

USF Engineering Expo 2017 Exhibit Descriptions & Show Schedules



MARS

1. **X-Labs Show** – ENA 105 - We will be explaining and running one of the worlds largest dual resonant solid-state Tesla coils. Harnessing millions of volts, we will be playing music with computer-modulated bursts of lighting, accompanied by sound responsive lights and other instruments. We will also be demonstrating physical phenomena such as a faraday cage. Show times - 9am, 10am, 11am, 1pm, 2pm, 3pm.
2. **IEEE Computer Society** – ENG Lobby - We will be creating video game which users will be able to interact with via motion capture software.
3. **Protsmiths** – 3D Printing and Prototypes - Come check out our 3D printer and desktop 3D scanner.
4. **Mechanical Electrical Computer Hub & Women in Computer Science and Engineering** – ENG 003 - Come check out our 3D printer and desktop 3D scanner and learn about the process of rapid prototyping.
5. **CARRT** - Center for Assistive, Rehabilitation, and Robotics Technologies – 19A - A collaboration between the Women in Computer Science and Engineering and MECH club where students will be building and designing arduino/raspberry pi projects.
6. **FreeFab 3D** - Tampa Bay area 3D printer manufacturer.
7. **Crane Research Lab** – ENG 004 - Tampa Bay area 3D printer manufacturer.
8. **a. Tampa Hackerspace** - Nonprofit makerspace with tools, classes, and a community to help make all kinds of stuff. **b. Whitehatters Computer Security Club** - We will host a simulated computer hacking demonstration to raise students' interests in cybersecurity, computer science, and information technology. **c. iD Tech** is a technology summer camp for 7-17 year olds running at USF.
9. **American Association of University Women** - Engineering Career Photo Booth.
10. **Society of Automotive Engineers** - Our exhibit is going to be our F1 style car, we will talk about how we design, manufacture and test our car.
11. **USF College of Pharmacy** - Nano experiment that changes from solid to liquid in ten minutes.
12. **Institute of Electrical and Electronic Engineers** - Come learn about some of our experiments conducted by IEEE.
13. **Society of Acute Care Nurse Practitioner Students at USF** - We will demonstrate and discuss the past, present, and future technologic advances in therapeutic hypothermia after cardiac arrest.



EARTH


1. **TECO** - Exercise bike that powers light bulbs, model power plant, power plant and People's Gas tools demonstrations, utility worker safety equipment demo, TECO lineman work trucks / bucket trucks.
2. **Gopher Resource** – Lead Acid Battery Recycling.
3. **Honeywell and STAM** - FRC Robotics - Demonstration of a FIRST FRC competition robot built in 6 weeks by high school students mentored by Honeywell engineers. Display of navigation system built by Honeywell Aerospace.
4. **FLATE** - NSF Adanced Technological Education Center booth
5. **FIRST** – ENB 118 - Robots ranging in size from LEGO built robots to 120 lb FIRST Robotics Competition robots. Guests will be able to see new season games, learn about FIRST, and try driving and programming robots.
6. **a. MOSI STEAM** - hands on science activities. **b. Bulls Eye Mentor Program** - interactive booth. ENB 116
7. **Smart Grid Power Systems Lab** - Solar and Energy Storage system remote control and operation.
8. **Lockheed Martin** – Virtual Reality Headsets, Desktop Simulators, 2-3 Full Body Simulators– ENB 110
9. **Institute of Industrial & Systems Engineers** - We will be illustrating principles of design of experiments by conducting rapid decomposition of hydrogen peroxide to create elephant toothpaste and shooting water balloons at a target while altering trajectory and power.
10. **Center for Wireless & Microwave Information Systems** - We will have an open-lab event to demonstrate how mobile phone works (ENB 236).
11. **Computer Science and Engineering** - We will show how powerful the GPU card can be and demonstrate visualized CUDA samples. (ENB 344).



URANUS

1. **Young Engineers of ASHRAE** - Our exhibit will have constructive electromagnets and electromagnetic engines.
2. **McLane MS Robotics Academy** - Our exhibit will feature robots that guest can operate to move and pickup items. We will also have model solar powered vehicles demonstrations (JSS).
3. **Biomedical Engineering Society** - The Biomedical Engineering Society at USF booth will be fun for all ages! From a lung simulation to a prosthetic hand raffle, we are pulling out all the stops to make this year's EXPO the BEST the community of Tampa has ever seen! We'll even measure your heart rate with our DIY electrocardiography and heart rate monitor!
4. **Electrothon of Tampa Bay** - Electrathon of Tampa Bay.Org (ETO) is a proud example of STEM in Action! High school and college students, along with open class enthusiasts, design, build, and race electric cars (called electrathons) during events that are held approximately once a month throughout the Tampa Bay area. Come see the vehicles and talk to our teams in our ETO display area on Fri., 2-17, and then join us for our races on Sat., 2-18.
5. **Humans vs. Zombies at USF** – ENC Study Area 2nd Floor - We'd like to open up modded blasters and show everyone how someone can turn a simple toy into a powerful foam slinging machine.
6. **Theta Tau** – ENC Study Area 2nd Floor - Interactive game panel with custom designed buttons, full explanation of the development, and entertaining game-play for participants.
7. & 8. **Robotics Interest Group** - Combat robot competition with testing on Friday and competition Saturday. All events conducted in secure 8' by 8' arena.
9. **INFORMS Student Chapter** at USF ENC 1004 & 1005 - Robotics Lab and Simulation Lab
10. **USF Pre-College** - Come learn about USF Pre-College!
11. **Society of Hispanic Professional Engineers** - This year SHPE USF will host five different experiments which will allow for variety of engineering applications.
12. **HCC Dale Mabry & Brandon Engineering Clubs** - Dale Mabry: The HCC Dale Mabry Engineering Club built a hydrogen generator that can help subsidize the amount of gas your car uses to perform its daily routine. Brandon: Our exhibit will allow guests to create marble roller-coasters using insulation piping, duct tape, and wooden blocks.
13. **American Society of Civil Engineers** - We will be presenting our unique concrete canoe and steel bridge.
14. **Engineering for Kids** – ENC 2004 - Inspiring the next generation of Engineers

