هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: *Najran University*	Date: *8/05/1439H*
College/Department : *Engineering / Electrical Engineering*	

A. Course Identification and General Information

1. Course title and code: *Communications Lab 342EE*

2. Credit hours: 1 (0 , 2 , 0)

3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)

Electrical Engineering Program

4. Name of faculty member responsible for the course: *Dr. Seif Shebl Seif*

5. Level/year at which this course is offered: *8th/ 4th year*

6. Pre-requisites for this course (if any): ---

7. Co-requisites for this course (if any): *Communications Principles 341 EE -3*

8. Location if not on main campus: ---

9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

- Know the primary communication resources, namely, transmission power and bandwidth
- Know the communication channel for signals transmission
- Define the modulation process
- Know the continuous modulation techniques, amplitude and angle modulation
- Define sampling, which is basic to all forms of pulse modulation
- Define quantization, which when combined with sampling represents analog signals in the form of amplitude and time
- Know different methods of digital modulation

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

Plans for developing and improving
• Using MATLAB program to solve, visualize, and plot signals spectrum and time waveforms lively on the Data Show. Sending and receiving pieces of program codes via e-mail. • Conducting lab experiments in the communications lab using state-of-the art tools (CASSY-2 Lab, Panels kits, Comm3 lab …) to foster theoretical and analytical understanding of the subject.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

AM and FM modulation and detection: PCM and delta modulation; TDM; shift- keyin, basics of modem technology; ASK; FSK; PSK; Line coding and decoding

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Getting started with Communications Lab modules and devices.	**1**	**1**
AM modulation experiment on CASSY2 LAB	**1**	**1**

AM demodulation experiment on CASSY2 LAB	**1**	**1**
FM modulation and detection experiment on CASSY2 LAB.	**1**	**1**
Analog Modulation and demodulation experiments on COMM3 LAB.	**1**	**1**
Pulse modulation schemes PAM, PPM, PWM experiments on CASSY2 LAB.	**1**	**1**
Pulse Code Modulation (PCM) and delta modulation experiments on CASSY2 LAB.	**1**	**1**
Time Division Multiplexing (TDM) experiment on CASSY2 LAB.	**1/2**	**1/2**
Shift keying and basics of modem technology (ASK, FSK, PSK) experiments on COMM3 LAB.	**1/2**	**1/2**
Line Coding (Binary Signaling) and decoding experiments on COMM3 LAB.	**1**	**1**
Getting started with Communications Lab modules and devices.	**1**	**1**

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	NA	NA	28	NA	NA	28
	Actual						
Credit	Planed						
	Actual			14			14

3. Additional private study/learning hours expected for students per week. ☐

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		

1.1	• Apply Fourier transform to different signals.	○ Lab Sessions ○ Tutorials ○ Computer experiments using MATLAB program.	○ Homework assignments ○ Lab quizzes ○ Two mid-term exams. ○ Final Exam.
1.2	• Analyze AM and FM modulated signals in time and frequency domains using lab modules	○ Lab Sessions ○ Tutorials ○ Computer experiments using MATLAB program.	○ Homework assignments ○ Lab quizzes ○ Two mid-term exams. ○ Final Exam.
2.0	**Cognitive Skills**		
2.1	• Apply sampling to achieve Time Division Multiplexing (TDM)	○ Solve different applications of communication systems during the tutorials. ○ Solve communications problems using different tools in the lab to show the students how the economic way is to be considered. ○ Use computer experiment tests to use communication systems practically.	○ Homework assignments. ○ After performing the experiment tests, students have to submit an experiment sheet data. ○ Two Midterm exams have to be done. ○ Final Exams at the end of the semester.
2.2	• Identify line codes and different kinds of modem technology using lab modules.		
2.3	• Explain the principles of Pulse Code Modulation (PCM), and DM using lab modules		
3.0	**Interpersonal Skills & Responsibility**		
3.1	• Identify line codes and different kinds of modem technology using lab modules.		
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1	• Identify line codes and different kinds of modem technology using lab modules.	○ Computer experiments tests ○ Lab sessions	○ Record the attendance of the students every lab

		and tutorials.	session. ○ There is a computer experimental test. ○ ○ Midterm and Final term exams ○
4.2			
5.0	**Psychomotor**		
5.1	None		
5.2			

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Final Report	Every week	10 %
2	Quizzes and lab performance	Every week	20%
3	Mid-Term exam	7	20 %
4	Final Term exam	The end of the term	50 %
5			
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) **6 hours weekly as office hours**

E Learning Resources

1. List Required Textbooks *Communications Systems*, Simon Haykin, John Wiley, 2010
2. List Essential References Materials (Journals, Reports, etc.) *Modern digital and analog communication systems, B. P. Lathi, Zhing, 2010* *Fundamentals of telecommunications, 2nd Edition, Roger L. Freeman, 2005* *Telecommunication and Data Communications Handbook, Ray Horak, 2008*
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. AM Manual FM Manual PCM Manual
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. COMM3 Lab System

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Lecture Room for 20 students Laboratory hall suitable for 30 students
2. Technology resources (AV, data show, Smart Board, software, etc.) Computers and multimedia equipment available in the class room
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) None

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Complete course evaluation questionnaire by the students. • Open discussion for the students to touch their weak and strong points in the subject. • Feedback from the mid-term exam records.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department Seminars for the teacher, to show his lectures arrangement and progress in front of all the staff members in the department.
3. Processes for Improvement of Teaching • Learning form students feedback • Learning from instructor and department feedback • Learning/Using various teaching methods (lecturing, discussions, workshops, exams…) • Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) **Increase the experiment hours for the students in the laboratory.**
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- Ongoing updating and improving (during the course).
- Annual updating and improving (during summers).

Name of Instructor: _____Dr. Seif Shebl Seif_____

Signature: _____ Date Report Completed: 8/05/1439H

Program Coordinator:_____Dr. Abdulkareem Almawgany_____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 23/12/1438H
College/Department : Electrical Engineering Department	

A. Course Identification and General Information

1. Course title and code: Computer Programming for Electrical Engineering Code # 351EE 3 Section # 1
2. Credit hours: 3(3,0,1)
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course Dr Yousfi Khemissi
5. Level/year at which this course is offered: 8
6. Pre-requisites for this course (if any): 204GE 3 Computer programming for Engineers
7. Co-requisites for this course (if any): No Co-requisite materials
8. Location if not on main campus:
9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

By the completion of this course, the student should be able to:

1. Use different Matlab systems and its applications .
2. Solve Problem solution techniques and algorithm design
3. Understand LabView front panels and block diagrams.
4. Use built in VIs.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

Introduction to MATLAB system , generate matrices and perform, plot data, annotate graphs, create scripts and functions, construct and manipulate data structures, set up a basic data analysis. How Simulink Software Interacts with the MATLAB, Creating a Simulink Model, Modeling a Dynamic Control System.
Introduction to LabView, virtual instruments, LabView environments, creating, editing and debugging a VI, creating a sub VI, loops and charts, Arrays, graphs, clusters, case and sequence structures, formula node.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to MATLAB system	1	4
Generate matrices and perform	2	8
Plot data, annotate graphs,	2	8
Construct and manipulate data structures	3	12
Set up a basic data analysis	2	8
Creating a Simulink Model, Modeling a Dynamic Systems.	2	8
Introduction to LabView, virtual instruments, LabView environments,	2	8
Creating, editing and debugging a VI, creating a sub VI, loops and charts.	1	4

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact	Planed	45	15				60

Hours	Actual	45	15				60
Credit	Planed	3	1				3
	Actual	3	1				3

3. Additional private study/learning hours expected for students per week. 1

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Describe the components of the MATLAB package.	Lectures and Problem solving.	In class quizzes , Test and Final exam.
1.2			
2.0	**Cognitive Skills**		
2.1	Analyze and plot data in Matlab environment.	• Offering extra tutorials for students • Encourage class participation • Making field trips to help students understand various concepts of the course topics	• Class participation Quizzes • Midterm exams . • Final Exams at the end of the semester.
2.2	Analyze a scripts and functions symbolically.	• Offering extra tutorials for students • Encourage class participation • Making field trips to help students	• Class participation (Quizzes) • Midterm exams . • Final Exams at the end of the

		understand various concepts of the course topics	semester.
2.3	Apply Simulink and Matlab toolboxes.	• Making field trips to help students understand various concepts of the course topics	• Final Exams at the end of the semester.
2.4	Practice LabView..	• Making field trips to help students understand various concepts of the course topics	• Final Exams at the end of the semester.
3.0	**Interpersonal Skills & Responsibility**		
3.1	Model and Analyze different electrical and mechanical systems.	Impose deadline for Project assignments. Register student attendance in both lectures and exercises. Active class participation. Grade quizzes and homework in class.	Ability to formulate a mathematical solution. Ability to ask question.
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1	Compute the PID controller parameters via Matlab Simulink and control toolbox Understanding a Programming Logic Controller (PLC).	Encourage students to consult the instructor for help during office hours.	Analysis of computer program results and output curves.
4.2			
5.0	**Psychomotor**		
5.1	Not Applicable	Not Applicable	Not Applicable
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Class participation, attendance, and assignment	Every weeks	0 %
2	Quiz Theory	Every two Outcomes	5 %

3	Quiz Lab	Every two Outcomes	5 %
4	Mid-Term exam Theory	Every four Outcomes	10 %
5	Mid-Term exam Lab	Every four Outcomes	10 %
6	Final Term exam Lab	Every two weeks	15 %
7	Practical Project	End Terms	5 %
8	Final Term exam	End Terms	50 %

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) • Teaching staff are available weekly for all the students and can answer any query that rises, besides, the students can email their enquiries to the main lecture. Beside students have Open general discussions with other class mates. • 6 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks • Matlab 2010 with Simulink Software. www.mathworks.com LabView 2011 , Course manual, Course software version 2011, www.ni.com/Lab
2. List Essential References Materials (Journals, Reports, etc.) • Holly Moore, MATLAB for Engineers, 3/E, ISBN-10: 0132103257, ISBN-13: 9780132103251, Prentice Hall, 2012. Ronald W. Larsen, LabVIEW for Engineers, ISBN-10: 0136094295, ISBN-13: 9780136094296, Prentice Hall, 2011.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. • IEEE spectrum http://spectrum .ieee.org/. • IEEE Potentials magazine Electronic Materials, Web Sites (kayousfi-Najran University)
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. • Matlab 2014 with Simulink Software. www.mathworks.com • LabView 2011 , Course manual, Course software version 2011, www.ni.com/LabView

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) **Lecture room with a maximum 15 seats**
2. Technology resources (AV, data show, Smart Board, software, etc.) **Students own laptops**
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) **Projector to facilitate going over student papers in class**

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Complete course evaluation questionnaire by the students. • Open discussion for the students to touch their weak and strong points in the subject. • Feedback from the mid-term exam records.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Course report • Conducting workshops given by experts on the teaching and learning • Periodical departmental revisions on its methods of teaching
3. Processes for Improvement of Teaching • Learning form students feedback • Learning from instructor and department feedback • Learning/Using various teaching methods (lecturing, discussions, workshops, exams…) • Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) • The instructors of the course are checking together and put a unique process of evaluation. • Providing samples of all kind of assessment in the departmental course portfolio of each course. • Students who believe they are under graded can have their papers cheked by a second reader
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Several meetings of faculty members to discuss improvements. • Review the curriculum periodically and suggest improvements • Different physical and industrial control applications are simulated in Matlab environment and different toolboxes are implemented to assure the achievements of course outcomes and objectives.

Name of Course Instructor: __ **Dr. Yousfi Khemissi**

Signature: _____ Date Specification Completed: **_23/12/1438H**

Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 10/01/2018
College/Department : Electrical Engineering	

A. Course Identification and General Information

1. Course title and code: Electrical Measurements 416 EE-3
2. Credit hours: 4
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course: Dr. Saifur Rahman Masihur Rahman
5. Level/year at which this course is offered: 4th Year
6. Pre-requisites for this course (if any): 213EE-1
7. Co-requisites for this course (if any):
8. Location if not on main campus:
9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?
   After learning this course the students will be able to understand the basic concept of measurements in electrical, its different units used, errors occurred during measurement, Analogue meters: DC and Ac meters, loading effect and insertion effect, Digital measurements, Difference and instrumentation DC/AC bridge and Characteristics and analysis of Sensors and Transducers types.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field).
To make the students not only depends on book but also use the internet to learn the present scenario of the measurements in electrical system.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Measurement fundamentals: units and errors	3	10
statistical analysis: DC and AC analog digital meters constructions	5	20
Analog and Digital Multi meters to measure electrical parameters	3	15
Transducers and sensors;	2	7

DC and AC bridge	2	8

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	45	15				60
	Actual	45	15				60
Credit	Planed	3					3
	Actual	3					3

3. Additional private study/learning hours expected for students per week. 3

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Measurement fundamentals: units and errors	Lectures and Problem solving.	H.A., class quizzes , Test and Final exam
1.2	statistical analysis: DC and AC analog digital meters constructions	Lectures and Problem solving.	H.A., class quizzes , Test and Final exam
2.0	**Cognitive Skills**		
2.1	Analog and Digital Multi meters to measure electrical parameters	• Offering extra tutorials for students • Encourage class	• Class participation Quizzes • Midterm exams

		participation • Making field trips to help students understand various concepts of the course topics	. • Final Exams at the end of the semester.
2.2			
3.0	**Interpersonal Skills & Responsibility**		
3.1			
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1	Transducers and sensors	Lectures and Problem solving • Offering extra tutorials for students • Encourage class participation	• Class participation Quizzes • Midterm exams . • Final Exams at the end of the semester.
4.2	DC and AC bridge	Lectures and Problem solving • Offering extra tutorials for students • Encourage class participation	• Class participation Quizzes • Midterm exams . • Final Exams at the end of the semester.
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Class participation, attendance, and assignment	EVERY WEEK	5%
2	Quizzes	ONE TIME	5%
3	Mid-Term exam	AFTER 1.5 MONTH	40%
4	Final Term exam	AFTER 10 WEEKS	50%

5			
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) The teacher is available to the students for academic advise for about 16 hrs per week

E Learning Resources

1. List Required Textbooks Applied Electronics Instrumentation and Measurements, by David Bushla and Wayne Mclachlan, 1998. Principles of measurement systems, John P. Bentley, fourth edition, Pearson Prentice Hall, 2005
2. List Essential References Materials (Journals, Reports, etc.) Measurement and Instrumentation Principles, by Alan.s.Moris , Butterworth-Heinemann (2001)
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Classrooms with 20 seats.
2. Technology resources (AV, data show, Smart Board, software, etc.). Smart projector and white board is available.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Complete course evaluation questionnaire by the students. • Open discussion for the students to touch their weak and strong points in the subject. • Feedback from the mid-term exam records. Questionnaire given online on google doc to fill up as a feedback.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department. A feedback form is fill up by the students provided by the department Seminars for the teacher, to show his lectures arrangement and progress in front of all the staff members in the department
3. Processes for Improvement of Teaching. Workshop and seminars are held on teaching methods for the improvement of teaching processes.
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution). Re-check the final term exams for some random students by another faculty member in the same field subject inside the department.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Re-improve for the subject course contents by an external committee members in the same field of study in another institution

Name of Course Instructor: Dr. Saifur Rahman Masihur Rahman

Signature: _____ Date Specification Completed: 10/01/2018
Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 22/04/1439 H
College of Engineering / Department of Electrical Engineering	

A. Course Identification and General Information

1. Course title and code: Utilization of Electrical Engineering 417EE-3
2. Credit hours: 3 (2 , 0 , 2)
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course
Dr. Salim Nasar Mursal
5. Level/year at which this course is offered: 10^{th} /5^{rd} year
6. Pre-requisites for this course (if any):
Fundamentals of Power Systems 426EE3
7. Co-requisites for this course (if any):
None
8. Location if not on main campus:
9. Mode of Instruction (mark all that apply):

a. traditional classroom		What percentage?	50 %
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	50 %
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

1. Understand Basic principles for using electrical energy in different applications.
2. Understand Power quality issues.
3. Understand the importance and the basics of renewable energy sources .

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

None

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:
Lighting and electric wiring; Electric heating; Cooling and heating of buildings; Welding; Electrolysis; Power quality issues; Power factor improvement, Renewable energy sources.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
1- Electric Lighting	Week: 1,2	8
2- Electric Wiring	Week: 3,4,5	12
3- Electric heating, cooling, welding and Electrolysis.	Week: 6,7	8
4- Power quality issues.	Week: 8,9	6
5- Power factor improvement.	Week: 9,10	6
6- Renewable energy sources.	Week: 11	6
7- Fundamentals of Solar and Wind Power Systems	Week: 12,13,14,15	14

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total

Contact Hours	Planed	30	0	30	0	None	60
	Actual						
Credit	Planed	2	0	2	0	None	3
	Actual						

3. Additional private study/learning hours expected for students per week. 4

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Classify the types of electric heating, Cooling, and welding.	Lecture and tutorial	Exams and quizzes
1.2	Illustrate the role and applications of electrolysis in industry.	Lecture and tutorial	Exams and quizzes
1.3	Describe the importance of renewable energy sources.	Lecture and tutorial	Exams and quizzes
2.0	**Cognitive Skills**		
2.1	Apply concepts of lighting and illumination technology, show the types of electrical installation and their techniques and the protection systems used in buildings.	Lecture and tutorial	Exams and quizzes
2.2	Identify the power quality issues and analyze methods to improve the electric power factor.	Lecture and tutorial	Exams and quizzes
3.0	**Interpersonal Skills & Responsibility**		
3.1			
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1			
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Test 1	6	15 %
2	Test 2	12	10 %
3	Lab Report	14	20 %
	Home Work	-	05 %
4	Final Exam	End of semester	50%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) 10 Hrs

E Learning Resources

1. List Required Textbooks ”Generation, Distribution & Utilization of Electrical Energy” by Wadhwa"
2. List Essential References Materials (Journals, Reports, etc.)
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. • "Mechanical and Electrical Systems in Buildings " Richard R. Jains,, William K. Y. Tao" • "The design of electrical services for buildings", F. Porges, 3th edition,
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) * Classroom with adequate size, seats, lighting & data projector
2. Technology resources (AV, data show, Smart Board, software, etc.) * Classroom with adequate size, seats, lighting & data projector
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) * Classroom with adequate size, seats, lighting & data projector

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3. Processes for Improvement of Teaching
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Name of Course Instructor: __**Dr. Salim Mursal**

_____

Signature: _____ Date Specification Completed: 22/04/1439 H_____

Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 1/5/1436H
College/Department : Engineering College /Electrical Engineering	

A. Course Identification and General Information

1. Course title and code: Electromechanical Energy Conversion 422EE3

2. Credit hours: 3 (3 , 0 , 1)

3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
Electrical Engineering Program

4. Name of faculty member responsible for the course
Dr. A. Elmitwally

5. Level/year at which this course is offered: 9^{th} /4^{th} year for Electrical

6. Pre-requisites for this course (if any):
325EE3 Electrical Machines

7. Co-requisites for this course (if any):
None

8. Location if not on main campus:
None

9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?
    1. To understand the basic principles of DC and synchronous machines.
    2. To know the operation and testing of DC and synchronous machines

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

None

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:
Synchronous machines (construction, internal voltage, equivalent circuit, phasor diagram, performance of turbo-alternator, generator operating alone, parallel operation of AC generators, synchronous motor, steady-state operation, starting), DC machines (construction, classification, performance, motor characteristics, starting of DC motors, speed control of DC motors).

