Special Topics Program

SPRING 2023 TOPICS

IMPORTANT: HIGH SCHOOL STUDENTS IN LUBBOCK AND SURROUNDING TOWNS MAY SIGN UP FOR IN-PERSON MEETINGS. ALL LISTED MEETING TIMES ARE TENTATIVE AND MAY BE CHANGED AT THE DISCRETION OF THE STUDENTS AND MENTORS. MEETING LOCATIONS WILL BE DETERMINED BASED ON STUDENT INTEREST AND AVAILABILITY.

Intro to Animal Science

Animal science is the study and management of domestic livestock such as cattle, horses, sheep, goats, swine, and companion animals. Students will develop the skills to determine the breeds of all these species. We will have fun learning about the importance of each species as we go through them. The program is intended to give students a head start in the animal science degree program. Every session, students will watch a presentation and play games to help their brains remember the material. They will be encouraged to study on their own time so that they can learn more easily when the next session arrives.

In-Person Meeting Time: Mondays at 6:00PM, location TBD

Chemistry and Biology in Our Lives

Chemistry and biology is all around us, in our bodies, in our air, and even in the food we eat. This topic focuses heavily on biology and chemistry and how they apply to our everyday life, with an emphasis on medicine and an exploration of other fields, such as nutrition, cosmetic science, and more. Students will leave the program with a basic understanding of biological mechanisms and the chemistry that occurs in the body by engaging in short lectures and discussions to solidify what they have learned. By the end of the program, students will create their own individual projects bridging what they learn in their own biology and chemistry classes versus how they see it in the real world.

In-Person Meeting Time: Thursdays at 6:00PM, location TBD

Electronic Product Design with the Raspberry Pi

This affordable minicomputer is the newest wave for rapid prototyping small scale engineering projects. Learn how to write functional scripts using Python and Bash, design basic circuitry, and use CAD software including Fusion360 and Eagle CAD. We will take you from project ideation to all the way to final product testing, with additional focus on teamwork and collaboration. All course materials will be provided and no prior knowledge or skill are needed as well as the course will be offered in both in person and online.

In-Person AND Online Meeting Time: TBD, location TBD

Web Design: Intro. to Personal Branding

The goal of this topic is to introduce tools, concepts, and discussions that will allow students to build their own unique personal brand website. The value of a personal website is to showcase their strengths (through a portfolio and/or resume), communications skills (through a blog/article), and design skills (by creating an aesthetic space). This semester the group will utilize web design platforms including Wix, Canva, and more. Once a week, students will meet to be introduced to a new section of a personal website, discuss aspects of each section in small groups, and create their own version for their website.

In-Person AND Online Meeting Time: Thursdays at 5:30PM

Location: Texas Tech Innovation Hub and Zoom

Writing Outside the Lines

"Either write something worth reading or do something worth writing." -Benjamin Franklin

Life is full of moments, big, small, dull, bright, and everything in between. Everyone has a story to tell and a perspective to share. This course will allow us to take an idea, prompt, quote, and much more and write our takeaways from it. This is a chance to show who you are and what amazing ideas you have to offer. It is a relaxed environment to open doors for a creative outlet to help grow as writers, and as individuals.

In-Person AND Online Meeting Time: Wednesdays at 6:15PM

Location: TTU Library

Intro to Astronomy and Environmental Sciences

This online group will lead students on a survey through both astronomy and environmental sciences, including where they overlap. In the astronomy portions of the program, we'll look at the solar system and its exploration, galaxies and exoplanets, and the life cycle of stars. The environmental science aspect will focus on the nature of environmental science, the relationship between society and ecosystems, as well as the concept of sustainability and sustainable development. This group will also focus on teaching students to read and understand research papers from both fields. The work students will be expected to complete includes weekly readings, a presentation on the topic of the student's choice relating to astronomy and/or environmental science to be given at the end-of-semester seminar, self-assessment works, and projects using web-based software. Students should plan to spend about an hour, outside of meetings with the group, on the assigned work.

Online Meeting Time: Mondays at 5:00PM

Creative Writing

Students will be exposed to and practice fundamental writing styles, methods, techniques, structures, tropes, and character development of short stories and poetry. Students are encouraged to write on topics and subjects that interest them; no prompt will be provided unless requested. Every student will write a fiction, non-fiction, or poetry piece of no required length, and will present it to the group in order to receive helpful and constructive feedback. This program is designed to be a discussion and project-rooted engagement, as students are expected to present original content.

Online Meeting Time: Saturdays at 6:00PM

Introduction to Computer Science

Computer Science is a broad field of study, therefore it can be daunting for new students to break through into the fantastic world of CS. Our course will help students by introducing them to key concepts in computer science. Our goal is the make sure that the students are well-equipped to enter the world of computer science and continue their studies independently.

The program will include concepts like programming, algorithms, data structures, databases(SQL), Cybersecurity, Web development, Software development, and more. The program will be conducted in 1 hour weekly meetings, with maximum emphasis on in-class participation and minimal extra work.

Online Meeting Time: Saturdays at 6:00PM