

ENERGY FINANCE, CERTIFICATE

Requirements for an undergraduate certificate may be completed at any campus location offering the specified courses for the certificate.

Program Description

The Energy Finance certificate program is designed for students who desire to combine their engineering emphasis in energy systems with the financial expertise gained through courses in financial analysis and risk management.

You Might Like This Program If...

You are interested in helping risk managers understand the interrelationships among and between the various industries that make up the global energy marketplace. That marketplace has changed dramatically over the last decade, and the headwinds and challenges now facing the energy industry dictate a distinct type of program.

Program Requirements

To earn an undergraduate certificate in Energy Finance, a minimum of 15 credits is required, with a minimum of 6 credits in prerequisites.

| Code | Title | Credits |
|---|--|---------|
| Required Courses | | |
| <i>Required Courses: Require a grade of C or better</i> | | |
| EBF 200 | Introduction to Energy and Earth Sciences Economics | 3 |
| EBF 301 | Global Finance for the Earth, Energy, and Materials Industries | 3 |
| or MET 436 | Energy Conservation Systems | |
| EGEE 101 | Energy and the Environment | 3 |
| FIN 418 | Energy Finance | 3 |
| FIN 427 | Derivative Securities | 3 |

Non-Course Requirements

- All courses must be completed with a C or higher

Certificate Learning Objectives

- Analyze the Processes and Systems for Energy Conversion:** Analyze the processes and systems for energy conversion, including power, refrigeration and air conditioning cycles, thermoelectrics, etc.
- Economics of Energy Finance:** Have a clear understanding of the economic rationale behind energy exploration, development, capital budgeting, option pricing and risk management.
- Energy and Environmental Concepts and Analysis:** Have a clear understanding and appreciation of energy and environmental concepts and interconnectedness; analyze energy consumption patterns; discuss various energy resources that power the modern society; examine the energy conversion processes; explore interrelationships between energy use and industrial progress and environmental consequences; discuss future energy alternatives.
- Microeconomic Fundamentals of Energy Finance:** Elucidate the microeconomic fundamentals with a focus on the applications of economics to energy and environmental markets.

- Valuation and Risk:** Master the basic techniques for the valuation of forwards, futures, swaps, and vanilla options (calls and puts), and understand the specifics of risk management in terms of energy risk.

Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

Erie

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Career Paths

Careers

The energy risk professionals are employed in a variety of industries such as energy companies, including oil, power, natural gas and LNG, and renewables; financial institutions, including commercial and investment banks, asset management firms, and hedge funds; and other industries, including consulting and technology firms and government agencies.

Energy risk professionals perform a variety of job roles involving identifying, measuring, and managing the risk related to energy products and industry. Examples of job titles for energy risk professionals are risk analyst, risk manager, energy consultant, and chief risk officer.

Opportunities for Graduate Studies

With this certificate, you may have a "hand up" to enter a master's program in Sustainable Energy or Finance, or a general M.B.A. program.

Professional Resources

- Global Association of Risk Professionals (<https://www.garp.org>)
- Houston Energy Finance Group (<https://hefg.net/>)

Contact

Erie

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<https://behrend.psu.edu/school-of-business> (<https://behrend.psu.edu/school-of-business/>)