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to synchronous machines and its construction ,Voltage Induced in the Armature Winding of Synchronous Machine, Equivalent Circuit of Synchronous Machine and its Phasor Diagram, Performance of Synchronous Generator	Weeks 1-4 (12 hours)	12 hours
Synchronous Generator Operating Alone, Parallel Operation of Synchronous Generators	5-8 (9 hours)	9 hours
Synchronous Motor Analysis, Steady State Operation, Starting.	8-9 (6 hours)	6 hours
Introduction to DC Machines and its construction, Classification of DC Machines, DC Generators Operation and Performance.	10-11 (6 hours)	6 hours
DC Motors Characteristics, Starting of DC Motors.	12-13 (6 hours)	6 hours
Speed Control of DC Motors.	14-15 (6 hours)	6 hours

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact	Planed	45	15	None	None	None	60

Hours	Actual	45	15	None	None	None	60
Credit	Planed	3	0	None	None	None	3
	Actual	3	0	None	None	None	3

3. Additional private study/learning hours expected for students per week.	3

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Define and classify the synchronous machines and dc machines.	Lecture	HW, quizzes and Exams
1.2	Recognize and explain different equivalent circuits of synchronous machines and dc machines.	Lecture	HW, quizzes and Exams
2.0	**Cognitive Skills**		
2.1	Explain the principle operation of synchronous generators ,motors and dc machines	Lecture	HW, quizzes and Exams
2.2			
3.0	**Interpersonal Skills & Responsibility**		
3.1			
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1	Apply different concepts to find correct solutions of electrical machine performance.	Lecture	HW, quizzes and Exams
4.2	Operate measuring instruments to determine electrical parameters of electrical machines and obtain its main characteristics.	Lecture	HW, quizzes and Exams
5.0	**Psychomotor**		

5.1	None		
5.2			

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Assignments	Scheduled	5 %
2	Quizzes	Scheduled	5 %
3	First Mid-Term exam	7	20 %
4	Second Mid-Term exam	13	20 %
5	Final Term exam	The final of the term	50 %
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) • Teaching staff are available weekly for all the students and can answer any query that rises, beside the students can email their enquiries to the main lecture. Beside students have Open general discussions with other class mates. • 5 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks Chapman;" Fundamentals of Electric Machinery", McGraw Hill, 2005.
2. List Essential References Materials (Journals, Reports, etc.) Principles of Electric Machines and Power Electronics, P. C. Sen, John Wiley &Sons, second edition, 1997.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. None
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. None

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Laboratory with adequate daylight equipped with data projector.
2. Technology resources (AV, data show, Smart Board, software, etc.) None.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) None.

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • After the 3rd week. • At mid-semester. • End-of-Course
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Written feedback from a classroom observation that details judgment on teaching. • Written feedback that details judgment on course materials such as syllabi, handouts and exams. • Written documentation that details teaching contribution to the department.
3. Processes for Improvement of Teaching • Learning form students feedback • Learning from instructor and department feedbacks • Learning/Using various teaching methods (lecturing, discussions, workshops, exams…) • Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) Check marking by an independent member teaching staff of a sample of student work.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. The course is updated each semester based on the last course results and students' feedback.

Name of Course Instructor: **Dr. A. Elmitwally**

_____

Signature: _____ Date Specification Completed: 11/5/1438H _____

Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 19/12/1438
College/Department : Engineering/Electrical	

A. Course Identification and General Information

1. Course title and code: Fundamentals of Power Systems 426EE3
2. Credit hours: 3 (3 ,0 , 1)
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
Bachelor of Electrical Engineering
4. Name of faculty member responsible for the course
Dr. Ayman Taher Hindi
5. Level/year at which this course is offered: 9th Level/4th Year
6. Pre-requisites for this course (if any):) 214EE3 Electric Circuit Analysis
7. Co-requisites for this course (if any): None
8. Location if not on main campus: None
9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

1. Recognize power system function, structure, and operation Analyze three-phase induction machines
2. Analyze transmission lines performance
3. Recognize electrical insulators types.
4. Recognize power system surges.
5. Construct per-unit model of power systems.
6. Analyze transmission lines performance.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

Offering the students extra hour of tutorial in addition to the prescribed office hours.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description: Power system components and representation; Transmission line and cable parameters; Analysis of transmission and distribution lines; Electric insulators; Grounding systems; High voltage surges

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to electrical energy systems	Week 1	4
Analysis of single-phase and three-phase circuits	2,3	8
Introduction to power system modeling and per-unit system	4,5	8
Calculation of transmission line parameters	6,7	8
Transmission lines modeling and performance evaluation	8,9	8
Electrical insulators	10,11	8
Grounding systems	12,13	8
High voltage surges: Analysis	14	4

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	48	14		None		62
	Actual						

Credit	Planed	3	1				3
	Actual						

3. Additional private study/learning hours expected for students per week. ٤

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1			
1.2			
2.0	**Cognitive Skills**		
2.1	Recognize power system structure and operation.	Lecture	Exams, Quiz
2.2	Construct per-unit model of power systems	Lecture	Exams, Quiz
3.0	**Interpersonal Skills & Responsibility**		
3.1	Analyze transmission lines performance.	Lecture	Exams
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1			
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz-1	3	2
2	Quiz-2	5	2
3	Test-1	4	20
4	Test-2	7	20
5	Report	13	6

6	Final	End of semester	50
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- Teaching staff are available weekly for all the students and can answer any query that rises, beside the students can email their enquiries to the main lecture. Beside students have Open general discussions with other class mates.
- 5 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks
Husain, "Electrical power Systems", CBS Publisher & Distributors, 1994.

2. List Essential References Materials (Journals, Reports, etc.)
Power System Analysis,John J.Grainger and William D. Stevenson,Jr.-McGraw-Hill1994

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
http://lib.nu.edu.sa/DigitalLibbrary.aspx

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
Lecture Room for 20 students

2. Technology resources (AV, data show, Smart Board, software, etc.)

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • **Complete course evaluation questionnaire by the students.** • **Open discussion for the students to touch their weak and strong points in the subject.** • **Feedback from the mid-term exam records.**
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Written feedback from a classroom observation that details judgment on teaching. • Written feedback that details judgment on course materials such as syllabi, handouts and exams. • Written documentation that details teaching contribution to the department.
3. Processes for Improvement of Teaching • Learning form students feedback • Learning from instructor and department feedbacks • Learning/Using various teaching methods (lecturing, discussions, workshops, exams…) • Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) **Checking students' results by another teaching staff member through reviewing the assessment samples during the semester in order to verify the students' results.**
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • **Ongoing updating and improving (during the course).** • **Annual updating and improving (during summers).**

Name of Course Instructor: __ Dr. Ayman Taher Hindi
_____

Signature: _____ Date Specification Completed: 19/12/1438 H_____

Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution	Date
Faculty of Engineering-Najran University	30-05-1439H
College/Department	

A. Course Identification and General Information

1. Course title and code: Electric Drive 427EE-3			
2. Credit hours: 3 (3 , 0 , 1)			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) ***Electrical Engineering Program***			
4. Name of faculty member responsible for the course: Prof. Dr. A. M. Abdel-Hamid			
5. Level/year at which this course is offered: 10			
6. Pre-requisites for this course (if any): 323EE-3 Automatic Control			
7. Co-requisites for this course (if any): None			
8. Location if not on main campus			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	**Yes**	What percentage?	**100%**
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	
Comments:			

B Objectives

1. What is the main purpose for this course? ***By the completion of this course, the student should be able to:*** 1. ***Principles of electric drive and different mechanical loads*** 2. ***DC & AC solid state drives.***
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) ***A development has been legalized such that an additional tutorial hour is added to give chance for more exercises on the course topics.***

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description: ***Principles of electric drive; Definitions; Electrical considerations: running, starting, braking; Mechanical considerations: type of enclosure, noise, drive transmission, motor selection; Electric traction; DC & AC solid state drives.***

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to electrical drives and solid state power converters.	Week 1	4 hours
Basic components of electrical drive systems.	2-3	8 hours
Analysis of the basic criterion of selecting an electric motor for a given drive system.	4-5	8 hours
DC solid state drive systems.	6-8	12 hours
AC solid state drive systems.	9-11	12 hours
Application of control methods to regulate motor speed, position and torque.	12-15	16 hours

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	45	15	-	-	-	60
Credit	3	1	-	-	-	4/week

3. Additional private study/learning hours expected for students per week. 1

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code	NQF Learning Domains	Course Teaching	Course Assessment

#	And Course Learning Outcomes	Strategies	Methods
1.0	**Knowledge**		
1.1	• Ability to define the different types of electrical drive systems.	Lectures, discussion rounds, homework, tutorials, assignments	Quizzes, Midterm Exams, Computer Homework, Final exam
1.2	• Distinguish among different power electronic devices and circuits.	Lectures, discussion rounds, homework, tutorials, assignments	Quizzes, Midterm Exams, Computer Homework, Final exam
1.3	• Able to design drive systems based on different machines and power electronic Converters (PEC's).	Lectures, discussion rounds, homework, tutorials, assignments	Quizzes, Midterm Exams, Computer Homework, Final exam
1.4	• Able to drive system controllers DC and AC machines.	Lectures, discussion rounds, homework, tutorials, assignments	Quizzes, Midterm Exams, Computer Homework, Final exam
1.5	• Able to achieve the industry requirements of drive systems.	Lectures, discussion rounds, homework, tutorials, assignments	Quizzes, Midterm Exams, Computer Homework, Final exam
1.6	Application of speed control and torque control of DC and AC machines via PEC's.	Lectures, discussion rounds, homework, tutorials, assignments	Quizzes, Midterm Exams, Computer Homework, Final exam
2.0	**Cognitive Skills**		
2.1	Ability to analyze drive systems.	Lectures, discussion rounds, homework, tutorials, assignments	Quizzes, Midterm Exams, Computer Homework, Final exam
2.2	Ability to analyze PEC's.	Lectures, discussion rounds, homework, tutorials, assignments	Quizzes, Midterm Exams, Computer Homework, Final exam
3.0	**Interpersonal Skills & Responsibility**		
3.1	Conduct collaborative and peer-to-peer coaching sessions which enhance team work skills.	More tutorials to enhance the students hands – on experience related to solving lecture topic exercises.	Record the attendance of the students every lecture. Midterm and Final term exams Assess the group Assignment.

3.2	During the classes students has to act responsible and ethical behavior	More tutorials to enhance the students hands – on experience related to solving lecture topic exercises.	Record the attendance of the students every lecture. Midterm and Final term exams Assess the group Assignment.
4.0	**Communication, Information Technology, Numerical**		
4.1	• During the classes students has to show responsible and ethical behaviors.	Invite the students to benefit from the office hours to ask more about their subject.	Ability to formulate different problems and provide solutions
4.2			
4.3	• During the exams students has to show responsible and ethical behaviors.		
4.4			
5.0	**Psychomotor**		
5.1			
5.2			

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.)

Course LOs #	**Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)**										
	a	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**
Define and classify the different electrical machines and drive systems. Analyses and design of DC motor speed controller.	√	√	√	0	√	0	0	0	0	0	√
Analysis of solid state power electronic circuits for DC drive systems.	√	√	√	0	√	0	0	√	√	√	√
Modeling and analysis of DC and AC motors.	√	√	√	0	√	0	0	0	0	0	√
Analysis of solid state power electronic circuits for AC drive	√	√	√	0	√	0	0	√	√	√	√

systems.											
Analyses and design of DC motor speed controller.	√	√	√	0	√	0	0	√	√	√	√
Analyses and design of AC motor speed controller.	√	√	√	0	√	0	0	√	√	√	0

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quizzes and mini project	Every two chapters	20 %
2	First Mid-Term exam	Week 6	20 %
3	Second Mid-Term exam	Week 12	10 %
4	Final Term exam	At the end of the semester as determined by the academic calendar	50 %
5			
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- **Teaching staff are available weekly for all the students and can answer any question that rises, besides, the students can email their enquiries to the main lecturer. Beside students have Open general discussions with other class mates.**

• **6 hours per week and can be arranged according to the student needs.**

E Learning Resources

1. List Required Textbooks 1.Modern Control System Theory and Design 2nd edition, Stanley Shinner, Interscience, 1998. 2. Automatic Control Systems, Benjamin Kuo, Prentice-Hall, 2002.
2. List Essential References Materials (Journals, Reports, etc.)
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc. none
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. ***Lecture hall for 20 students***

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) ***Very efficient***
2. Computing resources (AV, data show, Smart Board, software, etc.)

Own Lap tops if necessary
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) *none*

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching *After every assessment exam students will be informed about their scores and a feedback about their satisfactory and weaknesses is discussed.*
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department *none*
3 Processes for Improvement of Teaching • ***Learning form students feedback*** • ***Learning from instructor and department feedback*** • ***Learning/Using various teaching methods (lecturing, discussions, workshops, exams…)*** • ***Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)*** In case of student complaints more tutorials will be provided and re-explanations of difficult topics would be repeated. ***Checking students' results by another teaching staff member through reviewing the assessment samples during the semester in order to verify the students' results.***

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Name of Instructor: Prof. dr. a. M. Abdel-Hamid

Signature: _____ Date Report Completed: 30.05.1439H

Name of Course Instructor: Prof. dr. a. M. Abdel-Hamid

Program Coordinator: ----------

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 23/12/1438H
College/Department : Electrical Engineering Department	

A. Course Identification and General Information

1. Course title and code: Applied Control	Code # 428EE 3	Section # 1	
2. Credit hours: 3(3,0,1)			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course Dr Yousfi Khemissi			
5. Level/year at which this course is offered: 10			
6. Pre-requisites for this course (if any): 323EE3 Automatic Control			
7. Co-requisites for this course (if any): 323EE3 Automatic Control			
8. Location if not on main campus:			
9. Mode of Instruction (mark all that apply):			
a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	
Comments:			

B Objectives

1. What is the main purpose for this course?

By the completion of this course, the student should be able to:

1. Use the different approaches for advanced system control
2. Design controller ,Transducers and actuators

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- Different physical and industrial control applications are simulated in Matlab environment different toolboxes are implemented to assure the achievements of course outcomes and objectives.
- different toolboxes are implemented to assure the achievements of course outcomes and objectives

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to control and its industrial applications.	2	8
The rule of transducers and actuators in open loop and closed loop control systems.	3	12
Modeling and analysis of dynamic models of different systems such as mechanical and electrical systems including models of motor position and speed, and cruise control systems.	2	8
Transient analysis of mechanical and electrical systems.	2	8
Design and analysis of P, PI, and PID control strategies.	2	8
Application of root locus and frequency domain and state space methods in the design of controllers.	2	8
Application of Matlab Simulink and control toolbox for dc motor and robot controller design . Understanding a Programming Logic Controller (PLC).	2	8

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total

Contact Hours	Planed	45	15	N/A	N/A	N/A	60
	Actual	45	15	N/A	N/A	N/A	60
Credit	Planed	3	1	N/A	N/A	N/A	3
	Actual	3	1	N/A	N/A	N/A	3

3. Additional private study/learning hours expected for students per week. 10

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Define and classify applied control strategies for industrial applications.	Lectures.	In class quizzes . Test1 , Test2 and Final exam.
1.2			
2.0	**Cognitive Skills**		
2.1	Analyses of different control method such as root locus, frequency domain, state space for different electrical and mechanical systems.	Ability to work independently and as part of team.	Ability to work independently and as part of team. Ability to communicate in work orally and written.
2.2	Design and Analysis of P, PI, and PID controllers using the previous control methods.	Ability to work independently and as part of team.	Ability to work independently and as part of team. Ability to communicate in work orally and written.
3.0	**Interpersonal Skills & Responsibility**		
3.1	Model and Analyze different electrical and mechanical systems.	Impose deadline for Project assignments. Register student attendance in both lectures and exercises. Active class participation.	Ability to formulate a mathematical solution. Ability to ask question.

