



CREATING A WORKFORCE OF CYBER-TRAINED EDUCATORS

Summer 2021 CyberCity Educator Workshops

The multi-year CyberCity Initiative funded by the George Kaiser Family Foundation seeks to infuse cyber education in every school, eventually in every classroom in the Tulsa metropolitan area. In the middle ages, students learned long division in college; now children learn it by fourth grade. It is imperative to impart cyber education and skills throughout the K-12 system, helping energize a generation of cyber-savvy tinkerers and innovators who may well transform Tulsa and its economy.

Five CyberCity Educator Workshops will be conducted during the summer of 2021 to stimulate and enhance curricular and extra-curricular cyber activities in elementary, middle and high schools. The workshops will prepare K-12 grade educators to impart cyber, programming and cyber security learning experiences through grade-appropriate, standards-based activities. Workshop activities will include content lessons, hands-on laboratories, cooperative games and competitions in a variety of classroom settings.

All five CyberCity Educator Workshops will be conducted in in-person, half-day formats over ten days (two contiguous weeks).



The *Python Programming Workshop* for High School Computer Science Educators will be capped at 24 participants. The remaining four *Cyber and Cyber Security Workshops*, designed for K-2 Grade Educators, 3-6 Grade Educators, 6-8 Grade Educators and 6-12 Grade Educators, will be capped at 40 participants. Groups of two to four teachers from Tulsa-area schools are encouraged to participate in the four Cyber and Cyber Security Workshops to create critical mass, foster collaborative efforts during the academic year and infuse cyber curricula and activities in their schools.

Depending on the instructional level of a CyberCity Workshop, each participant will receive equipment (Raspberry Pi computer with a keyboard, mouse and monitor, and/or programmable robot), software and assorted learning materials collectively priced at \$200 to \$450. Additionally, each CyberCityWorkshop participant will receive a \$700 stipend.

For additional information, please contact Professor Kimberly Adams (kimberly-adams@utulsa.edu) and Professor Sujeet Shenoi (sujeet@utulsa.edu)



Python Programming Workshop (High School Computer Science Educators)

Weeks of June 14 and June 21 (10 Days)

Morning Sessions Only: 8:30AM to 12:00PM

Maximum Participant Count: 24

Workshop Content

- **System and Software Installation and Use:** Raspberry Pi setup, configuration and debugging, Linux operating system and installation and use of Python, Anaconda, Jupyter Notebook, GitHub and text editor.
- **Python Programming Topics:** Variables and sample data types, lists, queues and stacks, control statements and program development, functions and classes, Python standard libraries and files.
- **Python Programming Projects:** Caesar cipher implementation (individual) and Advanced Encryption Standard (AES) cryptosystem implementation (group).
- **Cyber and Cyber Security Topics:** Basic cyber concepts, cyber ethics and cyber bullying, online safety, Internet of Things, cyber threats and risks, and cyber security best practices.

Participant Equipment/Supplies/Stipend

Raspberry Pi computer with keyboard, mouse and monitor, cyber security breakout game software, 12 cyber security game card decks, CyberCity t-shirt and \$700 stipend.

Contact

Professor Vidhyashree Nagaraju (vidhyashree-nagaraju@utulsa.edu).

[Python Programming Workshop for High School CS Educators Application](#)

Cyber and Cyber Security Workshop (K-2 Grade Educators)

Weeks of June 14 and June 21 (10 Days)

Morning Sessions Only: 8:30AM to 12:00PM

Maximum Participant Count: 40

Workshop Content

- **Sphero Bolt Robot Programming Topics:** Sphero Bolt robot setup and configuration, robot programming, block coding with Scratch and JavaScript.
- **Cyber and Cyber Security Topics:** Basic cyber concepts, cryptography for K-2 grade students, cyber ethics and cyber bullying, online safety, Internet of Things, cyber threats and risks, creating cyber security games for K-2 grade students and cyber security best practices.

Participant Equipment/Supplies/Stipend

Sphero Bolt programmable robot, cyber security breakout game software, 12 cyber security game card decks, CyberCity t-shirt and \$700 stipend.

Contact

Professor Kimberly Adams (kimberly-adams@utulsa.edu).

[Cyber and Cyber Security Workshop for K-2 Grade Educators Application](#)

Cyber and Cyber Security Workshop (6-8 Grade Educators)

Weeks of June 14 and June 21 (10 Days)

Afternoon Sessions Only: 1:00PM to 4:30PM

Maximum Participant Count: 40

Workshop Content

- **Python Programming Topics:** Raspberry Pi setup, configuration and debugging, and basic Python programming.
- **mBot Robot Programming Topics:** mBot robot setup and configuration; robot programming and block coding.
- **Cyber and Cyber Security Topics:** Basic cyber concepts, cryptography for 6-8 grade students, cyber ethics and cyber bullying, online safety, Internet of Things, cyber threats and risks, creating cyber security games for 6-8 grade students and cyber security best practices.

Participant Equipment/Supplies/Stipend

Raspberry Pi computer with keyboard, mouse and monitor, mBot programmable robot, cyber security breakout game software, 12 cyber security game card decks, CyberCity t-shirt and \$700 stipend.

Contact

Professor Kimberly Adams (kimberly-adams@utulsa.edu).

[Cyber and Cyber Security Workshop for 6-8 Grade Educators Application](#)

Cyber and Cyber Security Workshop (6-12 Grade Educators)

Weeks of July 12 and July 19 (10 Days)

Morning Sessions Only: 8:30AM to 12:00PM

Maximum Participant Count: 40

Workshop Content

- **Python Programming Topics:** Raspberry Pi setup, configuration and debugging, and basic Python programming.
- **mBot Robot Programming Topics:** mBot robot setup and configuration, robot programming and block coding.
- **Cyber and Cyber Security Topics:** Basic cyber concepts, cryptography for 6-12 grade students, cyber ethics and cyber bullying, online safety, Internet of Things, cyber threats and risks, creating cyber security games for 6-12 grade students and cyber security best practices.

Participant Equipment/Supplies/Stipend

Raspberry Pi computer with keyboard, mouse and monitor, mBot programmable robot, cyber security breakout game software, 12 cyber security game card decks, CyberCity t-shirt and \$700 stipend.

Contact

Professor Kimberly Adams (kimberly-adams@utulsa.edu).

[Cyber and Cyber Security Workshop for 6-12 Grade Educators Application](#)

Cyber and Cyber Security Workshop (3-6 Grade Educators)

Weeks of July 12 and July 19 (10 Days)

Afternoon Sessions Only: 1:00PM to 4:30PM

Maximum Participant Count: 40

Workshop Content

- **Python Programming Topics:** Raspberry Pi setup, configuration and debugging, and basic Python programming.
- **mBot Robot Programming Topics:** mBot robot setup and configuration, robot programming and block coding.
- **Cyber and Cyber Security Topics:** Basic cyber concepts, cryptography for 3-6 grade students, cyber ethics and cyber bullying, online safety, Internet of Things, cyber threats and risks, creating cyber security games for 3-6 grade students and cyber security best practices.

Participant Equipment/Supplies/Stipend

Raspberry Pi computer with keyboard, mouse and monitor, mBot programmable robot, cyber security breakout game software, 12 cyber security game card decks, CyberCity t-shirt and \$700 stipend.

Contact

Professor Kimberly Adams (kimberly-adams@utulsa.edu).

[Cyber and Cyber Security Workshop for 3-6 Grade Educators Application](#)



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