

EET 3710 - Electrical Machines

Fall 2026 Syllabus, Section 01, CRN 41929,

Credit hours: 3

Instructor

Jason Zapka

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Public Instructor Information

Instructor Title: Associate Professor

Instructor Professional Qualifications: M.S., Electrical Engineering, Youngstown State University, 2010; B.E., Electrical Engineering, Youngstown State University, 1998

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Course Description

3710. Electrical Machines. Construction, operating principles and characteristics, efficiency and control of DC motors, generators, and specialized machines. AC single and 3-phase transformers, alternators, induction and synchronous motor principles, characteristics, efficiency and control. Prereq.: "C" or better in EET 1502 and EET 1502L and ENTC 1505 and MATH 1570. Concurrent with EET 3710L. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Electrical Motor Controls for Integrated Systems	Rockis and Mazur	9780826912268
Required	Electrical Motor Controls for Integrated Systems - Workbook	Rockis and Mazur	9780826912275
Required	Electrical Motor Controls for Integrated Systems – Application Manual	Rockis and Mazur	780826912299

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Day	Date	Reading(s)	Proposed Topic	Due/To Prepare for Class
Mon	8/24	Chapter 2	Control Circuit Symbols	
Wed	8/26	Chapter 5	Control Logic	
Mon	8/31	Chapter 6	Mechanical Input Devices	
Wed	9/2	Chapter 7	Solenoids	Due 9/2 at 4:45pm: Homework #1
Mon	9/7	No Class		
Wed	9/9	Chapter 8	Electromagnetic Relays	Due 9/9 at 11:59pm: Homework #2
Mon	9/14	Chapter 15	Reversing Circuits	
Wed	9/16	Chapter 21	Prox Sensors and other Switches, Sensors	Due 9/16 at 11:59pm: Homework #3
Mon	9/21	Chapter 12	Contactors	



Wed	9/23	Test #1	Chapters 2, 5, 6, 7, 8, 12, 15, and 21	Due 9/23 at 4:30pm: Test #1 Due 9/23 at 11:59pm: Homework #4
Mon	9/28	Chapter 9	DC Generators	
Wed	9/30	Chapter 10	AC Generators	
Mon	10/5	Chapter 11	Transformer Principles	
Wed	10/7	Chapter 11	Transformer Principles	Due 10/7 at 11:59pm: Homework #5
Mon	10/12	Chapter 28	Power Distribution	
Wed	10/14	Chapter 13	DC Motors	Due 10/14 at 11:59pm: Homework #6
Mon	10/19	Chapter 14	AC Motors	
Wed	10/21	Chapter 14	AC Motors	Due 10/21 at 11:59pm: Homework #7
Mon	10/26	Review	Chapters 9, 10, 11, 13, 14, and 28	
Wed	10/28	Test #2	Chapters 9, 10, 11, 13, 14, and 28	Due 10/28 at 11:59pm: Homework #8 Due 10/28 at 4:45pm: Test #2
Mon	11/2	Chapter 16	Timing and Counting	
Wed	11/4	Chapter 16	Timing and Counting	
Mon	11/9	Chapter 17	Motor Stopping Methods	
Wed	11/11	No Class		Due 11/12 at 11:59pm: Homework #9
Mon	11/16	Chapter 19	Reduced Voltage Starting Circuits	
Wed	11/18	Chapter 24	Photoelectric Semiconductors, Fiber Optics, & Light-based Applications	
Mon	11/23	Chapter 25 Chapter 26	Solid State Relays and Starters Motor Drives	Due 11/23 at 11:59pm: Homework #10
Wed	11/25	No Class		
Mon	11/30	Test #3	Chapters 16, 17, 19, 24, 25, and 26	Due 11/30 at 4:45pm: Test #3
Wed	12/2	Final Exam Review	All Chapters covered in class	
Wed	12/9	Final Exam		Due 12/9 at 3pm: Final Exam

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.