	4	Differential amplifier using s	BJTs, JFETs and MOSFET	Theoretical + Discussion	General questions and discussion
Eighth	4	Differential amplifier with	passive and active loads	Theoretical + Discussion	General questions ,

					discussion and exam
Ninth	4	Instrumentation circuits	Control source	Theoretical + Discussion	General questions and discussion
Tenth	4	Log and antilog amplifier	Voltage comparator	Theoretical + Discussion	General questions and discussion
Eleventh	4	Low-pass filter, High-pass filter, band-pass filter	Active filter	Theoretical + Discussion	General questions, discussion and exam
Twelfth	4	Hybrid II equivalent circuit	for BJTs	Theoretical + Discussion	General questions and discussion
Thirteenth	4	Hybrid II equivalent circuit	for FETs	Theoretical + Discussion	General questions and discussion
Fourteenth	4	ANALOG ICs	ANALOG ICs	Theoretical + Discussion	General questions, discussion and exam
Fifteenth	4	Basing IC amplifier stage at low frequencies	Basing IC amplifier stage at low frequencies	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	- Electronic Devices and Circuit theory Robert L. Boylestad 1 - Electronic Devices and Circuits Bogart. 2 – Microelectronic Circuits Sedra / Smith. 3 - Microelectronics / Jacob Millman 4 – Electronic Devices / Floyd.
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	
Minimum number of students	
The largest number of students	47

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar – College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE3326/ Electronics II
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	Second Semester - Third Academic Year
7. Number of Credit Hours (Total)	60 hours
8. The preparation date of this description	22/6/2021
9. Course Objectives: Study of the basic components of electronic circuits in addition to design and analysis	
and frequency response to those circuits	

10. Learning outcomes and teaching, learning and assessment methods

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities

C- Thinking skills

1- Developing the student's ability to work on performing duties and delivering them on time.
2- Try to apply concepts by solving different types of exercises.
3- Developing the student's ability to dialogue and discussion

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
  Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

1- Developing the student's ability to deal with the means of technology.
2- Developing the student's ability to deal with the Internet.
3- Developing the student's ability to deal with multiple means.
4- Developing the student's ability to dialogue and discussion.

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	4	Definitions, amplifier classes and efficiency	Power amplifier	Theoretical + Discussion	General questions and discussion
Second	4	Series fed amplifier, Transformed coupled amplifier	Class A amplifier	Theoretical + Discussion	General questions, discussion and exam
Third	4	Popular class B amplifier, transformed coupled, practical class B circuits	Class B amplifier	Theoretical + Discussion	General questions and discussion
Fourth	4	Circuit connections	Class AB, Class C, Class D amplifiers	Theoretical + Discussion	General questions and discussion
Fifth	4	Feedback amplifier	: Voltage -shunt. Voltage series configuration	Theoretical + Discussion	Monthly exam
Sixth	4	Feedback amplifier	: **current-shunt**, current – series, configuration	Theoretical + Discussion	General questions and discussion
Seventh	4	Basic principles of sinusoidal oscillators	Linear Oscillator	Theoretical + Discussion	General questions and discussion

Eighth	4	Positive feedback and oscillation	Linear Oscillator	Theoretical + Discussion	General questions, discussion and exam
Ninth	4	**RC Phase shift oscillator and Wien bridge oscillator**	Linear oscillator	Theoretical + Discussion	General questions and discussion
Tenth	4	LC oscillator, crystal oscillator	Linear oscillator	Theoretical + Discussion	General questions and discussion
Eleventh	4	Timer circuit Schmitt trigger oscillator	Nonsin usoidal oscillator	Theoretical + Discussion	General questions, discussion and exam
Twelfth	4	Monostable multivibrator	The 555 circuit and application	Theoretical + Discussion	General questions and discussion
Thirteenth	4	Astable multivibrator	The 555 circuit and application	Theoretical + Discussion	General questions and discussion
Fourteenth	4	ANALOG ICs	ANALOG ICs	Theoretical + Discussion	General questions, discussion and exam
Fifteenth	4	Voltage regulators and practical applications	Power supplies	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	- Electronic Devices and Circuit theory Robert L. Boylestad 1 - Electronic Devices and Circuits Bogart. 2 – Microelectronic Circuits Sedra / Smith. 3 - Microelectronics / Jacob Millman 4 – Electronic Devices / Floyd.
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	
Minimum number of students	10
The largest number of students	47

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Analog Communications and Noise / EE3328
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	First Semester / Third Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	22/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods

A. Understand the main principles of communication systems

B. Study of mathematical models of communication systems

C. Theoretical study and some applications in the laboratory

D. Design of some communication systems

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.

- Exercises and activities in the classroom.

- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.

Submission of activities

Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student’s ability to dialogue and discussion.

Teaching and learning methods
• Exercises and practical problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Analogue connections	Introduction to Communication systems	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Signals & Fourier & Spectrum	4	Second
General questions and discussion	Theoretical + Discussion	=	Bandwidth & Filters	4	Third
I'm examined.	Theoretical + Discussion	=	Analog Communications: AM-DSB-SC	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	AM-DSB-LC	4	Fifth
General questions and discussion	Theoretical + Discussion	=	AM-SSB & VSB	4	Sixth
General Questions	Theoretical + Discussion	=	Superheterodyne & FDM	4	Seventh
Group duties	Theoretical + Discussion	=	Examples & Problems	4	Eighth
General Questions	Theoretical + Discussion	=	Quiz & Introduction to FM	4	Ninth

Monthly exam	Theoretical + Discussion	=	NB-FM & WB-FM,	4	Tenth
General Questions	Theoretical + Discussion	=	Types of Mod/DeMond	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	PLL	4	Twelfth
General Questions	Theoretical + Discussion	=	Introduction to Noise	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	Noise in AM & FM	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	Examples & problems	4	Fifteenth

12. Infrastructure	
Introduction to Communication Systems by. Ferrel G. Stremler.	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE3319	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Digital Communications / EE3329
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	Second Semester / Third Academic Year
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	21/6/2021

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods

Understand the main principles of communication systems

B. Study of mathematical models of communication systems

C. Theoretical study and some applications in the laboratory

D. Design of some communication systems

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.

- Exercises and activities in the classroom.

- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.

