Master of Science: Conservation

The program, designed for participants who have an affinity for the architectures and landscapes of the past, is geared to provide an innovative approach to historic preservation. It expands upon conventional notions of historic preservation to encompass the multiple scales that shape the cultural and environmental heritage of a community and its region. The course of study offers participants an innovative approach to connecting physical, social and ecological contexts as a means of probing architecture’s active role in the construction of culture.

Participants will explore how to imaginatively design the future of historic structures, as well as progressively develop under-utilized historically significant urban sites and landscapes. Participants will be given the tools to bridge the gap between historic preservation of the past and present and the construction of natural resources.

Pedagogical Goals

Modern and pre-modern landscapes, environments and cultural sites are at risk of being destroyed or altered to such a degree so as to lose their original relevance. Conservation combines a deep affection for and knowledge of heritage with an engaged understanding of how the past might enhance the vitality of contemporary neighborhoods and cities. Conventional historic preservation fails to capture the holistic role of community advocacy and economic development in conservation processes. At the same time, conventional approaches toward the preservation of historic sites overlook the potential of the built environment to affect ecological systems. This program will focus on the role of conservation in community organizing and neighborhood identity, as well as in the effective development of urban districts.

The degree coursework will combine conservation, activism, and entrepreneurship, and allow participants to analyze historic districts, sites, landscapes, and territories as well as propose alternatives for the future. It will combine technical training in conservation methods from outstanding practitioners; perspectives on urban history; urban design; community organizing; economic development; and public policy that draw from the college and the University of Michigan’s strength in areas such as architecture, urban design, and public policy. It will combine the strengths of the college and the University of Michigan in areas such as architecture, urban design, and public policy.

Application deadline: March 1, 2012

Learn more about the program and the college:

Master of Science Open House at the University of Michigan: January 20, 2012, 2:30 p.m. - 5:30 p.m.; a lecture of faculty design research will follow.

"Whither Installations" Symposium: January 21, 2012, 10 a.m. - 4:30 p.m.; all of these events are made available to you as part of your open house registration.

Requirements: How to apply, and for more information:

taubmancollege.umich.edu/msc
The Master of Science concentration in Material Systems (MS_MS) is a 2.5 semester (fall, winter, spring half) post-professional degree that develops a platform for project-based design research methodologies aimed at experimentation and innovation in architectural material behavior, specific assembly performance, technology integration and responsive material systems. The program is intended to develop new methodologies of architectural exploration that are based in cross-disciplinary collaboration. The program draws on the broad range of research currently ongoing at Taubman College, as well as close ties with University of Michigan's internationally recognized programs in materials science, engineering, art and design, integrated microsystems and environmental assessment.

The MS_MS concentration (thirty-six credits) advances architectural research methodologies and design practice in new materials and adaptive/high-performance architectural material assemblies with an emphasis upon performance, fabrication, and experimentation. Students will develop research methodologies that will include material performance, such as building energy reduction, and technology exploration with emerging material systems. Participants will work with interdisciplinary teams of architecture, engineering, manufacturing, and material science faculty to develop material systems that are innovative and collaborative. The curriculum will emphasize new building components and new building systems.

Pedagogical Goals

The program will focus on two basic trajectories: advancing research in new material exploration through new material applications and manufacturing processes, and advancing research in technology-integrated material explorations (in areas of engineering, responsive and adaptive structures). The concentration seminars and required courses will include labs in material behavior, new materials (smart materials, high-performance materials, energy conversion materials), fabrication and manufacturing techniques, materials selection and the environment, interactive systems, sensing systems, fabrication and the environment, and the environment. The program will leverage cross-disciplinary collaboration with the university’s existing research and development efforts in the fields of materials science, bioengineering, nanotechnology and microsystems. The program will prioritize physical exploration and testbed development as well as the development of appropriate research techniques and methods of evaluation.

U-M resources: Taubman College Digital Technologies Lab (FaB Lab), environmental and water resources engineering lab / Hydraulics lab utilizing laser-induced fluorescence and particle image velocimetry; engineering research center for Wireless Integrated Microsystems and the school of Natural Resources and Environment.

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Requirements: How to apply, and for more information: taubmancollege.umich.edu/ptramatics
The Master of Science concentration in Digital Technologies (MS_DT) is a 2.5 semester (fall, winter, spring half) post-professional degree that offers motivated participants the opportunity to investigate design practices and conduct independent design research in computer-aided design and advanced fabrication techniques. The program builds upon a tradition of cutting-edge technical research at Taubman College, the University of Michigan, and in the Detroit region. University of Michigan offers unmatched excellence in digital fabrication and access to world-class lab and production facilities and regional linkages to industry.

As architecture integrates advanced technologies from the aerospace, automotive, and shipbuilding industries, it has altered both the way buildings are conceived and the manner in which they are manufactured. CAD/CAM (computer-aided design/computer-aided manufacturing) technologies have transformed traditional professional boundaries and forced architects to reconsider their role in response to changing contractual relationships, expansion of client services, and concerns for ecological and sustainable thinking.

The MS_DT provides a full range of investigations in computational design and advanced fabrication techniques. New integrations and opportunities for the development of applications in computational design. Project-based research provides a testing ground for new modes of practice and innovative uses of existing, new, and emerging technologies and tools.

The college’s digital Fabrication Lab (FaBLab) leverages state-of-the-art industrial technology to perform architectural fabrication research. It is one of few academic institutions around the world utilizing robotic automation to perform subtractive and additive manufacturing processes.

Fab lab resources include: 3D printers to print small plastic models; 7-axis robot cuts metals, plastics, rubber, and wood; digitizer generates a digital model of a physical object; CNC router routes wood based on a digital model; CNC mill mills metals, including stainless and aluminum; CNC waterjet cuts 2-dimensional profiles from sheets of material.

Application Deadline: March 1, 2012

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- All of these events are made available to you as part of your open house registration.

Requirements: To apply, and for more information:
taubmancollege.umich.edu/msdt

Image credit: Taubman College’s digital FaB Lab features a seven-axis robot for subtractive and additive fabrication processes.