Blackhawk School District

CURRICULUM

Course Title:	**3D Modeling**
Course Number:	**1033**
Grade Level(s):	**10-12**
Length of Course:	**1 semester**
Credits:	**.5**
Faculty Author(s):	**Dale Moll**
Date:	**January 2010**

COURSE DESCRIPTION:
This course is designed for students that have completed CADD I (1035) and CADD II (1036) with a "C" or higher. This course will allow students to explore different elements of design and materials. Students will develop solid modeling techniques and skills using the Autodesk Inventor program.

COURSE OUTLINE	OBJECTIVES (PA standard)	PROPOSED TIME / ACTUAL TIME	RESOURCES	LESSON REFLECTION (for future revisions)
Intro to 3d Modeling and Inventor • **Software** • **Tools and Equipment** • **Guided Tutorial** **Basic Part Creations (25Parts) using tools such as:** • **Sketch** • **Extrude** • **Cut** • **Fillet** • **Hole** • **Thread** • **Loft** • **Shell** • **Sweep** • **Sheet Metal** • **Fold** • **Face** • **Bend** • **Work Planes** • **Axis** • **Revolve** **How to print** • **Page Size** • **iProperties** • **Title Blocks** • **Borders** • **Base** • **Projected Views** • **Annotations** **Assemblies (5)** • **Complete Parts**	3.4.12.A2. Describe how management is the process of planning, organizing, and controlling work. 3.4.12.A3. Demonstrate how technological progress promotes the advancement of science, technology, engineering and mathematics (STEM). 3.4.10.B3.Compare and contrast how a number of different factors, such as advertising, the strength of the economy, the goals of a company and the latest fads, contribute to shaping the design of and demand for various technologies. 3.4.10.B4. Recognize that Technological development has been evolutionary, the result of a series of refinements to a basic invention. 3.4.10.C1. Apply the components of the technological design process. 3.4.12.C2. Apply the concept that engineering design is influenced by personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly. 3.4.12.C3. Apply the concept that many technological problems require a multi-disciplinary approach. 3.4.10.D1. Refine a design by using prototypes and modeling to ensure quality, efficiency, and productivity of a final product. 3.4.12.D2. Verify that engineering design is influenced by personal	2 Days 23 Days 2 Days 24 Days	Computers, Autodesk Inventor Software, Laser Printer, Plotter, Projector, Promethean Board	

• **Constrain**
• **Mate**
• **Insert**
• **Align**
• **Ground**
• **Print Outs**
• **Parts List**
 	
Rendering and Intro to 3D Max
• **Rendering in Inventor**
  • **Lighting**
  • **Background**
  • **Work planes**
  • **Inserting to Drawing**
• **3D Max**
  • **Tools**
  • **Materials**
  • **Scene**
  • **Rendering**
  • **Tutorial on part creation**
 	
F1 Car
• **Create Car following F1 in Schools regulations**
• **Create Printout and layout showing criteria**
 	
Final
	characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly.
	3.4.10.D3.
	Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and the environment.
	3.4.12.E4
	Synthesize the effects of information and communication systems and subsystems as an integral part of the development of the Information Age.
	3.4.12.E6.
	Compare and contrast the importance of science, technology, engineering and math (STEM) as it pertains to the manufactured world.
		8 Days
		
		10 Days
		
		1 Day		