Submission of activities

Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods
• Exercises and practical problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Digital Communication	Introduction to Sampling	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	PAM, PWM, PPM	4	Second
General questions and discussion	Theoretical + Discussion	=	COMPRISES	4	Third
I'm examined.	Theoretical + Discussion	=	PCM	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Delta PCM, Differential PCM	4	Fifth
General questions and discussion	Theoretical + Discussion	=	DM, Adaptive DM	4	Sixth
General Questions	Theoretical + Discussion	=	Channel capacity, ISI	4	Seventh
Group duties	Theoretical + Discussion	=	Probability of error	4	Eighth
General Questions	Theoretical + Discussion	=	Examples & problems	4	Ninth
Monthly exam	Theoretical + Discussion	=	Quiz & introduction to Digital Comm	4	Tenth

General Questions	Theoretical + Discussion	=	ASK, FSK, PSK	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	Probability of error in Digital Mod	4	Twelfth
General Questions	Theoretical + Discussion	=	M-level Modulation	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	QPSK	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	QAM, Examples & problems	4	Fifteenth

12. Infrastructure	
Introduction to Communication Systems by Ferrel G. Stremler.	Required readings: ▪ Course Books ▪ Other
	Special requirements
	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE3328	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE4107 / English IV
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester 2020-2021
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	1 / 9 / 2020
9- Course Objectives :	

10. Learning outcomes and teaching, learning and assessment methods

A. The student's ability to make a presentation in English
B. The student's ability to understand the instructions and advice in English in detail
c. The student can take notes from an English-speaking person
d. The student's ability to write a letter in English

B - Subject-specific skills
B1 – Dialogues
B2 – Make a presentation

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

d. General and transferable skills (other skills related to employability and personal development).
D1- Developing the student's ability to deal with the means of technology.
D2- Developing the student's ability to deal with the Internet.
D3- Developing the student's ability to deal with multiple means.
D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	2	The listening: Things I miss from home The reading: A Home from Home	Unit - 1	Theoretical + Discussion	General questions and discussion
Second	2	The writing: Applying for a job The speaking: pronunciation practice	Unit - 1	Theoretical + Discussion	General questions and discussion or exam I
Third	2	The grammar: The tense system (simple, continuous, perfect)	Unit - 2	Theoretical + Discussion	General questions and discussion
Fourth	2	The listening: An interview with Tashi Wheeler The reading: Paradise Lost	Unit - 2	Theoretical + Discussion	I'm examined.
Fifth	2	The writing: writing informal letters The speaking: conversations about Exchanging information	Unit - 3	Theoretical + Discussion	General questions and discussion or exam I
Sixth	2	The grammar: Active and passive, and spoken English (Informal language)	Unit - 3	Theoretical + Discussion	General questions and discussion
Seventh	2	The listening: The money jigsaw The reading: Jane Austen	Unit - 4	Theoretical + Discussion	General Questions
Eighth	2	The writing: Narrative writing-1, Linking ideas The speaking: Information gap and roleplay	Unit - 4	Theoretical + Discussion	Group duties

Ninth	2	The grammar: The present tenses (perfect, simple, and continuous), and spoken English (Being imprecise, Filters)	Unit - 5	Theoretical + Discussion	General Questions
Tenth	2	Progressive exam 1	=	theoretical	Monthly exam
Eleventh	2	The listening: My most memorable lie The reading: Diana and Elvis shot JFK	Unit - 6	Theoretical + Discussion	General Questions
Twelfth	2	The writing: writing emails The speaking: The pros and cons of arranged marriage	Unit - 6	Theoretical + Discussion	Discussion and exam I
Thirteenth	2	The grammar: Narrative tenses (all past tenses such as simple, continuous, and perfect), Active and passive, and spoken English	Unit - 7	Theoretical + Discussion	General Questions
Fourteenth	2	Progressive exam 2	=	theoretical	Monthly exam
Fifteenth	2	Oral exam	=	discussion	conversation

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	▪ Soars, J., Soars, L., & Hancock, P. (1987). Headway: Upper-intermediate. Student's book. Oxford: Oxford University Press.
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	

13. Acceptance	
Prerequisites	***EE3106***
Minimum number of students	10
The largest number of students	40

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Administration and Leadership Skills /EE3106
4. Programs in which he enters	
5. Available Attendance Forms	E-Presence
6. Semester / Year	First semester - Third Academic year
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	22/6/20 21
9. Course Objectives: A- Benefiting from the absolute technical expertise on electrical engineering systems and graduating qualified engineers	
B- To interact professionally and professionally in the contemporary business environment through effective communication, leadership and teamwork	

C. Clarifying the concept of leadership of all kinds
D- The course aims to give the student a new background that can be used when studying engineering projects

10. Learning outcomes and teaching, learning and assessment methods A. Knowledge and understanding
- Recognize the basic concepts of leadership skills - Give the student experience in the characteristics of a leader - Learn about successful leadership styles
B- Skills for Education B1- Scientific reports and graduation research
Teaching and learning methods
1- Scientific lectures using the blackboard 2- Discuss the topic of the lecture and solve some exercises 3- Provide abstracts through separate lieutenants from different books 4- Performing tests and discussing their results
Evaluation methods
Classroom participation Presentation of activities Quarterly and final exams and activities
C- Thinking skills C1- Developing the student's ability to work on performing duties and delivering them on the scheduled date C2- Try to apply concepts by solving different types of exercises C3- Developing the student's ability to dialogue and discussion
Teachingand learning methods :
- Daily surprise and continuous weekly tests - Exercises and activities in the classroom - Guiding students in some sources that contain examples and exercises to benefit from
Evaluation methods
- Classroom participation - Presentation of activities - Quarterly and final exams and activities

D - General and transferred skills (other skills related to employability and personal development).
D1- Existing ones

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	3	Leadership skills	**Concepts of skill, management and leadership Types - Management Operations**	Theoretical + Discussion	General questions and discussion
Second	3	Leadership skills	**Elements of administrative leadership and leadership requirements.**	Theoretical + Discussion	General questions, discussion and exam I
Third	3	Leadership skills	**Leadership and the leader, leadership theories**	Theoretical + Discussion	General questions, discussion and exam I
Fourth	3	Leadership skills	**Leadership styles and duties of a leader**	Theoretical + Discussion	I'm examined.
Fifth	3	Leadership skills	Methodology of preparing and making leaders, Leadership Arts	Theoretical + Discussion	General questions and discussion
Sixth	3	Leadership skills	Leadership qualities and skills	Theoretical + Discussion	General questions and discussion
Seventh	3	Leadership skills	**Duties and rights of the leader, weakness of leadership and its treatments**	Theoretical + Discussion	General Questions
Eighth	3	Leadership skills	**The difference between leadership in**	Theoretical + Discussion	Group duties

