جامعة المجمعة
Majmaah University

Course Specifications

Muharram 1437 H

Institution:	Majmaah University
Academic Department :	College of Engineering
Programme :	Electrical (Power and Machines track)
Course :	High Voltage Engineering Systems
Course Coordinator :	Dr. Ahmed Bilal Awan
Programme Coordinator :	.....
Course Specification Approved Date :	…./ … / …… H

This form compatible with NCAAA 2013 Edition

A. Course Identification and General Information

1 - Course title : High Voltage Engineering Systems		Course Code: EE 477	
2. Credit hours : (3)			
3 - Program(s) in which the course is offered: Electrical (Power Track)			
4 – Course Language : English			
5 - Name of faculty member responsible for the course: Dr.Ahmed Bilal Awan			
6 - Level/year at which this course is offered : Level 9/Year 4			
7 - Pre-requisites for this course (if any) : • Principles of Electric Machines (EE 288)			
8 - Co-requisites for this course (if any) : •			
9 - Location if not on main campus : College of Engineering			
10 - Mode of Instruction (mark all that apply)			
A - Traditional classroom	■	What percentage?	90 %
B - Blended (traditional and online)		What percentage?	..... %
D - e-learning	■	What percentage?	10 %
E - Correspondence		What percentage?	..... %
F - Other		What percentage?	..... %
Comments :			

B Objectives

What is the main purpose for this course? This course is aimed to provide undergraduate students with knowledge, skills and the ability to study the electrical power system, understand the methods of generation of high voltage, understand the mechanism of conduction and breakdown of dielectric materials, to learn different methods and techniques of high voltage testing.
Briefly describe any plans for developing and improving the course that are being implemented : .....

C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Generation and measurements of high DC, AC and impulse voltages	5	20
Conduction and breakdown processes in gaseous, liquid, and solid insulating media	5	20
High voltage test techniques	5	20
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

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

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	**45**	**15**	**0**	**0**	**0**	60
Credit	**3**	**0**	**0**	**0**	**0**	3

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

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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	.....	.....	.....
1.6	.....	.....	.....
2.0	**Cognitive Skills**		
2.1	Identify and solve engineering problems by analyzing, and finding the reasons of insulator breakdown.	- Lectures - Solving specific design problems (Tutorial)	- Exams - Homework
2.2	Solve engineering problems by carrying out high voltage testing of electrical components.	- Lectures - Solving specific design problems (Tutorial)	- Exams - Homework
2.3	.....	.....	.....
2.4	.....	.....	.....
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	Describe different methods of generation of high voltage.	- Lectures - Solving specific design problems (Tutorial)	- Exams - Quizzes - Homework
4.2	Compare methods of generations of HVDC and HVAC.	- Lectures - Solving specific design problems (Tutorial)	- Exams - Quizzes - Homework
4.3	Demonstrate breakdown mechanism of gaseous, liquid and solid insulators	- Lectures - Solving specific	- Exams - Quizzes

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
		design problems (Tutorial)	- Homework
4.4	Perform high voltage testing of various insulators.	- Lectures - Solving specific design problems (Tutorial)	- Exams - Quizzes - Homework
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	First Midterm Exam	7th	20%
2	Second Midterm Exam	12th	20%
3	Final Exam	16th	40%
4	Semester Project	13th	10%
5	Quizzes and Homework	During Semester	10%
6	.....	.....	.....
7	.....	.....	.....
8	.....	.....	.....

D. Student Academic Counseling and Support

1. All students are distributed among academic advisors
2. Advising Information are included in the student Guide and in the college website
3. Every Advisor assignees 3 office hours for supporting the student academic counselling

E. Learning Resources

1. List Required Textbooks :

- Naidu and Kamaraju, "High Voltage Engineering", 2nd Edition, Tata McGraw Hill

2. List Essential References Materials :

- .....
- .....
- .....

3. List Recommended Textbooks and Reference Material :

- Kuffel, Zaengl, Kuffel, "High Voltage Engineering - fundamentals", Butterworth Heinenmann

4. List Electronic Materials :

- .....
- .....
- .....

5. Other learning material :

- .....
- .....
- .....

F. Facilities Required

1. Accommodation

- 25 seats in the classroom.

2. Computing resources

- Laptop

3. Other resources

- .....
- .....
- .....

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Students' course survey is used by quality unit in the department for obtaining students feedback.

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

- Visits of colleagues to evaluate the teaching process.

3 Processes for Improvement of Teaching :

The process for improvement of teaching by considering the following:

- Course Report
- Results of students' course survey
- Results of teaching evaluation by program instructor
- Related workshops and training sessions

4. Processes for Verifying Standards of Student Achievement

- Process of marking is checked by independent member, teaching staff for a sample and verifying the sum of marks.

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

- Reviewing the course description by the undergraduate program power subcommittee periodically parallel with program specifications for improving contents, textbook and references and level or year.
- Reviewing the course report every semesteR and every year for improving the teaching strategies, distribution of topics over weeks and method of assessment.

Course Specification Approved
Department Official Meeting No (…..) Date … / …. / ….. *H*

Course's Coordinator		Department Head	
Name :	……..	***Name :***	.....
Signature :	.....	***Signature :***	.....
Date :	…./ … / …… *H*	***Date :***	…./ … / …… *H*