UCSD StudentTECH 2016
Advanced Technology for Middle and High School Students
Sponsored by the San Diego Supercomputer Center, University of California, San Diego

Wearable Electronics: Introduction to Sewable Circuits

Thursday- Friday, August 11-12, 2016 (two days)
Class meets on the UC San Diego campus from 8:30 a.m. - 3:30 p.m.

Course Overview:

The cutting edge field of electronic textiles or e-textiles is a recent development in both design and engineering. E-textiles are fabrics with embedded electronics, including sensors, lights, motors, and small computers. Designers of e-textiles keep things soft by employing new materials like conductive thread, conductive fabric, and flexible circuit boards. E-textiles are used in many different domains and settings including astronaut space suits, wearable medical devices, and haute couture fashions. You’ll find them in Lady Gaga costumes that change shape, high-tech military tents, and jackets that keep you warm while you snowboard.

During this two-day workshop you will learn how to make your own soft, colorful, and wearable electronics. You’ll play with fabric, light, and sound to build a glowing bracelet as well as your own battery powered t-shirt for you to keep. Along the way, you’ll learn how to sew, design electronics, and write computer programs.

The emphasis of this workshop is art, exploration, and fun. No need to know how to code or sew! Ray Kinne has taught various forms of programming for the last 15 years for San Diego City Schools and SDSU. He especially interested programming, hacking, and art installations.

What you can expect from this workshop:

* How to create a simple circuit.
* An introduction to the Arduino programming environment.
* How sensors can be used to add functionality to your project.
* Several projects that you can take home to show to your friends and family.

Thursday, August 12, 2016 Battery, Thread, Lights, Action!
Today each we will explore the beauty of the Lilypad platform. We will start by making a lightable bracelet using a small battery, several LED’s, and some conductive thread. We will connect them to our computers and write the code to control our device. Coding techniques and ideas will be explored to further enhance your project.

Friday, August 13, 2016 – The fun is just starting!
We will create designs for our t-shirts and sew the circuits, as well as a pouch for the battery. We will look at how to add sensors to make your design even more fabulous. Your finished t-shirt will be able to be washed (gently) and worn for years to come.
Presented by Ray Kinne, San Diego Unified School District

Ray Kinne has taught various forms of programming for the last 15 years for San Diego City Schools and SDSU. He sees the computer as a way to create and generate art in a modern society. He invites you to join him.

Prerequisites:
- Must be a current middle or high school student in grades 7-10.
- Interested in learning the basics of computer coding in creative and fun manner
- Willingness to work in teams and give your best
- Eager to ask questions, share ideas, and help others in the class

Course fee: $100.00

Registration is open until filled. Register early as space fills quickly. Space is limited.

If you have any questions regarding this workshop or the application process, please contact Ange Mason via phone at 858 534-5064 or via email at amason@ucsd.edu.