			Islam and dictatorships		
Ninth	3	Public Administration	**Management levels and functions**	Theoretical + Discussion	General Questions
Tenth	3	Engineering Management	**Engineering Management, Engineering Projects Management**	Theoretical + Discussion	Monthly exam
Eleventh	3	Engineering Management	Terminology used in engineering work and how to Assignment and execution	Theoretical + Discussion	General Questions
Twelfth	3	Engineering Management	**Methods of planning and programming engineering projects, Network analysis method**	Theoretical + Discussion	Discussion and exam I
Thirteenth	3	Engineering Management	**Find the time required to complete the project and calculate the critical path**	Theoretical + Discussion	General Questions
Fourteenth	3	Engineering Management	Applied exercises on the method of network analysis, finding the critical path, project completion time and total grace time for the project	Theoretical + Discussion	Group Duties + Discussion
Fifteenth	3	Engineering Management	Equilibrium line method and calculations, solving exercises	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	1. Operations research (second edition), P.Rama Murthy 2. Glimpses into the art of leaders. (C Courtois) 3. Leadership in the light of principles (Stephen Covey)
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects

13. Acceptance	
Prerequisites	There isn't any
Minimum number of students	10
The largest number of students	40

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE Lab VI / EE4330
4. Programs in which he enters	
5. Available Attendance Forms	Traditional + (Blended Learning)
6. Semester / Year	First Semester 2020-2021
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	1/9/2020

9- Course Objectives:

10. Learning outcomes and teaching, learning and assessment methods
A. Understand the main principles of the operation of control systems B. Study of mathematical models of control systems C. Theoretical study and laboratory applications D. Design of some control systems E. Understand the main principles of communication systems F. Practical application of the most important communication systems in the laboratory G. Linking the theoretical study of some applications to the practical side H. Design of some communication systems and their practical application
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities

Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	**Method of education**	**Name of the unit/course or topic**	**Required Learning Outcomes**	**Hours**	**The week**
General questions and discussion	Theoretical + Discussion	Electrical Lab 6	Systems Representation in MATLAB	4	First
General questions and discussion or exam I	Theoretical + Discussion	=	Systems Response in MATLAB	4	Second
General questions and discussion	Theoretical + Discussion	=	Steady State Error in MATLAB	4	Third
I'm examined.	Theoretical + Discussion	=	Homework in Systems Representation in MATLAB	4	Fourth
General questions and discussion or exam I	Theoretical + Discussion	=	Introduction To Simulink	4	Fifth
General questions and discussion	Theoretical + Discussion	=	Simulink Systems Representation	4	Sixth
General Questions	Theoretical + Discussion	=	Simulink Systems Representation	4	Seventh
Group duties	Theoretical + Discussion	=	Systems Response in Simulink	4	Eighth

General Questions	Theoretical + Discussion	=	Steady State Error in Simulink	4	Ninth
Monthly exam	Theoretical + Discussion	=	Low pass filter	4	Tenth
General Questions	Theoretical + Discussion	=	High pass filter	4	Eleventh
Discussion and exam I	Theoretical + Discussion	=	AM-DSB-SC Modulation	4	Twelfth
General Questions	Theoretical + Discussion	=	AM-DSB-SC Demodulation	4	Thirteenth
Group Duties+ discussion	Theoretical + Discussion	=	AM-DSB-LC Modulation	4	Fourteenth
Monthly exam	Theoretical + Discussion	=	AM-DSB-LC Demodulation	4	Fifteenth

12. Infrastructure

Laboratory sheet prepared by department lecturers	Required readings: ▪ Course Books ▪ Other
	Special requirements

	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE3328 & EE4332	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	EE Lab VII/ EE4331
4. Programs in which he enters	
5. Available Attendance Forms	Traditional + (Blended Learning)
6. Semester / Year	Second Semester 2020-2021
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	1/9/2020
9- Course Objectives :	

10. Learning outcomes and teaching, learning and assessment methods

A. Understand the main principles of the operation of control systems
B. Study of mathematical models of control systems
C. Theoretical study and laboratory applications
D. Design of some control systems
e.Understand the main principles of communication systems
G. Practical application of the most important communication systems in the laboratory
H. Linking the theoretical study of some applications to the practical side
i. Design of some communication systems and their practical application

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.
D2- Developing the student's ability to deal with the Internet.
D3- Developing the student's ability to deal with multiple means.
D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	4	PCM	Electrical Lab 7	Theoretical + Discussion	General questions and discussion
Second	4	PWM	=	Theoretical + Discussion	General questions and discussion or exam I
Third	4	DM & CVSD	=	Theoretical + Discussion	General questions and discussion
Fourth	4	Sampling & Aliasing using Simulink	=	Theoretical + Discussion	I'm examined.
Fifth	4	PCM using Simulink	=	Theoretical + Discussion	General questions and discussion or exam I
Sixth	4	ASK Modulation	=	Theoretical + Discussion	General questions and discussion
Seventh	4	Experiment 5 Second-Order System	=	Theoretical + Discussion	General Questions
Eighth	4	Experiment 6 Transient Response	=	Theoretical + Discussion	Group duties
Ninth	4	Experiment 7 Effect of Zero on First Order System	=	Theoretical + Discussion	General Questions
Tenth	4	Experiment 8 Effect of Zero on Second Order System	=	Theoretical + Discussion	Monthly exam
Eleventh	4	Experiment 9 Dominant Pole of Second Order System	=	Theoretical + Discussion	General Questions

Twelfth	4	Experiment 10 P-Controller	=	Theoretical + Discussion	Discussion and exam I
Thirteenth	4	Experiment 11 I-Controller	=	Theoretical + Discussion	General Questions
Fourteenth	4	Experiment 12 D-Controller	=	Theoretical + Discussion	Group Duties+ discussion
Fifteenth	4	Experiment 13 PID-Controller	=	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	**Laboratory sheet prepared by department lecturers**
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	