		Grade quizzes and homework in class.	
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1	Compute the PID controller parameters via Matlab Simulink and control toolbox Understanding a Programming Logic Controller (PLC).	Encourage students to consult the instructor for help during office hours.	Analysis of computer program results and output curves.
4.2			
5.0	**Psychomotor**		
5.1	Not Applicable	Not Applicable	Not Applicable
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Define and classify applied control strategies for industrial applications.	Week 1,2 (6 hours)	
2	Model and Analyze different electrical and mechanical systems	3,4 (6 hours)	Quiz 1
3	Analyze the transient Analysis of different electrical and mechanical systems.	5,6,7 (9 hours)	Test 1
4	Analyses of different control method such as root locus, frequency domain, state space for different electrical and mechanical systems.	8,9 (6 hours)	Quiz 2
5	Design and Analysis of P, PI, and PID controllers using the previous control methods.	10,11,12 (9 hours)	Test 2
6	Compute the PID controller parameters via Matlab Simulink and control toolbox. Understanding a Programming Logic Controller (PLC).	13,14 (6 hours)	Project
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) • Teaching staff are available weekly for all the students and can answer any query that rises, besides, the students can email their enquiries to the main lecture. Beside students have Open general discussions with other class mates. • 6 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks Kuo, "Automatic Control Systems", Prentice-Hall, 1995.
2. List Essential References Materials (Journals, Reports, etc.) Katsuhiko Ogata, "Modern Control Engineering", Prentice Hall 2010.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. Linear control system analysis and design John D'Azzo and Constantine H. Houpis (McGraw-Hill Companies; 4 Sub edition) January 12, 1995
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. http://ctms.engin.umich.edu/CTMS/index.php?aux=Index_Tutorials

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) **Lecture room with a maximum 15 seats**
2. Technology resources (AV, data show, Smart Board, software, etc.) • **Computer lab** • **Students own laptops**
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) • **Control and microprocessor labs** • **Projector to facilitate going over student papers in class**

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Peer consultation on teaching • Continuous assessment by department Quality committees.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Course report • Conducting workshops given by experts on the teaching and learning • Periodical departmental revisions on its methods of teaching
3. Processes for Improvement of Teaching • Learning form students feedback • Learning from instructor and department feedback • Learning/Using various teaching methods (lecturing, discussions, workshops, exams…) • Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) • The instructors of the course are checking together and put a unique process of evaluation. • Providing samples of all kind of assessment in the departmental course portfolio of each course. • Students who believe they are under graded can have their papers cheked by a second reader
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Several meetings of faculty members to discuss improvements. • Review the curriculum periodically and suggest improvements • Different physical and industrial control applications are simulated in Matlab environment and different toolboxes are implemented to assure the achievements of course outcomes and objectives.

Name of Course Instructor: __ **Dr. Yousfi Khemissi**

Signature: _____ Date Specification Completed: **_23/12/1438H**

Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 10/09/2017 G
College/Department : College of Engineering/ Electrical Engineering	

A. Course Identification and General Information

1. Course title and code: Digital Signal Processing (437EE3)
2. Credit hours: 3
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
Bachelor of Engineering
4. Name of faculty member responsible for the course
Dr. Mohammad Shahed Akond
5. Level/year at which this course is offered: 9th/4th year
6. Pre-requisites for this course (if any): 323EE3 (Automatic Control)
7. Co-requisites for this course (if any):
8. Location if not on main campus:
9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?
By the completion of this course, the student should be able to:
    1. Understand and use different theories and tools for digital signal processing
    2. Design digital filter.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)
Changes in the content are subjected with the common consent of the curriculum committee.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:
Review of discrete-time signals and systems; The Discrete-Time Fourier transform, Fast Fourier Transform, Z Transform, Recursive and no recursive digital filters design and realization; Decimation and interpolation; Applications of digital signal processing in communications.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Signal processing, characterizations of signals, classifications of signals, examples of typical signals. Discrete-Time Signals: Time-Domain Representation, Typical sequences and sequence representation, basic sequences, the sampling theorem.	2	8
Discrete- time systems: linear discrete- time systems, shift -invariant systems, LTI discrete- time systems, causal systems, stable systems.	2	8
Impulse response, Time-Domain characterizations of LTI discrete- time systems, convolution sum.	2	8
Stability condition of an LTI discrete- time systems, causality condition of LTI discrete- time systems, finite – dimensional LTI discrete- time systems, classification of an LTI discrete- time systems .	1	4
The Discrete-Time Fourier transform, Fast Fourier Transform Z- transform, rational Z- transform, ROC of Z- transform, Inverse Z- transform.	2	8
The transfer function, LTI discrete- time systems in the transform domain, the frequency response.	2	8
The concept of filtering, types of transfer functions, ideal filters, sample FIR and IIR digital filters, Block diagram representation.	4	14

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	45	12	NA	NA		57
	Actual	40	10	NA	NA		50
Credit	Planed	3	0	NA	NA		3
	Actual	3	0	NA	NA		3

3. Additional private study/learning hours expected for students per week. 6

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Apply sampling theorem to reconstruct signals.	• Lectures • Tutorials • Home Assignments	• *Quizzes* • *Assignment* • *Mid Exams* • *Final Exam*
1.2	Apply Z-transform, its properties and applications.		
2.0	**Cognitive Skills**		
2.1	Distinguish between time and frequency domain representations of signals and systems.	• Lectures • Tutorials • Home Assignments	• *Quizzes* • *Assignment* • *Mid Exams* • *Final Exam*
2.2	Design different types of system response.		
2.3	Identify the theories of LTI systems and properties of convolution.		
3.0	**Interpersonal Skills & Responsibility**		
3.1	Design and analyze analog and digital filters.	Same as above	Same as above
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1			
4.2			
5.0	**Psychomotor**		
5.1			

5.2			

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz 1	2	2%
2	Quiz 2	4	2%
3	Quiz 3	5	2%
4	Quiz 4	8	3%
5	Project Work	3	10%
6	Mid Exam 1	7	10%
7	Mid Exam 2	12	20%
8	Final Exam	14	50%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) There are 3 experts in this field. Weekly schedule of the course instructor are posted in front of the office room where enough office hours are kept for the students.

E Learning Resources

1. List Required Textbooks Mitra, "Digital Signal Processing: A Computer Based Approach", Mc Graw Hill, 2001.
2. List Essential References Materials (Journals, Reports, etc.)
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. Hand Notes
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. Hand Notes and assignments are posted in blackboards

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) **Lecture Room for 25 students**
2. Technology resources (AV, data show, Smart Board, software, etc.) **Computers and wireless multimedia equipment are available in the class room, but connectivity can be achieve through Wire connection only.**
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching Students feedback is obtained from surveying at the end of semester and strategies are adopted accordingly.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department CLOSO faculty surveying and review report is tried to follow in the following semester.
3. Processes for Improvement of Teaching
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Name of Course Instructor: **Dr. Mohammad Shahed Akond**
Signature: _____ Date Specification Completed: _____

Program Coordinator: **Dr. Abdul Kareem**

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution:	Najran University	Date:	30.05. 2017
College/Department : Faculty of Engineering/Electrical Engineering Department			

A. Course Identification and General Information

1. Course title and code: Graduation Project I (491EE-2)

2. Credit hours: 2

3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)

Electrical Engineering

4. Name of faculty member responsible for the course
Dr. Adam and Dr. Muhammad Irfan

5. Level/year at which this course is offered: 9th level

6. Pre-requisites for this course (if any): 323EE, 351EE

7. Co-requisites for this course (if any):

8. Location if not on main campus:

9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	80
b. blended (traditional and online)		What percentage?	
c. e-learning	√	What percentage?	20
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?
Ability to formulate design project and manage it.
•Ability to review related data and knowledge from credible sources.
•Ability to communicate orally and to report technically.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- Provide a special classroom for project students equipped by IT and web based reference material.
- Carrying group projects emphasizing design of product, process, production and facilities to gain experience in design in production systems.
- Carrying discussions with experts in the field to gain better understanding of design and reporting the finding. The finding is presented using data show.
- Applying group discussion for project work.
- Developing better explanatory aids in design work assignments.
- Developing better student skills in technical writing and presenting design project using Data Show.

The number of students do not exceed three.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:
The graduation project is a culminating handy course work for which the students are expected to integrate and apply what they have learned through previous academic work and field experiences, with faculty supervision. These projects may be "new," continuation of work done in previous courses; or may be projects started in a previous course that become significantly expanded and enhanced for the thesis. It has two phases- to be taken in consecutive two semesters at senior level.
At the beginning of the semester, the students propose a topic on which they are supposed to work as a group. Project students meet in class weekly, discuss their research, and screen their progresses for peer and faculty critique and suggestions. At the end of the semester, students present their thesis projects to the supervising committee.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Choose a project and write a proposal.	1	2

Initial Student Presentations: project title, description, motivation and aims.	2	4
Project planning, process, management activities, work breakdown, time estimation, milestones, activity sequencing, activity network, scheduling, Gantt charts and re-planning.	3	6
Literature survey: search and review, tracing the information, critical evaluation, writing literature review, ethics and responsibilities.	2	4
Software development, life cycle, models, assistance in writing the progress report	2	4
Student presentations: project proposal: problem definition, objectives, justification, and approach.	2	4
Final presentation & final report (committee)	3	6

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	30	-	-	-	-	30
	Actual	30					30
Credit	Planed	2					2
	Actual	2					2

3. Additional private study/learning hours expected for students per week. 3

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Conduct enough literature review in the project domain	discussion rounds, homework, assignments	Discussion, presentation
1.2			

2.0	**Cognitive Skills**		
2.1	Identify and formulate engineering problems in the area of electrical Engineering	discussion rounds, homework, assignments	Discussion, presentation
2.2	Design a system, component or process with defined constraints	discussion rounds, homework, assignments	Discussion, presentation
2.3	Solve engineering problems and implement designed solutions	discussion rounds, homework, assignments	Discussion, presentation
3.0	**Interpersonal Skills & Responsibility**		
3.1	Collect and analyze data, and draw conclusions through experiments while testing a project.	discussion rounds, homework, assignments	Discussion, presentation
3.2	Function in multidisciplinary teams		
4.0	**Communication, Information Technology, Numerical**		
4.1	Communicate effectively in written engineering report and in oral presentation	discussion rounds, homework, tutorials, assignments	Discussion, presentation
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Logbook (supervisor)	Every week	15 %
2	Final Report Draft (supervisor)	Week 13	35 %
3	Presentation (examination panel)	Week 14	20 %
4	Final Report Draft (examination panel)	Week 14	30 %
5			
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) • Teaching staff are available daily for all the students and can answer their query about the project, the students can email their enquiries to the main lecturer. Beside students, have open general discussions with other class mates. • Three (3) hours per week extra is arranged according to the student needs.

E Learning Resources

1. List Required Textbooks Any available books in the library related to project work.
2. List Essential References Materials (Journals, Reports, etc.) The students review the literature of the project from Published research articles.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. None
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. The work is done by the students on the software related to the project (like MATLAB, Pspice, Lab view, ARDUINO)

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) The department provides the classroom and Lab facilities needed by the students.
2. Technology resources (AV, data show, Smart Board, software, etc.) MATLAB, Pspice, Lab view, ARDUINO
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) None

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching – Complete course evaluation questionnaire by the students. – Open discussion for the students to touch their weak and strong points in the subject. – Feedback from the examination panel records.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department Presentation by all staff members to evaluate their teaching skills through their presentations and arrangement of lectures.
3. Processes for Improvement of Teaching Provide workshops for all staff members to improve their teaching skills through arrangement of lectures.
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) Checking students' results by another teaching staff member through reviewing the assessment samples during the semester in order to verify the students' results.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. – Ongoing updating and improving (during the course) Annual updating and improving (during summers)

Name of Course Instructor: **Dr. Adam and Dr. Muhammad Irfan**

Signature: _____ Date Specification Completed: **30.05.2017**

Program Coordinator: _____

Signature: _____ Date Received: _____

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 30/01/2018
College/Department: Faculty of Engineering/Electrical Engineering Department	

A. Course Identification and General Information

1. Course title and code: Graduation Project II (492EE-3)
2. Credit hours: 3
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)

Electrical Engineering

4. Name of faculty member responsible for the course

Dr. Adam Alhawari, Dr. Muhammad Irfan and Dr. Abdullah Alwadie

5. Level/year at which this course is offered: 10th level
6. Pre-requisites for this course (if any): EE491-2: Graduation Project I
7. Co-requisites for this course (if any): None
8. Location if not on main campus: None
9. Mode of Instruction (mark all that apply)

a. traditional classroom	X	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments: None

B. Objectives

1. What is the main purpose for this course?

- Identify and formulate engineering problems in the area of electrical engineering
- Work effectively as a member of the team
- Conduct enough literature review in the project domain
- Design a system, component or process with defined constraints
- Solve engineering problems and implement designed solution
- Collect and analyze data, and draw conclusions though experiments while testing a project
- Communicate orally and in writing the project design details in a technical report

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- Use the data show to explain various concepts of the topics
- Offering the students extra hour of tutorial in addition to the prescribed office hours.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

The graduation project is a culminating handy course work for which the students are expected to integrate and apply what they have learned through previous academic work and field experiences, with faculty supervision. This is the continuation of graduation project-I, and consequently graduation project-II is supposed to be taken in the consecutive semester.

Throughout the semester, the students try to implement what they proposed in graduation project-I as a group. Project students meet in class or lab weekly, segregate the work into sub-projects, and integrate the individual works in order to reach their target and faculty critique and suggestions. At the conclusion of the semester, students present their design projects along with the thesis to the supervising committee.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Choosing a project and writing a proposal. Group Formation Form is Due.	1, 2	(6 hours)

Initial Student Presentations: Project title, description, motivation and aims.	3	(3 hours)
Project planning, project process, project management activities, work breakdown, time estimates, milestones, activity sequencing, activity network, scheduling, Gantt charts, re-planning.	4	(8 hours)
Literature Survey: Search and Review, tracing the information, critical evaluation, writing literature review, ethics and responsibilities.	5,6	(12 hours)
Software Development, life cycle, models. Assistance in Writing progress Report	7,8	(6 hours)
Student Presentations I: Project Proposal: problem definition, objectives, justification, and approach.	9	(3 hours)
The initial Design/the Analysis Stage: System requirements specification, Functional and non-functional requirements, data, software and hardware requirements,	11,12,13	(9 hours)
Student Presentations II: literature survey, analysis, and design.	14	(3 hours)

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	45	0	None	0	None	45
	Actual	45	0	None	0	None	45
Credit	Planed	3	None	None	0	None	3
	Actual	3	None	None	0	None	3

3. Additional private study/learning hours expected for students per week. None

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Subject-based knowledge	Lectures, discussion rounds, tutorials Computer programing tools	Logbook, Presentation and Final Report Draft
2.0	**Cognitive Skills**		
2.1	– Identify and formulate engineering problems in the area of Electrical Engineering – Function in multidisciplinary teams – Conduct enough literature review in the project domain – Design a system, component or process with defined constraints – Solve engineering problems and implement designed solutions – Collect and analyze data, and draw conclusions through experiments while testing a project – Communicate effectively in written and oral forms, and achieve ethical aspects	– Offering extra tutorials for students – Encourage class participation – Making field trips (to, for example, Najran TV & Radio transmission station) to help students understand various concepts of the course topics	Logbook, Presentation and Final Report Draft
3.0	**Interpersonal Skills & Responsibility**		
3.1	Conduct collaborative and peer-to-peer coaching sessions which enhance team work skills.	Make all class meeting in the class room to enhance the students hands – on experience Lectures and tutorials	Logbook, Presentation and Final Report Draft
3.2	During the classes students has to act responsible and ethical behavior	Make all class meeting in the class room to enhance the students hands – on experience Lectures and tutorials	Logbook, Presentation and Final Report Draft
4.0	**Communication, Information Technology, Numerical**		
4.1	Record the students' attendance.	Invite the students to benefit from the office hours to ask more about their	Ability to formulate different problems and provide solutions

		subject.	
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Logbook (supervisor)	Every week	15 %
2	Final Report Draft (supervisor)	Week 13	35 %
3	Presentation (examination panel)	Week 14	20 %
4	Final Report Draft (examination panel)	Week 14	30 %

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- Teaching staff are available weekly for all the students and can answer any query that rises, besides, the students can email their enquiries to the main lecture. Beside students have open general discussions with other class mates.
- Six (6) hours per week and can be arranged according to the student needs.

E. Learning Resources

1. List Required Textbooks

Any available books in the library related to field of work.

2. List Essential References Materials (Journals, Reports, etc.)

Published research articles

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) None
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc. None
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. MATLAB Program

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) None
2. Computing resources (AV, data show, Smart Board, software, etc.) 3D Electromagnetic Software such as Computer Simulation Technology (CST)
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) None

G. Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching – Complete course evaluation questionnaire by the students. – Open discussion for the students to touch their weak and strong points in the subject. – Feedback from the examination panel records.
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department Provide workshops for all staff members to improve their presentations skills and arrangement of lectures
3 Processes for Improvement of Teaching

– Learning form students' feedback – Learning from instructor and department feedback – Learning using various teaching methods (lecturing, discussions, workshops, exams…)
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) Checking students' results by another teaching staff member through reviewing the assessment samples during the semester in order to verify the students' results.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. – Ongoing updating and improving (during the course) – Annual updating and improving (during summers)

Name of Instructor: DR. ADAM ALHAWARI, DR. MUHAMMAD IRFAN AND DR. ABDULLAH ALWADIE

Signature: _____ Date Report Completed: 30/01/2018

Name of Course Instructor _____

Program Coordinator:_____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 7.

T8. FIELD EXPERIENCE SPECIFICATION

هيئة تقويم التعليم
Education Evaluation Commission

Field Experience Specifications

Institution: Najran University	Date of Report: 24/06/1439
College: Engineering	Department: Electrical Engineering
Program: Electrical Engineering program	Track (if any):NA

A. Field Experience Course Identification and General Information

1. Field experience course title and code
Field training (490EE-0)

2. Credit hours (if any)
0

3. Level or year of the field experience.
Summer semester

4. Dates and times allocation of field experience activities.

a. Dates: 5 days/ week _____

b. Times: __8AM-2 PM _____

5. List names, addresses, and contact information for all field experience locations.

	Name and Address of the Organization	Name of Contact Person	Contact Information (email address or mobile
a.	Electrical Company - Najran		
b.	Saudi Telecommunication Company STC		
c.	Regionals and Municipalities. Telecommunication companies.		
d.	Contractor companies.		
e.	Engineering consulting companies.		

