ID - Innovative Design

Courses numbered 500 to 799 = *undergraduate/graduate*. (Individual courses may be limited to undergraduate students only.) Courses numbered 800 to 999 = *graduate*.

ID 506. Leadership Development for Innovation (3).
Examines what makes or breaks a great leader, not just in companies, but in life. Studies the six "C's" of leadership: character, charisma, commitment, competence, communication and courage, and how each one can enhance or take away from leadership ability. Intended for students with diverse interests and nontechnical backgrounds.

ID 507. Tech Talent Development (1).
Prepares students for integration into the rapidly growing technology industry using applied problem solving exercises within the area of technology development. Students are exposed to a diverse array of real-world problems faced by technology startups and established companies, and taught how to facilitate successful outcomes while adapting to the culture. Focuses on team-building exercises, estimating solutions effort and cost, resolving conflicts, developing interpersonal skills, and identifying roles within teams. Intended for students with interests in the technology industry.

ID 508. Design Sprints (2).
As a method to quickly solve big problems and test new ideas, design sprints are a very efficient ideation and problem solving process. Attendees learn the collaborative sprint process and how to use it to develop new products and services, and to solve complex problems. Course is ideal for students who intend to work in the tech, product or service development industries, are UX designers, are looking to grow their collaboration and team leadership skills, or intend to run their own business.

ID 509. Applied Sustainability in Innovation (3).
Students participate in thoughtful discussion on sustainability, adoption of sustainable practices and policies, and employ hands-on analysis of the long-term sustainability of innovative solutions to today's wicked problems.

ID 511. Agile Product Management (3).
Prepares students for integration into a professional Agile product development environment using applied problem-solving exercises. Students are exposed to a diverse array of complex product development challenges and are taught how to facilitate and document successful outcomes. The focus is on problem-solving within a team environment, establishing an Agile product development workflow, estimation of solutions effort and cost, and learning to fail gracefully.

ID 512. Structuring Your Startup (3).
Explores how startups and new business ventures can benefit from thinking deeply about their customers, the value they bring, and how they will actually make money before launching the business. This course is designed to help entrepreneurs reduce their risk in a new venture. Offers entrepreneurs, innovators and startups a strategic approach utilizing design thinking principals to create a well thought out business plan that identifies and establishes the core values of the business, target audience, value proposition, product positioning, revenue streams and channels for delivering customer value. Focuses on building a relevant business model, testing the model's assumptions, prototyping the business concept and testing it.

ID 513. Human-Centric Design Thinking (3).
Helps students learn, understand and appreciate the process of design thinking. This course focuses on the various techniques of developing empathy and understanding, effectively defining a problem, exploring ideas, rapid prototyping, and testing. Students observe and collaborate with interdisciplinary teams to discover user insights, improve user experiences, innovate new products and services, create team alignment and overall problem-solving. The course is intended for students with diverse interests and technical or nontechnical backgrounds.

ID 513H. Human-Centric Design Thinking Honors (3).
Helps students learn, understand and appreciate the process of design thinking. This course focuses on the various techniques of developing empathy and understanding, effectively defining a problem, exploring ideas, rapid prototyping, and testing. Students observe and collaborate with interdisciplinary teams to discover user insights, improve user experiences, innovate new products and services, create team alignment and overall problem-solving. The course is intended for students with diverse interests and technical or nontechnical backgrounds.

ID 514. Lean UX Challenges (3).
Develop and prototype solutions for complex social and environmental challenges. This course helps students develop robust business or mission plans to deliver valuable impacts to identified customer segments based on a challenge prompt. Students end the course with a business plan and pitch to be used towards potential funding opportunities.

ID 515. Blockchain Fundamentals (2).
Provides students with a working understanding of the blockchain, cryptocurrencies and tokens, NFT's, and Web3.0. Course topics include the history of centralized and decentralized computer systems, the birth and core concepts of blockchain, tokenomics and microeconomies, the evolution of the blockchain to now, and current examples of applied blockchain technology.

ID 516. Blockchain Applications (2).
Provides an overview of the basics of blockchain technologies, and then dives deeper into four applications used in the blockchain ecosystem: Smart Contracts, decentralized applications, blockchain platforms and NFT's. Course topics include an overview of a few of the programming languages behind Smart Contracts with a walkthrough of a Smart Contract in Solidity, the technology and use of decentralized applications, the various platforms in blockchain and how and why they are useful, and Non-Fungible Tokens in use today as well as what projects are being worked on to use them in the future.

ID 705. Seminar in Applied Innovation (1-6).
An umbrella course created to explore a variety of subtopics differentiated by letter (e.g., 705A, 705B). Not all subtopics are offered each semester – see the course schedule for availability. Students enroll in the lettered courses with specific topics in the titles rather than in this root course.

ID 705D. Agile Software Development for Web (3).
Students don't just learn to code, they learn to develop products. Students use critical thinking tactics to explore how to use their set of coding skills to fit into various real-world applications. This course is for anyone wanting to learn how to apply agile software development practices to solve complex problems. Emphasis is placed on developing the individual technical skills necessary to excel in a cross-functional agile team environment.

ID 710. Service Design Thinking (2).
Teaches students how to tailor design-thinking processes to achieve intended outcomes and objectives associated with services, systems and processes using empathy maps, journey maps, storyboards, prioritization grids, and next steps. Additionally, students learn how vision, goals, activities, tasks and steps can help users complete an intended outcome in a way that supports the overall mission of the organization. Course is for anyone who works with or develops services, systems or processes including innovators, engineers, game designers, web designers, operations management, efficiency

management and service-related industries such as restaurants, hotels and event centers.