13. Acceptance	
Prerequisites	***EE3329 and EE4333***
Minimum number of students	10
The largest number of students	40

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Control Theory I/ EE4332
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	First Semester 2020-2021
7. Number of Credit Hours (Total)	90
8. The preparation date of this description	1/9/2020
9- Course Objectives :	
A. The correct understanding of the working methods of control systems.	
B. Theoretical andsimile study on computers of control theories.	
C. Design for conventional controllers for all control systems	
D- Creating sports models for any physical system	

10. Learning outcomes and teaching, learning and assessment methods

To familiarize the student with the history of control science and the most important scientists who made shifts in this science
The student should familiarize himself with the basic units of controlling dealing
The student should know the general structure of the control problem
The student should be introduced to the methods of dealing with traditional control problems
The student should know the goals of control in reducing cost with the largest exit and the fastest response

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods
• Exercises and sports problems • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	3	Introduction to control system:		Theoretical + Discussion	General questions and discussion
Second	3	Mathematical Representation of physical systems:		Theoretical + Discussion	General questions and discussion or exam I
Third	3	transfer functions		Theoretical + Discussion	General questions and discussion
Fourth	3	electrical systems.		Theoretical + Discussion	I'm examined.
Fifth	3	mechanical translation system		Theoretical + Discussion	General questions and discussion or exam I
Sixth	3	Block diagrams Processing		Theoretical + Discussion	General questions and discussion
Seventh	3	Block diagrams Processing		Theoretical + Discussion	General Questions
Eighth	3	Signal flow graphs:		Theoretical + Discussion	Group duties
Ninth	3	Signal flow graphs:		Theoretical + Discussion	General Questions
Tenth	3	Transient response analysis:		Theoretical + Discussion	Monthly exam
Eleventh	3	Transient response analysis:		Theoretical + Discussion	General Questions
Twelfth	3	Steady – state error in unity- feedback control system		Theoretical + Discussion	Discussion and exam I

Thirteenth	3	Steady – state error in unity- feedback control system:		Theoretical + Discussion	General Questions
Fourteenth	3	Routh's stability criterion.		Theoretical + Discussion	Group Duties+ discussion
Fifteenth	3	Routh's stability criterion.		Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	Modern control Engineering Katsuhiko Oqata1 Linear Control System Analysis and Design with MATLAB/ John J. D'Azzo and Constantine 2 – Automatic Control Systems / BENJAMIN C. KUO.
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	***EE2209, EE2311, EE3320 and EE3325***
Minimum number of students	10
The largest number of students	40

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Control Theory II/ EE4333
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester 2020-2021
7. Number of Credit Hours (Total)	90
8. The preparation date of this description	1/9/2020
9. Course Objectives:	
A. The correct understanding of the working methods of control systems.	
B. Theoretical and simulation study on computers of control theories.	
C. Design for conventional controllers for all control systems	

9. Learning outcomes and teaching, learning and assessment methods

To familiarize the student with the history of the science of control and the most important scientists who made shifts in this science
The student should be familiar with the basic units of the dominant transaction
The student should recognize the general structure of the control problem
The student should be introduced to the methods of dealing with traditional control problems
The student should know the goals of control in reducing the cost with the largest exit and the fastest response

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1- Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discuss.

Teaching and learning methods
• Exercises and sports problems • Assigning the core to some collective activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom Evidence of student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
d. General and transferable skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with technical means. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discuss.

10. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	3	***Root Locus:***			General questions and discussion
Second	3	***Root Locus:***			General questions and discussion or exam I
Third	3	***Control system design by the root locus method***			General questions and discussion
Fourth	3	***Bode diagram***			I'm examined.
Fifth	3	***Bode diagram***			General questions and discussion or exam I
Sixth	3	***Polar plots.***			General questions and discussion
Seventh	3	***Polar plots.***			General Questions
Eighth	3	***Nyquist stability criterion.***			Group duties
Ninth	3	***Nyquist stability criterion.***			General Questions
Tenth	3	***Three term controllers***			Monthly exam
Eleventh	3	***Three term controllers***			General Questions
Twelfth	3	***Sampled data system.***			Discussion and exam I

Thirteenth	3	***Sampled data system.***			General Questions
Fourteenth	3	***Analysis of control systems in state space:***			Group Duties+ discussion
Fifteenth	3	***Analysis of control systems in state space:***			Monthly exam

11. Infrastructure	
Required readings: ▪ Course Books ▪ Other	Modern control Engineering Katsuhiko Oqata1 Linear Control System Analysis and Design with MATLAB/ John J. D'Azzo and Constantine 2 – Automatic Control Systems / BENJAMIN C. KUO.
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

12. Acceptance	
Prerequisites	***EE4332***
Minimum number of students	10
The largest number of students	40

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Information Theory / EE4334
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester 2020-2021
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	30/1/2021
9- Course Objectives :	

10. Learning outcomes and teaching, learning and assessment methods

A. Understand the basic principles of digital communication science
B. The study of digital communications, a theoretical and analytical study
C. Solving engineering problems by mathematical methods
D. Linking the topics of the prescribed curriculum with the latest information technology findings in the field of telecommunications engineering

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. • Apps, exercises and daily assignments
D - General and transferred skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	4	Model of communication system, Elements of a digital communication system	Information theory	Theoretical + Discussion	General questions and discussion
Second	4	Measure of Information, lnformation content of a message, Average information content [Entropy]	=	Theoretical + Discussion	General questions and discussion or exam I
Third	4	Entropy & information rate of Markov source, Encoding of the source output.	=	Theoretical + Discussion	General questions and discussion
Fourth	4	Shannon's Encoding Algorithm	=	Theoretical + Discussion	I'm examined.
Fifth	4	Fano Encoding Algorithm	=	Theoretical + Discussion	General questions and discussion or exam I
Sixth	4	Huffman Encoding Algorithm	=	Theoretical + Discussion	General questions and discussion
Seventh	4	LZ Algorithm	=	Theoretical + Discussion	General Questions
Eighth	4	Channels, capacity of discrete memoryless channel	=	Theoretical + Discussion	Group duties
Ninth	4	Cwe will analyze	=	Theoretical + Discussion	General Questions
Tenth	4	Examples	=	Theoretical + Discussion	Monthly exam

