

## Common Course Numbering System

Your current Institution is CCCS

### Searching Current Courses For Spring 2015

**Course:** WTG 210

**Title:** WTG Airfoils & Composites

**Long Title:** Wind Turbine Generator Airfoils and Composites

**Course Description:** Introduces students to aerodynamic principles and theory of lift as it relates to turbine efficiency in converting wind energy into mechanical energy. Students then learn basics of turbine blade construction and repair. Lab will give students a limited hands-on experience working with composite materials.

**Min Credit:** 2

**Max Credit:**

**Status Notes:** Entered new course 6/26/09 s@

1. Demonstrate understanding of aerodynamic principles and the correlation to wind turbine designs.
  2. Define and explain specific terms related to wind turbine blade design.
  3. Demonstrate understanding of physics of power output dependent on size, shape, number of blades and wind speed.
  4. Be able to discuss the design and construction materials and process of wind turbine blades.
  5. Be able to discuss the WTG blade industry as a niche within the WTG industry.
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- I. Wind Turbine Design & Aerodynamics
    - a. Theory of lift
    - b. Airfoil lift, drag, gravity, thrust, center of gravity, span, cord, aspect ratio
  - II. Physics of energy conversion & associated parameters
  - III. Turbine blade design & construction materials
  - IV. Turbine blade manufacturing and repair business

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