

# Online Courses for Continuing Education



UNIVERSITY OF MINNESOTA

**Driven to Discover<sup>SM</sup>**

# Active Courses

- Power Electronics Online Course Modules
- Wind Energy Essentials Online Course
- Power System Protection Online Course



# Programs in the Works

- Power Systems Online Course Modules
- Electric Drives Online Course Modules
- Advanced Electric Drives Online Course Modules



# Power Electronics Online

- Course management system (CMS) – WebVista (more commonly known as Blackboard)
- Asynchronous, coupled with textbook
- Multimedia (content, video, resources)
- 1-hour video = 3-4 in class lectures (F2F)
- Online homework problems, self-assessments



# Wind Energy Essentials & Power System Protection

- CMS – Moodle (open source)
- Asynchronous
- Multimedia (video, presentations, and additional resources)
- 1.5-2-hour videos = 1 class lecture (F2F)
- No homework problems, no quizzes
- CEUs/PDHs available



# Audience

- College and university faculty and instructors
  - Faculty/instructor development
  - For incorporation into own courses (no college credit provided by U of MN)
- Practicing engineers



# Continuing Education

- CEUs are available to participants (based on registration fees)
- CEUs are applicable to PDHs for engineers



# Objectives

- Faculty and instructors review the course modules and integrate the information into their teaching methods.
- Faculty and instructors will utilize these online tools to assist their own teaching practices.
- Wind and Power System Protection: these videos can be incorporated into actual course sessions in Fall or Spring semesters.



Blackboard Learning System - Mozilla Firefox

File Edit View History Bookmarks Tools Help

umn.edu https://www2.webvista.umn.edu/webct/cobalt/MainFrame.dowebct?appforward=%2Fwebct%2Furw%2Fic684977E ☆ Google

Blackboard Learning System

MYU UNIVERSITY OF MINNESOTA Accessibility | Help

Build Teach Student View

CIEESE - Power Electronics Module One

Course Content

Your location: Home Page

## Power Electronics Modules

### Module One - Introduction to Power Electronics

Center for Innovation in Electric Engineering Systems Education  
University of Minnesota

#### About the Power Electronics Modules

**Goal for Power Electronics Modules :**  
Power Electronics is an enabling technology. The goal of this series of modules to describe the role of power electronics in "power processing" to utilize power and energy as efficiently as possible, with applications ranging from small cell phones and medical devices to harnessing of wind and solar energy, and reliable delivery of power and efficient end-use.

**Reference Textbook for all Power Electronics Modules:**  
[First Course on Power Electronics](#) by Ned Mohan, published by MNPERE and available at [www.mnpere.com](http://www.mnpere.com) (this link opens in a new window)

**Prerequisite background for all Power Electronics Modules:**  
Undergraduate (sophomore- and junior-level) courses in Circuits and Systems covering circuit analysis and electronics, and system analysis. Some magnetic concepts covered in Physics courses. Some pre-requisite concepts are listed below:

- Phasor Analysis of electric circuits in sinusoidal steady state

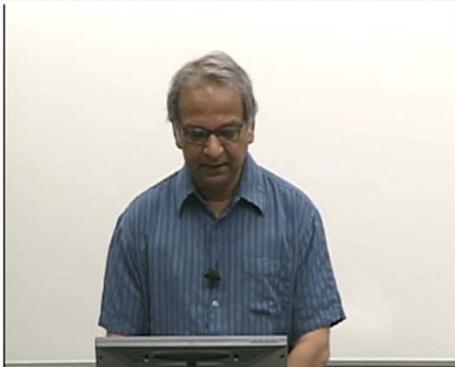
Find:  Next Previous Highlight all Match case

Done

110%



Your location: Home Page > Introduction to Power Electronics > Video: Introduction to Power Electronics (approx. 48 minutes)



First Course on Power Electronics  
Module 1: Introduction  
Professor Ned Mohan  
Reference Textbook: First Course on  
Power Electronics by Ned Mohan  
(www.MNPERE.com)

A title slide for the course. It has a yellow background with a blue curved shape on the left. The text is in blue and green.

