

ATTACHMENT 5.

Kingdom of Saudi Arabia
The National Commission for Academic Accreditation &
Assessment

T6. Course Specifications
(CS)

Course Specifications

Institution Najran University	Date of Report 02/01/1438H
College/Department College of Engineering/Electrical Engineering	

A. Course Identification and General Information

1. Course title and code: Electric Circuit Analysis / 214EE3			
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 Programs			
4. Name of faculty member responsible for the course Dr. Abdelouahab Amrani			
5. Level/year at which this course is offered 6 th Semester/3 rd year			
6. Pre-requisites for this course 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	<input checked="" type="checkbox"/>	What percentage?	100%
b. Blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	What percentage?	<input type="text"/>
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.
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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	Practical	Other:	Total
Contact Hours	42	14	None	0	None	56
Credit	3		none	0	None	3

3. Additional private study/learning hours expected for students per week.	5
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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.			
<p>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.)</p>			
Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1		Lecture and tutorial	Exams and quizzes
2.0	Cognitive Skills		
2.1	Analyze the transient response of first and second order circuits.	<ul style="list-style-type: none"> • Discussion and problem solving. • Homework assignments. • Providing assistance to students during office hours. 	<ul style="list-style-type: none"> • Homework assignments and class quizzes. • Two midterm Exams and Final Exam.
2.2	Diagram the frequency response of the circuits.		
2.3	Analyze circuits that function as filters.		
2.4	Analyze a terminated two-port circuit.		
2.5	Analyze circuit containing magnetically coupled coils.		
2.6	Analyze a balanced three-phase circuit, and circuits containing electronic devices.		
3.0	Interpersonal Skills & Responsibility		

3.1	<ul style="list-style-type: none"> Ability to work independently and as part of team. 	<ul style="list-style-type: none"> Solving problems in groups during lectures. 	<ul style="list-style-type: none"> Impose deadline for homework assignments. Take attendance.
4.0	Communication, Information Technology, Numerical		
4.1	Ability to communicate in class orally and written.	<ul style="list-style-type: none"> Giving opportunity to students to lead the discussion in class for limited time. Ask questions about previous lectures 	<ul style="list-style-type: none"> Active class participation. Grade quizzes and homework assignments.
5.0	Psychomotor		
5.1	None		

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

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	2.4	3.2		4.1	
Analyze the transient response of first and second order circuits.				√	√				
Diagram the frequency response of the circuits.				√	√				
Analyze circuits that function as filters.				√	√				
Analyze a terminated two-port circuit.				√	√				
Analyze circuit containing magnetically coupled coils.				√	√				

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	Test 1	6	20%
2	Test 2	12	20%
3	Quizzes	4 and 8	6%
4	Homeworks	3 and 7	4%
5	Final Exam	End of semester	50%

D. Student Academic Counseling and Support

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| <p>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)</p> <ul style="list-style-type: none"> 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 classmates. 5 hours per week and can be arranged according to the student needs. |
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E. Learning Resources

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| <p>1. List Required Textbooks</p> <p>James W. Nilsson and Susan A. Riedel , “Electric Circuits“ , EIGHTH EDITION, Pearson Prentice Hall .</p> |
| <p>2. List Essential References Materials (Journals, Reports, etc.)</p> <p>Lecture notes in Electric Circuit Analysis by Dr Abdelouahab – Najran University.</p> |
| <p>3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)</p> <p>Fundamentals of Electric Circuits by C. D. Alexander and M. N. O. Sadiku, third Edition, Mc Graw-Hill Education, 2007.</p> |
| <p>4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)</p> <p>http://lib.nu.edu.sa/digitallibrary.aspx
 www. en.wikipedia.org/wiki/Electrical_network
 www. allaboutcircuits.com
 www. physicsclassroom.com/Class/</p> |
| <p>5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.</p> <p>None</p> |

F. Facilities Required

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| <p>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.)</p> |
| <p>1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)</p> <p>Classroom with sufficient seats and should be spacious.</p> |

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
<ul style="list-style-type: none"> • Throughout the Course (Verbal Feedback). • Questionnaire • At mid-semester. • End-of-Course.
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • Learning from students feedback • 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.

- Ongoing updating and improving (during the course).
- Annual updating and improving.
- Have a curriculum review committee to review the curriculum periodically and suggest improvements.

Name of Instructor: Dr Abdelouahab Amrani

Signature: _____ Date Report Completed: **02/01/1438H**

Name of Course Instructor Dr Abdelouahab Amrani

Program Coordinator: _____

Signature: _____ Date Received: _____