

# **Bachelor of Science in Energy Economics and Finance**

**(A 128-133 credit hour program)**



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**As a foundation for the program students enroll in the General Education (38 cr. hrs.) and Business core classes (40 cr. hrs.).**



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**Also students complete a set of required major program courses (47 cr. hrs.).**

**Some typical classes include:**

- **International Energy Markets**
- **Advanced Project Evaluation and Risk Analysis**
- **Seminar in Energy Topics**



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**In addition a student may pursue an option (12-15 cr. hrs.) in a number of areas including but not limited to:**

- **Geology**
- **Engineering Studies**
- **Management Information Systems**
- **Computer Science**
- **Entrepreneurship**



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## **Careers:**

- **Energy Business Analyst**
- **Product Pricing Analyst**
- **Asset Team Member**
- **Energy Project Financial Analyst**
- **Energy Loan Specialist**



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# **Program also includes Renewable**

## **Energy topics including:**

- **Wind Farms**
- **Solar (PV)**
- **Geothermal**
- **Fuel Cells**
- **Flex Fuels (Ethanol, Biodiesel, CNG)**



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## **HOW CAN YOU HELP?**

- **Support for Student Scholarships, Educational materials and funds for Faculty Development**
- **Volunteer to serve on our Energy Advisory Committee.**



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**COMMENTS**

**DEAN OF THE COLLEGE OF BUSINESS**

**QUESTIONS**



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# **ENERGY FUNDAMENTALS**

## **A QUICK OVERVIEW**



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# **What is a BTU?**

**As a basis for understanding energy content, it is a reference, a standard just as psi (pounds per square inch) is a standard for measuring pressure.**

## **Definition of a BTU:**

**The amount of heat (energy) required to raise the temperature of one pound of water by one degree Fahrenheit.**

# OTHER ENERGY UNITS

**joules**

**calorie**

**1 calorie = 4.187 joules**

**1.0 gigajoule (GJ)  $10^9$**

**NOTE:**

**1BTU = 1055 joules**

## **MEASURING GDP GROWTH and ENERGY:**

**A Country's GDP/Energy input is measured in Quad's or one quadrillion BTU's ( $10^{15}$  BTU) (U.S. U.K.) or 172 million bbls of oil equivalent (BOE).**

**Other countries measure Energy/GDP growth in Gigajoules.**

**For home heating bills one may see a term called 'therm' which is equal to 100,000 BTU's or a decatherm's (1,000,000 BTU).**

# **TRANSPORATION**

**In the future when comparing alternative fuels one may encounter a concept known as GGE (gasoline gallon equivalent).**

**Gasoline (regular) has 114,100 BTU/gal. Ethanol (E100) has a GGE of 1.53 gallons, or 76,100 BTU/gal.**

**Diesel #2 has 129,500 BTU/gal or a GGE of .88 gallons.**

**Biodiesel (B100) has 118,300 BTU/gal or a GGE of .96 gallons.**

# Review Handout