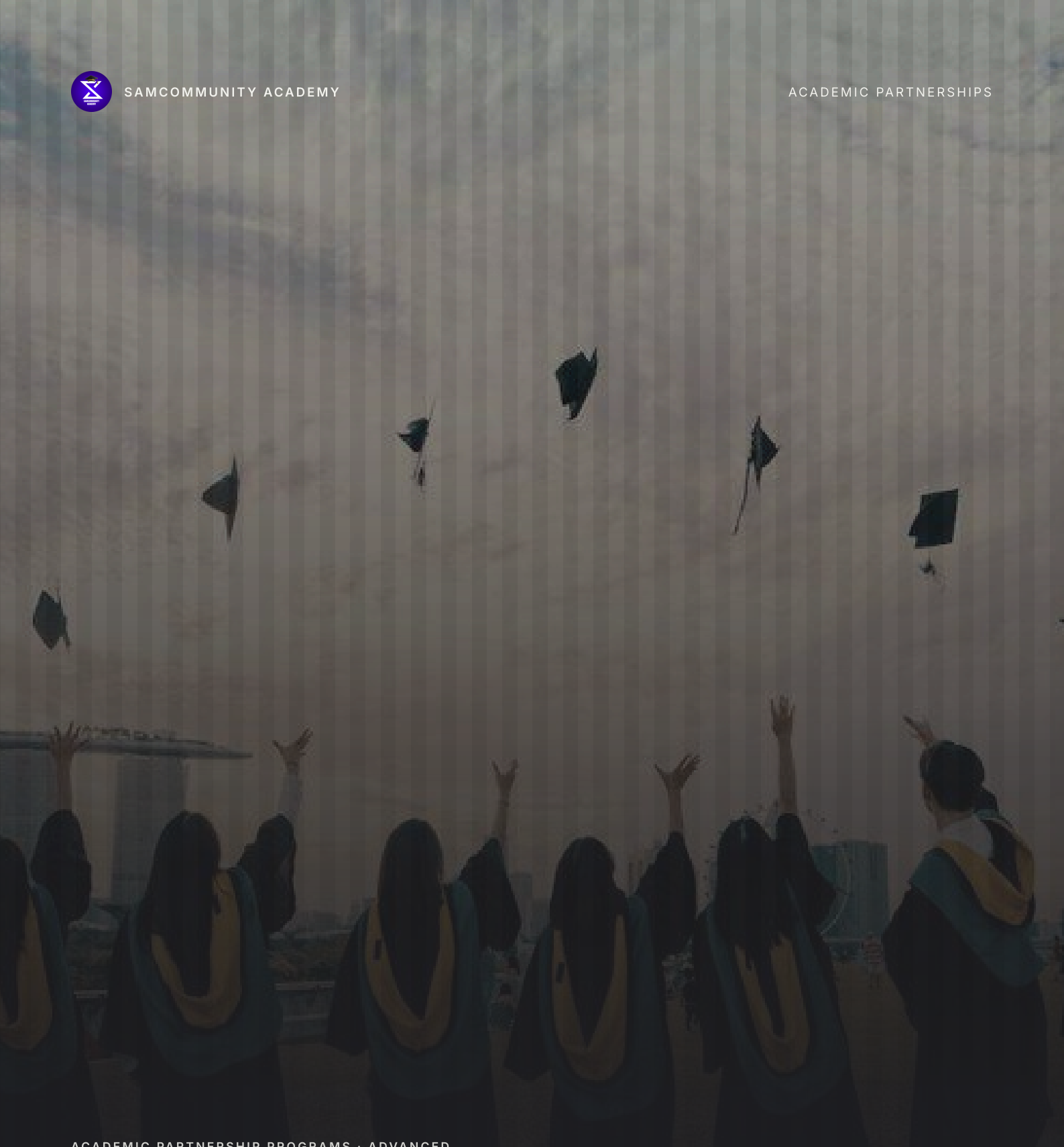


ACADEMIC PARTNERSHIP PROGRAMS · ADVANCED

Advanced Cybersecurity Research Internship

Research the threats of tomorrow.

3 MONTHS · 5 MODULES

SAM-IITCS · 2026

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LEVEL	Advanced
DURATION	3 Months
MODULES	5
CERTIFICATE	SAM-IITCS

Why this program

A research-focused internship on applied cybersecurity problems with industry mentors.

Cybersecurity advances through careful research into new threats, defensive techniques and better tools. This research internship gives strong students mentored experience working on applied security problems, from literature review and lab setup to experiments, validation and publication-ready reporting. Interns learn rigorous research methods, ethical and legal boundaries, and how to communicate findings clearly, building a credible research portfolio.