Eleventh	4	Error detection & correction	=	Theoretical + Discussion	General Questions
Twelfth	4	linear block codes (error correction & detection)	=	Theoretical + Discussion	Discussion and exam I
Thirteenth	4	Binary cyclic codes (syndrome calculation error detection & error correction)	=	Theoretical + Discussion	General Questions
Fourteenth	4	Examples	=	Theoretical + Discussion	Group Duties+ discussion
Fifteenth	4	convolutional codes (encoding, decoding and performance), the viterbi algorithm (optimum decoding),	=	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	

13. Acceptance	
Prerequisites	***EE3328 / EE3329***
Minimum number of students	10
The largest number of students	40

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Advanced Communications Systems / E4335
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester 2020-2021
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	30/1/2021
9- Course Objectives :	
A. Thestudent acquires the skill of dealing with systems of embedding and extracting signals using the technique of diffuse spectrum.	
B. Clarify the concepts of advanced communication systems such as satellites, positioning systems and radars.	
C- The course aims to study the applications of advanced communication systems mentioned above.	

D- The course aims to give the student a new background that he can benefit from when making a project or researching these systems.

9. Learning outcomes and teaching, learning and assessment methods

A. Knowledge and understanding

- Understand the basic principles of communication systems
- The study of communications is a theoretical and analytical study
- Solving engineering problems by mathematical methods
- Work on linking the prescribed curriculum vocabulary with the latest technology in the field of communications engineering.

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Making daily sudden and weekly tests continuously .
- Assigning students to exercises and activities in the classroom.
- Work on guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

- Participation in the classroom.
- Submission of activities
- Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

C4- Opening the way for the student to provide what he sees regarding the material.

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of grade tofor daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.
D2- Developing the student's ability to deal with the Internet.
D3- Developing the student's ability to deal with multiple means.
D4- Developing the student's ability to dialogue and discussion.

10. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	3	Direct Sequence Spread Spectrum	explain the process of embedding and extracting signals using the direct sequence method,	Theoretical + Discussion	General questions and discussion
Second	3	Frequency Hopping Spread Spectrum	Explain the process of embedding and extracting signals using the repeated jumping method	Theoretical + Discussion	General questions and discussion
Third	3	Tutorials Of Spread Spectrum	Solve questions related to the topic of diffuse spectrum	Theoretical + Discussion	discussion
Fourth	3	Pseudo Random Number Generation	Explain the process of generating a false random number	Theoretical + Discussion	Exam I am general questions and discussion
Fifth	3	Spectrum Spreading Scenario	Explain the process of embedding and extracting the signal by the method of the diffuse spectrum and using the false random number,	Theoretical + Discussion	General questions and discussion or exam I
Sixth	3	Advantages, Jamming/Noise Immunity of Pseudo Noise	Explain the benefits of using a random number and how to protect the signal from noise	Theoretical + Discussion	General questions and discussion
Seventh	3	Tutorials Of Pseudo Noise	Giving questions related to the use of false random number in sending and extracting signals	Theoretical + Discussion	Discussion with to give collective duties
Eighth	3	Introduction Of Satellite Communications	Give an introduction to satellites, their types and principles	Theoretical + Discussion	Monthly exam

Ninth	3	Satellite Applications	Satellite applications explained	Theoretical + Discussion	General Questions
Tenth	3	Uplink/Downlink Propagation	Explain the process of transmitting signals to and from satellites	Theoretical + Discussion	General questions and discussion
Eleventh	3	Orbits Of Satellites	Explain the types of satellite orbits with related issues	Theoretical + Discussion	General Questions
Twelfth	3	Path Loss and Link budget	Signal losses	Theoretical + Discussion	General questions and discussion
Thirteenth	3	Introduction To RADAR Systems	Give an introduction to radars, their types, range and accuracy	Theoretical + Discussion	General Questions
Fourteenth	3	Transmitter & Receiver Architecture	**Explanation of the structure of the transmitted part and the receiving part of the GPS** system	Theoretical + Discussion	Group Duties+ discussion
Fifteenth	3	Fundamental Of GPS System (Space, Control, User) Segment	Explain the basics of GPS and its sections and the controlling part and the user	Theoretical + Discussion	Monthly exam

11. Infrastructure	
Required readings: ▪ Course Books ▪ Other	▪ **Communication-Systems 4ed by Haykin** ▪ **Satellite Communications- 4th Edition by *Dennis Roddy***
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

12. Acceptance	
Prerequisites	Digital Communications / **EE3329**
Minimum number of students	10
The largest number of students	60

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical engineering Department
3. Course Name/Code	Electric Power III/ EE 4336
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	First Semester 2020-2021
7. Number of Credit Hours (Total)	30
8. The preparation date of this description	1/9/2020

9- Course Objectives:
A. Introducing the student to the ability system and extracting its variables to prepare him to be an engineer capable of designing and calculating all requirements.

10. Learning outcomes and teaching, learning and assessment methods
A. Knowledge and understanding - Identify the basic types of power system. - Give the student experience in dealing with various malfunctions
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

d. General and transferable skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Introduction of Power System.	Introduction of Power System.	3	First
General questions and discussion or exam I	Theoretical + Discussion	Power System Representation.	Power System Representation.	3	Second
General questions and discussion	Theoretical + Discussion			3	Third
I'm examined.	Theoretical + Discussion	Per Unit System.	Per Unit System.	3	Fourth
General questions and discussion or exam I	Theoretical + Discussion			3	Fifth
General questions and discussion	Theoretical + Discussion	Balanced Faults.	Balanced Faults.	3	Sixth
General Questions	Theoretical + Discussion	Symmetrical Fault Calculations.	Symmetrical Fault Calculations.	3	Seventh
Group duties	Theoretical + Discussion	Symmetrical Components.	Symmetrical Components.	3	Eighth
General Questions	Theoretical + Discussion	Unsymmetrical Faults.	Unsymmetrical Faults.	3	Ninth

