

# **UCSD StudentTECH 2012**

## **Advanced Technology for High School Students**

Sponsored by the San Diego Supercomputer Center and UCSD College  
Explorations at the  
University of California, San Diego

### **Introduction to Securing Computer Systems**

Monday-Tuesday and Thursday- Friday, July 2-3 and 5- 6, 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 learn the fundamentals of securing computer operating systems. This class is a combination of theory and hands-on application.

This course will show students how operating systems work and actions that can be used to make them more secure. As a part of the class, students will be given weak systems to secure. Students will learn about Windows and UNIX Systems. Once they are done, the systems will come under simulated attack by a Red Team (virtual bad guys) and will need to work to thwart the attack.

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.

#### **Topics to be Covered During this workshop:**

How operating systems work  
Cyber security careers  
Basic security measures  
What attackers look for  
Scripting and programming  
Detecting and fixing vulnerabilities  
Ethics

#### **What to Expect:**

*July 2, 2012*

#### **Day 1: Windows Operating System**

On this day students will learn how operating systems work and weak areas. They will learn the difference between a server and workstation. They will also learn about cyber security related jobs.

*July 3, 2012*

#### **Day 2: Blocking the Attacker**

Now that students know how an operating system works, on this day students will learn what attackers look for and the first steps they need to do to secure a system.

*July 5, 2012*

**Day 3: Tools, Tools, Tools**

Now that they have learned the fundamentals, students will learn about some of the tools they can use to detect and fix vulnerabilities. Students will also learn the basics of detecting attacks. On this day, students will learn how to automate their actions and actually write scripts to help secure systems.

*July 6, 2012*

**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, UCSD Instructor

**Prerequisites:**

- Must be a current high school student in grade 9–12.
- No previous programming experience is required. .
- Eager to learn

**Course fee: \$180.00**

**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).

# Introduction to Securing Computer Systems

July 2-3 and 5-6, 2012

## Applicant Information:

Name: \_\_\_\_\_  
Last First Middle

Mailing address: \_\_\_\_\_  
Street Address or Post Office Box City/State Zip

Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

Date of birth: \_\_\_\_\_ Age as of June 30, 2012: \_\_\_\_\_

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

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

Grade completed by June 2012: \_\_\_\_\_

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

## Parent or Legal Guardian Information (if applicant is under 18): (Please Print)

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

Mailing address: \_\_\_\_\_  
Street Address or Post Office Box City/State Zip

Telephone: (Home) \_\_\_\_\_ (Work) \_\_\_\_\_

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

**Course fee: \$280.00**

**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

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