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MERCURY

1. **Department of Physics** - Department of Physics studies information booth.
2. **Society of Aeronautics and Rocketry** - A presentation about aeronautics and rocketry, a trivia after the presentation, and a card stock fold up rockets competition.
3. **NASA Kennedy Space Center** - Find out what is new at NASA Kennedy Space Center! Follow our steps on the Journey to Mars, try our interactive apps to build and launch rockets and to play and explore space vehicles and scenes!. Learn about the new CREW of astronauts and upcoming launches and more!
4. **Society of Physics Students Show** – ISA 1051- The show covers a wide range of subjects in Physics; from forces, to electricity and magnetism. Shows at 9AM, 10AM, 11AM, 12PM on Friday and 9AM, 10AM, 11AM, 12PM 2PM, 3PM on Saturday.



VENUS

1. **Tau Beta Pi** - Florida Gamma - presents an interactive exhibit focusing on some of the science and engineering principles that shape our world! Visitors can expect cabbage juice, marshmallows, and some educational fun.
2. **Boys Scouts** - BSF - Boy Scouts Activity
3. **Society of Women Engineers** - We will have a robotic hands station where visitors can make a mock-prosthetic hand out of cardboard, straws and string. At the top of each hour we will have an elephant toothpaste showing. There will be a lava lamp station where visitors make a lava lamp out of oil and water. And finally there will be a magnetic slime station as well as paper airplanes.



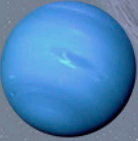
SATURN

1. & 2. **Institute of Transportation Engineers** – CUTR 22 & 1st Floom Lobby - Demonstration of Traffic Signal Control Device, Motorcycle Simulator, and Transportation Jeopardy Game.



JUPITER

1. **International Solar Energy Society** - We will demonstrate and discuss the past, present, and future technologic advances in therapeutic hypothermia after cardiac arrest.
2. **Engineering Expo Booth** - Experiments related to materials.
3. **National Society of Black Engineers & Society of Asian Scientists Engineers** - Bouncy Ball Activity, Create Your Own Electric Motor Activity, TumbleWing Airplane Activity, and Ice Fishing Activity.
4. **Environmental Protection Commission (Friday Only)** - EPC of Hillsborough County - Environmental Engineering and Protection
5. **USF Geology Club** - We are planning on building a “dig pit” that is 8’ by 8’ and contains extinct fossils, ancient Roman coins, and rocks such as geodes and minerals.
6. **USF Engineering Expo Community Outreach Lectures** - STEM Lecture Series: Featuring keynote speakers Dr. Ralph Fehr to present Engineering in the Future, and Professor Antonio Paris to present Engineering on Mars. On Friday, Dr. Fehr will lecture at 11am & 1pm, and Professor Paris will lecture at 12pm & 2pm. On Saturday, Dr. Fehr will lecture 11am & 1pm.
7. **Girls Scouts of West Central Florida** - We’ll be doing Inertia Towers.
8. **Douglas L. Jammerson Jr. Elementary** - Design and drop a parachute with fifth grade students from Douglas Jamerson Elementary! How does area affect velocity? Which designs best overcome the force of gravity, allowing for a safe landing?
9. **Greco Middle School STEM Engineering Academy** - We will provide hands-on STEM activities for all ages.
10. **Engineers Without Borders**
11. **American Society of Mechanical Engineers** - We plan to have two medium sized trebuchets, both having buckets where different amounts of weight can be added in order to influence various trajectories. We will have two corn hole boards with oversized holes. We will explain the mechanics and physics behind the trebuchets, then have children pick weights to place in the buckets, stand back, and we will



NEPTUNE

1. **USF-SE Balsa Bridge Competition (Saturday Only)** - CHE 111 - Here, middle school and high school students and teachers in Hillsborough and neighboring counties have been creating and competing strong bridges out of balsa wood. Students can gain some experience and understanding of mathematics, problem-solving, engineering and teamwork.
2. **Girl Scouts** - CHE 100 (Saturday Only) - Girl Scouts Activity
3. **Bell Creek Academy High & Middle School** - Come to Bell Creek Academy’s exhibit and make a miniature hovercraft of your own that you can take with you! Using a CD, a balloon, and a few other household items, our 7th and 8th grade middle school students will help you create an awesome hovercraft.
4. **FWEA & AWWA** - Our exhibits introduce students to concepts of environmental and water resource engineering.
5. **American Institute of Chemical Engineers** - If you hear a large explosion, do not be afraid! The American Institute of Chemical Engineers and the Chemistry Society have teamed up to create the largest and safest chemical magic show at USF. Experiments include our classic Ping-Pong Ball Explosion going off every 15 minutes, come learn about chemical properties as we conduct 11 different experiments. Experiments range from lighting a scientist’s hand on fire to creating a silver mirror in a test tube to a dragon breathing fire. The exhibit has something for everyone and even includes hands-on activities and an experiment for kids to take home.