Monthly exam	Theoretical + Discussion	Synchronous Machine in Power System.	Synchronous Machine in Power System.	3	Tenth
General Questions	Theoretical + Discussion	Power System Load Flow Problems.	Power System Load Flow Problems.	3	Eleventh
Discussion and exam I	Theoretical + Discussion	Direct Methods Involving Inversion of The Nodal Admittance Matrix.	Direct Methods Involving Inversion of The Nodal Admittance Matrix.	3	Twelfth
General Questions	Theoretical + Discussion	Iterative Methods Gauss-Seidal Method.	Iterative Methods Gauss-Seidal Method.	3	Thirteenth
Group Duties+ discussion	Theoretical + Discussion			3	Fourteenth
Monthly exam	Theoretical + Discussion	Newton Raphson Method.	Newton Raphson Method.	3	Fifteenth

12. Infrastructure

1-power system analysis John J. Grainger , William D. Stevenson , JR. 2- Power system analysis Hadi Saadat . 3- power system analysis and Design J. Duncan Glover	Required readings: ▪ Course Books ▪ Other
	Special requirements

Practical application in graduation research projects.	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
None	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Power electronics / EE4337
4. Programs in which he enters	Multisim
5. Available Attendance Forms	E- presence
6. Semester / Year	First Semester 2020-2021
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	1/9/2020

9- Course Objectives :
A. The student acquires detailed information about the electronic elements and their properties that qualify them to be used in power electronics.

B. The course aims to study some of the three-phase controlled units, where these units convert the alternating source voltage and has a constant effective value into a variable continuous face, where it is controlled by ignition motors of electronic keys used in this circuit .

C- The course aims to study some DC sections, as these sections aim to convert a voltage

Constant constant source to constant voltage variable value and can be controlled by controlling circuits

Ignition of electronic keys used in section wires at the time of separating and closing electronic keys.

D- The course aims at some single-phase inverters, where these inverters are used to convert the constant constant source voltage into a constant alternating voltage or variable value, where this voltage is controlled by controlling the closing and disconnection time of the electronic keys used in these inverters and also by controlling the value of the liter required to separate and close these electronic switches.

10. Learning outcomes and teaching, learning and assessment methods

A. Knowledge and understanding

- Making the scientific science of power electronics appear for the student in an accessible manner and for those interested in knowing and studying this science as a stage that they can start with the help of other valuable references.
- Give the student experience in electronic elements, whose function is keys to separate and close electronic circuits and apply these elements to make the required control of power electronics circuits..

B - Subject-specific skills

B1 – Scientific Reports

B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests .
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of grade tofor daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

d. General and transferable skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.
D2- Developing the student's ability to deal with the Internet.
D3- Developing the student's ability to deal with multiple means.
D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Name of the unit/course or topic**	**Method of education**	**Evaluation method**
First	4	Introduction to Electronics Capability	Power Electronics	Theoretical + Discussion	General questions and discussion
Second	4	Introduction to Electronics Capability	Power Electronics	Theoretical + Discussion	General questions and discussion or exam I
Third	4	Semiconductors and their properties.	Power Electronics	Theoretical + Discussion	General questions and discussion
Fourth	4	Semiconductors and their properties.	Power Electronics	Theoretical + Discussion	I'm examined.
V	4	Semiconductors and their properties.	Power Electronics	Theoretical + Discussion	General questions and discussion or exam I
Sixth	4	Uniters	Power Electronics	Theoretical + Discussion	General questions and discussion
Seventh	4	Uniters	Power Electronics	Theoretical + Discussion	General Questions
Eighth	4	Uniters	Power Electronics	Theoretical + Discussion	Group duties
Ninth	4	Uniters	Power Electronics	Theoretical + Discussion	General Questions
X	4	DC Cutters	Power Electronics	Theoretical + Discussion	Monthly exam
Eleventh	4	DC Cutters	Power Electronics	Theoretical + Discussion	General Questions
Twelfth	4	Reflectors	Power Electronics	Theoretical + Discussion	Discussion and exam I

Thirteenth	4	Reflectors	Power Electronics	Theoretical + Discussion	General Questions
Fourteenth	4	Cyclo Converter	Power Electronics	Theoretical + Discussion	Group Duties+ discussion
Fifteenth	4	Cyclo Converter	Power Electronics	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	(1) M.H. Rashid, 'Power Electronics: Circuits, Devices and Applications', Pearson Education, PHI Third Edition, New Delhi, 2004 (2) Power Electronics DanielW. Hart Valparaiso University Valparaiso, India (3) Interactive of Power Electronic
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	EE2308 / Electronics 1 EE2309Electronics 2
Minimum number of students	10
The largest number of students	40

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Engineering Project I / EE4338
4. Programs in which he enters	
5. Available Attendance Forms	Traditional
6. Semester / Year	First Semester / 2020-2021
7. Number of Credit Hours (Total)	60
8. The history of preparation of this description	1/9/2020

9- Course Objectives:	

9. Learning outcomes and teaching, learning and assessment methods
A. Preparing engineering staff in the field of electrical engineering B. Preparing qualified engineers in the implementation of projects and maintenance C. Providing engineering consultations and expertise. D. Instilling professional ethics in the hearts of graduates to spare them corruption and deviation
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities

Quarterly tests, activities and activities.

C- Thinking skills

C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

10. Course Structure

Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
					First
					Second
					Third
					Fourth
					Fifth
					Sixth
					Seventh
					Eighth
					Ninth
					Tenth
					Eleventh
					Twelfth
					Thirteenth
					Fourteenth
					Fifteenth

11. Infrastructure

	Required readings: ▪ Course Books ▪ Other
	Special requirements

	Social services (e.g., guest lectures, vocational training and field studies)

12. Acceptance	
	Prerequisites
1	Minimum number of students
4	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Engineering Project II / EE4339
4. Programs in which he enters	
5. Available Attendance Forms	(Blended Learning)
6. Semester / Year	Second Semester / 2020-2021
7. Number of Credit Hours (Total)	60
8. The preparation date of this description	1/9/2020
9- Course Objectives:	

10. Learning outcomes and teaching, learning and assessment methods

A. Preparing engineering staff in the field of electrical engineering
B. Preparing qualified engineers in the implementation of projects and maintenance
C. Providing engineering consultations and expertise.
D. Instilling professional ethics in the hearts of graduates to spare them corruption and deviation

B - Subject-specific skills
B1 – Scientific Reports
B2 – Graduation Research

Teaching and learning methods

- Continuous sudden and weekly daily tests.
- Exercises and activities in the classroom.
- Guiding students to some sources that contain examples and exercises to benefit from them.

