DESIGN THINKING @ WILLIAMS - A TIMELINE

"What is design thinking? It's an approach to problem solving based on a few easy-to- grasp principles that sound obvious: "Show Don't Tell," "Focus on Human Values," "Craft Clarity," "Embrace Experimentation," "Mindful of Process," "Bias Toward Action," and "Radical Collaboration." These seven points reduce to five modes — empathize, define, ideate, prototype, test — and three headings: hear, create, deliver. That may sound corporate and even simplistic, but design thinking has been used to tackle issues like improving access to economic resources in Mongolia, water storage and transportation in India, and elementary and secondary education and community building in low-income neighborhoods in the United States."

Design Thinking developed at the Stanford D-school and is now growing into new programs at Smith, Dartmouth, and UVM to name a few. Smith seems to be at the forefront in the Northeast, having created an interdisciplinary work group to bring Design Thinking into the curriculum. This group has published the following definition and rationale for bringing design into the liberal arts:

> *Design is the process of intentionally creating something that does not yet exist. In contrast to analysis, which works to deepen our understanding of what is, design is more concerned with the question, "what if ? While critical analysis is undeniably an important component of design, divergent creative thinking skills are equally essential, yet they are often underemphasized in today's educational systems. Design Thinking can be conceptualized as the application of methodologies associated with design to identifying, framing, and solving problems (or creating experiences) in any domain or realm. It encompasses an often non-linear and iterative process of inspiration, imagination, idea-development, prototyping, and, ultimately, implementation. Design Thinking is also often associated with certain attitudes and attributes, including: the development of a resilient and productive relationship to failure, risk taking in the realm of ideas, the development of creative confidence, the capacity for empathetic observation, agility and optimism in the face of conceptual blocks, comfort with the discomfort of ambiguity, an appetite for changing one's frame of reference in order to gain new insights, a willingness to take collective responsibility for idea improvement, intellectual humility, and an iterative and collaborative mindset.*

If you'd like an in depth account of the Design Thinking method, IDEO, the design firm that has been an active collaborator with the Stanford team, offers a free Human Centered Design Toolkit. It's nicely designed.

Design Thinking addresses many of the educational goals that we share at Williams. It encourages interdisciplinary thinking through active making and doing. It provides a method to collaborate successfully. It connects creativity to social agency.

Williams Designs: Events and Programming

Winter Study 2012: The art department has twice sponsored, "Design Garage", a winter study course offered by D-School grad, Carissa Carter.

Winter Study 2013: 1) The 1960's Scholars invited 4 designers for the "Design Workshop Weekend". 2) Tina Olsen and Satyan Devadoss offered a popular Design Thinking winter study. On a recent sabbatical Satyan spent time at Stanford, where he became interested in Design Thinking and how it might travel to Williams. 3) January 12-13, 2013: "Williams Innovates: Spring Street" two-day workshop, "Think Entrepreneurship + Community Development + Design Thinking + Business Modeling + Prototyping, sponsored by Career Center.

Winter Study 2014: Tina Olsen, Eugene Korsunskiy, and Mike Glier offered an independent study with 3 students, who founded, "Kinetic", a student organization which uses Design Thinking

tools to address local issues like food distribution for people with low incomes. The three students in the Design Thinking class spent the first half of this semester designing programs to promote engagement with the WCMA collection by students and faculty who are not directly involved with the arts.

February 2014: Kinetic, The Williams College Think Tank, From Potential to Action. Ephs Address Campus Issues Using Design Thinking (Claiming Williams Report)

Spring 2014: Williams College Museum of Art, "Spark|Think|Make: Transforming the Museum" CMA (under Tina Olson's leadership, Design Thinking is an instrumental of WCMA's strategic plan)

January 17-18, 2015: Kinetic Student Conference. Learn about design thinking, hear dynamic speakers, develop your passion for social issues, and learn from prominent experts about things like civic engagement, homelessness, environmental sustainability, and more. Full description: *Often on college campuses, students develop passions for social issues and changemaking but lack a centralized means to turn the potential idea into an actionable project that makes a difference. The Kinetic Action Conference will provide a space for aspiring social innovators to leverage design thinking, in-depth research, and collaborative problem-solving to actively engage in issues that matter to them. The two-day Kinetic Conference will feature preeminent innovators in a variety of fields, including Ellen Futter, president of the Museum of Natural History and Biniam Gebre, deputy commissioner of the Federal Housing Administration. Dynamic speakers will set the stage for students to engage in issues like civic engagement, homelessness, and environmental sustainability, and students will have opportunities to hone the skills that will allow them to successfully implement social ventures and will be able to network with hundreds of collegiate social innovators, professors, and community members.*

