



# SCHOOL DISTRICT OF MONROE

*Preparing for the Future, One Child at a Time*

## C.A.D.D. 2 (Computer Modeling)

### **Course Description:**

The curriculum for this course is developed in alignment with the [Wisconsin Standards for Technology and Engineering](#). This enhanced level elective course is a 1-trimester course in which students will apply the 3D computer modeling skills and software needed for architectural and engineering design. Students will be provided with and be guided through self-directed learning; which will introduce students to a current, widely-used industry standard computer modeling software program for architectural and engineering construction. Students will demonstrate their learning through guided applications and projects. The information in this course overview outlines what students should understand and be able to do by the end of the trimester.

### **Mastery Standards:**

Students will understand how the design of structures includes a number of requirements (AC1.a.11.h).

Students will be able to Identify design solutions for residential construction problems (AC1.b.11.h).

Students will develop building plans and schedules by using processes common to residential and commercial construction (AC1.g.9.h).

Students will be able to analyze and use technological systems (BB1.a).

Students will be able to analyze graphic communications in an ever-increasing technological world (ICT1.c).

Unit	Description of Unit and Learning Targets
<p><b>Unit Title: 1</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"><li>How does understanding computer modelling help us improve our ability to demonstrate architectural and engineering design used for construction?</li></ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"><li>I can explain how BIM (building information modeling) is useful for creative designing, fast modifications, and better communication of all building elements and utilities.</li><li>I can explain how BIM allows owners and contractors mto identify how the building will look and what are the sizes and locations of all building components <i>before</i> construction.</li><li>I can identify and correctly use all of the user interface components in a building information modeling program to create a building.</li></ul>
<p><b>Unit Title: 2</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"><li>How do you determine what are the most effective ways to generate and communicate potential design solutions to construction problems?</li></ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"><li>I can identify and correctly use all of the features of a building information modeling program to create all of the site components and topography, foundation and structural systems, and architectural components (floors, walls, ceilings, roofs, doors, windows, cabinetry, furniture, and materials finishes).</li><li>I can identify and demonstrate the proper use of all modification tools, which allow for fast changes and/or corrections to any design area or component..</li><li>I can identify and use the general properties components of building information software to determine the size and area of</li></ul>

all building components for cost estimation.

- I can create 2D and 3D annotated drafting plans for any building design, for both interior and exterior views, and presentation renderings.
- I can cut parts using the cut files produced from the Inventor post processor.