

COURSE DETAIL

DESIGNING INTERACTIVE ELECTRONIC DEVICES: A PRACTICAL INTRODUCTION

Country

Germany

Host Institution

Technical University Berlin

Program(s)

Technical University Summer

UCEAP Course Level

Lower Division

UCEAP Subject Area(s)

Electrical Engineering

UCEAP Course Number

60

UCEAP Course Suffix**UCEAP Official Title**

DESIGNING INTERACTIVE ELECTRONIC DEVICES: A PRACTICAL INTRODUCTION

UCEAP Transcript Title

DESIGN ELECTR DEVIC

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course gives students an overview of how to create projects in electronics. The course covers a basic overview of electronics, solder skills, use of computer chips (“microcontrollers”) to make sound, control lights, and move things, use Arduino and other easy/fun microcontroller development boards, modify (“hack”) existing programs for controlling electronics with microcontrollers, basics of how to make sound with microcontrollers (“Digital Signal Processing”), read a schematic diagram, use solderless breadboards (to quickly make electronic projects), use some tools for debugging projects, design solder boards (“Printed Circuit Boards”) using software (using KiCad), principals of Open Source, patents, project names, and Intellectual Property, skills to manufacture projects (both small-scale and mass-production), basics of starting one’s own small business, and principals of entrepreneurial thinking and hacker’s mindset. The course uses, as an example, a project called “TV-B-Gone universal remote control”, which was invented by the course instructor. With the ideas learned through the TV-B-Gone project, students are then in an excellent position to apply the lessons learned to come up with their own project ideas, and implement them in small groups and with their own projects, and present them at the end of the class.

Language(s) of Instruction

English

Host Institution Course Number

Host Institution Course Title

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Host Institution Course Details

<https://www.tu.berlin/en/international/summer-school/summer-school/summer-schoo...>

Host Institution Campus

TUBS

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed

2026-2027

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