

2017 Middle School Summer Engineering Technology Program

Building for Tomorrow: Introduction to Civil Engineering

Offered: Week 2: June 19-23

Coordinator: Fred Bloetscher, Ph.D.

Schedule:

Day	Morning Session	Afternoon Session
Monday	<ul style="list-style-type: none"> • Overview of Civil Engineering Major & tour of labs • Concrete Cube & Frisbee Activities - See who can make the strongest concrete cube & frisbee out of cement and rocks. We will give you the materials to mix – you will get dirty. 	<ul style="list-style-type: none"> • Bridge/Structure Design <i>Activity-Length vs. Weight</i> This activity will test how students will look at a problem of building a strong bridge, out of popsicle sticks and glue. • Cornhole Board played with concrete.
Tuesday	<p>Egg Drop Physics We will look at a problem of catching a moving egg without breaking it. You will get dirty.</p>	<p>Dam Construction/Water Resources <i>"Five Gallons in Five Minutes"</i> How to build a dam that will leak 5 gallons in 5 mins thru a hole in the dam. Closest to the time wins. You might get wet when we test it Fri a.m.</p>
Wednesday	<p>Geotech <i>"Recycle that Garbage"</i> Test how students can use recyclable materials to build a cube that we will crush. You want the biggest vol. and the highest strength. But your box cannot weigh more than 5 lbs and be bigger than 10 x 10 inches. You will get dirty.</p>	<p>Environmental Engineering/Water Quality <i>"Clean that Dirty Water"</i> What can be used to filter water. Feel free to bring some disposable stuff with you. You need to clean 2 g of water in 10 mins or less. Winner is clearest water and least time. Test in lab with turbidity meters. Individual project. We will use dirty water from a local stream.</p>
Thursday	<p>Surveying Methods This activity will test how students will look at a problem figuring out where an object is on campus. Work with students and faculty advisor.</p>	<p>Games Try out Frisbees and your cornhole boards.</p>
Friday	<p>Importance of Statistical Data Prepare to be crushed... or at least have your projects crushed. We will spend the morning breaking structures in the structures lab. You will get dirty, wet, and/or have egg on you.</p> <p>Pizza for lunch.</p>	<p>Review of Week's Activities/Presentations Create a short PowerPoint presentation about what you learned from the projects. We will see who has the most insight about the testing.</p> <p>Certificates and awards Issued.</p>