Jordan University of Science and Technology

Faculty of Engineering

Electrical Engineering Department

EE306 Electrical Engineering Lab
Summer Semester 2019-2020

Course Catalog
1 Credit Hours. DC circuits; Diodes; transistors; thyristors; operational amplifiers; Transformers; DC motors; Synchronous motors; Single-phase and three-phase induction motors.

Text Book	
Title	Circuits, Devices and Systems
Author(s)	Ralph J. Smith and Richard C. Dorf
Edition	5th Edition
Short Name	Ref # 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref # 2	Principles of Electric Machines and Power Electronics	P. C. Sen	2nd Edition	
Ref # 3	Engineering Circuit Analysis	W. H. Hayt, Jr., J. E. Kemmerly	6th Edition	

Instructor	
Name	**Mr. Adel Shawagfeh**
Office Location	E1 L-1
Office Hours	
Email	adelsh@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Sat, Thu : 08:30 - 11:30
Room: LAB

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 2	DC circuits: series and parallel combinations	
Week 3	The Diodes: half-wave rectification	
Week 4	The bipolar-junction transistor: common-emitter amplifier	
Week 5	The operational amplifier	
Week 6	The Thyristor	
Week 8	The single-phase transformer	
Week 9	The three-phase induction motor	
Week 10	DC motors: shunt and series	
Week 11	The single-phase induction motor	
Week 12	The three-phase synchronous motor	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Learn to assemble and analyze basic DC circuits. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	
Learn to assemble, and analyze the half-wave rectifier circuits. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	
Learn to assemble basic circuits, and interpret experimental results concerning the characteristics of the common-emitter amplifier. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	
Learn to assemble basic circuits, and interpret experimental results concerning the characteristics of operational amplifier. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	
Learn to assemble, and analyze the half-wave phase controlled rectifier circuits. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	
Learn to carry out tests which demonstarate the principles of operation of single-phase transformers. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	
Learn to produce and investigate the torque-speed characteristics of single-phase induction motors experimentally. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	
Learn to produce and investigate the torque-speed characteristics of three-phase induction motors experimentally. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	

Learn to produce and investigate the torque-speed characteristics of shunt and series DC motors experimentally. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	
Learn to produce and investigate the "V" curves of the three-phase synchronous motor experimentally. [1ABET1, 2ABET3, 1ABET6, 1ABET7]	10%	

Relationship to Program Student Outcomes (Out of 100%)						
ABET1	ABET2	ABET3	ABET4	ABET5	ABET6	ABET7
20		40			20	20

Evaluation	
Assessment Tool	**Weight**
Mid-term	30%
Works	30%
Final	40%

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