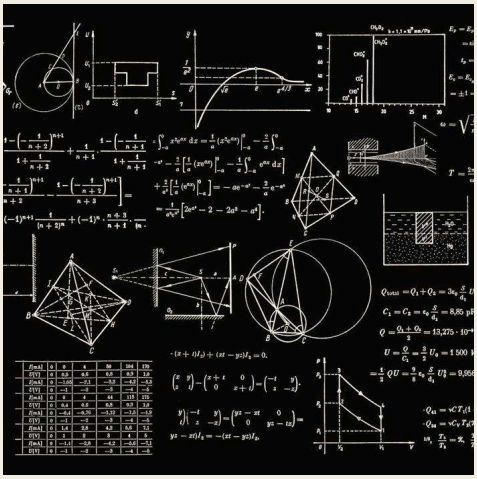
3
months of compact, practical sessions

5
focused modules, built around real work

3
projects plus a capstone presentation



Who this program is for



01

Vice-chancellors & deans

CoE, curriculum and accreditation support

02

Training & placement cells

Certification and placement readiness

03

Faculty

Faculty development programs

04

Top-tier students

Research internships, CTF academy, incubation

PREREQUISITES

- Solid foundation in networking and operating systems
- Working knowledge of Linux and Python
- Prior security coursework or CTF experience

DESIGNED FOR

- Security research interns
- Junior security researchers
- Threat research analysts
- Security tool developers
- Graduate research candidates

What you'll be able to do.

01 Formulate focused cybersecurity research questions from literature reviews

02 Build isolated, reproducible research labs using Linux and Kali

03 Automate data collection and analysis tasks with Python

04 Design and run experiments evaluating defensive security techniques

05 Validate findings rigorously and compare them with prior work

06 Write and present research reports following responsible disclosure

How the program works

Weeks 1–2: Research Foundations

Research methods in security, Literature review techniques, Research ethics and legal boundaries, Choosing a research problem.

Weeks 3–4: Tools and Lab Environment

Linux for researchers, Kali Linux tooling overview, Python for security automation, Virtualised isolated lab environments.

Weeks 5–8: Applied Research Work

Threat and vulnerability analysis, Security dataset analysis, Defensive technique evaluation, Mentor review sessions.

Weeks 9–10: Analysis and Validation

Statistical analysis of results, Validating findings, Comparing with prior work, Threats to validity.

01 · Weeks 1–2: Research Foundations

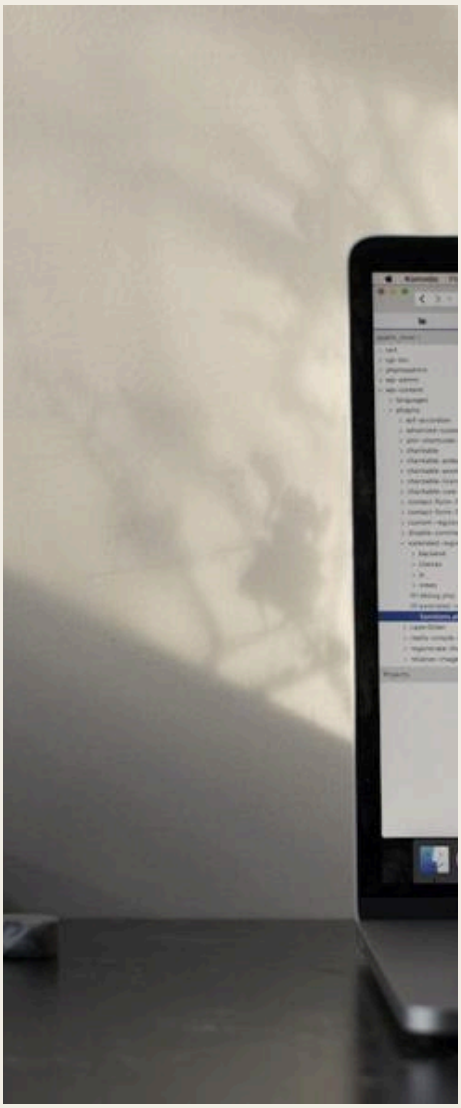
02 · Weeks 3–4: Tools and Lab Environment

03 · Weeks 5–8: Applied Research Work

04 · Weeks 9–10: Analysis and Validation

05 · Weeks 11–12: Publication and Presentation

★ Capstone · Applied Security Research Paper



The curriculum

MODULES 01–03

01 Weeks 1–2: Research Foundations

Practical: Write a literature review summary and research proposal on a chosen topic

- Research methods in security
- Literature review techniques
- Research ethics and legal boundaries
- Choosing a research problem
- Writing a research proposal

