

Indiana University of Pennsylvania's 2022

GenCyber

STUDENT CAMP

June 13 - 17, 2022

PROGRAM DETAILS

- Advanced virtual (via Zoom) cybersecurity camp for middle and high school students.
- Online pre-camp activity days (3/26/2022 & 5/7/2022) and post-camp activity day on 9/10/2022.
- Learn detailed information about cybersecurity.
- Learn hacking defense techniques.
- Acquire skills to land your dream job.

ADVANTAGES

- Offered at no cost!
- An Electronic Kit for each participant!
- Hands-on, engaging content
- Instruction and mentorship from IUP faculty and other experts!
- Skills and knowledge for a growing career field!
- Apply **NOW** space is limited!

Through this opportunity, you will learn safe online behavior, increase knowledge of cyberspace, and explore cybersecurity careers.

Apply today at www.iup.edu/iupgencyber

QUESTIONS?

e-mail:
gen-cyber@iup.edu

LOCATION

Online
(via Zoom)

PROJECT PI

Dr. Waleed Farag, Director,
IUP Institute for Cybersecurity

THIS PROGRAM
IS PROUDLY
SPONSORED BY:



PARTICIPATION ADVANTAGES

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**An Electronic Kit for
each participant!**

**Hands-on,
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content**

**Instruction and
mentorship from
IUP faculty and
other experts!**

**Skills and
knowledge for a
growing career
field!**

HOW TO APPLY

Applications are accepted online only. To apply or view other important program information, please visit:

www.iup.edu/iupgencyber

PROGRAM DATES

**Online Camp (via Zoom),
June 13 - 17, 2022 Daily
schedule from
9 AM - 3:30 PM**

**Online pre-camp activity
days (3/26/2022 & 5/7/2022)
and online post-camp activity
day on 9/10/2022
Daily schedule from
9 AM - 3 PM**

PROGRAM DIRECTOR

Dr. Waleed Farag
Director, Institute for Cybersecurity

Summer 2022 GENCYBER Student Camp



**Presented by:
IUP & NSA**

IUP GENCYBER

GenCyber is a national initiative that is supported by the National Science Foundation and the National Security Agency. This program has the following goals:

Ignite, sustain, and increase awareness of K12 cybersecurity content and cybersecurity postsecondary and career opportunities for participants through year-round engagement

Increase student diversity in cybersecurity college and career readiness pathways at the K-12 level

Facilitate teacher readiness within a teacher learning community to learn, develop, and deliver cybersecurity content for the K-12 classroom in collaboration with other nationwide initiatives

THE FUNDED GRANT

Under the leadership of Dr. Waleed Farag, grant PI, IUP, along with a selected group of national universities, has again been awarded funding for the seventh year in a row to run the GenCyber program in 2022.

This year, the camp is open to middle and high school students. The prospective camp will address essential security concepts in an interesting, novel approach to foster interest in cybersecurity among middle and high school students in Pennsylvania.

PROGRAM SUMMARY

This project is a free, five-weekday online camp in summer 2022, two online pre-camp activity days, and an online post camp activity day. Instruction will be delivered by a team of professors with numerous backgrounds but established expertise in cybersecurity teaching and research.

The student camp will provide a uniformly distributed, engaging blend of delivery that includes direct instruction, group activities, structured discovery, and hands-on, laboratory, and informal instructional techniques to both individual and combined cohorts.



CAMP SCHEDULE

Day One - June 13, 2022



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 9:20 a.m.

Brief camp orientation, schedule, and logistics
Dr. Farag

9:20 a.m. to 11:10 a.m.

Cybersecurity Life
Mr. Karnbauer

Encryption Basics
Dr. Wu

11:10 a.m. to 11:20 a.m.

Break

11:20 a.m. to 1:00 p.m.

Authentication Methods I
Mrs. Lint

Cybersecurity Life
Mr. Karnbauer

1:00 p.m. to 1:40 p.m.

Lunch Break

1:40 p.m. to 3:30 p.m.

Exploring Vulnerabilities
and Security in Insecure
Systems I
Dr. Wu

The Incredibles - Biometric
Authentication Method
Mrs. Lint

CAMP SCHEDULE

Day Two - June 14, 2022



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 11:00 a.m.

