



Course Specifications

Muharram 1437 H

Institution:	College of Engineering, Majmaah University, Al-Majmaah, KSA.
Academic Department :	Department of Electrical Engineering.
Programme :	Electrical Engineering
Course :	EE 479
Course Coordinator :	Dr.Youcef & Eng.M.A.Baseer
Programme Coordinator :	Dr.Abdullah Almuhaissen
Course Specification Approved Date :	25/ 3 / 1437 H



A. Course Identification and General Information

1 - Course title :	Protection and HV Lab	Course Code:	EE479
2. Credit hours :	(1)		
3 - Program(s) in which the course is offered:	Electrical Engineering.		
4 – Course Language :	English		
5 - Name of faculty member responsible for the course:	Dr.Youcef, &Eng.M.A.Baseer		
6 - Level/year at which this course is offered :	10th Level/4th year		
7 - Pre-requisites for this course (if any) :	<ul style="list-style-type: none"> • 		
8 - Co-requisites for this course (if any) :	<ul style="list-style-type: none"> • EE477 High voltage Engineering systems 		
9 - Location if not on main campus :	(College of Engineering)		
10 - Mode of Instruction (mark all that apply)			
A - Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	90 %
B - Blended (traditional and online)	<input type="checkbox"/>	What percentage?	0 %
D - e-learning	<input checked="" type="checkbox"/>	What percentage?	10 %
E - Correspondence	<input type="checkbox"/>	What percentage?	0 %
F - Other	<input type="checkbox"/>	What percentage?	0 %
Comments :	.....	

B Objectives

<p>What is the main purpose for this course?</p> <ul style="list-style-type: none"> • The course gives an overview of different types of fault analysis, transmission, and distribution. • Different types of mechanical loads are discussed. Maxwell's equations are applied to magnetic circuits including permanent magnets. • This course explores various aspects of the design and operation of modern power systems. • The focus will be on the area of Protection in Power Systems and High Voltage Engineering. • In the laboratory classes, you will work with some state-of-the-art equipment used in industry for protection and measurement in power systems.





- It gives an idea about under voltage Relay.

Briefly describe any plans for developing and improving the course that are being implemented :

After Learning the course (Electrical Machines) the students can develop and improve the :

- 1-Using D2L for uploading assignment, project and other related materials.
- 2- Changing the textbook to cover new hot topics in the high-voltage engineering field.

C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Introduction: Introductory to lab equipment's and basic components	1	2
CHARACTERISTICS OF DIFFERENT PROTECTIVE RELAYS	2	2
CO-ORDINATION OF PROTECTIVE RELAYS	3	2
TO DETERMINE THE RELAY TESTING	4	2
Equivalent circuit of transformers	5	2
Three-phase connections and harmonic problems.	6	2
Equivalent circuit of three-phase and single-phase induction motors.	7	2
MIDTERM-I	8	2
HIGH VOLTAGE AC TEST SOURCE.	9	2
TO DETERMINE THE CHARACTERISTICS OF UNDERVOLTAGE RELAY.	10	2



TO DETERMINE THE CHARACTERISTICS OF UNDERCURRENT RELAY.	11	2
TO DETERMINE THE CHARACTERISTICS OF UNDERPOWER RELAY.	12	2
MIDTERM-II	13	2
LAB-REPORT-I	14	2
LAB-REPORT-II	15	2

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

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	0	0	30	0	0	30
Credit	0	0	1	0	0	1

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

NO

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1
1.2
1.3
1.4
1.5





	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.6	.....	.....	.....
2.0	Cognitive Skills		
2.1	An ability to design and conduct experiments, as well as to analyze and interpret data	Lecture, small group work, , research activities, lab demonstrations, projects and individual presentation	Standardized exams, oral exams, micro projects
2.2	An ability to design a system, component, or process to meet desired needs within realistic constraints	Lecture, small group work, , research activities, lab demonstrations, projects and individual presentation	Reports and presentations
2.3	An ability to identify, formulate, and solve engineering problems	Lecture, small group work, , research activities, lab demonstrations, projects and individual presentation	Standardized exams, oral exams, micro projects
2.4	The ability to analyze, design, and implement systems.	Lecture, small group work, , research activities, lab demonstrations, projects and individual presentation	Standardized exams, oral exams, micro projects
2.5	.....	.....	.....
2.6	.....	.....	.....
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2	.....	.....	.....
3.3	.....	.....	.....
3.4	.....	.....	.....
3.5	.....	.....	.....
3.6	.....	.....	.....
4.0	Communication, Information Technology, Numerical		
4.1	An ability to apply knowledge of	Lecture, research	Standardized





	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	mathematics, science, and engineering	activities, lab demonstrations, projects, case studies, memorization and individual presentation	exams, oral exams, micro projects
4.2		.....	.....
4.3	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	Lecture, research activities, lab demonstrations, projects, case studies, memorization and individual presentation	Exams, quizzes and reports
4.4	.....	.....	.....
4.5	.....	.....	.....
4.6	.....	.....	.....
5.0	Psychomotor		
5.1	.....	.....	.....
5.2	.....	.....	.....
5.3	.....	.....	.....
5.4	.....	.....	.....
5.5	.....	.....	.....
5.6	.....	.....	.....

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	Lab manual Assessment	Monthly	5%
2	Lab Report 1	10 th week	5%
3	Lab Report 2	14 th week	10%
4	Midterm 1 st	8 th week	20%
5	Midterm 2 nd	13 th week	20%





6	Final Exam	16 th week	40%
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)

Student can access the concern staff during office hours; each student can take the consultation and advice.

Day	Time
Sunday	8:00-10:00
Tuesday	8:00-9:00
Wednesday	8:00-10:00

E. Learning Resources

1. List Required Textbooks :

- Badri Ram, "Power System Protection and Switchgear", Tata McGraw-Hill.

2. List Essential References Materials :

- Aidu and Kamaraju, "High Voltage Engineering", 2nd Edition, Tata McGraw Hil
- Laboratory Manual will be distributed by the Lecturer.

3. List Recommended Textbooks and Reference Material :

-

4. List Electronic Materials :

-
-
-

5. Other learning material :

-
-
-

F. Facilities Required

1. Accommodation

- Laboratory area is small

2. Computing resources

-
-
-

3. Other resources

-
-
-





G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Confidential completion of standard course evolution questionnaire.
- Focus group discussion with small group of students.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

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3 Processes for Improvement of Teaching :

1. Plan: The instructor will develop a strategy for teaching.
2. Do: The strategy will be implemented for one semester.
3. Study: The experiences of the students will be collected through a survey.
4. Act: Effective teaching strategies will be implemented and revised as more experiences are gained.

4. Processes for Verifying Standards of Student Achievement

- Check marking of a sample of examination papers

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

- Continuous improvement is a circular process, encompassing student assessment, course planning and design, implementation, evaluation, and revision.
- A feedback from all relevant assessment tools must be considered in the continuous process of course objectives refinement and assessment.

Course Specification Approved

Department Official Meeting No () Date ... / ... / H
Course's Coordinator **Department Head**

Name : Dr.Youcef, &
M.A.Baseer
Signature :
Date :5/1/2016

Name
Dr.AbdullahAlmuhausen
Signature :
Date : .../ ... / H