B. Learning Outcomes

Learning Outcomes for Field Experience in Domains of Learning, Assessment Methods and Teaching Strategy
Program Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning and teaching. The ***National Qualification Framework*** provides five learning domains. Learning outcomes are required in the first four domains and sometimes are also required in the Psychomotor Domain. On the table below are the five NQF Learning Domains, numbered in the left column. **First**, insert the suitable and measurable learning outcomes required in each of the learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each program learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process.

	NQF Learning Domains and Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge**		
1.1			
1.2			
2.0	**Cognitive Skills**		
2.1	Relate practical work to previous knowledge from basic sciences, engineering fundamentals, and discipline related courses.	Determined by field teaching staff	Form 4 & form 8
2.2	Apply the theoretical knowledge practically.	Determined by field teaching staff	Form 4 & form 8
3.0	**Interpersonal Skills & Responsibility**		
3.1	Exhibit integrity, punctuality, and ethical behavior in engineering practice and relationships.	Determined by field teaching staff	Form 4 & form 8
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1	Communicate effectively within the working environment in a teamwork.	Determined by field teaching staff	Form 4 & form 8
4.2			
5.0	**Psychomotor**		
5.1	NA		
5.2			

C. Description of Field Experience Activity

1. Describe the major student activities taking place during the field experience. Eight weeks of training in industry under the supervision of a college member. Students have to submit a report about their achievements during training in addition to any other requirements assigned by the Department.
2. List required assignments, projects, and reports.
a. Every trainee student should obligate the university training regulations stated either here or at the college and university websites. Commitment of the enterprise should also be considered.
b. Field training registration should be processed according to the university registration rules.
c. The entire field training Forms should be precisely filled.
d. The trainee student should responsibly behave toward the custody of the university ethics and reputation.
e. The trainee student should spent full time for the field training responsibilities.
f. The Trainee student should keep secretes of the enterprise information.
g. A significant interest should be shown regarding all the trainee duties in every sector of the enterprise.
h. The weekly training Form “Form 3”should be filled in time.
i. Form 5 should be also filled at the end of his training period.
j. Particular interest should be done for the overall training process in a way that guarantees a full interest from the training program.
k. The department training supervisor should be informed about any problems that may hinder the achievement of a successful training.
l. A final report about the training should be prepared by every student and submitted in time to the department training committee.
m. Forms 4 and 5 should be filled from the enterprise and the student respectively and submitted in time to the department training supervisor.
n. A final report should be prepared by the student and submitted in time to the supervisor.
o. Every student should prepare a demonstration to be displayed during the training discussion.

3. Follow up with students. What arrangements are made to collect student feedback? • The weekly training Form "Form 3" should be submitted weekly on time. • At least supervisor should visit the trainee in his field training enterprise two times per period of training. • Supervisor provides guidance and advice for students during the training period through E-mail or meeting.
4. Insert a field experience flowchart for responsibility and decision-making (including a provision for conflict resolution). NA

5. Responsibilities.

	Student	Field Teaching Staff	Program College and Teaching Staff	Department or College
Planning Activities				
a. Student activities.		√		
b. Learning experiences.		√	√	
c. Learning resources		√	√	
d. Field site preparations		√		
e. Student guidance and support		√	√	
Supervision Activities				
a. transport to and from site.	√			
b. Demonstrate learning outcome performance.	√			
c. Completion of required tasks, assignments, reports, and projects.	√			
d. Field site – safety.		√		
e. Student learning activities.		√	√	
b. Providing learning resources		√		
c. Administrative (attendance)		√		
Assessment Activities				
a. Student learning outcomes			Weekly report (from 3) Presentation Final report	
b. Field experience		Students activity and performance	Presentation Final report	
c. Field teaching staff		Attendance Students activity and performance Attitude		
d. Program faulty and teaching staff				Presentation Final report
e. Field site		Attendance Students activity and performance Attitude		
f. Learning resources				Presentation Final report

b. Explain the student assessment process.

c. Explain the resolution of differences process (If the field teaching staff and the program college and teaching staff share responsibility for student assessment, what process is followed for resolving differences between them?)

D Planning and Preparation

1. Identification of Field Locations

List Requirements for Field Site Locations (IT, equipment, labs, rooms, housing, learning resources, clinical)	List Safety Standards	List Specialized Criteria
a. Power generation department	General information regarding electrical safety requirements can be found in detail in the attached file (Appendix A).	Refer to the attached file (Appendix A).
b. Planning department		
c. Control department		
d. Maintenance department		
e. Telecommunication department		
Explain the decision-making process used to determine appropriate field experience locations.		

2. Identification of Field Staff and Supervisors

List Qualifications	List Responsibilities	List Training Required
a. Program College and Teaching Staff : Staff with PhD holder.		
b. Field Teaching Staff : Determined by companies.		
Explain the decision-making process used to determine appropriate field staff and supervisors.		

3. Identification of Students

List Pre-Requisite Requirements	List Testing Requirements	List Special Training Required
Completed 90 credit hours.	Presentation Final report	Go all department in the company such as…
Explain the decision-making process used to determine that a student is prepared to enroll in field experience activities. • The student should complete 90 credit hours in order to register the field training. • Field training registration should be processed according to the university registration rules. • The entire field training Forms should be precisely filled • The final list of training students approved by the field training committee		

4. Safety and Risk Management.

List Insurance Requirements	List Potential Risks	List Safety Precautions Taken	List Safety Training Requirements
Attached in Appendix A	Attached in Appendix A	Attached in Appendix A	Attached in Appendix A
Explain the decision-making process used to protect and minimize safety risks.			

5. Resolution of Differences in Assessments. If supervising staff in the field location and college from the institution share responsibility for student assessment, what process is followed for resolving any differences between them?

NA

E. Evaluation of the Field Experience

1. Describe the evaluation process and list recommendations for improvement of field experience activities by:

a. Students
Describe evaluation process
Presentation and repot

b. Supervising staff in the field setting
Describe evaluation process
Students activity and performance

c. Supervising faculty from the institution
Describe evaluation process
Form 7

e. Others—(e.g. graduates, independent evaluator, etc.)
Describe evaluation process
NA

Name of Field Experience Coordinator: ___Essam Al Yafrosi

Signature: _____  _____ Date Specification Completed: __24/06/1439___

Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 8/05/1439 H
College/Department : Engineering/Electrical	

A. Course Identification and General Information

1. Course title and code: Computer Programming for Engineers (204GE-3)
2. Credit hours: 3 (2 , 2 , 1)
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)

   Electrical Engineering Program
4. Name of faculty member responsible for the course: Dr. Seif Shebl
5. Level/year at which this course is offered: 5th/3rd year
6. Pre-requisites for this course (if any): None
7. Co-requisites for this course (if any): None
8. Location if not on main campus: None
9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

1. Understand the basic computer programming concepts.
2. Programming some examples with C language

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- Use the data show to explain various concepts of the topics,
- Deliver all class meeting in the Computers Laboratory,
- Offering the students extra hour of tutorial in addition to the prescribed office hours.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

Computer Algorithms; Developing Algorithms; Programming Preliminaries; Simple computer Programs; Numeric Constants and Variables; Arithmetic Expressions; Input and Output in C Programs; Conditional statements; Implementing loops in Programs; Defining and Manipulation Arrays; Logical Expressions and More Control statements; C Programs Examples; Functions; Enumerated data Type and stacks; Structures; Pointer Data Type and its Applications; Lists and Trees; Recursion; Bit level Operations and Applications; Files in C; Miscellaneous Features of C.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to programming languages	Week 1	4 hours
Input and output in C language.	2,3,4	12 hours
Studying the syntaxes of C language.	5,6	8 hours
Sequential, selection and repetitive structures of C language.	7,8,9	12 hours
Arithmetic and mathematical expressions.	10,11	8 hours
Functions, arrays and pointer.	12,13,14	12 hours

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total

Contact Hours	Planed	24	15	24	N/A	N/A	63
	Actual	24	15	24	N/A	N/A	63
Credit	Planed	3	1	N/A	N/A	N/A	4
	Actual	3	1	N/A	N/A	N/A	4

3. Additional private study/learning hours expected for students per week. None

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	The student should demonstrate an ability: • Develop Computer Algorithms.	• Lectures • Tutorials • Computer experiments using C-Free software.	- Class participation and homework assignments - Class quizzes - Mid-term exam. - Final Lab exam - Final Exam.
1.2			
2.0	**Cognitive Skills**		
2.1	• The student should demonstrate an ability: • Distinguish different data types.	• Solve different applications of computer programming during the tutorials. • Solve programming	Class participation and homework assignments. After performing the coding test, students have to submit a detailed

		problems using different ways to show the students how the efficient solution is to be considered. • Use computer experiment tests to solve practical computing problems.	solution. One Midterm exams has to be done. Final Exams at the end of the semester plus final lab exam.
2.2	• The student should demonstrate an ability: • Identify the Basic Structure and syntaxes of Programming languages.	• Solve different applications of computer programming during the tutorials. • Solve programming problems using different ways to show the students how the efficient solution is to be considered. • Use computer experiment tests to solve practical computing problems.	Class participation and homework assignments. After performing the coding test, students have to submit a detailed solution. One Midterm exams has to be done. Final Exams at the end of the semester plus final lab exam.
3.0	**Interpersonal Skills & Responsibility**		
3.1	• During lab sessions, students have to deal with each other to get help and cooperate in completing their programming tasks. • Students have to deal in a team workgroup during programming sessions, • Students have the chance during the tutorials and lectures to ask any difficult questions to improve their self-confidence. • During the classes students have to act in an ethical and responsible behaviour.	• Computer experiments tests • Lectures and tutorials.	• Record the marks of the students every lab. • There is a computer experimental test every week. • Midterm and Final term exams

	• During the different exams students have to act in an ethical and responsible behaviour.		
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1	Record the students' attendance. Quizzes, Mid Terms and final exams.	Invite the students to benefit from the office hours to ask more about their subject.	Ability to formulate different problems and provide solutions
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quizzes + Homework	Two quizzes + one HW.	10 %
2	Mid-Term exam	Week 8	20 %
3	Labwork	Every week	20 %
4	Final exams	At the end of the semester as determined by the academic calendar	50 %
5			
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) • Teaching staff are available weekly for all the students and can answer any query that rises, besides, the students can email their enquiries to the main lecture. Beside students have Open general discussions with other class mates. • 6 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks Computer Programming in C" by V. RAJARAMAN Eastern Economy Edition.
2. List Essential References Materials (Journals, Reports, etc.) "Problem Solving and Program Design in C," Jeri R. Hanly & Elliot B. Koffman, Seventh Ed., Pearson, 2017 "C How to Program," P. J. Deitel & H. M. Deitel, Sixth Ed., Pearson, 2010
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. None
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. Code::Blocks IDE software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) **Lecture Room for 20 students**
2. Technology resources (AV, data show, Smart Board, software, etc.) • **Only Laptops.** • **Computer software is limited to the Code::Blocks IDE.**
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) **None**

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching
• **Complete course evaluation questionnaire by the students.** • **Open discussion for the students to touch their weak and strong points in the subject.** • **Feedback from the mid-term exam records.**
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department **Seminars for the teacher, to show his lectures arrangement and progress in front of all the staff members in the department.**
3. Processes for Improvement of Teaching • **Learning form students feedback** • **Learning from instructor and department feedback** • **Learning/Using various teaching methods (lecturing, discussions, workshops, exams…)** • **Learning/Using various teaching media (projector, whiteboard, videos, Internet resources)**

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) **Checking students' results by another teaching staff member through reviewing the assessment samples during the semester in order to verify the students' results.**
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • **Ongoing updating and improving (during the course).** • **Annual updating and improving (during summers).**

Name of Course Instructor: _____**Dr. Seif Shebl**_____

Signature: _____ Date Specification Completed: **8/05/1439H**

Program Coordinator: _____**Dr. Abdulkaremm Almawgany**_____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 25-04-1439
College/Department : College of Engineering / Electrical Department	

A. Course Identification and General Information

1. Course title and code:
Fundamental of Electrical Circuits 211EE-3

2. Credit hours:3

3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)

4. Name of faculty member responsible for the course
Dr, Hisham Alghamdi

5. Level/year at which this course is offered: 6th /3rd year

6. Pre-requisites for this course (if any):
Math106 Phys105

7. Co-requisites for this course (if any):
n/a

8. Location if not on main campus:
n/a

9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

The course objective is to introduce fundamental concepts of electric circuits, and provide students with basic electric circuits analysis techniques.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

Write the full details of the syllabus to be clear for any new lecturer of the module.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:
Basic circuit elements and concepts; Basic laws of circuit theory: Ohm's law, Kirchoff's law; Circuit theorems: superposition principle, Thevenin and Norton theorems; maximum power transfer theorem Techniques of circuit analysis: Nodal and mesh analysis; Sinusoidal sources and the concept of phasor in circuit analysis; Introduction to concept of average, reactive, complex power and power factor.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Current, voltage and resistance.	Week: 1 (4 hours)	4
Ohm’s law, power and energy calculations.	Week: 2 (4 hours)	4
Kirchhoff’s current and voltage laws in series/parallel DC circuit analysis.	Week: 3,4 (8 hours)	8
Mesh, nodal analysis and source transformation.	Week: 5,6,7 (12hours)	12
Superposition, Thevenin, Norton and maximum power transfer theorems.	Week: 8,9,10 (12hours)	12
Sinusoidal Alternating Waveforms and phasor representation.	Week: 11,12 (8hours)	8
Series, Parallel and Series/Parallel AC circuits	Week: 13,14,15 (8hours)	12

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	45	15	-	-	-	60
	Actual	45	15	-	-	-	60
Credit	Planed	3	-	-	-	-	3
	Actual	3	-	-	-	-	3

3. Additional private study/learning hours expected for students per week. 4

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Define current, voltage and resistance.	Lecture and tutorial	MidTerm-1 & Final Exam
1.2	Ohm's law, power and energy calculations.	Lecture and tutorial	MidTerm-1 & Final Exam
1.3	Describe Kirchhoff's current and voltage laws in series/parallel DC circuit analysis.	Lecture and tutorial	MidTerm-1 & Final Exam
2.0	**Cognitive Skills**		
2.1	Calculate Mesh, nodal analysis and source transformation.	Lecture and tutorial	MidTerm-2 & Final Exam
2.2	Summarize Superposition, Thevenin, Norton and maximum power transfer theorems.	Lecture and tutorial	MidTerm-2 & Final Exam
2.3	Explain Sinusoidal Alternating Waveforms and phasor representation.	Lecture and tutorial	Final Exam
3.0	**Interpersonal Skills & Responsibility**		
3.1			
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1			
4.2			

5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	test	7 , 13	42%
2	Quizzes	2 , 6,9	8%
3	Final Examination	15	50%
4			
5			
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) 10 (HR)

E Learning Resources

1. List Required Textbooks قائمة الكتب المقررة المطلوبة : " Introductory Circuit Analysis (12th Edition) by Robert L. Boylestad - Prentice Hall – 2010"
2. List Essential References Materials (Journals, Reports, etc.) قائمة المراجع الأساسية (الدوريات العلمية- والتقارير – وغيرها) None
3. List Electronic Materials Web Sites, Facebook, Twitter, etc. قائمة المصادر الإلكترونية، مواقع الإنترنت، فيس بوك، تويتر، ...الخ • 1-Electric Circuits (8th Edition) by James W. Nilsson Susan Riedel - Addison Wesley – 2004. • 2-Engineering Circuit Analysis (6th ed.) by W.H. Hayt, J.E. Kemmerly, and S. Durbin.
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. مواد تعليمية أخرى مثل البرامج المعتمدة على الحاسب الآلي/الأسطوانات المدمجة، والمعايير المهنية أو اللوائح التنظيمية والبرمجيات.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) 15 students in one class.
2. Technology resources (AV, data show, Smart Board, software, etc.) Computer for power point slides.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) n/a

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching End of the course
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department -Written feedback from a classroom observation that details judgment on teaching. -Written feedback that details judgment on course materials such as syllabi, handouts and exams. -Written documentation that details teaching contribution to the department.
3. Processes for Improvement of Teaching -Learning form students feedback -Learning from instructor and department feedbacks -Learning/Using various teaching methods (lecturing, discussions, workshops, exams…) -Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) Check marking by an independent member teaching staff of a sample of student work.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. -Ongoing updating and improving (during the course). -Annual updating and improving (during summers).

