MUTAH UNIVERSITY
Faculty of Engineering
Department of Electrical Engineering

Course Syllabus

Course Code	Course Name	Credits	Contact Hours
0401482	Power Systems (2)	3	3T

INSTRUCTOR/COORDINATOR	
Name	Dr. Talal Aljaafreh
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Office Hours	11:00-12:30 (Mon,Wed)

TEXTBOOK	
Title	Power System Analysis
Author/Year/Edition	Hadi Saadat, 2002, 3rd Edition Tata McGraw Hill Publishing Co. Ltd., NewDelhi,
Other Supplemental Materials	
Title (1)	Power System Analysis & Design
Author/Year/Edition	Glover, J. Duncan, Mulukutla S. Sarma, and Thomas Overbye. , *SI Version*. Cengage Learning, 2012.
Title (2)	Principles of power system
Author/Year/Edition	Mehta, V. K., and Rohit Mehta. S. Chand, 2005

SPECIFIC COURSE INFORMATION
A. Brief Description of the Content of the Course (Catalog Description)
Underground cables; mechanical design of overhead transmission lines; insulators; economic operation; Power system Control; (Voltage and frequency control), power system stability and transients, power system earthing; DC transmission lines**.**
B. Pre-requisites (P) or Co-requisites (C)
Power Systems (1) (0401481) **(P)**
C. Course Type (Required or Elective)
Required

SPECIFIC GOALS
A. Course Learning Outcomes (CLOs)
By the end of this course, the student should be able to: **CLO1**: To provide students with the basic understanding, fundamental and concepts of power system stability and transients [1]. **CLO2**: To explain different control types in power system [1]. **CLO3**: To make the student understand the economic dispatch and operation of power systems [1]. **CLO4**: To make the student able to analyze underground cables and power system earthing/grounding [1].
B. Student Learning Outcomes (SOs) Addressed by the Course

1	2	3	4	5	6	7
✓						

BRIEF LIST OF TOPICS TO BE COVERED		
List of Topics	**No. of Weeks**	**Contact Hours**
Unit 1: Power system stability	1	3
Unit 2: Power system Control; Generator control	1	3
Unit 3: Economic operation of power systems	2	6
Unit 4: Mechanical Design of overhead transmission	1	3
Unit 5: Electrical Design of overhead transmission lines	2	6
Unit 6; Underground cables; Types, Materials, Electric Characteristics	3	9
Unit 7: Power system earthing/grounding.	2	6
Unit 8: HVDC transmission System	2	6
Total	*14*	*42*

EVALUATION		
Assessment Tool	**Due Date**	**Weight (%)**
Mid Exam	According to the university calendar	30
Course Work (Homeworks, Quizzes, Projects, …etc.)	One week after being assigned	20
Final Exam	According to the university calendar	50

ABET's Students Learning Outcomes (Criterion # 3)		
	Relationship to program outcomes	
ABET 1-7		**Engineering Student Outcomes**
1	√	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2		an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3		an ability to communicate effectively with a range of audiences.
4		an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5		an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6		an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7		an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.