GRADUATE CERTIFICATE IN VALUE-DRIVEN INNOVATION

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:

This certificate is the result of ongoing discussions between Kummer College and the College of Engineering and Computing (CEC) aimed to break down silos and enhance the coordination efforts toward education in innovation across the S&T campus. The certificate curriculum marked the pioneering joint endeavor of Kummer College and CEC to synchronize the innovation curriculum with valuable insights from industry stakeholders.¹

This curriculum fundamentally differs from most existing technology and innovation management certificates nationwide, focusing on management and market strategies post-launch. The uniqueness of this innovation curriculum is its emphasis on teaching students the economic and engineering design phase of innovation before the launch (or hitting the marketplace) of new products, services, or processes.

PURPOSE:
The Value-Driven Innovation Graduate Certificate aims to empower technology-powered teams to build collaborative systems that generate economic and societal impact for all participants, specifically by equipping students with the knowledge and skills to drive purposeful innovation, create value, and succeed in today’s dynamic business landscape. This certificate program, comprising four courses, offers a holistic understanding of innovation processes, economic principles, financial strategies, and market dynamics essential for driving successful ventures and initiatives. By exploring the intersection of innovation, economics, finance, and technology, students will gain the expertise required to identify opportunities, develop innovative solutions, and effectively bring them to market. Whether aspiring entrepreneurs, business leaders, or professionals seeking to enhance their innovation capabilities, this certificate program empowers students to become catalysts for change and value creation in their respective fields.

¹ The certificate has an innovation curriculum design team of four (4) members: John Lovitt, Phillip Mulligan, Ed Koharik, and Venkat Allada. John Lovitt is an S&T Board of Trustee member, and he has worked exclusively with startups, mainly as a mentor and advisor, but also as CEO, board member, and investor. Lovitt’s work now is focused almost entirely on tech startup founders, mainly in Silicon Valley. Phillip Mulligan, who represents CEC, is from the Mechanical and Aerospace Engineering department and teaches a first-year engineering design course, a requirement for almost all engineering students at S&T. Venkat Allada, who represents Kummer College, is from the Engineering Management and Systems Engineering department. His teaching focuses on product design and development and senior engineering design courses. Ed Koharik earned a bachelor’s degree in economics at S&T with a minor in computer science. He has worked in the Medical Tech and FinTech space and now works for the social welfare Tech space.
ADMISSION:
The Value-driven Innovation 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 Value-driven Innovation 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 Value-driven Innovation 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 Value-driven Innovation, a student must meet the general requirement of taking the following four courses (12 credit hours):

Required Courses (12 credit hours):
- ECON 5338 Innovation and Value Generation (3 credit hours)
- ECON 5643 Innovation Economics and Finance (3 credit hours)
- ECON 5648 Innovation to Market (3 credit hours)
- ECON 6020 Seminar: Contemporary Issues in Technology and Innovation (3 credit hours)

COURSE DESCRIPTIONS:

ECON 5338 Innovation and Value Generation (LEC 3.0)
The course delves into innovation, invention, and entrepreneurship, offering insights into effectively creating value for organizations and consumers. Students will learn the process of purposeful innovation and gain a comprehensive perspective on the economics of ventures and products. Through the analysis of case studies, students will uncover the critical factors that influence the success or failure of innovations brought to the market.
ECON 5643 Innovation Economics and Finance (LEC 3.0)
This course studies the financial lifecycle of innovation, from funding to launch, and uncovers its pivotal role in both B2B and B2C ecosystems. Through simulated decision-making, students will learn the flow of funds from manufacturing and research to user and organizational buy-in. Ultimately, students will gain a deep understanding of financial calculations and organizational structures essential to drive successful innovation ventures.

ECON 5648 Innovation to Market (LEC 3.0)
This course teaches students how to identify product-market fit and strong innovations to take to market. They will then propose a plan to take the innovation to market through potential customer interviews, ecosystem, and competitor research. Students will also review the Business Model Canvas and other product ideation and decision-making techniques.

ECON 6020 Seminar: Contemporary Issues in Technology and Innovation (LEC 3.0)
Through engaging guest lectures from industry leaders, students will unravel the most pressing challenges, trends, and opportunities shaping the future of technology and innovation. From navigating the complexities of digital transformation and disruptive technologies to exploring the impacts of emerging regulations and innovative breakthroughs, this course comprehensively explores the forces driving change in the global technology landscape.