# *Renewable Energy Systems* - ME 4823

Fall 2017 Mechanical Engineering Technical Elective

Renewable energy is all around us and will be a part of our future. Learn the theory, practice and analysis of concepts such as:

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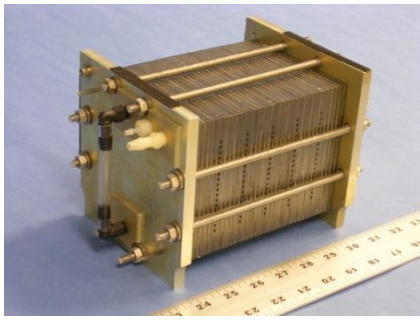
- Wind Power
- Photovoltaic Power
- Solar Thermal Heat/Power
- Energy Storage
- Geothermal Power
- Biomass Power
- Hydrogen Energy Storage and Utilization
- Ocean Thermal Energy Conversion
- Hydro Power



This class will provide students with an introductory understanding of the technical and societal opportunities and obstacles to renewable energy for the present and future.

**Instructor: Dr. Comas Haynes, Faculty, Georgia Tech Center for Innovative Fuel Cell and Battery Technologies**

Inclusive of anticipated expert guest lecturers, tours of related GT facilities
and research demonstrations

# Course Information

**Title:** Renewable Energy Systems

**Course #:** ME 4823

**Instructor:** Comas Haynes (GTRI)

**Phone:** 404-407-7578

**Email:** comas.haynes@gtri.gatech.edu

**Room:** TBD

**Time:** TBD

**Credit Hours:** 3-0-3

**Prerequisites:** Thermodynamics (ME 3322), Fluid Mechanics (ME 3340)

**Co-requisite:** Heat Transfer (ME 3345)

**Textbook: TBD**

**Audience:** Undergraduate upperclassmen primarily in Mechanical Engineering. The course will fulfill one technical elective.

**Topics Covered:**

- Principles, overview and importance of renewable energy
- Review of thermal sciences (i.e., pertinent thermodynamics/transport phenomena)
- Solar-based heating and power generation
- Fluidic power generation (aerial and waterway)
- Biomass and biofuels
- “Subsurface” thermal energy utilization (OTEC and geothermal)
- Energy systems, storage and transmission
- Opportunities for, and challenges to, societal implementation