



ISTANBUL OKAN UNIVERSITY

FACULTY OF ENGINEERING

COURSE SYLLABUS

2020/2021 Fall

Course Code-Name	ENG353 – Electric Drives
Course Schedule	Saturday 15:00-16:00 (Online)
Instructor's Name Phone E-mail Homepage Office Hours	Asst. Prof. Dr. O. Cihan Kivanc +90 (216) 677-1630 Ext. 2459, 2485 (C100) cihan.kivanc@okan.edu.tr http://users.okan.edu.tr/cihan.kivanc Room 213 or C100 (PEEC - Power Electronics and Energy Conversion Lab)
Assistants' Name Phone E-mail	N/A
Textbook(s)	<ul style="list-style-type: none">• Ned Mohan, <i>Electric Drives: An Integrative Approach</i>, MNPERE, June 2003, ISBN-10: 0971529256.• Ned Mohan, <i>Electric Machines and Drives: A First Course</i>, NJ: John Wiley & Sons Inc., January 2012, ISBN-13: 978-1-1180-7481-7. (Almost the same book as above!)• Ned Mohan, <i>Advanced Electric Drives: Analysis, Control, and Modeling Using MATLAB/Simulink</i>, NJ: John Wiley & Sons, Inc., September 2014, ISBN-13: 978-1-118-48548-4.
Supplementary Materials	<ul style="list-style-type: none">• Ion Boldea and Syed A. Nasar, <i>Electric Drives, Second Edition (Electric Power Engineering Series)</i>, 2nd ed., CRC Press, August 2005, ISBN-10: 0-84-9342201.• R. Krishnan, <i>Electric Motor Drives: Modeling, Analysis, and Control</i>, Prentice Hall, February 2001, ISBN-10: 0130910147.• George Ellis, <i>Control System Design Guide: A Practical Guide</i>, 3rd ed., Elsevier Academic Press, 2004, ISBN-10: 0-12-237461-4.• Seung-Ki Sul, <i>Control of Electric Machine Drive Systems</i>, Wiley-IEEE Press, 2011, ISBN: 978-0-470-59079-9.• Haitham Abu-Rub, Atif Iqbal, Jarosław Guzinski, <i>High Performance Control of AC Drives with MATLAB/Simulink Models</i>, John Wiley & Sons, Inc., 2012, ISBN: 978-0-470-97829-0

Course Outline (per weeks)	Week	Tentative Class Subjects
	1	Ch1: Introduction to Electric Drive Systems – (ED = Electric Drives book)
	2	Ch1: Introduction to Electric Drive Systems – (ED = Electric Drives book) Ch6: Basic Principles of Electro-Mechanical Energy Conversion – ED
	3	Ch1: Introduction to Electric Drive Systems – (ED = Electric Drives book) Ch6: Basic Principles of Electro-Mechanical Energy Conversion – ED
	4	Ch7: DC-Motor Drives and Electronically Commutated Motor Drives – ED + Ch13: Section 13.2 – ED
	5	Ch7: DC-Motor Drives and Electronically Commutated Motor Drives – ED + Ch13: Section 13.2 – ED
	6	Ch8: Designing Feedback Controllers for Motor Drives – ED
	7	No Class
	8	Ch2: Induction Machine Equations in Phase Quantities: Assisted by Space Vectors – (AED = Advanced Electric Drives book)
	9	Midterm Exam (No Class)
	10	Ch3: Dynamic Analysis of Permanent-Magnet AC Machines in Terms of dq- Windings – AED
	11	Ch3: Dynamic Analysis of Permanent-Magnet AC Machines in Terms of dq- Windings – AED
	12	Ch10: Sinusoidal Permanent Magnet AC (Brushless DC) Drives – ED + Ch4: Vector Control of AC Motor Drives – AED
	13	Ch9: Vector Control of Permanent-Magnet Synchronous Motor Drives – AED
	14	Ch9: Vector Control of Permanent-Magnet Synchronous Motor Drives – AED
	15	Ch9: Vector Control of Permanent-Magnet Synchronous Motor Drives – AED
Midterm Dates	TBA - On the week of midterm exam	
Grading (Tentative)	<ul style="list-style-type: none"> • Midterm Exam 50% • Final Exam 50% 	
Attendance	Regularity of 70% is required in the class.	

<p>Additional Remarks</p>	<p><u>Academic Dishonesty</u></p> <p>It is the philosophy of Istanbul Okan University that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.</p> <p>Academic dishonesty or academic misconduct is any type of cheating that occurs in relation to a formal academic exercise. It can include</p> <p>Plagiarism: The adoption or reproduction of original creations of another author (person, collective, organization, community or other type of author, including anonymous authors) without due acknowledgment.</p> <p>Fabrication: The falsification of data, information, or citations in any formal academic exercise.</p> <p>Deception: Providing false information to an instructor concerning a formal academic exercise—e.g., giving a false excuse for missing a deadline or falsely claiming to have submitted work.</p> <p>Cheating: Any attempt to give or obtain assistance in a formal academic exercise (like an examination) without due acknowledgment.</p> <p>Bribery: or paid services. Giving certain test answers for money.</p> <p>Sabotage: Acting to prevent others from completing their work. This includes cutting pages out of library books or willfully disrupting the experiments of others.</p> <p>Cheating includes the following:</p> <ul style="list-style-type: none"> • giving or receiving information during an exam ("exam" includes tests and quizzes) • using unauthorized material (like notes) during an exam; unauthorized dissemination or receipt of exams, exam materials, contents, or answer keys • taking an exam or writing a paper for another student or asking someone to take an exam or write a paper for you (this includes shared work and/or group-produced answers on homeworks). • submitting the same paper—or different versions of what is substantially the same paper. • misrepresenting or fabricating written work, sources, research, or results as well as helping another student commit an act of academic dishonesty or lying to protect a student who has committed such an act. <p>Penalties for academic dishonesty are severe and can include, but are not limited to, a written reprimand, a zero on the assignment/exam, re-taking the exam in question, an F in the course, or expulsion from the University. Don't jeopardize your career by an act of academic dishonesty.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Academic dishonesty. Wikipedia, the free encyclopedia. http://en.wikipedia.org/wiki/Academic_dishonesty 2. Lars R. Jones, Robert Taylor, Sharon Irvin, Leslie Faircloth http://www.fit.edu/current/documents/plagiarism.pdf
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