

3D Printing Overview For Professor or Student Use

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Augsburg's 3D printer is available for use by professors and students. It was purchased thanks to a grant from the mathematics and education departments. The 3D printer has previously been used to create objects such as a test tube holder, microfluidics molds, and a funnel for use with physics experiments.

If you are interested in utilizing the 3D printer, there are some things you should be aware of. Each object has to be printed, and then support material used in the printing may have to be removed from the object. An object takes approximately one hour per cubic inch to print, plus potentially time soaking in a chemical bath to remove the support material. If an object needs to soak in the chemical bath, that will add an additional one to two days to the total preparation time.



Note that due to the slow print time, our 3D printer is more suitable for printing small, detailed objects than something larger. We are more prepared to print a small example object than, say, a life-sized cannon. Our printer can print objects up to approximately 8 inches in any one dimension. Also, please note that a higher level of detail generally means more time spent in the chemical bath, as it correlates with the object having more support material.

As a result of the 3D printer laying down layers of melted plastic that harden into a solid shape the object may not be suitable for high stress or high torque applications, as the layers may shear and the object break. The objects printed are not fragile, but will not stand up to large amounts of stress.

There are many programs which can be used to design an object for 3D printing. If there is not a 3D CAD software you prefer, we recommend tinkercad, which may be found at tinkercad.com. Tinkercad is highly accessible, making it easy to learn, yet powerful enough for most design challenges we faced. When sending files for 3D printing, the printer uses .stl (STereoLithography) files, so be sure to save your object in the .stl file format.

Happy printing!