Design and Build Your Own Custom Skateboard!

Monday - Friday, July 11-15, 2016

Class meets at the University of California, San Diego from 8:30am - 3:00pm.

Course Overview

“Engineering” or “science” are probably not the first words that come to mind when you think “skateboarding”. However, skateboarders require reliable, precisely-shaped skateboards for progressing as both athletes and artists.

In this course, students will turn seven sheets of Hard Rock Maple veneers into a custom-shaped skateboard deck. Along the way, students will learn how the features of skateboard decks affect skateboarding, design a board using CAD (Computer Aided Design), shape a foam mold, use atmospheric pressure to laminate their board, and learn basic woodworking skills.

At the end of the course, students will have a deck that is truly their own to skate! We will also provide trucks and wheels so students are ready to ride!

Course Goals and Learning Objectives

The goal of this course is to expose students to the design/build process and empower them to create and turn ideas into reality. Students will learn:

• Computer Aided Design (CAD)
• Mold-making
• Vacuum forming
• Woodworking and finishing
• Tool use and safety

And, at the end of the class, each student will have his or her own skateboard deck - and they will understand how engineering and science have been used as tools to help them produce a high-quality product.

How the Class Will Be Taught

This class will be taught primarily with demonstrations and hands-on student activities that lead to the production of a skateboard deck. Before each student activity, the purpose of the activity will be discussed and a demonstration will be shown, with continuous opportunity to ask questions.

Power tools will be used in a portion of the class, and students will be taught how to use the tools safely and responsibly.
Topics to be Covered During This Workshop (and Tentative Schedule)

Day 1:
- Introduction to skateboard design:
  - Why certain shapes, why certain materials?
  - Design your skateboard deck shape
- Introduction to CAD:
  - Why is CAD important?
  - Getting started in DraftSight
  - Modeling skateboards in CAD

Day 2:
- Finishing CAD models
- Introduction to vacuum forming and mold making
  - How does vacuum forming work?
  - Start mold making

Day 3:
- Finish molds
- Introduction to vacuum forming
  - Press the skateboards

Day 4:
- Tool use
  - How can we be safe with power tools?
  - How do the tools we use work?
- How to cut out your board
  - Making templates
  - Cutting the boards

Day 5:
- Finishing, sanding, art, sealing
- Skateboard safety
- Discussion, lessons learned

Instructor: Beau Trifiro, Founder of Open Source Skateboards, B.S. Mechanical Engineering

Prerequisites:
- Must be a current high school student in grades 11-12.

Course fee: $360.00 (Materials costs are being subsidized to $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.