جامعة الطفيلة التقنية
Tafila Technical University

EE 0113416

Wind Energy Systems

Dr. Abdullah Awad

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EXCELLENT

Introduction: Dr. Abdullah awad

- PhD from Technical University of Berlin/ Germany.
- Undergrad degree from Tafila Technical University/ Jordan.

Research Interests

- Theoretical power system research
- Integration of renewable energy
- Control and optimization

Profiles:

ORCID

Scopus®

Google Scholar

Syllabus

Course Title: **Course Code:** **Level of Course:**	Wind Energy Systems 0113416 Fourth-year Students.
Semester:	First Semester 2023/2024
Credit Hours (Lecture or Laboratory)	3 (3+0)
Required or Elective Course:	Required
Prerequisite(s):	Electrical Machines (0102320) Power Electronics (0109361)
Instructor: **Instructor's Office:** **Instructor's e-mail:**	Dr. Abdullah Eial Awwad Eng. 340 Abdullah.awad@ttu.edu.jo
Office Hours:	10:00 – 11:30 am (Sunday, Tuesday) 09:00 – 10:30 am (Monday, Wednesday)
Course Type: **Class Room:** **Time:**	**On Campus (Face-to-face)**, Distance learning, Hybrid. Eng. 109 08:30 – 10:00; Sunday & Tuesday

Syllabus

Course Description:	The course offers a broad introduction to wind turbine systems, including wind energy potential, application to power generation, and wind resources. Wind turbine types, configurations, and components. Topics include wind energy principles, Wind turbine aerodynamics, site assessment, wind turbine components, power generation machinery, control systems, connection to the electric grid, and maintenance.
Textbook(s): **Other Required Material:**	**Textbook:** Wind Energy: An Introduction; **Mohamed Elsharkawi,** 1st Edition, 2016. 1. Wind Power in Power Systems; **Thomas Ackermann**, 2nd Edition, 2012. 2. Wind Energy Handbook; **Tony Burton, Nick Jenkins, David Sharpe, Ervin Bossanyi**, 2nd Edition, 2011.
Course Learning Outcomes (CLOs)	1. Identify the fundamentals of wind energy formation. 2. Describe the factors that affect the generation and movement of wind. 3. Describe the component of the wind energy converter for the various wind power machines. 4. Analyze wind power, wind energy, and the design of the turbines. 5. Analyze and design considerations of a wind machine. 6. Improve the efficiency of the recently available wind turbines in terms of the design parameters.

Grading & Programming

Mid Exam	(30 Points)	TBA
Course Work	(20 Points)	Quizzes, Assignments, Homework, Attendance, and Computer Projects.
Final Exam	(50 Points)	TBA

Programming

- We will cover some introductory optimization material.
- There are a lot of optimization software out there, we just require linear programming.
- We will officially use **MATLAB**, but you're welcome to use whatever other packages you want .

Website

Use the course website:	To check for announcements
	To get copies of the lecture slides and other material
	To get the homework and project assignments

https://lms.ttu.edu.jo/