First Course on  
Power Electronics

Module 1: Introduction

By  
Ned Mohan  
Professor of ECE  
University of Minnesota

Reference Textbook:  
First Course on Power Electronics by Ned Mohan,

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100%





COLLEGE OF CONTINUING EDUCATION

Power System Protection

Moodle Home ENGR

Return to my normal role

Administration

Grades

My Links

- My Profile
- My Moodle
- My Blog Entries
- My Calendar

Quick links for students

- Watch online orientation
- User guides
- Student support forums
- Email: moodle@umn.edu

Library Resources

Search in: Ebscohost

Welcome to Power System Protection!

This course covers the design and application of relaying schemes for the protection of power system equipment such as buses, transformers, Shunt VAR compensating elements, transmission lines, and rotating equipment. Basic concepts of protection and associated mathematical tools will be introduced before discussing details of protection. Latest available technologies and future of the industry will also be discussed. On availability of time, several industry experts are expected to provide presentations on latest developments such as synchro-phasors, wide area protection.

The organizers of this course hope that you will find it useful, and your comments to improve it next year are most welcome.

Course Benefits

- Practicing engineers from utility and consulting firms who are getting into the design and application of protective relays.
- Maintenance and operation engineers involved in the analysis of events.
- Experienced protection engineers who need to update their knowledge with latest protection principles.

Instructor

Pratap G. Mysore P.E.

Pratap Mysore received his B.E. and M.E. degrees in electrical engineering from the Indian Institute of Science,

Latest news

Add a new topic...

03:16 PM, Jan 20  
Heather Dorr  
First Video will be posted by January 27, 2011 more...  
Older topics ...

Recent activity

Activity since Thursday, February 3, 2011, 10:43 AM  
Full report of recent activity...  
Nothing new since your last login

Section Links

1 2





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Wind Energy Essentials Online

Moodle Home ENGR 0319

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Quick links for students

- Watch online orientation
- User guides
- Student support forums
- Email: moodle@umn.edu

Library Resources

Search in: Ebscohost



Your library account

Welcome to Wind Energy Essentials!

The objective of this course is to familiarize participants with various essential aspects in harnessing wind energy and its conversion and delivery as electricity. It will consist of a series of seminars offered by various speakers.

The organizers of this course hope that you will find it useful, and your comments to improve it next year are most welcome.

**Course Objectives:** The course objective is to familiarize students with various essential aspects in harnessing wind energy and its conversion and delivery as electricity.

**Course Outcome:** A broad understanding of essential elements in wind-electric systems; turbines, wind-plant development and their integration into the utility grid, environmental impacts, wind forecasting, etc.

Participating University of Minnesota departments:

- Electrical and Computer Engineering (ECE)
- Civil Engineering (CE)
- Mechanical Engineering (ME)
- Aerospace Engineering and Mechanics (AEM)

Course Details:

Recent activity

Activity since Tuesday, February 1, 2011, 05:38 PM

Full report of recent activity...

Nothing new since your last login

Section Links

1 2 3 4 5 6 7 8 9 10 11 12 13

People

Participants

Calendar

February 2011

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6



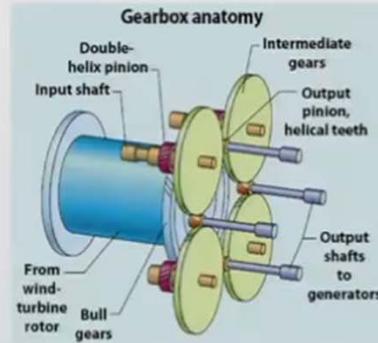
Wind Energy Essentials Online

Moodle Home > ENGR 0319 > Resources > View Lecture 1 video in Flash



### The Quantum Drive<sup>®</sup> Distributed Drivetrain

- Four high speed output shafts
- Lighter and more efficient than other commercial GBs
- Split load by a factor of 16, 400% more than the commercially available GBs
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- Ability to replace all high-speed stage components using on-board gantry crane



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49:34

122:08

Transferring data from l.longtailvideo.com...

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# Demonstration

- [www.ece.umn.edu/groups/power](http://www.ece.umn.edu/groups/power)
- [www.cce.umn.edu/power](http://www.cce.umn.edu/power)

