



**OLD DOMINION UNIVERSITY**

**FRANK BATTEN COLLEGE OF  
ENGINEERING AND TECHNOLOGY**

**I D E A FUSION**

# Advanced Engineering Certificate in Energy Systems

## Contact

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for more information and to apply.

## Overview

The certificate program offered by the Frank Batten College of Engineering and Technology is aimed at providing understanding of energy engineering and the increasing role of energy engineers in addressing growing energy needs. The new skills and advanced understanding developed in class will prepare students for employment in rapidly growing energy industries.

### The certificate program will:

- ✓ Develop an understanding of the current status of energy issues and systems, and their management;
- ✓ Educate about varying energy resources and technologies, such as petroleum, coal, natural gas, nuclear, solar, biomass, hydro-electric, and wind;
- ✓ Provide details on existing commercial processes and associated economics of various energy products;
- ✓ Foster a better understanding of public policies to provide greater momentum to the energy industry;
- ✓ Teach the environmental impacts of the various energy systems;
- ✓ Offer credits for future studies in the energy engineering in Hampton Roads region;
- ✓ Prepare a skilled workforce for the energy industry.

## Admission Requirements

- Bachelor of Science degree (or equivalent) in an engineering field or undergraduate degree in another relevant STEM field
- Prerequisites for applicants from non-engineering fields include college-level mathematics, calculus-based physics, and chemistry or biology

## Course Requirements

- Twelve credit hours of graduate course work
- A grade point average of 3.00 or better
- Two core courses (each course 3 credit hours):
  - *ENGR 671*: Carbon-Free Clean Energy
  - *ENGR 672*: Energy Systems Management
- Two electives from the course list below (each course 3 credit hours):
  - *CEE 559*: Biofuels Engineering
  - *MAE 513*: Energy Conversion
  - *ECE 772*: Fundamentals of Solar Cells
  - *ENGR 673*: Fossils Energy
  - *ENGR 697*: Independent Study in Energy Systems
  - *MAE 721/821*: Fundamentals of Combustion
  - *MAE 516*: Solar Power Engineering