USTEP 2025 Course Catalog

UVA Society of Women Engineers: University Student Taught Engineering Program

Engineering for the People: An Introduction to UX

In this session, you will gain a powerful introduction to user-centered design and learn how to create intuitive, user-first experiences. Through focused exercises and activities, you will explore how empathy plays a key role in designing solutions that truly meet the needs of diverse users. By the end of the session, you will have practical insights and hands-on skills to start thinking about design in a whole new way—making your creations not only functional but truly impactful. This quick, action-packed session is your first step toward becoming a designer who puts people at the heart of every project!

Science in Motion: The Magic of Lava Lamps

In this class, you'll explore the fascinating science behind a DIY lava lamp experiment. Using simple materials, you'll uncover how density, molecular polarity, and chemical reactions work together to create a mesmerizing display of bubbling "lava." By the end of the session, you'll have your very own lava lamp and a fun, engaging way to share these exciting concepts—making science interactive and accessible!

Intro to Hacktivism: Hacking for a Cause!

Ever wanted to learn how hackers compromise systems? Or how some have used hacking as a way of protesting? This workshop covers hacktivism, through both a social and technical analysis of socially and/or politically motivated cyberattacks. Notable hacktivist groups and events will be covered to open a discussion on the ethics of hacktivism as a while. Gain a technical understanding of how these attacks were carried out through hands on experience with SQL injection attacks and firewall defense through beginner friendly mini games.

Rise to Stardom: The Life and Legacy of our Sun

Blast off into the world of astrophysics! In this session, you'll step into the shoes of a real astrophysicist and embark on an epic journey through time and space. Witness the dramatic birth of stars, follow their incredible life stories, and experience the fiery finale of their cosmic adventures. Imagine the Sun's future and uncover its secrets like never before. Plus, get hands-on as you build your very own spectroscope to unlock the hidden colors of sunlight and discover why the sun is so important to our everyday lives. Get ready for an out-of-this-world experience!

Escaping the Logic Labyrinth

In this session, you will be tasked with the mission of rescuing Hansel and Gretel from the evil witch by solving an escape room. Immersed in the world of binary numbers, you will be solving a series of challenges where you will apply your knowledge of Boolean algebra, logic gates, and circuits to find the breadcrumbs leading up to the witch's house. Get ready to embark on a fun-filled journey!

Taking Flight: Model Kites

Build your own miniature kite while learning how they work! We all live on Earth with a force called gravity that is ever present, keeping us on the ground. Gravity is the reason a basketball ball will fall back down after you throw it into the hoop. So how do birds, airplanes, and kites make a life in the sky if gravity persists? Learn the terminology and basic concepts behind airplanes wings and the forces that guide them.