Evaluation methods

Participation in the classroom.
Submission of activities
Quarterly tests, activities and activities.

C- Thinking skills
C1 - Developing the student's ability to work on performing duties and delivering them on time.
C2- Try to apply concepts by solving different types of exercises.
C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and practical problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.
D2- Developing the student's ability to deal with the Internet.
D3- Developing the student's ability to deal with multiple means.
D4- Developing the student's ability to dialogue and discussion.

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First					
Second					
Third					
Fourth					
Fifth					
Sixth					
Seventh					
Eighth					
Ninth					
Tenth					
Eleventh					
Twelfth					
Thirteenth					
Fourteenth					
Fifteenth					

12. Infrastructure

Required readings: ▪ Course Books ▪ Other	
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	

13. Acceptance	
Prerequisites	EE4338
Minimum number of students	1
The largest number of students	4

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name / Code	Digital Electronics /EE4343
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	First Semester 2020-2021
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	1/9/2020

9. Course Objectives: A- Benefiting from the absolute technical expertise on electrical engineering systems and graduating qualified engineers
B- To interact professionally and professionally in the contemporary business environment through effective communication, leadership and teamwork
C - Clarification of the concept of integrated circuits of all kinds
D- The course aims to give the student a new background that can be used when studying synchronous and asynchronous circuits

10. Learning outcomes and teaching, learning and assessment methods A. Knowledge and understanding
- Learn about the basic concepts of integrated circuits - Give the student experience in the properties of digital integrated circuits - Recognizes synchronous and asynchronous counters
B- Skills for Education B1- Scientific reports, graduation researches
Teaching and learning methods
1- Scientific lectures using the blackboard 2- Discuss the topic of the lecture and solve some exercises 3- Provide abstracts through separate lieutenants from different books 4- Performing tests and discussing their results
Evaluation methods
Classroom participation Presentation of activities

Quarterly and final exams and activities
C- Thinking skills C1- Developing the student's ability to work on performing duties and delivering them on the scheduled date C2- Try to apply concepts by solving different types of exercises C3- Developing the student's ability to dialogue and discussion
Teaching and learning methods:
- Daily surprise and continuous weekly tests - Exercises and activities in the classroom - Guiding students in some sources that contain examples and exercises to benefit from
Evaluation methods
- Classroom participation - Presentation of activities - Quarterly and final exams and activities
D - General and transferred skills (other skills related to employability and personal development).
D1- Existing ones

11. Course Structure

Evaluation method	Method of education	Name of the unit / course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	Introduction to sequential cct.	Sequential logic cct.	3	First
General questions, discussion and exam l	Theoretical + Discussion	FSM types	digital circuits using finite state machines	3	Second
General questions, discussion and exam l	Theoretical + Discussion	Design SSM	Design of Synch. State machine	3	Third
I'm examined.	Theoretical + Discussion	Analysis of SSM	Analysis of Synch. State machine	3	Fourth
General questions and discussion	Theoretical + Discussion + Daily Exam	Design ASM	Design of Asynch. State machine	3	Fifth
General questions and	Theoretical + Discussion	Analysis of ASM	Analysis of Asynch. State machine	3	Sixth

discussio n					
Monthly exam	Monthly exam	Monthly exam	Monthly exam	3	Seventh
Group duties	Theoretical + Discussion	ADC principles and types	Analog to digital convertor	3	Eighth
General Question s	Theoretical + Discussion	DAC principles and types	Digital to Analog convertor	3	Ninth
Monthly exam	Theoretical + Discussion	Ccs. and types of digital integrated circuits (IC)	Logic families	3	Tenth
General Question s	Theoretical + Discussion	Transistor- Transistor Logic (TTL), emitter-coupled logic (ECL), CMOS logic families	Logic families	3	Eleventh
Discussio n and exam I	Theoretical + Discussion + Daily Exam	memory classification, architecture	Semiconductor memories	3	Twelfth
General Question s	Theoretical + Discussion	RAM, ROM, EPROM, E2ROM	Semiconductor memories	3	Thirteent h
Group Duties + Discussio n	Theoretical + Discussion	PAL, PLA	Programmable logic devices	3	Fourteent h
Second month exam	Second month exam	Second month exam	Second month exam	3	Fifteenth

12. Infrastructure	
Digital Electronic Design M. Morris Mano	Required readings: ▪ Course Books ▪ Other
	special requirements
Practical application in graduation research projects	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance	
EE2304 / EE2305	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((review of the academic program))

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Power System Analysis - EE 4348
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	Second Semester 2020-2021
7. Number of Credit Hours (Total)	30
8. The preparation date of this description	1/9/2020

9. Course Objectives:
A. Introducing the student to the ability system and extracting its variables to prepare him to be an engineer capable of designing and calculating all requirements.

10. Learning outcomes and teaching, learning and assessment methods
A. Knowledge and understanding - Identify the basic types of power system. - Give the student experience in dealing with various malfunctions.
B - Subject-specific skills B1 – Scientific Reports B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time.

C2- Try to apply concepts by solving different types of exercises.

C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods

- Exercises and sports problems
- Assigning the student some group activities and duties.
- Allocate a percentage of the grade for daily assignments and tests.

Evaluation methods

- Active participation in the classroom is a guide to student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- Quarterly and final exams express commitment and achievement of knowledge and skills.
- Apps, exercises and daily assignments

D - General and transferred skills (other skills related to employability and personal development).

D1- Developing the student's ability to deal with the means of technology.

D2- Developing the student's ability to deal with the Internet.

D3- Developing the student's ability to deal with multiple means.

D4- Developing the student's ability to dialogue and discussion.