Name of Course Instructor: _____Dr. Hisham Alghamdi_____

Signature: _____ Date Specification Completed: __25-04-1439_

Program Coordinator: _____

Signature: _____ Date Received: _____

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution Najran University	Date
College/Department	

A. Course Identification and General Information

1. Course title and code: 212EE-3			
2. Credit hours 3 (3 , 0 , 1)			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course Dr. Abdulkarem Hussein Mohammed Almawgani			
5. Level/year at which this course is offered	5th Semester/2nd year		
6. Pre-requisites for this course (if any) Advance physic 105Phy Advance calculus 203Math3			
7. Co-requisites for this course (if any) None			
8. Location if not on main campus			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom	√	What percentage?	85%
b. Blended (traditional and online)		What percentage?	
c. e-learning	√	What percentage?	10%
d. Correspondence	√	What percentage?	5%
f. Other		What percentage?	
Comments:			

B Objectives

1. What is the main purpose for this course? 1. Grasp Electromagnetics principles and laws 2. Apply Electromagnetics principles and laws 3. Analyze simple electromagnetic systems
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description: Review to vector calculus; Electrostatic fields; Gauss's law and divergence; Electric potential; Dielectrics and capacitance; Poisson's and Laplace's equations; Charge images; Current density and conductors; Magnetostatic fields; Biot–Savart and Ampere's laws; Curl and Stokes's theorem; Magnetic materials and circuits; Self and mutual inductances; Energy in static Fields.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Review to vector calculus, divergence theorem, curl, and Stokes's theorem	2.5	10
Electrostatic fields; electric field strength, Gauss's law, and electric potential	4	15
Properties of materials, dielectrics and capacitance, conductors and current density	2.5	10
Poisson's and Laplace's equations and the method of charge images	1	5
Magnetostatic fields; Biot–Savart law and Ampere's law	4	15
Magnetic materials and circuits, inductors and inductances, and energy in static fields.	2	5

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	45	15	0	0	0	60
	Actual	45	15	0	0	0	60
Credit	Planed	3	1				3
	Actual	3	1				3

3. Additional private study/learning hours expected for students per week.	6

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	**CLO 3:** Classify materials, and identify dielectrics, conductors and properties	Lectures and tutorials	Test 2, final exam assignments and homework
2.0	**Cognitive Skills**		
2.1	**CLO 1:** Apply vector calculus to understand the behavior of static fields	Lectures and tutorials	Test 1, final exam assignments and homework
2.2	**CLO 2:** Analyze electrostatic forces, fields, and potentials	Lectures and tutorials	Test 1, final exam assignments and homework
2.3	**CLO 4:** Analyze magnetostatic fields and derive Maxwell's equations	Lectures and tutorials	Test 2, final exam assignments and homework
3.0	**Interpersonal Skills & Responsibility**		
3.1			
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1			
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Test 1	7	20%
2	Quiz 1 and 2	4 and 6	3%
3	Test 2	15	15%
4	Quiz 3 and 4	9 and 11	3%
5	Homework	3, 5, 7, 9, 11 and 13	7%
6	Final exam	16	50%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- Teaching staff are available weekly for all the students and can answer any query that rises, beside the students can email their enquiries to the main lecture. Beside students have Open general discussions with other class mates.
- 6 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks

William H. Hayt, Jr. John A. Buck, “Engineering Electromagnetics”, Sixth Edition, 2004

2. List Essential References Materials (Journals, Reports, etc.)

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
Matthew N. O. Sadiku, “Elements of Electromagnetics”, Oxford Edition.

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Classroom, 25 seats
2. Computing resources (AV, data show, Smart Board, software, etc.) Data show, Smart Board
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching i. Complete course evaluation questionnaire by the students. ii. Open discussion for the students to touch their weak and strong points in the subject. iii. Feeding back from the mid-term exam records.
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor • Written feedback from a classroom observation that details judgment on teaching. • Written feedback that details judgment on course materials such as syllabi, handouts and exams. • Written documentation that details teaching contribution to the department. • Feedback from peer reviewer in the department after attendance classroom lecture.
3 Processes for Improvement of Teaching Actions by department council
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) Check marking by an independent member teaching staff of a sample of student work
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Ongoing updating and improving (during the course). • Semi-annual discussion in department council

Name of Instructor: Dr. Abdulkarem Hussein Mohammed Almawgani

Signature: _____ Date Report Completed: 14/3/2017

Name of Course Instructor _____

Program Coordinator:_____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 18/08/1438H
College/Department : Engineering/Electrical	

A. Course Identification and General Information

1. Course title and code:
   Electric Circuits Lab 213EE1
2. Credit hours: 1 (0 , 2 , 0)
3. Program(s) in which the course is offered.
   (If general elective available in many programs indicate this rather than list programs)
   Electrical Programs
4. Name of faculty member responsible for the course
   Eng. Fahad Alkahtani
5. Level/year at which this course is offered: 3rd year for Electrical Engineering
6. Pre-requisites for this course (if any):
   211EE3 Fundamentals of Electric Circuits
7. Co-requisites for this course (if any):
   None
8. Location if not on main campus:
9. Mode of Instruction (mark all that apply):

a. traditional classroom	✓	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

The course objective is to apply fundamental concepts of electric circuits in laboratory, and provide students with basic electric circuits analysis techniques.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

None

C. Course Description (Note: General description in the form used in Bulletin or handbook)

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
laboratory test equipment: voltage sources, current sources, resistors.	1	2 hours
Fundamental laws : Ohm's law, Kirchhoff voltage law (KVL) and Kirchhoff current law (KCL).	2,3,4,5,6	10 hours
Circuit analysis using: superposition, Thevenin, maximum power transfer theorems.	7,8,9,10, 11	10 hours
Resonance series and parallel.	12,13	4 hours
Transient response of first order circuits, Magnetically coupled and Three phase circuits.	14, 15	4 hours

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	None	None	30	None	None	30
	Actual	None	None	30	None	None	30
Credit	Planed	None	None	1	None	None	1
	Actual	None	None	1	None	None	1

3. Additional private study/learning hours expected for students per week. 2

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	• Recognize the electrical laboratory devices, namely DC/AC power supplies, digital multimeters, resistors….	• Practical sessions.	• Experiment report assignment • Two midterm Exams • Final Exam
2.0	**Cognitive Skills**		
2.1	• Use of electrical laboratory devices, namely DC/AC power supplies, digital multimeters, resistors…. • Analysis of circuits using ohm's law, Kirchhoff voltage law (KVL) and Kirchhoff current law (KCL). • Analysis of circuits using superposition, Thevenin and maximum power transfer theorems. • Measure of the resonant frequency and bandwidth of series and parallel circuits. • Examination of the transient response of first order circuits and analysis of a balanced three phase and magnetically coupled circuits. • Solving questions related to topics.	• Application and discussion during labs sessions. • Providing assistance to students during office hours.	• Experiment reports. • Two midterm Exams and Final Exam.
3.0	**Interpersonal Skills & Responsibility**		
3.1	• Ability to work independently and as part of team. • Ability to communicate in work orally and written.	• Giving opportunity to students to lead the discussion in class for limited time. • Ask questions about the topics.	• Take attendance. • Active class participation. • Grade Experiment reports assignments.

4.0	**Communication, Information Technology, Numerical**		
4.1	None		
5.0	**Psychomotor**		
5.1	None		

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Pre-lab quiz	weekly	10%
2	Lab report	weekly	10 %
3	Lab performance	weekly	10 %
	midterm exam	Week 7	20 %
	Final Term exam	The end of the term	50 %

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- Teaching staff are available weekly for all the students and can answer any query that rises, beside the students can email their enquiries to the main lecture. Beside students have Open general discussions with other class mates.
- 5 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks

Introductory Circuit Analysis (12th Edition) by Robert L. Boylestad - Prentice Hall – 2010

2. List Essential References Materials (Journals, Reports, etc.)

Introductory Circuit Analysis (12th Edition) by Robert L. Boylestad - Prentice Hall – 2010

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

- Engineering Circuit Analysis (6th ed.) by W.H. Hayt, J.E. Kemmerly, and S. Durbin.
- Electric Circuits (8th Edition) by James W. Nilsson Susan Riedel - Addison Wesley - 2004
- R. C. Dorf and J. A. Svoboda, Introduction to Electric Circuits, 7th Edition, Wiley, 2006.

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

- www. en.wikipedia.org/wiki/Electrical_network
- www. allaboutcircuits.com

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) • Lecture room with a maximum of 15 seats and adequate daylight equipped with data projector. • Size of classrooms is approximately 100 m^2
2. Technology resources (AV, data show, Smart Board, software, etc.) • Projector to facilitate going over student papers in class
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) • Lab Measurement Millimeters be with more safety, accuracy and periodically maintained, • DC, AC power supply units, and Clock Timers be increased to 15 units, in addition, alarm clocks.

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Throughout the Course (Verbal Feedback): • Questionnaire • At mid-semester. • End-of-Course.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Written feedback from a classroom observation that details judgment on teaching. • Written feedback that details judgment on course materials such as syllabi, handouts and exams. • Written documentation that details teaching contribution to the department. • Reduce the number of students to 10 in the lab.
3. Processes for Improvement of Teaching • Learning from instructor and department feedbacks • Learning/Using various teaching methods (lecturing, discussions, workshops, exams…) • Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) • Check marking by an independent member teaching staff of a sample of student work.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Ongoing updating and improving (during the course).

Name of Course Instructor: **Eng. Fahad Alkahtani**

Signature: *Fahad* Date Specification Completed 18/08/1438H

Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 22/04/1439 H
College of Engineering/Department of Electrical Engineering	

A. Course Identification and General Information

1. Course title and code:
   Electric Circuit Analysis 214EE-3
2. Credit hours: 3(3,0,1)
3. Program(s) in which the course is offered.
   (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course
   Dr. Salim Mursal
5. Level/year at which this course is offered: 6th Semester/3rd year/ **1438/1439 H**
6. Pre-requisites for this course (if any):
   Fundamentals of electric circuits 211EE3
7. Co-requisites for this course (if any):
   None
8. Location if not on main campus:
9. Mode of Instruction (mark all that apply):

a. traditional classroom	☐	What percentage?	100%
b. blended (traditional and online)	☐	What percentage?	
c. e-learning	☐	What percentage?	
d. correspondence	☐	What percentage?	
f. other	☐	What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

To develop problem solving skills of circuit theory through the application of techniques and principles of electrical circuit analysis to common circuit problems.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)
None

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:
Frequency response of RLC and selective circuit: concept of transfer function, resonance, bode plots, introduction to filters; Two-Port networks; Mutual inductance and transformers; Transient analysis of first and second order circuits; Three phase circuits; Introduction to Op-Amp, ideal characteristics with simple applications; Diode characteristics, clipping and rectification.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Transient response of RLC circuit.	1,2,3	12 hours
Frequency response of RLC circuit.	4,5	8 hours
Introduction to Filters.	6,7	8 hours
Two-Port Circuits.	8,9	8 hours
Mutual Inductance and transformers.	10,11	8 hours
Three-Phase Circuits, and electronic devices circuits	12,13,14	12 hours

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact	Planed	45	15	None	0	None	60

Hours							
Credit	Planed						
	Actual	3	1	0	0	None	3

3. Additional private study/learning hours expected for students per week. 4

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Classify the types of electric heating, Cooling, and welding.	Lecture and tutorial	Exams and quizzes
1.2	Illustrate the role and applications of electrolysis in industry.	Lecture and tutorial	Exams and quizzes
1.3	Describe the importance of renewable energy sources.	Lecture and tutorial	Exams and quizzes
2.0	**Cognitive Skills**		
2.1	Apply concepts of lighting and illumination technology, show the types of electrical installation and their techniques and the protection systems used in buildings.	Lecture and tutorial	Exams and quizzes
2.2	Identify the power quality issues and analyze methods to improve the electric power factor.	Lecture and tutorial	Exams and quizzes
3.0	**Interpersonal Skills & Responsibility**		
3.1			
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1			
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Analyze the transient response of first and second order circuits.	• Discussion and problem solving. • Homework assignments. • Providing assistance to students during office hours.	• Homework assignments and class quizzes. • Two midterm Exams and Final Exam.
2	Diagram the frequency response of the circuits.		
3	Analyze circuits that function as filters.		
4	Analyze a terminated two-port circuit.		
5	Analyze circuit containing magnetically coupled coils.		
6	Analyze a balanced three-phase circuit, and circuits containing electronic devices.		
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) • Teaching staff are available weekly for all the students and can answer any query that rises during office hours. Beside students, have Open general discussions with other classmates. • 10 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks • Boylestad , "Introductory Circuit Analysis" , Twelfth Edition, Pearson Prentice Hall .
2. List Essential References Materials (Journals, Reports, etc.) • James W. **Nilsson** and Susan A. Riedel , "Electric Circuits" , EIGHTH EDITION, Pearson Prentice Hall . • Fundamentals of Electric Circuits by C. D. Alexander and M. N. O. Sadiku, third Edition, Mc Graw-Hill Education, 2007.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. http://lib.nu.edu.sa/digitallibbrary.aspx www. en.wikipedia.org/wiki/Electrical_network www. allaboutcircuits.com
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. None

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Classroom with sufficient seats (25 seats) and should be spacious (15x15m^2 at least).
2. Technology resources (AV, data show, Smart Board, software, etc.) Classroom with adequate daylight equipped with data projector, separated from white board.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) None

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Throughout the Course (Verbal Feedback). • Questionnaire • At mid-semester. • End-of-Course.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Survey feedback from the student's observation that details judgment on teaching. • Written feedback that details judgment on course materials such as syllabi, handouts and exams.
3. Processes for Improvement of Teaching • Learning from instructor and department feedbacks • Learning/Using various teaching methods (lecturing, discussions, exams…) • Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) • Check marking by an independent member teaching staff of a sample of student work.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. * Have a curriculum review committee to review the curriculum periodically and suggest

improvements

Name of Course Instructor: Dr. Salim Mursal_____

Signature: _____ Date Specification Completed: 22/04/1439H _____

Program Coordinator: _ **Dr Abdulkarem Al Mawgani**
_____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 10/09/2017 G
College/Department : College of Engineering/ Electrical Engineering	

A. Course Identification and General Information

1. Course title and code: Electromagnetism (2) : 215EE3
2. Credit hours: 3 (Three)
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
Bachelor of Engineering
4. Name of faculty member responsible for the course
Dr. Mohammad Shahed Akond
5. Level/year at which this course is offered: 7th/ 3rd year
6. Pre-requisites for this course (if any): Electromagnetism 1: 212EE3
7. Co-requisites for this course (if any):
8. Location if not on main campus:
9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

By the completion of this course, the student should be able :

1. Analyze Time varying fields
2. Analyze Electrical and Magnetic fields
3. Analyze the different types of Plane waves propagation

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

Changes in the course content is subjected to the approval of the curriculum committee.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

Time varying fields; Faraday's law. Transformer and motional emfs; Displacement current; Maxwell's equations and time harmonic fields; Wave equation; Power transfer and Poynting vector; Plane wave propagation in free space, in lossy dielectrics and in good conductors; Polarization; Reflection of plane wave at normal and oblique incidence; Transmission lines; Impedance matching; Introduction to radiation and antennas; Antenna parameters; Wire antennas.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction, Examples and Applications of EM waves	1	3
Transformer and Motional EMFs, Displacement Current, Maxwell's Equation, Time Harmonic Field	2	6
Wave Equation, Plane Wave Propagation in Free Space	2	6
Power Transfer and Poynting Vector	1	3
Plane Wave Propagation in lossy dielectric and in good conductors; Polarization	2	6
Reflection of plane wave at normal and oblique incidence	3	9
Transmission lines; Impedance Matching	3	9
Introduction to radiation and antennas, Antenna types, Antenna parameters, Wire Antenna	1	3

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	45	12	N/A	N/A		57
	Actual	40	10	N/A	N/A		50
Credit	Planed	3	0	N/A	N/A		3

	Actual	3	0	N/A	N/A		3

3. Additional private study/learning hours expected for students per week.	6

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Analyze transmission lines and design matching networks.		
1.2			
2.0	**Cognitive Skills**		
2.1	Analyze time varying fields and the motional EMFs	• Lectures • Tutorials Home Assignments	• Mid Exams • Quizzes • Home Works • Attendance • Final Exams
2.2	Solve wave equation and evaluate wave propagation in different types of materials.		
2.3	Identify fundamentals of antennas.		
2.4	Examine reflection and refraction of waves.		
3.0	**Interpersonal Skills & Responsibility**		
3.1			
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1			
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz 1	2	2%
2	Quiz 2	4	3%
3	Quiz 3	5	2%
4	Quiz 4	8	3%
5	Mid Exam 1	7	20%
6	Mid Exam 2	12	20%
7	Final Exam	14	50%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

E Learning Resources

1. List Required Textbooks **Matthew N. O. Sadiku, "Elements of Electromagnetics", Oxford Edition**
2. List Essential References Materials (Journals, Reports, etc.) 1. **J. A. Stratton, " Electromagnetic Theory", McGraw-Hill Book Company, 1941.** **2. J. A. Kong "Electromagnetic Wave Theory", John Wiely&sones, 1986.**
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. Hand Notes supplied through e-dashboard
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) **Lecture Room for 25 students**
2. Technology resources (AV, data show, Smart Board, software, etc.) **Computers and wireless multimedia equipment are available in the class room, but connectivity is not good enough. However, connecting wire is available**.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching Students feedback is obtained from surveying at the end of semester and strategies are adopted accordingly.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department CLOSO faculty surveying and review report is tried to follow in the following semester.
3. Processes for Improvement of Teaching
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Name of Course Instructor: _____**Dr. Mohammad Shahed Akond**_____

Signature: _____ Date Specification Completed: _____

Program Coordinator: _____**Dr. Abdul Kareem**_____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution Najran University	Date 15/05/1439 H
College/Department Electrical Engineering Program	

A. Course Identification and General Information

1. Course title and code: Signals and Systems : 321EE3
2. Credit hours 3 (3, 0, 1)
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course: Prof. A. M Abdel-Hamid
5. Level/year at which this course is offered 7th Semester 3rd year
6. Pre-requisites for this course (if any) EE 214 Electric Circuit Analysis
7. Co-requisites for this course (if any)
8. Location if not on main campus

9. Mode of Instruction (mark all that apply)

a. traditional classroom	☑	What percentage?	80
b. blended (traditional and online)		What percentage?	
c. e-learning	☑	What percentage?	20
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course? By the completion of this course, the student should be able to : 1)Use the different theories to analyze: **1.** Analog Signals **2.** Digital Signals 2) Simulate the signal in both time and frequency domains
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) The course is a basic course and its alteration will not give any benefit; however, re-checking of the course content is essential for its suitability in the upcoming courses of control, communication and Digital Signal Processing.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact Hours
Motivation and Applications;	Week 1,2	6 hours
Signal Classifications, Signal Operations, Singularity Functions;	3, 4	6 hours
Linear time-Invariant Systems and Convolution;	5, 6	6 hours
Correlation;	7	3 hours
Fourier Series for continuous and discrete time signals;	8, 9	6 hours
Applications of Fourier series in circuit analysis	10, 11	6 hours
Fourier Transform for continuous and discrete time signals	12, 13	6 hours
Laplace transform and applications; Introduction to z-transform.	14, 15	6 hours

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total

Contact Hours	45	15	----------	----------	----------	60
Credit	3	-------				3

3. Additional private study/learning hours expected for students per week.	4 hours

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Distinguish between continuous and discrete time signal and systems.	• Lectures • Tutorials • Assignment	Class Work Home Assignment Quizzes Mid term and Final Exams.
1.2			
2.0	**Cognitive Skills**		
2.1	Manipulate the different transform-domain techniques.	Solve various types of problems from the text books in categorical manner in the following order: • Examples • Basic Problems • Mathematical problems and • Advanced	• Home assignments. • Quizzes • Two Midterm exams. • Final Exams at the end of the semester.

		problems.	
2.2	Manipulate the different transform-domain techniques.	Solve various types of problems from the text books in categorical manner in the following order: • Examples • Basic Problems • Mathematical problems and • Advanced problems.	• Home assignments. • Quizzes • Two Midterm exams. • Final Exams at the end of the semester.
3.0	**Interpersonal Skills & Responsibility**		
3.1			
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1	Analyze continuous linear time invariant systems using the concept of convolution.	Ask the students to use the office hours to ask more about their subject.	• Attendance record for the students. • Mid Term and final exams. • Quizzes and Home Works.
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.)

