GRADUATE CERTIFICATE IN ENERGY ECONOMICS AND GLOBAL SUSTAINABILITY

OFFERED BY:
Economics

PARENT DEPARTMENT AND DEGREE:
Department of Economics, Master’s degree program in Economics and Innovation (MEI), MS

INTENDED AUDIENCE:  X Main Campus Students  X Distance Students  X Hybrid

PROGRAM DESCRIPTION:

PURPOSE:
The Energy Economics and Global Sustainability Graduate Certificate offers a distinctively interdisciplinary approach to understanding the complex dynamics of energy systems, policies, and sustainability practices. By combining theoretical frameworks with practical industry applications and insights, students gain a comprehensive understanding of energy economics, policy analysis, sustainability principles, and management strategies. In addition, the program emphasizes the integration of Environmental, Social, and Governance (ESG) principles, ensuring that students are equipped to navigate the complexities of sustainable energy development and responsible resource management. This integrative approach empowers students to confidently address challenges and capitalize on opportunities within the global energy sector, forging a promising career pathway in the continuously evolving energy landscape.

ADMISSION:
The Energy Economics and Global Sustainability Certificate Program is open to all persons holding a B.S., M.S., or Ph.D. degree in Engineering, Science, and/or Mathematics or is currently accepted into a graduate degree program at Missouri S&T. Once admitted to the program; the student must take the four designated courses (provided in the curriculum section). In order to receive a Graduate Certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. Once admitted to the program, a student will be given six years to complete the program.

Students admitted to the Energy Economics and Global Sustainability Certificate Program will have non-degree graduate status; however, they will earn graduate credit for the courses they complete. Students who do not have all of the prerequisite courses necessary to begin the courses in the Energy Economics and Global Sustainability Certificate Program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.
GATEWAY FOR ADMISSION TO MASTER’S DEGREE
If the student completes the four-course sequence with a grade of B or better in each of the courses taken, they, upon application, will be admitted to the M.S. degree program in Economics and Innovation. The certificate credits taken by the students admitted to the M.S. degree program will count towards their master’s degrees.

CONTRIBUTING FACULTY:
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CURRICULUM:
To be awarded a graduate certificate in Energy Economics and Global Sustainability, a student must meet the general requirement of taking the following four courses (12 credit hours):

Required Courses (12 credit hours):
- ECON 6638 Energy Policy and Economic Analysis (3 credit hours)
- ECON 6658 Building Sustainability and ESG (3 credit hours)
- ENG MGT 5513 Energy and Sustainability Management Engineering (3 credit hours)
- ECON 6010 Seminar: Contemporary Issues in Energy Economics (3 credit hours)

COURSE DESCRIPTIONS:

ECON 6638 Energy Policy and Economic Analysis (LEC 3.0)
This course focuses on the economic and policy aspects of energy. Topics include energy prices, electricity market mechanisms, renewables, nuclear, alternative fuels, climate change, and the environmental consequences of energy consumption and production. The efficiency of various energy options is compared and discussed for future energy policies.

Delivery method: In-Person and/or Hybrid.
Offer frequency: Every fall.
Prerequisite: Graduate Standing.

ECON 6658 Building Sustainability and ESG (LEC 3.0)
Across the globe, businesses are increasingly recognizing the importance of sustainability and Environmental, Social, and Governance (ESG) principles. This course equips students with the knowledge, tool set, and skills needed to understand, implement, and integrate sustainability and ESG practices in various organizational contexts.

Delivery method: In-Person and/or Hybrid.
Offer frequency: Every fall.
Prerequisite: Graduate Standing.
ENG MGT 5513 Energy and Sustainability Management Engineering (LEC 3.0)
This course explores strategic processes and partnership required for the management of sustainable energy infrastructures and innovation in energy systems. Topics relate to renewable energy, energy efficiencies, energy conversion, energy technology, and economic efficiency of energy sources.

Delivery method: In-Person.
Offer frequency: Every spring.
Prerequisite: Senior or Graduate Standing.

ECON 6010 Seminar: Contemporary Issues in Energy Economics (LEC 3.0)
Through guest lectures by industry experts and policymakers, students discover the most pressing challenges, trends, and opportunities shaping the future of energy as we explore contemporary issues at the forefront of energy research and policy debate. From navigating the complexities of energy transition and decarbonization to unraveling the intricacies of policy regulation and innovative technological changes, this course comprehensively explores the forces driving change in the global energy economy.

Delivery method: In-Person and/or Hybrid.
Offer frequency: Every spring.
Prerequisite: Graduate Standing.