11. Course Structure					
Evaluation method	Method of education	Name of the unit/course or topic	Required Learning Outcomes	Hours	The week
General questions and discussion	Theoretical + Discussion	INTRODUCTION OF POWER SYSTEM	INTRODUCTION OF POWER SYSTEM	3	First
General questions and discussion or exam I	Theoretical + Discussion	POWER SYSTEM REPRESENTATION	POWER SYSTEM REPRESENTATION	3	Second
General questions and discussion	Theoretical + Discussion			3	Third
I'm examined.	Theoretical + Discussion	PER UNIT SYSTEM	PER UNIT SYSTEM	3	Fourth
General questions and discussion or exam I	Theoretical + Discussion			3	Fifth
General questions and discussion	Theoretical + Discussion	BALANCED FAULTS	BALANCED FAULTS	3	Sixth
General Questions	Theoretical + Discussion			3	Seventh
Group duties	Theoretical + Discussion			3	Eighth

General Questions	Theoretical + Discussion	SYMMETRICAL FAULT CALCULATIONS	SYMMETRICAL FAULT CALCULATIONS	3	Ninth
Monthly exam	Theoretical + Discussion	SYMMETRICAL COMPONENTS	SYMMETRICAL COMPONENTS	3	Tenth
General Questions	Theoretical + Discussion	UNSYMMETRICAL FAULTS	UNSYMMETRICAL FAULTS	3	Eleventh
Discussion and exam I	Theoretical + Discussion	SYNCHRONOUS MACHINE IN POWER SYSTEM	SYNCHRONOUS MACHINE IN POWER SYSTEM	3	Twelfth
General Questions	Theoretical + Discussion	Power System Stability	Power System Stability	3	Thirteenth
Group Duties+ discussion	Theoretical + Discussion			3	Fourteenth
Monthly exam	Theoretical + Discussion	The Equal Area Criterion	The Equal Area Criterion	3	Fifteenth

12. Infrastructure

1.POWER SYSTEM ANALYSIS JOHN J. GRAINGER, WILLIAM D. STEVENSON, 2.POWER SYSTEM ANALYSIS HADI SAADAT. 3.POWER SYSTEM ANALYSIS AND DESIGN J. DUNCAN GLOVER	Required readings: ▪ Course Books ▪ Other
	Special requirements
Practical application in graduation research projects.	Social services (e.g., guest lectures, vocational training and field studies)

13. Acceptance

None	Prerequisites
10	Minimum number of students
40	The largest number of students

Course Description Form

Review the performance of higher education institutions ((Academic Program Review)

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve. Prove whether he has made the most of the available learning opportunities. It must be linked to the description of program.

1. Educational institution	University of Anbar / College of Engineering
2. University Department / Center	Electrical Engineering Department
3. Course Name/Code	Programmer Logic Control / **EE4345**
4. Programs in which he enters	
5. Available Attendance Forms	E- presence
6. Semester / Year	First Semester 2020-2021
7. Number of Credit Hours (Total)	45
8. The preparation date of this description	1/9/2020
9. Course Objectives :	
A. Preparing engineering staff that can deal with control systems that contain logical control systems and how to program it and link it with input and output units.	

B. Preparing qualified engineers in the implementation and design of automation and automatic control systems.
C. Instilling professional ethics in the hearts of graduates.

10. Learning outcomes and teaching, learning and assessment methods
A. Knowledge and understanding - The student gets acquainted with the architecture of the logical control of the programm. - Giving the student programming logical control of the programming. - Learn how to connect the logical control of the programming and input and output units.
B - Subject-specific skills B1 – Scientific reports and writing programs B2 – Graduation Research
Teaching and learning methods
- Continuous sudden and weekly daily tests. - Exercises and activities in the classroom. - Guiding students to some sources that contain examples and exercises to benefit from them.
Evaluation methods
Participation in the classroom. Submission of activities Quarterly tests, activities and activities.
C- Thinking skills C1 - Developing the student's ability to work on performing duties and delivering them on time. C2- Try to apply concepts by solving different types of exercises and writing programs. C3- Developing the student's ability to dialogue and discussion.

Teaching and learning methods
• Exercises and programming of logical control • Assigning the student some group activities and duties. • Allocate a percentage of the grade for daily assignments and tests.
Evaluation methods
• Active participation in the classroom is a guide to student commitment and responsibility. • Commitment to the deadline in submitting assignments and research. • Quarterly and final exams express commitment and achievement of knowledge and skills. Apps, exercises and daily assignments
d. General and transferable skills (other skills related to employability and personal development). D1- Developing the student's ability to deal with the means of technology. D2- Developing the student's ability to deal with the Internet. D3- Developing the student's ability to deal with multiple means. D4- Developing the student's ability to dialogue and discussion.

11. Course Structure

The week	Hours	Required Learning Outcomes	Name of the unit/course or topic	Method of education	Evaluation method
First	3	Introduction to Programmable logic controllers	Introduction to Programmable logic controllers	Theoretical + Discussion	General questions and discussion
Second	3	Internal architecture of PLC	Internal architecture of PLC	Theoretical + Discussion	General questions and discussion or exam I
Third	3	Input-output devices	Input-output devices	Theoretical + Discussion	General questions and discussion
Fourth	3	I/O processing	I/O processing	Theoretical + Discussion	General questions and discussion
Fifth	3	Ladder programming	Ladder programming	Theoretical + Discussion	General questions and discussion or exam I
Sixth	3	functional block programming	functional block programming	Theoretical + Programming	General questions and programming
Seventh	3	PLC Program examples	PLC Program examples	Theoretical + Programming	General questions and programming
Eighth	3	PLC Program examples	PLC Program examples	Theoretical + Programming	General questions and programming
Ninth	3	Exam	Exam	Theoretical +	Monthly exam

				Programming	
Tenth	3	Internal relays	Internal relays	Theoretical + Discussion	General questions and discussion
Eleventh	3	Types of timers	Types of timers	Theoretical + Discussion	General questions and discussion
Twelfth	3	Programming timers	Programming timers	Theoretical + Discussion	General questions and discussion
Thirteenth	3	Forms of counter	Forms of counter	Theoretical + Discussion	General questions and discussion or exam I
Fourteenth	3	Programming counter	Programming counter	Theoretical + Discussion	General questions and discussion
Fifteenth	3	Exam	Exam	Theoretical + Discussion	Monthly exam

12. Infrastructure	
Required readings: ▪ Course Books ▪ Other	- W. Bolton, " Programmable Logic Controllers " - Dag H. Hanssen, "Programmable Logic Controllers"
Special requirements	
Social services (e.g. guest lectures, vocational training and field studies)	Practical application in graduation research projects.

13. Acceptance	
Prerequisites	None
Minimum number of students	10
The largest number of students	40