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IUP's WINTER 2020-21

GENCYBER Student Camp

OFFERED REMOTELY FEBRUARY 2021

Sessions will be held on Feb. 6th, 7th, 13th, 14th, & 20th

**IUP GENCYBER: CYBERSECURITY CAMP FOR
MIDDLE AND HIGH SCHOOL STUDENTS**

- Learn detailed information about cybersecurity basics
- Learn hacking defense techniques
- Acquire skills to land your dream job
- Do any of the topics interest you? Apply today!

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

Advantages

Offered at no cost!

**Raspberry Pi
for each participant!**

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

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

**Apply NOW space is
limited!**

Questions?

gen-cyber@iup.edu

Program Directors

**Waleed Farag, Ph.D.
Computer Science**

**Raj Ezekiel, Ph.D.
Computer Science**

**Xinwen Wu, Ph.D.
Computer Science**



PARTICIPATION ADVANTAGES

Offered online and
at no cost!

Raspberry Pi Kit for
each participant!

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

VIRTUAL CAMP DATES

Feb. 6-7, 13-14, & 20, 2021

PROGRAM DIRECTORS

Dr. Waleed Farag
Director, Institute for Cybersecurity
Professor, Computer Science

Dr. Soundararajan Ezekiel
Professor, Computer Science

Dr. Xinwen Wu
Associate Professor, Computer Science

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Winter 2020-21 GENCYBER Student Camp

Presented by:
IUP, NSF & NSA

IUP GENCYBER

WINTER 2020-21 PROGRAM

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

- Increase interest in cybersecurity careers and diversity in the cybersecurity workforce of the nation.
- Help all students understand correct and safe online behavior.
- Improve teaching methods for delivering cybersecurity content for K-12 curricula.

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 five years in a row to run the GenCyber program in Winter 2020-21.

Due to COVID-19 restrictions, this year the camp will be offered remotely and 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 western Pennsylvania.

PROGRAM SUMMARY

This project will remotely offer one free (no cost to participants), five weekend day camp in Winter 2020-21. 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. Upon completion of the camp, participants will have a strong understanding of cybersecurity in addition to mastering basic skills that help them be safer online.

DAILY CAMP SCHEDULE

DAY 1 - FEBRUARY 6, 2021



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 9:50 a.m.

Session 1.1
Welcome, Introduction to Team Members, Orientation and Logistics
Dr. Farag

9:50 a.m. to 10:00 a.m.

BREAK

10:00 a.m. to 10:50 a.m.

Session 1.2
Pre-Camp Survey, Cybersecurity Concepts
Dr. Farag - HSS 126

10:50 a.m. to 11:00 a.m.

BREAK

11:00 a.m. to 11:45 a.m.

Session 2.1
Learn the Lingo I
Mrs. Gentile

Session 2.1
Social Engineering via Open
Source Intelligence I
Dr. Ezekiel

11:45 a.m. to 11:55 a.m.

BREAK

11:55 a.m. to 12:40 p.m.

Session 2.2
Learn the Lingo I
Mrs. Gentile

Session 2.2
Social Engineering via Open
Source Intelligence I
Dr. Ezekiel

12:40 p.m. to 1:20 p.m.

LUNCH BREAK

1:20 p.m. to 2:05 p.m.

Session 3.1
Learn the Lingo II
Mrs. Gentile

Session 3.1
Social Engineering via Open
Source Intelligence II
Dr. Ezekiel

2:05 p.m. to 2:15 p.m.

BREAK

2:15 p.m. to 3:00 p.m.

Session 3.2
Learn the Lingo II
Mrs. Gentile

Session 3.2
Social Engineering via Open
Source Intelligence II
Dr. Ezekiel

DAILY CAMP SCHEDULE

DAY 2 - FEBRUARY 7, 2021



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 9:50 a.m.

Session 1.1
Programming Security Applications
via Raspberry Pi
Dr. Farag

Session 1.1
Cyber Security Life
Mrs. Gentile

9:50 a.m. to 10:00 a.m.

BREAK

10:00 a.m. to 10:50 a.m.

Session 1.2
Programming Security Applications
via Raspberry Pi
Dr. Farag

Session 1.2
Cyber Security Life
Mrs. Gentile

10:50 a.m. to 11:00 a.m.

BREAK

11:00 a.m. to 11:45 a.m.

Session 2.1
Modern Encryption I
Mrs. Lint

Session 2.1
Exploring Information Hiding
(Steganography)
Dr. Ezekiel

11:45 a.m. to 11:55 a.m.

BREAK

11:55 a.m. to 12:40 p.m.

Session 2.2
Modern Encryption I
Mrs. Lint

Session 2.2
Exploring Information Hiding
(Steganography)
Dr. Ezekiel

12:40 p.m. to 1:20 p.m.

LUNCH BREAK

1:20 p.m. to 2:05 p.m.

