Dr. Raju Dandu is a Professor of Mechanical Engineering Technology with academic education across Asia, Europe, and North America. His expertise spans product design, manufacturing, industrial automation, Lean Six Sigma, and emerging technologies. He is actively engaged with both industry and academia, contributing to professional organizations at local, national, and international levels. He earned his Ph.D. in Mechanical Engineering from North Dakota State University (USA), a Diploma Engineer degree in Thermal and Nuclear Power Engineering from Slovak Technical University (EU), and a Diploma in Automobile Engineering from Andhra Polytechnic in India. At Kansas State University's Salina campus, he served as Director of the Bulk Solids Innovation Center and as Graduate Program Director. Dr. Dandu has held significant leadership roles, including Chair of ABET's Engineering Technology Accreditation Commission (ETAC), member of the ABET Board of Delegates, member of American Society of Mechanical Engineers (ASME) Committee on Engineering Education, and member of the Boards of Directors for American Soceity for Engineering Education (ASEE) and the Salina Area United Way. His consulting work includes product design, manufacturing, industrial automation, CE certification, startup development, patent support, grant writing, reliability-centered maintenance, and workforce training. He teaches multidisciplinary capstone design, emphasizing modeling, simulation, manufacturing, IIoT, automation, and augmented reality applications. Dr. Dandu is fluent in Telugu, English, Slovak, and Czech, and conversant in Hindi, Russian, Spanish, and Arabic.

Structured Framework for a Senior Capstone Design Project Course

Workshop for Faculty and Students

Dr. Raju Dandu
Kansas State University

Emerging trends and transformations in engineering education demand structured course and curriculum frameworks that prepare graduates to meet local, national, and global industry as well as societal needs. This workshop introduces a structured framework for designing and delivering a Senior Capstone Design Course that aligns with multidisciplinary learning, industry-integrated problem-solving, project-based pedagogy, and competency-based outcomes. The workshop equips faculty and students with practical, feasible, and manageable strategies for guiding capstone teams through the project cycle, including project management, problem scoping, multidisciplinary research, teamwork, communication, concept generation, engineering analysis, prototyping, testing, and delivery. Special emphasis is placed on experiential learning, responsible use of AI, critical thinking, innovation, sustainability, and societal relevance, all of which are essential pillars for modern engineering graduates. By the end of the session, participants will be prepared to implement a scalable, capstone framework that enhances student readiness across diverse engineering disciplines and supports the goals of engineering education ecosystems.