

# SURFACE IMAGING (MSSI)

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**MSSI 501: Digital Textile Printing**

The course consists of theory and practice for digitally printing imageries on textile substrates for wet and dry processing (natural and synthetic fibers) from ideation to printing production on textile substrates. It includes (1) understanding of matrix of fibers and colorants (2) printing requirements and (3) pre and post treatments.

**Credits:** 1.5

**College:** School of Design & Engineering

**Schedule Type:** Lecture, Lecture/Lab, On-Line

**MSSI 502: Hard Surface Digital Printing**

Through a series of theories and experiential practices, students will learn to develop the printed production on rigid hard surface substrates with UV cured flatbed digital printing systems. In addition to printing direct colorations with coloring the images, the course also focuses on 2.5-dimensional printing (fundamental of additive printing practice) to introduce printed physical textures to the substrates as well as a basic concept of print-to-shape.

**Credits:** 1.5

**College:** School of Design & Engineering

**Schedule Type:** Lecture, On-Line

**MSSI 503: Dig Print for Flex Substrates**

Lecture and experiential practice course focuses on development of printed products for roll to roll flexible substrates, including organic and inorganic films, cling films, paper etc. with Eco Solvent, UV and Latex printing systems. This course will allow students to understand the potentials and limitations of digital printing on flexible substrates through layer printing, second surface printing, lamination, and print / cut (decals) mechanism.

**Credits:** 1.5

**College:** School of Design & Engineering

**Schedule Type:** Lecture, Lecture/Lab, On-Line

**MSSI 504: Digital Color Management**

The course will introduce a range of essential skills of digital color management through lectures and practices. It covers theory of digital color management, calibration, generating ICC color profiles for the workflow across different devices.

**Credits:** 1.5

**College:** School of Design & Engineering

**Schedule Type:** Lecture, Lecture/Lab, On-Line

**MSSI 505: Printing Technology**

This is an online lecture course that focuses on the principles, techniques and chemical processes involved with printing technologies. This course covers printing mechanisms, chemistry, coloration systems and styles for impact, non-impact, additive and subtractive printing. Media preparation, post treatment (fixation) and industrial testing standards are also examined. At the same time, the course also introduces the principal of surface Imaging supply chains that includes design, manufacturing, marketing and product distribution.

**Credits:** 1.5

**College:** School of Design & Engineering

**Schedule Type:** On-Line

**MSSI 506: Surface Imaging Design**

Surface Imaging Design will provide students the basic principals of decorative design processes (repeated pattern development and workflow) and design research methodologies for Surface Imaging. A series of short design projects are introduced with Adobe suites to enhance conceptual, technical and skill development towards surface imaging design.

**Credits:** 1.5

**College:** School of Design & Engineering

**Schedule Type:** Lecture, Studio

**MSSI 510: Specialist Printing**

This course will introduce a range of specialist printing technologies on textile substrates with flatbed screen printing for Surface Imaging. Through lectures and practices, the course covers theory, chemistry, process, and workflow related to the specialist printing.

**Credits:** 1.5

**College:** School of Design & Engineering

**Schedule Type:** Lecture, Lecture/Lab

**MSSI 550: Surface Imaging Pattern Design**

This course covers the design process and workflow to develop pattern design for surface imaging from research and ideation to finished pattern design collections. A series of short design projects, combining with technical process and aesthetic development, are introduced throughout the semester to enhance conceptual, technical, and skill development in Surface Imaging design and production.

**Credits:** 3

**College:** School of Design & Engineering

**Schedule Type:** Lecture

**MSSI 601: Surface Imaging Design I**

This is the first design studio course in the MSSI program that focuses on the individual creative design process utilizing design research methodologies, printing technologies as well as executed crafted control and successful design in surface imaging. Prerequisite: MSSI-500 Surface Imaging Design Foundation or equivalent

**Credits:** 3

**College:** School of Design & Engineering

**Schedule Type:** Lecture, Lecture/Studio Combination, Studio

**MSSI 602: Intro to Material Sci for SI**

This course will survey materials and materials-related processes associated with surface imaging applications. The science describing a wide range of solid-state materials (e.g., bulk metals and ceramics), polymeric materials (e.g., porous/non-porous substrates) and polymer solutions (e.g., inks, dyes and pigments) will be explained. The structure and properties of modern materials will be related to enhanced performance in the fields of surface imaging. Surface chemistry, including polar and non-polar surface tension and wetting phenomena will also be described from a materials science point-of-view. Some laboratory demonstrations will be included to reinforce student learning of these basic materials science concepts.

**Credits:** 3

**College:** School of Design & Engineering

**Schedule Type:** Lecture

**MSSI 607: Printing Technology for SI**

This is a lecture and lab course that focuses on the principles, techniques and chemical processes involved with printing technologies. This course covers printing mechanisms, chemistry, coloration systems and styles for impact, non-impact, additive and subtractive printing. Media preparation, post treatment (fixation) and industrial testing standards are also examined. At the same time, the course also introduces the principal of surface Imaging supply chains of surface Imaging supply chains including design, manufacturing, marketing and product distribution.

**Credits:** 3**College:** School of Design & Engineering**Schedule Type:** Lecture, Lecture/Studio Combination, Studio**MSSI 700: Transdisciplinary Project I**

This is an interdisciplinary course that involves real world industry related projects as well as working collaboration with a variety of disciplines. Example of projects may include: MSSI + corporate sponsor, MSSI + corporate sponsor + MSID + GFE, MSSI + corporate sponsor + MSTE + iMBA, etc.

**Credits:** 3**College:** School of Design & Engineering**Schedule Type:** Lecture, Studio**MSSI 701: Surface Imaging Design II**

This advanced studio course emphasizes innovation in surface imaging design and technology. Students will identify current industry movements-from contemporary global surface imaging industries in design, applied engineering and business-to develop innovative surface imaging projects toward future applications and systems. Prerequisite: MSSI-601 Surface Imaging Design I

**Credits:** 3**College:** School of Design & Engineering**Schedule Type:** Lecture, Studio**MSSI 702: Transdisciplinary Project II****Credits:** 3**College:** School of Design & Engineering**Schedule Type:** Lecture, Studio**MSSI 791: Internship for Surface Imaging****Credits:** 3**College:** School of Design & Engineering**Schedule Type:** Internship 3 Credits**MSSI 798: Independent Study Surface Imagn****Credits:** 3**College:** School of Design & Engineering**Schedule Type:** Independent Study**MSSI 800: SI Master Project**

Master Project is the final degree project for MSSI. This course consists of (1) the final project based on a concentrated area of SI design, SI applied engineering or SI commerce and (2) a documentation of a business plan to support the project toward an entrepreneurial application in the surface imaging industry. Students are required to represent the project in exhibition format and to conduct an in-person defense of their project to faculty members and outside critics. Prerequisite: MSSI-7XX Surface Imaging Design II This course will be first offered Summer 2016.

**Credits:** 9**College:** School of Design & Engineering**Schedule Type:** Lecture, Lecture/Studio Combination, Studio