

# Western Engineering Outreach

## 2021 Virtual ENGSquad



### **Welcome to ENGSquad**

We are very excited you have decided to participate in Western Engineering Outreach's ENGSquad. We hope that through this program you will have the opportunity to learn about engineering through hands-on projects, Q&A panels and guest speakers. Below is some important information to help you prepare for your adventure with us. If you have any questions or comments please feel free to contact us at [discover@uwo.ca](mailto:discover@uwo.ca).

### **Virtual ENGSquad Policy**

This year, ENGSquad will take place virtually through a secure Zoom account. Display names must match the name used for registration to ensure safety of all participants. Only registered individual will be admitted to the Zoom sessions.

### **Program Expectations & Acknowledgement of Risk**

#### **Supervision is the Responsibility of Guardians**

Guardians must supervise and support their student when participating in a Western Engineering Outreach virtual program. The supervision provided should be at an age-appropriate level for a student working on an independent project. Guardians must be easily available if the student requires them. Participation in a Western Engineering Outreach virtual program is not a substitute for guardian supervision.

#### **Internet Use has Inherent Risks**

In order to support student learning, these programs are being offered online. Internet use carries with it inherent risks. During this program, youth will access the internet and interact with other youth in a structured online environment. It is the responsibility of the guardian to structure their child's internet access in an age-appropriate manner. We also encourage guardians to talk to their child about online privacy and responsible online engagement.

#### **Sessions Will be Recorded for Safety and Training Purposes**

To protect the safety of participants and Instructors, online sessions will be recorded whenever possible. Recordings will only be accessed by Western Engineering staff for training purposes or as part of an incident review process.

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### Our Mentors

In addition to all the fantastic activities that you will get to participate in we have fantastic female engineering student who have volunteered to be mentors for this year's ENGSquad. They will be coming to all our sessions including the overnight event in May. You will get to meet them at our first session. Below is a special message from them to you:

*"We can't wait to meet you all and are super excited that you will be joining us for ENGSquad! You are in store for a great year of friends, engineering fun and memories that last a lifetime. #squadgoals" – Mentor Team*

Schedule	
Date & Timing	What we will be doing!
<b>Saturday October 24, 2020</b>  10:00am-11:30am	Welcome and Introduction <ul style="list-style-type: none"> <li>• Introduction and Icebreakers</li> <li>• Virtual Campus Tour</li> <li>• Special Guest</li> </ul>
<b>Saturday November 14, 2020</b>  10:00am-12:00pm	Introduction to Coding – Micro:bits and JavaScript <ul style="list-style-type: none"> <li>• Coding Lesson with Micro:bits</li> <li>• Special Guest</li> </ul>
<b>Saturday December 5, 2020</b>  10:00am-11:00am	Q&A Panel with <ul style="list-style-type: none"> <li>• Undergraduate Services</li> <li>• Current Female Undergrad Students</li> <li>• Alumni</li> </ul>
<b>Saturday January 23, 2021</b>  10:00am-12:00pm	Pitch Black <ul style="list-style-type: none"> <li>• Electrical Engineering Activity with Circuits</li> <li>• Special Guest</li> </ul>
<b>Friday March 5, 2021</b>  10:00am-12:00pm (PD Day for TVDSB)	Rock Candy and Cabbage pH <ul style="list-style-type: none"> <li>• Chemical Engineering Activity</li> <li>• Special Guest</li> </ul>
<b>Friday April 23, 2021</b>  10:00am-12:00pm (PD Day for TVDSB)	Marshmallow Tower <ul style="list-style-type: none"> <li>• Civil Engineering Design Challenge</li> </ul>
<b>Saturday May 1, 2021</b>  10:00am-11:00am	Q&A Panel with <ul style="list-style-type: none"> <li>• Undergraduate Services</li> <li>• Current Female Undergrad Students</li> <li>• Alumni</li> </ul>

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### Material Kit

We have a material kit available for purchase. The kit is optional but recommended. Please see the table below for the materials included in the kit. All materials, including the Micro:bit and electrical pieces are for participants to keep. The cost of the kit is \$80. If you are interested in purchasing a kit, please email [discover@uwo.ca](mailto:discover@uwo.ca)

Required Materials		
Activity	Materials in Kit	Materials Needed from Home
<b>Introduction to Coding – Micro:bits and JavaScript</b>	<ul style="list-style-type: none"> <li>• Micro:bit Starter Kit</li> </ul>	<ul style="list-style-type: none"> <li>• Computer with internet connection</li> </ul>
<b>Pitch Black</b>	<ul style="list-style-type: none"> <li>• Breadboard</li> <li>• 3 LEDs</li> <li>• Breadboard wires (male-male)</li> <li>• 9V battery</li> <li>• Battery Clip</li> <li>• 820 ohm resistor</li> <li>• 330 ohm resistor</li> <li>• Please note: materials are included in the Micro:bit Starter Kit</li> </ul>	<ul style="list-style-type: none"> <li>• Computer with internet connection</li> </ul>
<b>Rock Candy and Cabbage pH</b>	<ul style="list-style-type: none"> <li>• 2-3 Cups of Sugar</li> <li>• 3 Skewers</li> <li>• 3 Clothes pins</li> <li>• Pot</li> <li>• Butterfly Pea Flower Tea</li> <li>• Jug</li> <li>• Clear glasses</li> <li>• Vinegar</li> <li>• Baking Soda</li> </ul>	<ul style="list-style-type: none"> <li>• Computer with internet connection</li> <li>• Water</li> <li>• 3 Narrow Glasses or Jars</li> <li>• Pot</li> <li>• Stove</li> <li>• Food Colouring (optional)</li> <li>• Flavouring (optional)</li> <li>• Cabbage (optional)</li> <li>• If using cabbage: knife, blender, sieve</li> <li>• Jug</li> <li>• Household items: drain cleaner, window clean, etc.</li> </ul>
<b>Marshmallow Tower</b>	<ul style="list-style-type: none"> <li>• 1 Marshmallow</li> <li>• 20 of Pieces of Raw Spaghetti</li> <li>• 1 Meter of Tape</li> </ul>	<ul style="list-style-type: none"> <li>• Computer with internet connection</li> </ul>

### Western Engineering Outreach

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Western  
Engineering