Course LOs #	**Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)**								
	1.1	**1.2**		**2.1**		**3.2**		**4.1**	
1.1									
2.1									

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Assignments	Scheduled	14 %
2	First Mid-Term exam	7	18 %
3	Second Mid-Term exam	13	18 %
4	Final Term exam	The final of the term	50 %
5			
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

6 hours as of office hours

E Learning Resources

1. List Required Textbooks

Oppenheim, Willsky and Nawab,"Signals and Systems", Prentice-Hall, 1997.

2. List Essential References Materials (Journals, Reports, etc.)
Haykin and Veen, "Signals and Systems", John Wiley, 1998.

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. Introduction to MATLAB signal and system tools

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Lecture Room for 20 students
2. Computing resources (AV, data show, Smart Board, software, etc.) data show, Smart Board
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching i. Complete course evaluation questionnaire by the students. ii. Open discussion for the students to touch their weak and strong points in the subject. iii. Feeding back from the mid-term exam records.
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

Seminars for the teacher, to show his lectures arrangement and progress in front of all the staff members in the department.
3 Processes for Improvement of Teaching
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) Re-check the final term exams for some random students by another faculty member in the same field subject inside the department
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. Improve for the subject course contents by an external committee members in the same field of study in another institution.

Name of Instructor: Prof Dr. A. M. Abdel-Hamid _____

Signature: _____ Date Report Completed: _____

Name of Course Instructor _____

Program Coordinator:_____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 01-01-2018
College/Department : Faculty of Engineering, Electrical Engineering Department	

A. Course Identification and General Information

1. Course title and code: 324EE-1
2. Credit hours: 01
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
Electrical Engineering Program
4. Name of faculty member responsible for the course
Dr. Muhammad Irfan
5. Level/year at which this course is offered: 08
6. Pre-requisites for this course (if any): 323EE-3 Automatic Control Laboratory
7. Co-requisites for this course (if any):
8. Location if not on main campus:
9. Mode of Instruction (mark all that apply):

a. traditional classroom		What percentage?	
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other	yes	What percentage?	100 %

Comments:

Automatic control Lab

B Objectives

1. What is the main purpose for this course?
By the completion of this course, the student should be able to:

1. It is concerned with modern control techniques.
2. Student learns how to run Experiments include system identification, dynamic analysis of control systems with application to temperature control, light intensity control, PID control, and PLC control.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:
Experiments to support control theory using physical processes (e.g. temperature control, light intensity control, PLC etc); Control system simulation using Matlab; Modeling of physical (experimental) equipment; Static performance; Transient analysis; Measuring devices; Two-position control; Proportional control; PID control.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to the Computer-Aided Design Package MATLAB	Week 1, (2 hours)	Week 1, (2 hours)
Simulation of a Prototype Second Order System	2 (2 hours)	2 (2 hours)
Real-Time Simulation of the Second Order System using Cassy-Lab	3 (2 hours)	3 (2 hours)
Unit Step Response of Proportionate, Integrator and Differentiate Controller	4 (2 hours)	4 (2 hours)
PID Controller	5 (2 hours)	5 (2 hours)

Light Intensity Control	6 (2 hours)	6 (2 hours)
Temperature Control	7 (2 hours)	7 (2 hours)
Introduction to PLC	8 (2 hours)	8 (2 hours)
System Stabilityof the Control	9 (2 hours)	9 (2 hours)
Introduction to Root Locus Design	10 (2 hours)	10 (2 hours)

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed				20		20
	Actual				20		20
Credit	Planed				01		01
	Actual				01		01

3. Additional private study/learning hours expected for students per week. 01

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Analyze the control system using MATLAB simulation tools.	Lab., tutorials	quiz, Lab performance, final exam, midterm Exams
1.2	Analyze the control system using Cassy-Lab real-time simulation tools.	Lab., homework, discussion, practice,	Lab performance, final exam, midterm Exams
1.3	Analyze PID and two-position controller.	Lab.	quiz, Lab performance, final exam,
1.4	Verify modern control concepts	Lab.	Lab performance, final exam, midterm Exams
2.0	**Cognitive Skills**		
2.1	Analyze a control system in both Time domain and Frequency domain	Lectures, discussion rounds, homework, tutorials, assignments	Lab performance, Quizzes, Midterm Exams, Final exam
2.2	Construct the state-space model	Lectures, discussion rounds, homework, tutorials, assignments	Lab performance, final exam, midterm Exams
2.3	Evaluate the control system stability	Lectures, discussion rounds, homework, tutorials, assignments	Lab performance, final exam, midterm Exams
3.0	**Interpersonal Skills & Responsibility**		
3.1	Conduct collaborative and peer-to-peer coaching sessions which enhance team work skills.	More tutorials to enhance the students hands – on experience related to solving lecture topic exercises.	Record the attendance of the students every lecture. Midterm and Final term exams Assess the lab performance and reports.
3.2	During the lab hours students has to act responsible and ethical behavior	More tutorials to enhance the students hands – on experience related to solving lecture topic exercises.	Record the attendance of the students every lecture. Midterm and Final

			term exams Assess the lab performance and reports.
4.0	**Communication, Information Technology, Numerical**		
4.1	Record the students' attendance. Quizzes, Mid Terms and final exams.	Invite the students to benefit from the office hours to ask more about their subject.	Ability to formulate different problems and provide solutions
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Lab Performance	Every lab	10 %
2	Quizzes	Week 4	10 %
3	Mid-Term exam	Week 6	20 %
4	Lab Reports	Week 13	10 %
5	Final Term exam	At the end of the semester as determined by the academic calendar	50 %
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) • Teaching staff are available weekly for all the students and can answer any question that rises, besides, the students can email their enquiries to the main lecturer. Beside students have Open general discussions with other class mates. • 2 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks Modern Control Systems, by Richard C. Dorf and Robert H. Bishop, Pearson Education, 2008.
2. List Essential References Materials (Journals, Reports, etc.) Modern Control System Theory and Design 2nd edition, Stanley Shinner, Interscience, 1998. Automatic Control Systems, Benjamin Kuo, Prentice-Hall, 2002.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. http://ctms.engin.umich.edu/CTMS/index.php?aux=Home
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. Lab room hall for 15 students

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Very efficient
2. Technology resources (AV, data show, Smart Board, software, etc.) Cassy Lab beside Own Laptops if necessary
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) *none*

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching *After every assessment exam students will be informed about their scores and a feedback about their satisfaction and weaknesses is discussed.*
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department *Peer evaluation by the department*
3. Processes for Improvement of Teaching • Learning form students feedback • Learning from instructor and department feedback • Learning/Using various teaching methods (lecturing, discussions, workshops, exams…) • Learning/Using various teaching medias (projector, whiteboard, videos, educational visits) In case of student complaints more tutorials will be provided and re-explanations of difficult topics would be repeated.
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) ***Checking students' results by another teaching staff member through reviewing the assessment samples during the semester in order to verify the students' results.***

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Name of Course Instructor: Dr. Muhammad Irfan

Signature: _____ Date Specification Completed: 01-01-2018

Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 19/12/1438
College/Department : Engineering/Electrical	

A. Course Identification and General Information

1. Course title and code: Electrical Machines 325EE-3
2. Credit hours: 3 (2 , 2 , 1)
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
Bachelor of Electrical Engineering
4. Name of faculty member responsible for the course
Dr. Ayman Taher Hindi
5. Level/year at which this course is offered: 7 th Level Forth year
6. Pre-requisites for this course (if any):) 212EE Electromagnetism (1), 214EE Electric Circuit Analysis
7. Co-requisites for this course (if any): None
8. Location if not on main campus: None
9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?
1. Analyze Single-phase transformers, auto – transformers and three-phase transformers
2. Analyze three-phase induction machines
3. Calculate the performance and speed control of the three-phase induction machines

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

Offering the students extra hour of tutorial in addition to the prescribed office hours.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description: Power system components and representation; Transmission line and cable parameters; Analysis of transmission and distribution lines; Electric insulators; Grounding systems; High voltage surges

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Review of principles of operation; construction; review of equivalent circuit, elements of a transformer.	Week 1	4
The ideal transformer, practical transformers, open circuit test, short circuit test, efficiency , regulation	2,3	8
Practical transformer, three-phase connections	4,5	8
Measurement in three-phase, auto-transformer, taps, instrument transformer, parallel operation.	6	4
Basic theory and construction of squirrel-cage and wound-rotor motor	7,8	8
Equivalent circuit, losses, power flow, efficiency.	9,10	8
Analysis of machine equations; speed/torque curves, starting performance, starting methods	11,12	8
Single phase machines, reluctance shaded-pole, universal, permanent magnet, servo motors, stepper motors.	13,14	8

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	28	14	28	None		70
	Actual						

Credit	Planed	2	1	2			3
	Actual						

3. Additional private study/learning hours expected for students per week. 5

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Define operation principles of electrical machines.	Lecture	Exams
1.2			
2.0	**Cognitive Skills**		
2.1	Analyze fundamental characteristics of various types of machines.	Lecture	Exams, Quiz
2.2	Evaluate equivalent circuit and characterize different electrical machines.	Lecture	Exams, HW, Quiz
3.0	**Interpersonal Skills & Responsibility**		
3.1	Analyze transmission lines performance.	Lecture	Exams
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1	Demonstrate experiments on machine operations.	Lab	Exams, Report, Practical
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz-1	3	2
2	Quiz-2	5	2

3	HW-1	2	1
4	Test-1	7	15
5	Test-2	13	15
6	Lab assessment	14	15
7	Final	End of semester	50
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- Teaching staff are available weekly for all the students and can answer any query that rises, beside the students can email their enquiries to the main lecture. Beside students have Open general discussions with other class mates.
- 5 hours per week and can be arranged according to the student needs.

E Learning Resources

1. List Required Textbooks
Stephen J Chapman, Electrical Machinery Fundamentals, Publisher: McGraw-Hill Higher Education, 2005, Fourth Edition.

2. List Essential References Materials (Journals, Reports, etc.)
• Denis O'Kelly, Performance and Control of Electrical Machines, Publisher: Mc-Graw Hill Book Company, 1991
• Karsai, D Kereny, L Kiss, Studies in Electrical and Electronic Engineering 25, Large Power Transformers, Publisher: Elsevier, 1987
• A E Fitzgerald, Charles Kingsley, Stephen D Umans, Electric Machinery, Sixth Edition, Publisher: Mc-Graw-Hill Higher Education, 2002]
• Charles I Hubert, Electric Machines, Theory, Operation, Application, Adjustment and Control, Publisher: Macmillan Publishing Company, 1991
• Dino Zorbas, Electric Machines, Principles, Applications, and Control Schematics, Publisher: West Publishing Company, 1989

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
http://lib.nu.edu.sa/DigitalLibbrary.aspx

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) **Lecture Room for 20 students**
2. Technology resources (AV, data show, Smart Board, software, etc.)
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • **Complete course evaluation questionnaire by the students.** • **Open discussion for the students to touch their weak and strong points in the subject.** • **Feedback from the mid-term exam records.**
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Written feedback from a classroom observation that details judgment on teaching. • Written feedback that details judgment on course materials such as syllabi, handouts and exams. • Written documentation that details teaching contribution to the department.
3. Processes for Improvement of Teaching • Learning form students feedback • Learning from instructor and department feedbacks • Learning/Using various teaching methods (lecturing, discussions, workshops, exams…) • Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) **Checking students' results by another teaching staff member through reviewing the assessment samples during the semester in order to verify the students' results.**
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • **Ongoing updating and improving (during the course).** • **Annual updating and improving (during summers).**

Name of Course Instructor: __ Dr. Ayman Taher Hindi
_____

Signature: _____ Date Specification Completed: 19/12/1438 H_____

Program Coordinator: _____

Signature: _____ Date Received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركزالوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 6.

T5. COURSE REPORT (CR)

A separate Course Report (CR) should be submitted for every course and for each section or campus location where the course is taught, even if the course is taught by the same person. Each CR is to be completed by the course instructor at the end of each course and given to the program coordinator

A combined, comprehensive CR should be prepared by the course coordinator and the separate location reports are to be attached.

هيئة تقويم التعليم
Education Evaluation Commission

Course Report

For guidance on the completion of this template refer to the EEC-HES handbooks.

Institution : Najran Universty	Date of CR: 15-04-1439 H
College/ Department: Engineering College/ Electrical Engineering Department	

A Course Identification and General Information

1. Course title: Logic Design				Code: 331EE-3		Section: 1
2. Name of course instructor : Omar AlShorman						Location: EE-218
3. Year and semester to which this report applies: 2-1438						
4. Number of students starting the course? 13				Students completing the course? 12		
5. Course components (actual total contact hours and credits per semester):						
		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	45	15				60
	Actual						
Credit	Planed						
	Actual						

B- Course Delivery

1. Coverage of Planned Program

Topics Covered	Planned Contact Hours	Actual Contact Hours	Reason for Variations if there is a difference of more than 25% of the hours planned
Introduction to Digital logic Design.	2	2	
Binary Systems and Codes.	4	4	
Boolean algebra and logic gates.	4	4	
Simplification of Boolean functions.	4	4	
Combinational logic circuits design and analysis.	2	2	
Digital combinational logic (decoders, encoders, multiplexers, demultiplexers).	4	4	
Digital combinational logic (adders and subtractors, comparators, multipliers, dividers).	2	2	
Analysis of sequential circuits.	4	4	
Design of sequential circuits.	4	4	

2. Consequences of Non Coverage of Topics

For any topics where the topic was not taught or practically delivered, comment on how significant you believe the lack of coverage is for the course learning outcomes or for later courses in the program. Suggest possible compensating action.

Topics (if any) not Fully Covered	Effected Learning Outcomes	Possible Compensating Action

3. Course learning outcome assessment.

	List course learning outcomes	List methods of assessment for each LO	Summary analysis of assessment results for each LO
1	Define number systems; decimal, binary, octal and hexadecimal.	Exams and Quizzes	Effective
2	Analyze boolean algebra and Karnaugh map for logic circuits simplification.	Exams and Quizzes	Effective
3	Analyze and design combinational logic circuits.	Project, Exams and Quizzes	Effective
4	Analyze and design sequential logic circuits.	Exams and Quizzes	Effective
5			
6			
7			
8			

Note: In order to analyze the assessment of student achievement for each course learning outcome, student performance results can be measured and assessed using a KPI, a rubric, or some grading system that aligns student work, exam scores, or other demonstration of successful learning.

Summarize any actions you recommend for improving teaching strategies as a result of evaluations in table 3 above.

4. Effectiveness of used Teaching Strategies for Learning Outcomes set out in the Course Specification. (Refer to planned teaching strategies in Course Specification and description of Domains of Learning Outcomes in the National Qualifications Framework)

List Teaching Strategies set out in Course Specification	Were They Effective?		Difficulties Experienced (if any) in Using the Strategy and Suggested Action to Deal with Those Difficulties.
	No	Yes	
Lectures		Yes	

C. Results

1. Distribution of Grades

Letter Grade	Number of Students	Student Percentage	Analysis of Distribution of Grades
A^+	3	23%	
A			
B^+			
B	4	30%	
C^+			
C	4	30%	
D^+			
D	1	7%	
F			
DeniedEntry			
In Progress			
Incomplete			
Pass	12	93%	
Fail			
Withdrawn	1	7%	

2. Analyze special factors (if any) affecting the results

3. Variations from planned student assessment processes (if any) (see Course Specifications).	
Variations (if any) from planned assessment schedule (see Course Specifications)	
Variation	Reason

4.Student Grade Achievement Verification (eg. cross-check of grade validity by independent evaluator).	
Method(s) of Verification	Conclusion

D Resources and Facilities

1. Difficulties in access to resources or facilities (if any)	2. Consequences of any difficulties experienced for student learning in the course, and proposed action to overcome it.

E. Administrative Issues

1. Organizational or administrative difficulties encountered (if any)	2. Consequences of any difficulties experienced for student learning in the course, and proposed action to overcome it.

F Course Evaluation

1. Student evaluation of the course (Attach summary of survey results): Attached
a. List the most important recommendations for improvement and strengths NA
b. Response of instructor or course team to this evaluation NA
2. Other Evaluation (eg. by head of department, peer observations, accreditation review, other stakeholders) Peer Review
a. List the most important recommendations for improvement and strengths NA
b. Response of instructor or course team to this evaluation

G Planning for Improvement

1. Progress on actions proposed for improving the course in previous course reports (if any).

Actions recommended from the most recent course report(s)	Actions Taken	Action Results	Action Analysis
a.			
b.			
c.			
d.			