Secure Coding
Dr. Farag

Defense Against the Dark Hats:
Attack and Defense in
Cybersecurity
Dr. Orlando J. Hernandez

11:00 a.m. to 11:10 a.m.

Break

11:10 a.m. to 1:00 p.m.

Defense Against the Dark Hats:
Attack and Defense in
Cybersecurity
Dr. Orlando J. Hernandez

Enxploing Vulnerabilities
and Security in Zero-Trust Systems I
Dr. Wu

1:00 p.m. to 1:40 p.m.

Lunch Break

1:40 p.m. to 3:30 p.m.

What if? Conditional Clarity
Mrs. Lint

Digital Forensics I
Dr. Ezekiel

CAMP SCHEDULE

Day Three - June 15, 2022



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 11:00 a.m.

Network Troubleshooting-Availability
Mr. Karnbauer

Secure Coding
Dr. Farag

11:00 a.m. to 11:10 a.m.

Break

11:10 a.m. to 1:00 p.m.

What's your Function?
The Importance of using Functions in
Abstraction, Modularity, and Security
Mrs. Lint

Enxploring Vulnerabilities
and Security in Zero-Trust Systems II
Dr. Wu

1:00 p.m. to 1:40 p.m.

Lunch Break

1:40 p.m. to 3:30 p.m.

Configuring a Linksys Router
Mr. Karnbauer

Digital Forensics II
Dr. Ezekiel

CAMP SCHEDULE

Day Four - June 16, 2022



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 11:00 a.m.

Exploring Vulnerabilities and Security
in Insecure Systems II
Dr. Wu

Design for Security
Mr. Nigel Wright

11:00 a.m. to 11:10 a.m.

Break

11:10 a.m. to 1:00 p.m.

Design for Security
Mr. Nigel Wright

What If?
Condition Clarity
Mrs. Lint

1:00 p.m. to 1:40 p.m.

Lunch Break

1:40 p.m. to 3:30 p.m.

Strategic Defense in Design
Dr. Ezekiel

Network Troubleshooting-Availability
Mr. Karnbauer

CAMP SCHEDULE

Day Five - June 17, 2022



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 11:00 a.m.

Digital Forensics
Dr. Ezekiel

What's your Function?
The Importance of using Functions in
Abstraction, Modularity, and Security
Mrs. Lint

11:00 a.m. to 11:10 a.m.

Break

11:10 a.m. to 1:00 p.m.

End-of-Camp Competition
Mrs. Lint, Mr. Karnbauer, and Student Assistants

1:00 p.m. to 1:40 p.m.

Lunch Break

1:40 p.m. to 3:30 p.m.

Camp Conclusion, Post-Camp Surveys, and Certificates
Dr. Farag

CAMP SCHEDULE

Pre-Camp Day Two - May 7, 2022



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 10:45 a.m.

Intro to Networking
Mr. Karnbauer

Intro to Programming
Dr. Farag

10:45 a.m. to 10:50 a.m.

BREAK

10:50 a.m. to 12:35 p.m.

Programming by Design II
Mrs. Lint

Configuring a Linksys Router
Mr. Karnbauer

12:35 p.m. to 1:15 p.m.

LUNCH BREAK

1:15 p.m. to 3:00 a.m.

Encryption Basics
Dr. Ezekiel

Authentication Methods I
Mrs. Lint

CAMP SCHEDULE

Pre-Camp Day One - March 26, 2022



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 10:45 a.m.

Welcome, Introduction to Team Members, Orientation and Logistics
Pre-Camp Survey, Cybersecurity Concepts
Dr. Farag

10:45 a.m. to 10:50 a.m.

BREAK

10:50 a.m. to 12:35 p.m.

Intro to Security and Six GCC's
Mr. Karnbauer

Intro to Security and Six GCC's
Dr. Ezekiel

12:35 p.m. to 1:15 p.m.

LUNCH BREAK

1:15 p.m. to 3:00 a.m.

Programming by Design I
Mrs. Lint

Intro to Networking
Dr. Wu