Architectural Engineering and Design II

Creating drawings by choice – OnShape, Sketch Up, & Tinker Cad

Covid has effected how AE&D is being taught but that doesn't stop our dedicated teachers! Students at home have chromebooks but don't have access to computers capable of running Auto Cad and its software. Our teachers in the different AutoCad classes are teaching students to use a variety of design software programs. The programs have their own advantages and students have choice in the decision of which they prefer to use.

ONSHAPE - Cloud-connected - we never have to worry about updating our design computers or upgrade the software as the upgrades happen automatically every few weeks. We are always on the latest version and get access to the newest features. Analytics, we are able to see how we are using the tool, how long projects are really taking to complete and how much time we are spending in the system. Extensible, we are able to use FeatureScript and write functions for our own features. We have used this to automate repetitive tasks so that we save time on designing features that we use over and over.

SKETCHUP – **Advantage 1.** It's easy to draw your design because it's designed to behave like an extension of your hand. **Advantage 2.** Adjust to the lifelike drawings you'll create fast. That's because SketchUp is an intuitive, powerful and simple-to-learn 3D drawing tool. **Advantage 3.** SketchUp allows you to render surfaces in an array of "styles". Pick from a variety of architecture that best suits your design and pleases your client. **Advantage 4.** SketchUp makes it easy to integrate with software that furnishes additional capabilities. It also supports third-party "plug-in" programs. **Advantage 5.** With SketchUp you can place your model within "Google Earth" - right on the actual site! **SketchUp** for Schools is the core **SketchUp** modeler now available with G Suite for **Education** or Microsoft **Education**. Integrated with Google Drive and Microsoft OneDrive Works on Chromebooks or any Internet-connected computer.
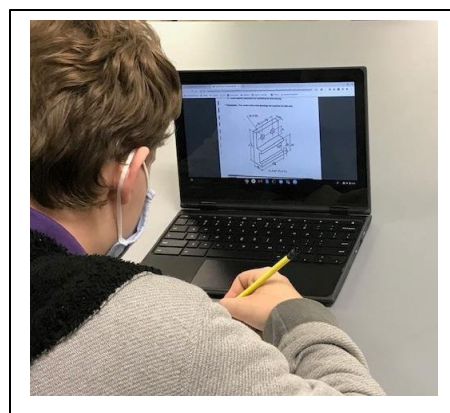
TINKERCAD - Tinkercad is a great tool to start 3d modelling. Even though you are an advanced 3d designer, you might be found yourself using it. It simplifies the process of 3d design. Tinkercad mainly solves primitive design needs. It is not a full design suite. But it contains a lot of feature for

a maker or a STEM teacher. Tinkercad consists of multiple modules such as electronics(Arduino), coding, classroom, Minecraft, Lego bricks etc.   If I needed a simple 3d object to print out from my 3d printer, I definitely first tried designing it on Tinkercad. It is easy to use and compatible with 3d printers. In many cases, I use it for my 3d file repair tool. Just upload the file to Tinkercad, and then download it repaired.