2. List what other actions have been taken to improve the course (based on previous CR, surveys, independent opinion, or course evaluation).

3. Action Plan for Next Semester/Year		
Actions Recommended for Further Improvement	Intended Action Points (should be measurable)	Person Responsible
a.		
b.		
c.		
d.		
e.		

Name of Course Instructor: **Omar AlShorman**

Signature:_____ Date Report Completed: **15/04/1439**

Program Coordinator: _____

Signature: _____ Date Received:_____

هيئة تقويم التعليم
Education Evaluation Commission
المركزالوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 6.

T5. COURSE REPORT (CR)

A separate Course Report (CR) should be submitted for every course and for each section or campus location where the course is taught, even if the course is taught by the same person. Each CR is to be completed by the course instructor at the end of each course and given to the program coordinator

A combined, comprehensive CR should be prepared by the course coordinator and the separate location reports are to be attached.

هيئة تقويم التعليم
Education Evaluation Commission

Course Report

For guidance on the completion of this template refer to the EEC-HES handbooks.

Institution : Najran Universty	Date of CR: 15-04-1439 H
College/ Department: Engineering College/ Electrical Engineering Department	

A Course Identification and General Information

1. Course title: Logic Design Laboratory	Code: 332EE-1 Section: 1
2. Name of course instructor : Omar AlShorman	Location: Microprocessor Lab.
3. Year and semester to which this report applies: 2-1438	
4. Number of students starting the course? 17	Students completing the course? 16

5. Course components (actual total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed			30			30
	Actual						
Credit	Planed						
	Actual			1			1

B- Course Delivery

1. Coverage of Planned Program

Topics Covered	Planned Contact Hours	Actual Contact Hours	Reason for Variations if there is a difference of more than 25% of the hours planned
Introduction to ETS-8000A (General Digitized Training System) Experiment 1: OR Gate; NOT Gate; NOT-OR Gate;	Week 1 and 2	4	
Introduction to ETS-8000A (General Digitized Training System) Experiment 1: OR Gate; NOT Gate; NOT-OR Gate;	3	2	
Experiment 2: Basic Logic Gates (2-Input NAND Gate; 4-Input NAND Gate; AND-NOR Gate and Staircase Light Control.)	4	2	

Experiment 3: Combinational Logic Circuits. Part 1	5	2	
Experiment 4: Combinational Logic Circuits Part 2	6	2	
Experiment 5:Adder and Subtractor (Half Adder; Full Adder; Half Subtractor; Full Subtractor; 4-Bit Adder; 4-Bit Subtractor; BCD Adder).	7	2	
Experiment 6: Decoder, Encoder, 7-seg Display (8-to-3 Encoder ; 3-to-8 Decoder). Part 1	9	2	
Experiment 7: Decoder, Encoder, 7-seg Display (8-to-3 Encoder ; 3-to-8 Decoder). Part 2	10	2	
Experiment 8: Multiplexer and Demultiplexer (Logic Unit; Implementing Logic Function with Multiplexer).	11	2	
Experiment 9: Basic Flip-Flops (NAND Gate RS Flip-Flop; NOR Gate RS Flip-Flop; JK Flip-Flop; T Flip-Flop; D Flip-Flop).	12	2	
Experiment 10: Flip-Flops Applications (Converting JK to D Flip-Flop; Converting JK to T Flip-Flop).	13 and 14	4	

2. Consequences of Non Coverage of Topics

For any topics where the topic was not taught or practically delivered, comment on how significant you believe the lack of coverage is for the course learning outcomes or for later courses in the program. Suggest possible compensating action.

Topics (if any) not Fully Covered	Effected Learning Outcomes	Possible Compensating Action

3. Course learning outcome assessment.

	List course learning outcomes	List methods of assessment for each LO	Summary analysis of assessment results for each LO
1	Define logic circuits laboratory	Pre labs, Performance,	Effective

	and logic gates.	Exams and Reports	
2	Analyze Basic Boolean function using logic gates.	Pre labs, Performance, Exams and Reports	Effective
3	Analyze and design combinational logic circuits.	Pre labs, Performance, Exams and Reports	Effective
4	Analyze and design sequential circuits.	Pre labs, Performance, Exams and Reports	Effective
5			
6			
7			
8			

Note: In order to analyze the assessment of student achievement for each course learning outcome, student performance results can be measured and assessed using a KPI, a rubric, or some grading system that aligns student work, exam scores, or other demonstration of successful learning.

Summarize any actions you recommend for improving teaching strategies as a result of evaluations in table 3 above.

4. Effectiveness of used Teaching Strategies for Learning Outcomes set out in the Course Specification. (Refer to planned teaching strategies in Course Specification and description of Domains of Learning Outcomes in the National Qualifications Framework)

List Teaching Strategies set out in Course Specification	Were They Effective?		Difficulties Experienced (if any) in Using the Strategy and Suggested Action to Deal with Those Difficulties.
	No	Yes	
Practical Experiments		Yes	

C. Results

1. Distribution of Grades

Letter Grade	Number of Students	Student Percentage	Analysis of Distribution of Grades
A^+			
A	3	17%	
B^+			
B	4	23%	
C^+			
C	6	35%	
D^+			
D	3	17%	
F			
DeniedEntry			
In Progress			
Incomplete	1	5%	
Pass	16	95%	
Fail			
Withdrawn			

2. Analyze special factors (if any) affecting the results

3. Variations from planned student assessment processes (if any) (see Course Specifications). NA	
Variations (if any) from planned assessment schedule (see Course Specifications)	
Variation	Reason

4.Student Grade Achievement Verification (eg. cross-check of grade validity by independent evaluator).	
Method(s) of Verification	Conclusion

D Resources and Facilities

1. Difficulties in access to resources or facilities (if any)	2. Consequences of any difficulties experienced for student learning in the course, and proposed action to overcome it.

E. Administrative Issues

1. Organizational or administrative difficulties encountered (if any)	2. Consequences of any difficulties experienced for student learning in the course, and proposed action to overcome it.

F Course Evaluation

1. Student evaluation of the course (Attach summary of survey results): Attached
a. List the most important recommendations for improvement and strengths NA
b. Response of instructor or course team to this evaluation NA
2. Other Evaluation (eg. by head of department, peer observations, accreditation review, other stakeholders) Peer Review
a. List the most important recommendations for improvement and strengths NA
b. Response of instructor or course team to this evaluation

G Planning for Improvement

1. Progress on actions proposed for improving the course in previous course reports (if any).

Actions recommended from the most recent course report(s)	Actions Taken	Action Results	Action Analysis
a.			
b.			
c.			
d.			

2. List what other actions have been taken to improve the course (based on previous CR, surveys, independent opinion, or course evaluation).

3. Action Plan for Next Semester/Year		
Actions Recommended for Further Improvement	Intended Action Points (should be measurable)	Person Responsible
a.		
b.		
c.		
d.		
e.		

Name of Course Instructor: **Omar AlShorman**

Signature:_____ Date Report Completed: **15/04/1439**

Program Coordinator: _____

Signature: _____ Date Received:_____

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

Course Specifications (CS)

Institution: Najran University	Date: 08/01/1439H
College/Department College of Engineering/Electrical Engineering	

A. Course Identification and General Information:

1. Course title and code :
Basics of Electronic Devices, 333EE-3

2. Credit hours : 3 (3 , 0 , 1)

3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)

Not Applicable

4. Name of faculty member responsible for the course:
Dr. Abdelouahab Amrani

5. Level/year at which this course is offered :
7th Semester/3rd year

6. Pre-requisites for this course (if any) :
- Integral Calculus, MATH106
- Advanced Physics, PHYS105

7. Co-requisites for this course (if any) :
None

8. Location if not on main campus :
/

9. Mode of Instruction (mark all that apply)

a. Traditional classroom	√	What percentage?	100%
b. Blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. Correspondence		What percentage?	
f. Other		What percentage?	

Comments :

B. Objectives

1. What is the main purpose for this course? Identify the operation principle and characteristics of a diode, BJT transistor and FET transistor, and perform a small signal AC analysis.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) The responsible should take action to reduce the number of students to 15 because the classroom size is too small.

C. Course Description (Note: General description in the form used in the Bulletin or handbook should be attached).

Course Description: Intrinsic and doped semiconductors, drift and diffusion currents. PN junction diode: basic structure, I-V characteristics, large and small-signal models. Bipolar junction transistor (BJT): basic structure, modes of operation, dc biasing, dc and small-signal models, single stage BJT amplifiers. Field-effect transistors (FET): structure and operation of enhancement and depletion MOSFETs, I-V characteristics, dc biasing. Introduction to JFET.

1. Topics to be Covered :

List of Topics	No. of Weeks	Contact Hours
P-N junction as a circuit element: Intrinsic and extrinsic semiconductors, operational principle of p-n junction diode, current-voltage characteristics of a diode, simplified DC and AC diode models and dynamic resistance.	3	12 hours
Diode circuits: Half wave and full wave rectifiers, rectifiers with filter capacitor, characteristics of a Zener diode, clamping and clipping circuits.	3	12 hours
Bipolar Junction Transistor (BJT) as a circuit element: current components, BJT characteristics and regions of operation, biasing the BJT for discrete circuits, small signal circuit models.	2	8 hours
Single stage BJT amplifier circuits: Voltage gain, input and output impedance of a common base, common emitter and common collector amplifier circuits.	2	8 hours
Junction Field-Effect-Transistor (JFET): Structure and physical operation of JFET, transistor characteristics, pinch-off voltage, JFET amplifier circuits.	2	8 hours

Metal Oxide Semiconductor Field Effect Transistor (MOSFET) as circuit element: structure and physical operation of an enhancement MOSFET, threshold voltage, current-voltage characteristics of an enhancement MOSFET.	3	12 hours

1.Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or studio	Practical	Other:	Total
Contact Hours	45	15	None	None	None	60
Credit	3	None	none	None	None	3

3-Additional private study/learning hours expected for students per week: 10

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table)

Second, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes.

Third, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain).

Code	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Become aware of the general characteristics of two important semiconductor materials: Si, Ge.	• Lectures and tutorials • Assist students during office hours. • Encourage class participation • Give video	• Homework assignments and class quizzes. • Two midterm Exams and Final Exam.
1.2	Understand conduction using electron and hole theory.		
1.3	Develop a clear understanding of the basic operation of a diode in the forward-bias and reverse-bias regions.		

Code	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	Understand the process of rectification to establish a dc level from a sinusoidal ac input.	examples and simulated animation to help students understand various concepts of the course topics.	
1.4	Understand the impact of an equivalent circuit whether it is ideal or practical.		
1.5	Understand the operation and characteristics of a Zener diode and light- emitting diode.		
1.6	Understand the basic construction and operation of the Bipolar Junction Transistor.		
1.7	Recognize the characteristics of an npn or pnp transistor. Become familiar with the construction and operating characteristics of Junction Field Effect (JFET), Metal-Oxide Semiconductor FET (MOSFET).		
2.0	**Cognitive Skills**		
2.1	Determine the static and dynamic resistance of a diode from the characteristics.	• Lectures and tutorials • Discussion and problem solving. • Assist students during office hours. • Encourage class participation	• Homework assignments and class quizzes. • Two midterm Exams and Final Exam.
2.2	Predict the output response of a clipper and clamper diode configuration.		
2.3	Determine the dc levels for the variety of important BJT configurations.		
2.4	Perform a load-line analysis of the most common BJT configurations.		
2.5	Use the BJT equivalent model to find the important ac parameters for an amplifier.		
2.6	Perform a dc and ac analysis of a variety of JFET and MOSFET configurations.		
3.0	**Interpersonal Skills & Responsibility**		

Code	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
3.1	Ability to work independently and as part of team.	• Solving problems in groups during lectures. • Giving opportunity to students to lead the discussion in class for limited time. • Ask questions about previous lectures.	• Impose deadline for homework assignments. • Record the attendance of the students every lecture. • Active class participation. • Grade quizzes and homework assignments.
3.2	Ability to communicate in class orally and written.		
3.3	During the classes students has to act responsible and ethical behaviour		
4.0	**Communication, Information Technology, Numerical**		
4.1	Ability to formulate a mathematical solution.	• Make students solve problems on the board. • Encourage students to study collectively. • Encourage students to consult the instructor for help during office hours. • Encourage students to browse websites related to electronic device topics.	Evaluating homework assignments, quizzes, midterm exams and final exam.
4.2	Ability to ask question.		
4.3	Invite the students to benefit from the office hours to ask more about their subject.		
5.0	**Psychomotor**		
5.1	None		

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (e.g. essay, test, Quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment

1	Test 1	6	20%
2	Test 2	12	20%
3	quizzes	1, 2, 3, 4, 5	10%
4	Final Exam	End of semester	50%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) • Teaching staff are available weekly for all the students and can answer any query that rises during office hours. Beside students, have Open general discussions with other classmates. • 10 hours per week and can be arranged according to the student needs.

E. Learning Resources

1. List Required Textbooks : Electronic Devices and Circuit Theory, Robert L. Boylestad, 11th Edition, 2013, Pearson Education.
2. List Essential References Materials (Journals, Reports, etc.) • Electronic devices, Tomas. L. Floyd, 9th Edition, 2011, Prentice Hall. • Electronic Principles, Albert Malvino and David Bates, 7th Edition, 2006, McGraw-Hill Education.
3. List Electronic Materials Web Sites, Facebook, Twitter, etc. ق • http://lib.nu.edu.sa/digitallibbrary.aspx • www. en.wikipedia.org • www. allaboutcircuits.com
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. None

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) Classroom with sufficient seats (25 seats) and should be spacious (15x15m^2 at least).

2. Computing resources (AV, data show, Smart Board, software, etc.) Classroom with adequate daylight equipped with data projector, separated from white board.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

None

G. Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

- Complete course evaluation questionnaire by the students.
- Open discussion Throughout the Course for students to touch their weak and strong points in the subject.
- Feedback from the mid-term and final exam records.

2. Other Strategies for Evaluation of Teaching by the Instructor or by the department.

- Survey feedback from the student's observation that details judgment on teaching.
- Written feedback that details judgment on course materials such as syllabi, handouts and exams.

3. Processes for Improvement of Teaching:

- Learning from instructor and department feedbacks
- Learning/Using various teaching methods (lecturing, discussions, exams…)
- Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)
- Reducing the number of students to 15 during classroom lecture.

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

Check marking by an independent member teaching staff of a sample of student work.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :

Have a curriculum review committee to review the curriculum periodically and suggest improvements

Name of Course Instructor: Dr Abdelouahab Amrani

Signature :_____ Date Specification Completed: 08/01/1439H

Program coordinator: Dr Abdulkarem Al Mawgani

Signature: _____ Date received: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: Najran University	Date: 01-08-2018
College/Department : : Engineering/Electrical Engineering department	

A. Course Identification and General Information

1. Course title and code: Basic Electronics Laboratory 334EE-1

2. Credit hours: 1(0,1,0)

3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)

Electrical Engineering Department

4. Name of faculty member responsible for the course
Eng. Muneer Abusaq

5. Level/year at which this course is offered: 7

6. Pre-requisites for this course (if any):

333EE-3 Basic Electronics

7. Co-requisites for this course (if any):
NA

8. Location if not on main campus:
Basic Electronics lab.
Main building – Engineering College- Electrical Department

9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?
   - To understand the electronics circuit analysis.
   - To apply the theory to analyze the build of electronic circuits.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

Intrinsic and doped semiconductors, drift and diffusion currents. PN junction diode: basic structure, I – V characteristics, large and small-signal models. Bipolar Junction Transistor (BJT): basic structure, modes of operation, DC biasing, DC and small-signal models, single stage BJT amplifiers. Field-effect transistor (FET): structure and operation of enhancement and depletion MOSFETs, I – V characteristics, DC biasing. Introduction to JFET

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to Semiconductor Materials	1	2
Introduction to Basic Laboratory tools and and signal amplifications.	2,3	4
PN Juction Diode Characteristics	4,5	4
Zener Diode Characteristics	6,7	4
Half Wave Rectifiers	8,9	4
Full Wave Rectifiers	10,11	4
CB Transistor Characteristics	12,13	4
CE Transistor Characteristics	14,15	4
Transistor Amplification	16,17	4
Transistor As Switch	18,19	4

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed			20			20
	Actual						
Credit	Planed						
	Actual			1			1

3. Additional private study/learning hours expected for students per week. NA

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Identify the applications and functions of electronics in Engineering.	Practical Experiments	Exam and Reports
1.2			
2.0	**Cognitive Skills**		
2.1	Recognize basic electronic components and devices.	Practical Experiments	Exam and Reports
2.2	Identify the characteristics of diodes, MOSFET, BJT, and operational amplifier.	Practical Experiments	Exam and Reports
2.3	Analyze and design analog electronic circuits using discrete components.	Practical Experiments	Exam and Reports
2.4	Compute the amplitude and frequency responses of common amplification circuits.	Practical Experiments	Exam and Reports
3.0	**Interpersonal Skills & Responsibility**		
3.1			
3.2			
4.0	**Communication, Information Technology, Numerical**		
4.1			

4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	PreLab Quiz	Every Week	10%
2	Student Performance	Every Week	10%
3	Lab Reports	Every Week	10%
4	MidTerm Exam	8	20%
5	Final Exam	16	50%
6			
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) In office hours 4 hours/week

E Learning Resources

1. List Required Textbooks Sedra and Smith, "Microelectronic Circuits", Oxford University Press, 1997
2. List Essential References Materials (Journals, Reports, etc.) .Lecture notes in Basics of Electronic Devices by DrAbdulwahab – Najran University Electronic Devices and Circuit theory (10th Edition) by Robert L. Boylestad and L. Nashelsky - Prentice Hall – 2010
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. MultiSIM Software tool

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
2. Technology resources (AV, data show, Smart Board, software, etc.)
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching Exit Survey
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3. Processes for Improvement of Teaching
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) Peer review for course file, teaching and exams.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Name of Course Instructor: _Muneer Abusaq_____

Signature: __MA_____ Date Specification Completed: **_21/04/1439H**
_____

Program Coordinator: _____

Signature: _____ Date Received: _____

ATTACHMENT 6.

