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# Master your Skills with Fusion 360 for aspiring EngineerA logo of a computer program Description automatically generated

**INSTRUCTOR: Prince Gildas Mbama Kombila**

## Week 1: Beginner Projects (Focus on Basic Tools and rendering) (09/21/2024)

## --- upcoming ---

### Project 1: Lego (Using extrude, pattern tool, reproduise images,color,move tool)

* + Tools Covered: Sketch, pattern, Fillet, extrude, and text.
  + Description: Participants will design a simple lego

### Project 2: Pencil (Revolve & Fillet)

* + Tools Covered: Sketch, Revolve, Fillet, Appearance.
  + Description: Create a basic pencil by revolving a sketch. Add details such as chamfers or fillets at the tip and apply textures to simulate a wooden or colored pencil.

### Project 3: Advanced Bottle with texture (Using the Revolve Tool)

* + Tools Covered: Sketch, Revolve, Fillet, Shell, and Appearance.
  + Description: Participants will design a simple water bottle using the revolve tool to create a symmetrical shape. They will also add thickness using the Shell tool and apply materials.

## Week 2: Intermediate Projects (Sweeps, Lofts, and Threads)

## --- upcoming ---

### Project 4: Lounge Chair (Focus on Loft and Sweep)

* + Tools Covered: Sketch, Sweep, Loft, Fillet, Mirror.
  + Description: Design a lounge chair with organic curves using the Loft tool for smooth transitions and Sweep for rounded arms or legs. Mirror the parts for symmetry.

### Project 5: Spiral Vase (Using the Coil and Thread Tools)

* + Tools Covered: Coil, Thread, Fillet, Shell, Pattern.
  + Description: Participants will create a spiral vase using the Coil and Thread tools, adding thickness with Shell and utilizing patterns to decorate the surface.

### Project 6: Assembly, animation,joints

* + Tools Covered: Assemble.
  + Description: Create a joints system and animate it by using assemble function.

## Week 3: Advanced Projects (Patterns, Mirroring, and Surfaces and 3D printing, parametric design, technical drawing)

## --- upcoming ---

### Project 7: Custom Gear + Servo motor (Using Patterns and Mirror, assembly, technical drawing)

* + Tools Covered: Sketch, Extrude, Circular Pattern, Mirror, Thread.
  + Description: Design a custom gear with a pattern of teeth and apply thread details. Participants will use the Circular Pattern tool to generate gear teeth and the Mirror tool for symmetrical elements.
  + Design a simple robotic gripper

### Project 8: Complex Modeling Bike Frame

* + Tools Covered: pipe, 3D sketch, combine,inspect,construct
  + Description: Model a complex curved surface like an automotive hood or a wing. Use Surface tools for creating and patching organic shapes and curves.

### Project 9: Threaded Bolt & Nut (Thread & Coil Tools, technical drawing)

* Use the Thread tool to create a bolt and the Coil tool for springs or other spiraled elements.
* Practice combining multiple tools for detailed parts.

## Week 4: Advanced SVG, Image Import, and Form Tools

## --- upcoming ---

### Project 10: Custom Phone Case (SVG and Emboss)

* + Tools Covered: SVG Import, Sketch, Extrude, Fillet, Emboss.
  + Description: Import SVG files to design a custom phone case with decorative patterns. Apply the Emboss tool to engrave or emboss patterns and logos onto the case.

### Project 11: 3D Model from Image Blueprint (Sketch from Image)

* + Tools Covered: Canvas, Sketch, Loft, Sweep, Mirror.
  + Description: Participants will import an image blueprint to trace and create a 3D model. Use Loft and Sweep to develop the shapes, and the Mirror tool to ensure symmetry.

### Project 12: Furniture Design Using Forms (Form and Surface Tools)

* + Tools Covered: Form, Surface tools, Loft, Sweep, Thicken, Fillet.
  + Description: Design a complex piece of furniture, like a modern chair, using Form and Surface tools. Shape the furniture with organic curves and refine it with Thicken and Fillet.

Key Focus Areas Throughout the Workshop:

* **Week 1: Basic tools (Sketch, Revolve, Extrude, Mirror).**
* **Week 2: Sweeps, Lofts, Threads, and Pipes, rendering.**
* **Week 3: Advanced tools (Surface modeling, Patterns, Mirroring, rendering).**
* **Week 4: Advanced design with images, SVG imports, and forms ,stl exporting.**
* **Week 5 +: Focus on Animation and rendering**