3D Printing

Course Overview

This crash course on 3D printing introduces students to the fundamentals of 3D modeling, slicing, and printing using the FlashForge Guider II 3D printer and PLA filament. Through interactive projects and hands-on exercises, students will learn how to design simple 3D models with Tinkercad, prepare these models for printing with FlashPrint software, and execute the printing process. By the end of this course, students will have the skills to bring their digital creations to life.

Course Objectives

- Gain an understanding of basic 3D printing concepts and the operational mechanisms of the FlashForge Guider II.
- Learn to design simple 3D models using Tinkercad, focusing on designs that are practical for printing with PLA filament.
- Master the process of setting up the FlashForge Guider II 3D printer for first use, including loading PLA filament.
- Learn to use FlashPrint software to slice models and prepare them for printing.
- Execute the 3D printing process, from file transfer to post-printing cleanup and maintenance.
- Complete a final project that involves designing, printing, and presenting a final piece that demonstrates the skills learned.

Additional Resources

[Tinkercad](#)
[FlashPrint Software](#)
[FlashForge Guider II User Manual](#)

Course Curriculum

- ☐ [3D Printer Rules & Guidelines](#) (please read and agree to these before continuing)
- ☐ Overview of 3D printing technologies and materials, with a focus on PLA filament and its properties.
- ☐ Designing for 3D Printing with Tinkercad - Basics of 3D modeling with Tinkercad, including creating shapes, combining objects, and preparing designs for printing.
- ☐ Getting to Know Your 3D Printer - Introduction to the FlashForge Guider II, including its features, loading filament, and maintenance.

☐ Using FlashPrint Software - Detailed guidance on installing FlashPrint, slicing models, and adjusting print settings for optimal results.

☐ The Printing Process - Step-by-step walkthrough of the printing process, from file transfer to the FlashForge Guider II to removing and finishing the printed object.

☐ Test Print - Conduct a test print to familiarize students with the printing process and troubleshoot any issues.

☐ Final Project - Students will apply what they've learned to design, print, and present a 3D printed object. The project encourages creativity and practical problem-solving.