Session 3.1
Modern Encryption II
Mrs. Lint

Session 3.1
Network Traffic Investigation I
Dr. Wu

2:05 p.m. to 2:15 p.m.

BREAK

2:15 p.m. to 3:00 p.m.

Session 3.2
Modern Encryption II
Mrs. Lint

Session 3.2
Network Traffic Investigation I
Dr. Wu

DAILY CAMP SCHEDULE

DAY 3 - FEBRUARY 13, 2021



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 9:50 a.m.

Session 1.1
Fast, Flexible Minds
Mrs. Gentile

Session 1.1
Programming Security Applications
via Raspberry Pi
Dr. Farag

9:50 a.m. to 10:00 a.m.

BREAK

10:00 a.m. to 10:50 a.m.

Session 1.2
Fast, Flexible Minds
Mrs. Gentile

Session 1.2
Programming Security Applications
via Raspberry Pi
Dr. Farag

10:50 a.m. to 11:00 a.m.

BREAK

11:00 a.m. to 11:45 a.m.

Session 2.1
Ensuring Confidentiality with
Python Programming
Mrs. Lint

Session 2.1
Defense Against the Dark Hats
Dr. Pearlstein

11:45 a.m. to 11:55 a.m.

BREAK

11:55 a.m. to 12:40 p.m.

Session 2.2
Ensuring Confidentiality with
Python Programming
Mrs. Lint

Session 2.2
Defense Against the Dark Hats
Dr. Pearlstein

12:40 p.m. to 1:20 p.m.

LUNCH BREAK

1:20 p.m. to 2:05 p.m.

Session 3.1
Defense Against the Dark Hats
Dr. Pearlstein

Session 3.1
Network Traffic Investigation II
Dr. Wu

2:05 p.m. to 2:15 p.m.

BREAK

2:15 p.m. to 3:00 p.m.

Session 3.2
Defense Against the Dark Hats
Dr. Pearlstein

Session 3.2
Network Traffic Investigation II
Dr. Wu

DAILY CAMP SCHEDULE

DAY 4 - FEBRUARY 14, 2021



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 9:50 a.m.

Session 1.1
Exploring Information Hiding
(Steganography)
Dr. Ezekiel

Session 1.1
Fast, Flexible Minds
Mrs. Gentile

9:50 a.m. to 10:00 a.m.

BREAK

10:00 a.m. to 10:50 a.m.

Session 1.2
Exploring Information Hiding
(Steganography)
Dr. Ezekiel

Session 1.2
Fast, Flexible Minds
Mrs. Gentile

10:50 a.m. to 11:00 a.m.

BREAK

11:00 a.m. to 11:45 a.m.

Session 2.1
Threats, Vulnerabilities and Attacks
Mr. Glavach

Session 2.1
Keeping Your Information Secure
Mrs. Lint

11:45 a.m. to 11:55 a.m.

BREAK

11:55 a.m. to 12:40 p.m.

Session 2.2
Threats, Vulnerabilities and Attacks
Mr. Glavach

Session 2.2
Keeping Your Information Secure
Mrs. Lint

12:40 p.m. to 1:20 p.m.

LUNCH BREAK

1:20 p.m. to 2:05 p.m.

Session 3.1
Network Traffic Investigation
Dr. Wu

Session 3.1
Threats, Vulnerabilities and Attacks
Mr. Glavach

2:05 p.m. to 2:15 p.m.

BREAK

2:15 p.m. to 3:00 p.m.

Session 3.2
Network Traffic Investigation
Dr. Wu

Session 3.2
Threats, Vulnerabilities and Attacks
Mr. Glavach



MIDDLE SCHOOL

HIGH SCHOOL

9:00 a.m. to 9:50 a.m.

Session 1.1
Social Engineering via
Open Source Intelligence
Dr. Ezekiel

Session 1.1
Message Authentication
Against Network Attacks
Dr. Wu

9:50 a.m. to 10:00 a.m.

BREAK

10:00 a.m. to 10:50 a.m.

Session 1.2
Social Engineering via
Open Source Intelligence
Dr. Ezekiel

Session 1.2
Message Authentication
Against Network Attacks
Dr. Wu

10:50 a.m. to 11:00 a.m.

BREAK

11:00 a.m. to 12:10 p.m.

Session 2.1
Virtual Escape Room Competition
Mrs. Gentile, Mrs. Lint, Mrs. Taylor & Others

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

LUNCH BREAK

12:50 p.m. to 1:50 p.m.

Session 2.2
Virtual Escape Room Competition
Mrs. Gentile, Mrs. Lint, Mrs. Taylor & Others

1:50 p.m. to 2:00 p.m.

BREAK

2:00 p.m. to 3:00 p.m.

Session 3
Camp Conclusion, Post-camp Surveys & Awarding Certificates
Dr. Farag