Spring 2015: "A Closer Look: Design School", Williams Magazine article featuring the Winter Study course offered by Professor Satyan Devadoss and WCMA Director Tina Olsen

Fall 2015: Eugene Korsunskiy '08 visit for Design Thinking workshop at the Oakley Center and participation in a Science Divison Lunch; Design Thinking Consultant idea proposed to CEA by Lee Park, Associate Dean of Faculty

June 30, 2016 "Collaborative Design Consultant" Proposal submitted to President Adam Falk and Provost Will Dudley after a year-long working group on Design Thinking and CEA review, and offering rationale for the position and its integrative potential for the Williams Community. Submitted by Lee Park, Associate Dean of the Faculty and the following undersigned: Lois Banta (Biology), Ben Benedict, Magnus Berhardsson (History), Paula Consolini (CLiA), Stephanie Dunson (Director of Writing Initiatives) , Ed Epping (Art), Steve Fix (English), Sarah Gardner (Environmental Studies), Mike Glier (Art), Sarah Goh (Chemistry), David Gurçay-Morris (Theater), Mika Hirai (Office of Institutional Technology), Barron Koralesky (Office of Institutional Technology), Tina Olsen (Williams College Museum of Art), Li Yu (Asian Studies)

July 2016: Design Thinking Consultant position supported by designated campaign gift; Task of recruiting "Design Thinker in Residence" handed off to Rhon Manigault-Bryant, Associate Dean of the Faculty. Steering Committee created, including Lois Banta (BIO), Paula Consolini (CLiA), Mike Glier (Art), Megan Konieczny (DoF), Barron Koralesky (OIT); Tina Olson (WCMA)

August 22, 2016: Northeast Design Thinking Summit, Smith College. Attended by Paula Consolini (CLiA), Megan Konieczny (DoF) and Rhon Manigault-Bryant (DoF/Africana Studies)

September 24, 2016: Design Incubation Colloquium 3.0: MCLA (Megan Konieczny, DoF)

December 2016: Design Thinker in Residence Position at Williams formally created and adverstised.

January 5 & 13, 2017: #DesignerDemo: Design Thinking @ Williams, a "crash course in design thinking approaches, strategies, and techniques for faculty student, and staff members of the Williams community. Led by Eugene Korsunskiy '08, Coordinator of Design Initiatives at the University of Vermont.

Design Thinking in the Williams Curriculum

Winter Study 2015: MATH 19 | Design School (CROSSLISTING ARTS 19)
Stanford has a world-renowned school of design, a synthesis between classical academics, silicon valley technology, and a startup culture. Our class brings this approach to the purple mountains, using design thinking in order to tackle big-scale projects at Williams, such as dorm-room and classroom space reallocation, online database interfaces, the future of collegiate athletics, the role of physical versus online learning, or any other ventures the class find exciting. After a week of learning to quickly prototype models and fostering teamwork between diverse disciplines, the majority of the course will focus on collaborative attempts in sketching, creating, and presenting visual thinking solutions to these big problems. And in this spirit, the course is jointly taught by mathematics and WCMA, bringing together art, design, space, and theory.
METHOD OF EVALUATION: Primarily on attendance and participation, including a final project that consists of written materials about the process, a design video, and a physical prototype.
PREREQUISITES: None
ENROLLMENT LIMIT: 15
METHOD OF SELECTION: Priority for those with experience in or intense curiosity for visual design, or those who are involved in large-scale projects at Williams.
COST: about $40 for books
MEETING TIME: mornings
INSTRUCTOR: Satyan Devadoss (Mathematics) and ADJUNCT INSTRUCTOR: Tina Olsen (Director of WCMA)

Winter Study 2015: CSCI 13 | Designing for People (CROSSLISTING: PSYC 13)

