DESIGN INNOVATION (DI)

DI 10010   SURVEY OF DESIGN INNOVATION NODES   3 Credit Hours
Develop awareness and actively utilize the wide array of shared-resource laboratories and environments across Kent State University's eight campus system that are connected as part of the Design Innovation (DI) Ecosystem. Explore the context of maker-communities, emerging technologies and social innovation resources while working in collaborative cross-disciplinary teams to tackle projects that intentionally connect the capabilities of multiple DI Nodes.
Prerequisite: None.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

DI 20020   BE SMARTER THAN YOUR SMARTPHONE   3 Credit Hours
This course uses the development of the smart phone to illustrate the multi-disciplinary nature of design and innovation. It provides an understanding of the technologies that make the smartphone possible. Specifically, the course covers the role of research and design in product development, the changed in patterns and nature of our communications through smartphones, and the implications for businesses, markets and society. The aim of this course is to introduce the multidisciplinary nature of innovation using the smartphone as an example. It presents the complexities, challenges, and opportunities that the smartphone has created.
Prerequisite: None.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

DI 20100   INTRODUCTION TO DESIGN INNOVATION   3 Credit Hours
This course blends analytical skills, intuition and creative thinking to develop practical solutions to real world problems. Students will gain a high-level understanding of the design process through team-based projects tackling challenges. Design thinking, methods and strategies offer novel ways to discover market opportunities, experiment to validate concepts and mitigate risk, and deliver value to all. This will be a reflective lecture and small project-based course that addresses the programmatic, technical, business, social and human factors of design in a way that leads to innovation(s) in the development of integrated solutions. Learn how to engage with end users, effectively frame problems, identify potential solutions, build prototypes to test assumptions and learn what works (and doesn't). Then dive into a range of ways large and small to bring design innovation into your daily life.
Prerequisite: None.
Schedule Type: Laboratory, Lecture, Combined Lecture and Lab
Contact Hours: 2 lecture, 3 lab
Grade Mode: Standard Letter

DI 30099   CHALLENGE-BASED INNOVATION (ELR)   3 Credit Hours
(Repeatable for credit) Challenge-Based Innovation (CBI) is a project and problem-based learning course, where multidisciplinary student teams and their instructors collaborate with faculty researchers, community and industry partners to discover novel solutions for the future of humankind. The projects are an elaborate mixture, proposed by cross-disciplinary faculty teams and derived from using research to tackle messy or complex problems to meet societal, human-driven needs. The multidisciplinary student teams act as catalysts in creating novel solutions to pressing problems.
Prerequisite: None.
Schedule Type: Laboratory, Lecture, Combined Lecture and Lab, Project or Capstone
Contact Hours: 2 lecture, 3 lab
Grade Mode: Standard Letter
Attributes: Experiential Learning Requirement

DI 49095   SPECIAL TOPICS IN DESIGN INNOVATION STUDIO   1-6 Credit Hours
(Repeatable for credit) Analysis and cross-disciplinary problem-solving of significant and current issues in design innovation not covered in existing design innovation courses. This studio course is offered when opportunities and resources permit; the topic is announced when the course is scheduled.
Prerequisite: None.
Schedule Type: Studio
Contact Hours: 2-6 other
Grade Mode: Standard Letter

DI 49099   DESIGN INNOVATION WORKSHOP (ELR)   1-4 Credit Hours
(Repeatable for credit) This course supports brief, intensive and interactive activities that address a narrowly defined range of problems in which the content is practical and concentrates on the acquisition of specific information and skills related to practices in design innovation. The variable credit format allows for intensive challenges that might occur in short periods, and that it might be focused on a single problem.
Prerequisite: None.
Schedule Type: Project or Capstone, Workshop
Contact Hours: 1-4 other
Grade Mode: Satisfactory/Unsatisfactory
Attributes: Experiential Learning Requirement

DI 49995   SPECIAL TOPICS IN DESIGN INNOVATION   1-3 Credit Hours
(Repeatable for credit) Analysis and cross-disciplinary problem-solving of significant and current issues in design innovation not covered in existing design innovation courses. This course is offered when opportunities and resources permit; the topic is announced when the course is scheduled.
Prerequisite: None.
Schedule Type: Lecture
Contact Hours: 1-3 lecture
Grade Mode: Standard Letter

DI 49999   DESIGN INNOVATION GRAND CHALLENGES STUDIO PROJECT (ELR)   3 Credit Hours
(Repeatable for credit) A cross disciplinary project-based capstone course that collaboratively focuses on a single grand challenge. Challenges range from those identified by GrandChallenges.org, "solving global health and development problems for those most in need" to one of the "Grand Challenges for Engineering", to one from the list regularly updated by the National Science Foundation, to a pressing challenge identified by the faculty. Taught by a multidisciplinary team of primary instructors with input from industry leaders with complementary expertise, the collaborative effort of students, faculty members, industry partners and-or community leaders, focuses on developing robust multi-perspective, actionable solutions considering multiple criteria including but not limited to technical, socio-cultural and economic dimensions. Outcomes range from early designs, to physical prototypes or policy solutions with an understanding of how to take them to a next phase. Travel component may be included.
Prerequisite: None.
Schedule Type: Project or Capstone
Contact Hours: 6 other
Grade Mode: Standard Letter
Attributes: Experiential Learning Requirement