

# UCSD StudentTECH 2012

## Advanced Technology for High School Students

Sponsored by the San Diego Supercomputer Center,  
University of California, San Diego

### One Step Beyond: Intermediate Securing Computer Systems

Monday- Friday, August 6-10, 2012

Class meets at the San Diego Supercomputer Center from 8:30am - 3:00pm.

#### Introduction to Securing Computer Systems

##### Course Overview:

In this course, students will build on their knowledge from the first class and learn how to find and fix vulnerabilities and detect intruders. This class is a combination of theory and hands-on application, with more focus on applying hands-on skills. Students will learn how to use vulnerability scanners, scripting tools and will install a network intrusion detection system.

After participating in this course, the student will understand the fundamentals on how to secure an operating system. The student will also have secured a system and defended it from attack. The course will conclude with simulated network attacks from a Red Team (virtual bad guys) that students will have to detect and respond to the threat.

**Attendance at the first workshop in July is not required.**

##### Topics to be Covered During This workshop:

- Finding vulnerabilities
- Cyber security careers
- Understand network traffic
- Using a network intrusion detection system
- Scripting and programming
- Incident response
- Ethics

##### What to Expect:

*August 6, 2012*

##### **Day 1: Securing Operating Systems**

On this day students will review what they learned in the first class and new students will be given an overview on securing operating systems. They will also learn about cyber security related jobs.

*August 7, 2012*

##### **Day 2: Find and Fix**

Today will do an in depth look at finding and fixing vulnerabilities. Students will learn to automate this

process and write their own scripts to find vulnerabilities and apply patches.

*August 8, 2012*

**Day 3: Nibbles and Bits oh My!**

Students will learn how to capture and analyze network traffic. As part of this class students will set up an actual Intrusion Detection System and capture malicious traffic.

*August 9, 2012*

**Day 4: Someone's been in my computer system**

Students will learn what to do when they capture a bad guy on their network. The last half of the will be a live exercise.

*August 10, 2012*

Last Day

**Day 5: Game On!**

Students will put their skills to use and defend systems while they are being attacked by the Red Team.

**Instructor:** Chris Simpson, Instructor, San Diego Supercomputer Center, UCSD

**Prerequisites:**

- Must be a current high school student in grade 9–12.
- No previous programming experience is required.
- Eager to learn
- Successful completion of the Basic class is encouraged

**Course fee: \$225.00**

**Registration deadline: June 15, 2012. Space is limited.**

If you have any questions regarding this workshop or the application process, please contact Ange Mason via phone at 858 534-5064 or via email at [amason@ucsd.edu](mailto:amason@ucsd.edu).

*August 6-10, 2012*

Name: \_\_\_\_\_

Last	First	Middle
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Mailing address: \_\_\_\_\_

Street Address or Post Office Box	City/State	Zip
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Date of birth: \_\_\_\_\_ Age as of June 30, 2012: \_\_\_\_\_

Gender: \_\_\_\_\_ Male      \_\_\_\_\_ Female

San Diego County Middle or High School: \_\_\_\_\_

School name	District
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Grade completed by June 2012: \_\_\_\_\_

Email: (optional) \_\_\_\_\_

Name: \_\_\_\_\_

Mailing address: \_\_\_\_\_

Street Address or Post Office Box	City/State	Zip
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Telephone: (Home) \_\_\_\_\_ (Work) \_\_\_\_\_

Email: (Please Print) \_\_\_\_\_

**Please make your check or money order payable to UC Regents and submit both payment and application in a single envelope to the following address:**

Ange Mason  
Attn: Student Summer Workshops  
San Diego Supercomputer Center  
University of California, San Diego  
9500 Gilman Drive, Mail Code 0505  
La Jolla, CA 92093-0505