T5. COURSE REPORT (CR)

A separate Course Report (CR) should be submitted for every course and for each section or campus location where the course is taught, even if the course is taught by the same person. Each CR is to be completed by the course instructor at the end of each course and given to the program coordinator A combined, comprehensive CR should be prepared by the course coordinator and the separate location reports are to be attached.

هيئة تقويم التعليم
Education Evaluation Commission

Course Report

For guidance on the completion of this template refer to the NCAAA handbooks.

Institution Najran University	Date of CR 20/4/1439
College/ Department college of engineering/electrical engineering department	

A Course Identification and General Information

1. Course title Introduction to microprocessor Code # 335EE-3 Section # 336						
2. Name of course instructor Eng. Essam Al- Yafrosi Location main campus						
3. Year and semester to which this report applies. 1438/1439, semester 1						
4. Number of students starting the course? 24 Students completing the course? 22						
5. Course components (actual total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	42	14	-----	-----		56
Credit	3		----	------		3

B- Course Delivery

1. Coverage of Planned Program			
Topics Covered	Planned Contact Hours	Actual Contact Hours	Reason for Variations if there is a difference of more than 25% of the hours planned
Introduction to microprocessors and microcomputers	1	4	
Software architectures of the 8088 and	2	8	

8086 microprocessors.			
Assembly language programing	2	14	
The 8086 microprocessor programing instructions and program structures.	5	14	
The 8086 microprocessor and their memory and input/output interfaces.	2	8	
Interrupt interface of the 8086 microprocessor.	1	4	

2. Consequences of Non Coverage of Topics

For any topics where the topic was not taught or practically delivered, comment on how significant you believe the lack of coverage is for the course learning outcomes or for later courses in the program. Suggest possible compensating action.

Topics (if any) not Fully Covered	Effected Learning Outcomes	Possible Compensating Action

3. Course learning outcome assessment.

	List course learning outcomes	List methods of assessment for each LO	Summary analysis of assessment results for each LO	
1	Describe the major components of a computer system and state their function and purpose.	Lectures Tutorials	72% students achieved 60%	
2	Recognize the hardware and software model of microprocessors.	Lectures Tutorials	62% students achieved 60%	
3	Identify addressing modes, instruction set of microprocessors.	Lectures Tutorials Programming skills in assembly language	63% students achieved 60%	
4	Demonstrate the ability to program a microprocessor in assembly language.	Lectures Tutorials Programming skills in assembly language	53% students achieved 60%	
5		This CLO is not provided	23% students achieved 60%	

	Identify interrupt, memory and input/output interfaces.			

Summarize any actions you recommend for improving teaching strategies as a result of evaluations in table 3 above. To improve CLO3 ,need more quizzes and more practice with assembly programming

4. Effectiveness of Planned Teaching Strategies for Intended Learning Outcomes set out in the Course Specification. (Refer to planned teaching strategies in Course Specification and description of Domains of Learning Outcomes in the National Qualifications Framework)

List Teaching Methods set out in Course Specification	Were They Effective?		Difficulties Experienced (if any) in Using the Strategy and Suggested Action to Deal with Those Difficulties.
	No	Yes	
Lectures		√	
Tutorials		√	
Programming skills in assembly language		√	

Note: In order to analyze the assessment of student achievement for each course learning outcome, student performance results can be measured and assessed using a KPI, a rubric, or some grading system that aligns student work, exam scores, or other demonstration of successful learning.

C. Results

1. Distribution of Grades

Letter Grade	Number of Students	Student Percentage	Analysis of Distribution of Grades
A	0	0%	
B	0	0%	
C	4	18%	
D	12	54.5%	
F	6	27%	
Denied Entry	0		
In Progress	0		
Incomplete	0		
Pass	16	73%	
Fail	6	27%	
Withdrawn	2	8%	

2. Analyze special factors (if any) affecting the results

3. Variations from planned student assessment processes (if any) (see Course Specifications).

a. Variations (if any) from planned assessment schedule (see Course Specifications)

Variation	Reason

b. Variations (if any) from planned assessment processes in Domains of Learning (see Course Specifications)	
Variation	Reason

4. Student Grade Achievement Verification (eg. cross-check of grade validity by independent evaluator).	
Method(s) of Verification	Conclusion

D Resources and Facilities

1. Difficulties in access to resources or facilities (if any)	2. Consequences of any difficulties experienced for student learning in the course.
Needing a laptop for presentation	The students are weak in computer programming

E. Administrative Issues

1 Organizational or administrative difficulties encountered (if any) NA	2. Consequences of any difficulties experienced for student learning in the course.

F Course Evaluation

1 Student evaluation of the course (Attach summary of survey results)
a. List the most important recommendations for improvement and strengths my recommendation to give students more exercises in logic design and computer programming
b. Response of instructor or course team to this evaluation Department
2. Other Evaluation (eg. by head of department, peer observations, accreditation review, other stakeholders)

a. List the most important recommendations for improvement and strength
b. Response of instructor or course team to this evaluation

G Planning for Improvement

1. Progress on actions proposed for improving the course in previous course reports (if any).			
Actions recommended from the most recent course report(s)	Actions Taken	Action Results	Action Analysis
give students many quizzes and tutorials	Already giving students tutorials related to assembly programming	Result effective but is not enough	Students are not active to practice with given them tutorial and exercises

2. List what other actions have been taken to improve the course (based on previous CR, surveys, independent opinion, or course evaluation). Given students a lot of tutorials

3. Action Plan for Next Semester/Year				
Actions Recommended for Further Improvement	Intended Action Points (should be measurable)	Start Date	Completion Date	Person Responsible
a. give students many quizzes and tutorials and computer homeworks	15%	10-05-39	29-08-39	Instructor

Name of Course Instructor: _____ Eng. Essam Abdullah A. Al- Yafrosi _____

Signature: _____ _____ Date Report Completed: 20/4/1439

Program Coordinator: _____

Signature: _____ Date Received: _____

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

T6. Course Specification (CS)

Institution **Najran University**	Date **28/12/1438**
College/Department **college of engineering/electrical engineering department**	

A. Course Identification and General Information

1. Course title and code: **microprocessor and microcontroller lab, 336EE-1**			
2. Credit hours 1			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) **Electrical Engineering**			
4. Name of faculty member responsible for the course **Eng. Essam Al- Yafrosi**			
5. Level/year at which this course is offered **8th level/4th year**			
6. Pre-requisites for this course (if any) **NA**			
7. Co-requisites for this course (if any) **335EE-3**			
8. Location if not on main campus **Main campus**			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	√	What percentage?	100%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course? By the completion of this course, the student should be able to: 1. Identify the 8086 training kit and demonstrate the basic operations and assembly commands. 2. Develop microprocessors arithmetic and logic instructions. 3. Implement hardware interfaces to practical systems. 4. Recognize the microprocessor interrupts.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description: Introduction to microprocessors and their architecture; Microprocessor C/Assembly programming and machine code generation; RAM and EPROM; RS-232C; SCI and serial port interface; Parallel I/O interface and DMA; Programmable I/O interfaces and UART; DAC and ADC converters; Real time implementation; Project. Introduction.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to 8086 microprocessors	1	2
Experiment #1: Introduction to MDA – 8086 Training Kit	1	2
Experiment #2: Basic operations of MDA 80x86 trainer kit	1	2
Experiment #3: different commands of MDA 80x86 trainer Kit	1	2

Experiment #4: Explore kit mode functionality	1	2
Experiment #5: Explore PC mode functionality	1	2
Experiment #6: Write a program to display the digits in decimal, from 0-7 into 7-segment	1	2
Experiment #7: initialize DOT MATRIX DISPLAY	1	2
Experiment #8:A/D convertor application	1	2
Experiment #9:D/A convertor application	1	2
Experiment #10:Interrupt system 8086	1	2

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	NA	NA	22	NA		22
Credit	NA	NA	1	NA		1

3. Additional private study/learning hours expected for students per week. 2

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		

1.1	Describe microprocessors and microcomputers	Laboratory experiments.	Lab. Reports. Mid-terms exam and final exam
1.2	Familiar with MDA-8086 trainer set and their applications	Laboratory experiments	Lab. Reports. Mid-terms exam and final exam
1.3	Understand the machine code as well as assembly programming	Laboratory experiments	Lab. Reports. Mid-terms exam and final exam
2.0	**Cognitive Skills**		
2.1	Solve the practical engineering problems.	Laboratory experiments	Lab. Reports. Mid-terms exam and final exam
2.2	Differentiate types of microprocessors and microcomputers practically.	Laboratory experiments	Lab. Reports. Mid-terms exam and final exam
2.3	Implement different applications of microprocessors systems.	Laboratory experiments	Lab. Reports. Mid-terms exam and final exam
3.0	**Interpersonal Skills & Responsibility**		
3.1	During the classes students has to act responsibility.	Laboratory reports	Lab performance assessment
4.0	**Communication, Information Technology, Numerical**		
4.1	Use the computer to debug, correct, run and execute programs written in machine as well as assembly languages	Laboratory experiments	Pre-Lab work and Lab performance assessment
4.2	Use the trainer set to simulate different applications of microprocessors	Laboratory experiments	Pre-Lab work and Lab performance assessment
5.0	**Psychomotor**		
5.1	NA		
5.2	NA		

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Middle semester exam	8	20%
2	Pre Lab Work	Every week	10%
3	Weekly Lab. report	Every week	10%

4	Lab performance	Every week	10%
5	Final exam	14	50%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) 6 hours per week

E Learning Resources

1. List Required Textbooks **Triebel and Singh "The 8088 and 8086 Microprocessors", Prentice Hall, 2000**
2. List Essential References Materials (Journals, Reports, etc.) **MDA-Win8086 MANUAL, An Integrated Development Environment kit, Midas Engineering co., ltd**
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc. Black board learning system
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. **Dos box program**

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) **LAB class room**
2. Computing resources (AV, data show, Smart Board, software, etc.) **Data show**
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching Complete course evaluation questionnaire by the students Feeding back from the mid-term exam records.
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3 Processes for Improvement of Teaching

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Name of Instructor: _____ Eng. Essam Al- Yafrosi _____

Signature: _____  __ **Date Report completed**: _____28/12/1438_____

Name of field experience teaching staff _____

Program Coordinator:_____ _____

Signature: _____ **Date Received**: _____

هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: **Najran University**	Date: **30/01/2018**
College/Department : **Faculty of Engineering/Electrical Engineering Department**	

A. Course Identification and General Information

1. Course title and code: **Communications Principles (341EE-3)**
2. Credit hours: **3 (3 , 0 , 1)**
3. Program(s) in which the course is offered.
(If general elective available in many programs indicate this rather than list programs)
Electrical Engineering Program
4. Name of faculty member responsible for the course
Dr. Adam Alhawari
5. Level/year at which this course is offered: **8th level / 4th year**
6. Pre-requisites for this course (if any): **Signals and Systems Analysis (321EE-3)**
7. Co-requisites for this course (if any): **None**
8. Location if not on main campus: **None**
9. Mode of Instruction (mark all that apply):

a. traditional classroom	√	What percentage?	90%
b. blended (traditional and online)		What percentage?	
c. e-learning	√	What percentage?	10%
d. correspondence		What percentage?	
f. other		What percentage?	

Comments:

B Objectives

1. What is the main purpose for this course?

1. **Categorize components of communication system.**
2. **Make use of signal analysis techniques in communication systems.**
3. **Analyze linear systems in time and frequency domains.**
4. **Categorize modulations techniques.**
5. **Analyze simple modulation systems.**
6. **Categorize multiplexing techniques.**
7. **Identify and analyze pulse code modulation systems.**
8. **Describe and analyze delta modulation systems.**
9. **Explain digital modulation techniques.**

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- **Use the data show to explain various concepts of the topics**
- **Deliver all class meeting in the communications Laboratory**
- **Offering the students extra hour of tutorial in addition to the prescribed office hours.**

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

Overview and basic elements of Communication systems; Transmission through Systems and channels; Modulation; AM; Frequency conversion; FM and PM; Superheterodyne receiver; FDM; Stereo Broadcasting; Sampling; Pulse Modulation (PAM, PWM ,PPM); TDM; Pulse Code Modulation (PCM); DPCM and DM; Regenerative Repeaters; Advantages of Digital Communications; Line Coding (Binary Signaling); Introduction to Digital Modulation (ASK, FSK, PSK).

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Overview and basic elements of communication systems	**1**	**4**
Signal analysis (Fourier series, Fourier transform, properties of Fourier transform)	**2,3**	**8**
Solving problems	**4**	**4**
Transmission through systems and channels	**5**	**4**

AM modulation, Frequency conversion, solving problems	**6,7**	**8**
Frequency (FM) and phase modulation (PM), solving problems	**8,9**	**8**
Superheterodyne receiver, FDM, stereo broadcasting	**10**	**4**
Sampling, pulse modulation (PAM, PWM, PPM)	**11**	**4**
Pulse code modulation (PCM), DPCM, and Delta modulation (DM), problems	**12**	**4**
Regenerative repeaters, line coding, advantages of digital communications	**13**	**4**
Introduction to digital modulation (ASK, FSK, PSK).	**14**	**4**

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	**45**	**15**	**N/A**	**N/A**	**N/A**	**60**
	Actual	**45**	**15**	**N/A**	**N/A**	**N/A**	**60**
Credit	Planed	**3**	**1**	**N/A**	**N/A**	**N/A**	**4**
	Actual	**3**	**1**	**N/A**	**N/A**	**N/A**	**4**

3. Additional private study/learning hours expected for students per week. **None**

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	• **Be familiar with basic communication system** • **Understand the relationship of signal**	- **Lectures** - **Tutorials** - **Computer programing tools**	- **Homework assignments** - **Quizzes** - **Two Midterm**

	analysis to communication systems • Learn how to analyze linear systems in time and frequency domains • Recognize modulations techniques • Recognize multiplexing techniques • Understand pulse code modulation • Understand delta modulation • Be aware of digital modulation techniques	(MATLAB)	exams has to be done. - Final Exams at the end of the semester
1.2			
2.0	**Cognitive Skills**		
2.1	Ability to analyze analog communication systems	• Offering extra tutorials for students • Encourage class participation • Making field trips (to, for example, Najran TV & Radio transmission station) to help students understand various concepts of the course topics	• Class participation and homework assignments (home works and Quizzes) • Two Midterm exams. • Final Exams at the end of the semester
2.2	Ability to design simple analog communication systems meeting desired needs	• Offering extra tutorials for students • Encourage class participation • Making field trips (to, for example, Najran TV & Radio transmission station) to help students understand various concepts of the course topics	• Class participation and homework assignments (home works and Quizzes) • Two Midterm exams. • Final Exams at the end of the semester

3.0	**Interpersonal Skills & Responsibility**		
3.1	**Conduct collaborative and peer-to-peer coaching sessions which enhance team work skills**	**Make all class meeting in the communications lab to enhance the students hands – on experience Lectures and tutorials**	**Record the attendance of the students every lecture Midterm and Final term exams Assess the group Assignment**
3.2	**During the classes students has to act responsible and ethical behavior**	**Make all class meeting in the communications lab to enhance the students hands – on experience Lectures and tutorials**	**Record the attendance of the students every lecture Midterm and Final term exams Assess the group Assignment**
4.0	**Communication, Information Technology, Numerical**		
4.1	• **Record the students' attendance** • **Quizzes, Mid Terms and final exams**	**Invite the students to benefit from the office hours to ask more about their subject**	**Ability to formulate different problems and provide solutions**
4.2			
5.0	**Psychomotor**		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	**Test 1**	**Week 6**	**20 %**
2	**Test 2**	**Week 12**	**20 %**
3	**Assignments/Quizzes**	**Every chapter**	**10 %**
4	**Final Exam**	**At the end of the semester as determined by the academic calendar**	**50 %**

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week) • **Teaching staff are available weekly for all the students and can answer any query that rises, besides, the students can email their enquiries to the main lecture. Beside students have Open general discussions with other class mates** • **6 hours per week and can be arranged according to the student needs**

E Learning Resources

1. List Required Textbooks **Communications Systems, Simon Haykin, John Wiley, 2010**
2. List Essential References Materials (Journals, Reports, etc.) - **Modern digital and analog communication systems, B. P. Lathi, Zhing, 2010** - **Fundamentals of telecommunications, 2nd Edition, Roger L. Freeman, 2005** - **Telecommunication and Data Communications Handbook, Ray Horak, 2008**
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc. **None**
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software. **MATLAB Program**

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) **Lecture room for maximum 20 students**
2. Technology resources (AV, data show, Smart Board, software, etc.) • **Laptops** • **Computer software is limited to MATLAB**
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) **None**

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching
• **Complete course evaluation questionnaire by the students** • **Open discussion for the students to touch their weak and strong points in the subject** • **Feedback from the mid-term exam records**
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department **Seminars for the teacher, to show his lectures arrangement and progress in front of all the staff members in the department**
3. Processes for Improvement of Teaching • **Learning form students feedback** • **Learning from instructor and department feedback** • **Learning/Using various teaching methods (lecturing, discussions, workshops, exams…)** • **Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)**

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) **Checking students' results by another teaching staff member through reviewing the assessment samples during the semester in order to verify the students' results**
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • **Ongoing updating and improving (during the course).** • **Annual updating and improving (during summers).**

Name of Course Instructor: **DR. ADAM ALHAWARI**

Signature: _____ Date Specification Completed: **30/01/2018**

Program Coordinator: _____

Signature: _____ Date Received: _____