COURSE DESCRIPTION: Many technologically-innovative and aesthetically-beautiful products fail because they are not sensitive to the attitudes and behaviors of the humans who interact with them. The field of Human Factors combines aspects of psychology and sociology with information technology, education, architecture, and physiology, to design objects and information that are easy for people to learn and easy for people to use. The course will provide students with a theoretical framework for analyzing ease-of-learning and ease-of-use, as well as practical knowledge of a variety of human factors testing methodologies. The course will examine usability of a wide variety of designed objects, including buildings, publications, websites, software applications, and consumer electronics gadgets. Students will demonstrate their understanding of human factors theory through a short paper and participation in class discussion. Students identify a usability problem and design a solution which they will evaluate by heuristic analysis and a usability test with 8-10 human test subjects. Findings will be presented to the class. Books to be purchased: *The Design of Everyday Things* by Donald Norman and *The Inmates are Running the Asylum* by Alan Cooper. Students will also be assigned additional readings.
METHOD OF EVALUATION: Five-page paper on usability theory, and presentation of usability design and testing project.
PREREQUISITES: none
ENROLLMENT LIMIT: 15
METHOD OF SELECTION: Instructor seeks a diverse group of students with interests in design, psychology, and human-computer interaction
COST: $36
MEETING TIME: afternoons
ADJUNCT INSTRUCTOR: Rich Cohen `82

Winter Study 2015: PHYS 16 | 3D Design and Fabrication for Rapid Prototyping and Advanced Manufacturing
COURSE DESCRIPTION: Advances in 3D design and fabrication technology are fundamentally changing the landscape of product development and manufacturing. Sophisticated tools for design and analysis are widely available and lower in cost. Concept to prototype design cycles have shrunk from months to days or even hours. Advanced manufacturing technology is creating more complex and intricate components with higher throughput, producing better products but creating fewer jobs. In this course, we will engage in hands-on exploration of the technology that is driving the change in products that affect our lives, but also in our economy and society.
Utilizing state-of the-art 3D CAD (computer-aided design) tools, we will model a variety of objects using both parametric and non-parametric methods. We will create dynamic simulations of mechanisms and perform stress analysis. We will use a 3-D printer to create rapid-prototypes. After verifying the design through prototypes, we will use CAM (computer-aided manufacturing) to create a program for a state-of-the-art 5-axis CNC milling machine. This CNC system will produce metal objects of virtually any shape or complexity at high-speed.
To gain further understanding of the impact of advanced manufacturing on jobs and the economy, we will visit several manufacturing companies in New England that use both traditional and highly advanced manufacturing technologies to create parts for industries such as aerospace and medical devices. In the last week, students will create a final project fabricated from their

own design. At the conclusion of the class students will display and discuss the projects in a public poster display and reception.
METHOD OF EVALUATION: Final project and poster form public display and reception
PREREQUISITES: none
ENROLLMENT LIMIT: 10
METHOD OF SELECTION: Preference based on one-paragraph explanation of student's interest in the course.
COST: 75
MEETING TIME: afternoons
ADJUNCT INSTRUCTOR: Michael Taylor

Fall 2016: ENVI 411, ENVI 302/AMST 302 | Practicum: Environmental Planning Workshop
COURSE DESCRIPTION: This interdisciplinary, experiential workshop course introduces students to the field of planning through community-based projects. Environmental Planning encompasses many fields pertaining to the natural and built landscape such as city planning, sustainable design, natural resource planning, landscape design, agricultural planning, climate planning, transportation planning, and community development. Students will get out of the classroom and gain direct experience working on the planning process in the Berkshire region. The class is organized into two parts. Part 1 focuses on reading and discussion of the planning literature: history, theory, policy, ethics, and legal framework. Part 2 focuses on project work in which students apply concepts learned to tackle an actual community problem. Small teams of students, working in conjunction with a client in the region and under supervision of the instructor, conduct a planning project using all the tools of a planner, including research, interviews, survey research, mapping, and site design. The project work draws on students' academic training and extracurricular activities, and applies creative, design thinking techniques to solve thorny problems. The midterm assignment is a creative landscape/site design project. The lab sections include field trips, GIS mapping labs, project-related workshop sessions, public meetings, and team project work. The course includes several class presentations and students will gain skills in public speaking, preparing presentations, interviewing, survey research, hands-on design, and teamwork. The class culminates in a public presentation of each team's planning study.
CLASS FORMAT: seminar discussion/group workshop/project lab
METHOD OF EVALUATION: short written exercises, class discussion, class presentations, final group report
PREREQUISITES: ENVI 101 or permission of instructor; open to juniors and seniors only
ENROLLMENT LIMIT: 16
METHOD OF SELECTION: Enrollment Preference granted to Environmental Studies majors, Environmental Policy majors, Environmental science majors, and Environmental Studies concentrators
COST:
MEETING TIME: TR 11:20-12:35
INSTRUCTOR: Sarah Gardner