ID 715. Product Development with Python (3).
Python is one of the most popular coding languages in the world, used as the foundational language for both legacy and emerging technologies. Artificial intelligence, data analytics frameworks and even weather ensemble models are all built on Python. This course helps build Python coding skills and literacy for novice and experienced programmers by using Agile software development practices to build valuable products. Both independent study and instructor-guided lessons are included. Students work individually and in teams.

ID 719. Collaborative XR Development (3).
Designed specifically for interdisciplinary product teams, this course equips students with the essential skills to excel in collaborative software development and delivery. Students work together to learn how to build effective teams, foster productive communication, and navigate the complexities of product innovation and management. Through instructor-guided workshops, real-world case studies and practical exercises, students gain the knowledge and tools to transform their project teams into high-performing units capable of delivering innovative product solutions. Course technology emphasizes extended reality (XR) products, including virtual and augmented reality (VR/AR).

ID 720. Sustainable Teams and Organizations (3).
Assess and discuss the long-term sustainability of various philosophies and techniques used in the management of people and teams. This course looks at the impacts of these approaches in individual, team and organizational settings. Students learn the value of creating psychological safety in a team environment, its impact on transparency and performance, and techniques for facilitating constructive conflict to attain continuous improvement in a complex product development environment – with people. Students also explore the impacts to team performance made by human resource policies, traditional project management techniques, large organizational structures, and compliance and risk mitigation.

ID 752. Innovation Studio: Product Development I (3).
The course contains four 4-week product sprints. Participants tackle an identified problem from an industry partner and utilize a design sprint innovation process to ideate and prototype their solutions and develop a three-minute pitch of their idea back to the industry partner. Every four weeks a new product sprint begins with an interview of the industry partner to better understand what problem they need to be solved. Often the partner interviews take place at their business location. Success in the course is demonstrated through the development of prototypes and pitch presentations.

ID 753. Design: Intent vs Impact (3).
Explores the ethics behind companies with the least impact vs the companies who create the most negative impact. Addresses why “being less bad” is still not good enough, and tackles the 4R’s — reduce, recycle, reuse and regulations. Students discuss and learn about ethically resourced materials, sustainability, carbon footprints, natural resources, outsource responsibility, product lifecycles, social responsibility, cutting waste, government concerns, respecting diversity and what potential new issues can arise from artificial intelligence. Course is for anyone planning to launch or run a company, innovate new products and services, looking to grow their leadership skills, or lead a team for a company that produces products and services. Intended for students with diverse interests and technical or nontechnical backgrounds. Completion of this course fulfills the Graduate School’s professional/scholarly/integrity training requirement.

ID 755. Innovation Studio: Product Development II (3).
Participants tackle an identified problem from an industry partner and utilize a design sprint innovation process to ideate, prototype, talk with users for feedback, and iterate solutions. Success in the course is demonstrated through an advanced prototype and presentation to the industry partner.

ID 830. Emerging Technology Travel Experience (0-1).
A two-week course and travel experience pre-session that focuses on emerging technologies and pinpoints where to strategically interact with them and their organizations. As part of the course, the students are presented with a unique problem statement requiring multiple forms of technology to solve. Then as part of the travel experience, students research, identify, tour, interact and talk with leading technology companies and products to identify a combination of emerging technologies that could solve the problem statement. There are two days of in class sessions to discuss the problem statement, begin researching organizations and technologies, discuss networking opportunities and cover travel expectations. Travel, lodging, meals and event expenses are the responsibility of the student.

ID 839. Emerging Technologies (0-1).
Emerging technologies are impacting and even disrupting industries and societies at a rapid rate, and keeping up with all the new tech is a daunting task for any individual. Each semester this course explores one or more disrupting emerging technologies while emphasizing peer-to-peer learning through a cohort of knowledge to discover, learn and use the latest tech. Additionally, the course incorporates industry leaders with firsthand knowledge of specific technologies to provide insights and uses cases. The course is designed to be a free flow of information around the business use of emerging technologies. Repeatable for credit.

ID 840. Innovation in Practice (1-6).
Independent study course for students undertaking the Master of Innovation Design or other related programs. Built around experiential enrichment related to the broad topic of innovation. Topics such as intellectual property, branding, pitching, wire-framing, prototyping and funding are discussed in a group setting and may include guest speakers and/or visits to local companies. Repeatable for credit, but only 6 credit hours may count toward plan of study.

ID 841. Project (1-6).
Independent study course for students undertaking the project development/creativity option for completion of the Master of Innovation Design. Project is a substantive piece of creative work involving primary and/or secondary development, which serves to demonstrate mastery over the discourse, methods and content of at least one academic, creative or professional field. Requires students to synthesize knowledge and skills acquired over the course of the graduate career. Project must be designed and completed under the supervision of a graduate faculty supervisor and at the supervisor's discretion, may be reviewed by additional faculty advisors. Repeatable for credit.

ID 842. Thesis (1-6).
Independent study course for innovation design degree students undertaking the research and writing of a master's thesis. A thesis is a substantive piece of scholarship or creative work involving primary and/or secondary research, which serves to demonstrate mastery over the discourse, methods and content of at least one academic, creative or professional field. Requires students to synthesize knowledge and skills acquired over the course of the graduate career. Thesis projects must be designed and completed under the supervision of a graduate faculty thesis supervisor and, at the supervisor's discretion, may be reviewed by additional faculty advisors. Repeatable for credit.