

E-Textiles Micro Course (99-360), Fall 2018

Dates: 11/2, 11/9, 11/16

Final Project due: 11/30

Class Time: 1:30-4:20pm **Lab Time:** 4:20-6:20pm

Location: A10 (Physical Computing Lab), Hunt Library

Instructors: Olivia Robinson (orobinso@andrew.cmu.edu)

TA: David Perry (dbperry@andrew.cmu.edu)

Class website: <https://courses.ideate.cmu.edu/99-360/f2018/>

This course aims to provide hands-on experience and knowledge on the process of working with e-textile techniques to be applied across different disciplines. The fabrication skills and concepts that will be covered in this course will be taught from an interdisciplinary approach to merge practices in arts and technology.

In this class, students learn to create active and responsive textiles embedded with microcontrollers, soft sensors, muscle wire, pneumatics, and/or electronics. This course also provides an overview of the field, the current state of the art in e-textiles, and the possibilities and difficulties that arise from working merging electronics with flexible materials.

Class 1:

Discussion Topic	Demo/Lab
Soft Sensors	<ul style="list-style-type: none">• Materials, Methods, and major considerations• Multiple Soft Sensor Samplers

Class 2:

Discussion Topic	Demo/Lab
Electronic Components & Textiles	<ul style="list-style-type: none">• Materials, Methods, and major considerations• Gemma Microcontroller Sampler

Class 3:

Discussion Topic	Demo/Lab
Movement with Pneumatics	<ul style="list-style-type: none">• Create movement using inflation
Movement with Muscle Wire	<ul style="list-style-type: none">• Demonstration of Muscle Wire/Flexinol/Nitinol

Sample Book + Final Project:

Throughout the class, students will create samples that will go into a sample book (1" binder with plastic sheets). This will serve as a reference for future projects.

For the final project students will choose to either further investigate a skill covered (or not covered) or create a project proposal that incorporates techniques from the class as a way to apply these skills into their own ideas and projects.

Students will upload a digital portfolio of their sample books and final project to the [IDeATe Gallery website](#) in the E-Textiles pool. Your digital portfolio will include photographs of each sample created in class as well as your Final Project (Proposal or Skill Investigation) as well as written reflection. Details of what to upload as part of your Final Project are below.

Due: **Friday, November 30**

Upload your documentation to the IDEATE gallery in the E-Textiles Pool

<http://ideate.xsead.cmu.edu/gallery/pools/e-textiles-pool>

- Photo of sample book + brief written reflection
- Final project:
 - **Proposal Option:** You will create a proposal for a project that utilizes techniques or concepts covered in the class. This project could be for another class or be for personal inquiry. Make sure to include:
 - Sketches
 - Write up of materials
 - Techniques and Concepts used
 - **Skill Investigation Option:** You will learn a new textile skill and create a sample to show what you have learned. This skill could be one that we discussed in class (but did not cover in a demo) or one for personal inquiry. Make sure to include:
 - Photos of your sample
 - What resources and guides used
 - What materials used
 - Possible applications

Special note: Register early for the [IDEATE gallery website](#). All requests are manually approved so it may take some time to get access.