02 Weeks 3–4: Tools and Lab Environment

Practical: Build an isolated research lab and automate a data collection task

Kali Linux Python Linux

- Linux for researchers
- Kali Linux tooling overview
- Python for security automation
- Virtualised isolated lab environments
- Reproducible experiment setup

03 Weeks 5–8: Applied Research Work

Practical: Run planned experiments and record results in a structured research log

- Threat and vulnerability analysis
- Security dataset analysis
- Defensive technique evaluation
- Mentor review sessions
- Iterating on methodology



Curriculum, continued

MODULES 04–05

04 Weeks 9–10: Analysis and Validation

Practical: Validate findings with mentor review and refine the experiment design

- Statistical analysis of results
- Validating findings
- Comparing with prior work
- Threats to validity
- Peer review

05 Weeks 11–12: Publication and Presentation

Practical: Present research findings to a mentor panel and submit the final report

- Writing a research paper
- Technical report structure
- Responsible disclosure of findings
- Research presentation skills
- Building a research portfolio



What you'll focus on.

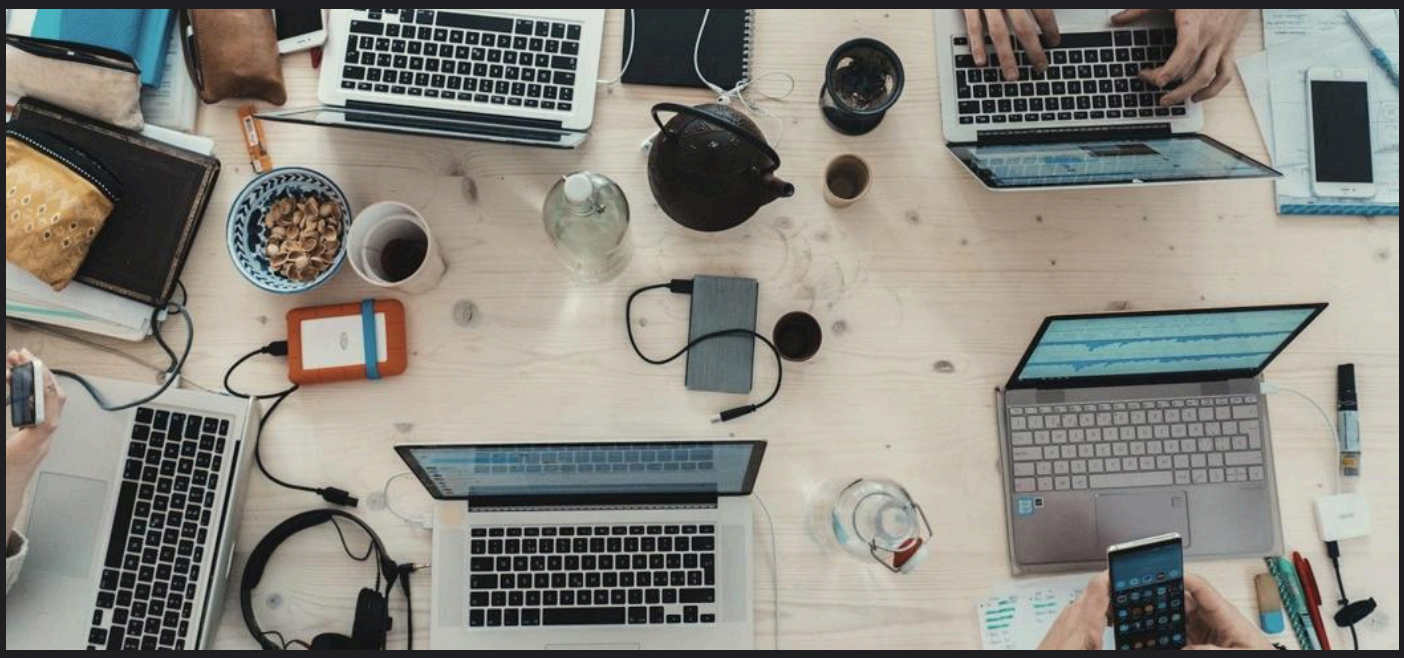
Weeks 1–2: Research Foundations 01

Weeks 3–4: Tools and Lab Environment 02

Weeks 5–8: Applied Research Work 03

Weeks 9–10: Analysis and Validation 04

Weeks 11–12: Publication and Presentation 05



Kali Linux
Security testing distribution

Python
Automation & scripting

Linux
Server & CLI fundamentals

Projects & capstone

01

Literature Review Survey

Survey recent research on a chosen security topic, summarising methods, findings and open problems in a structured review document.

02

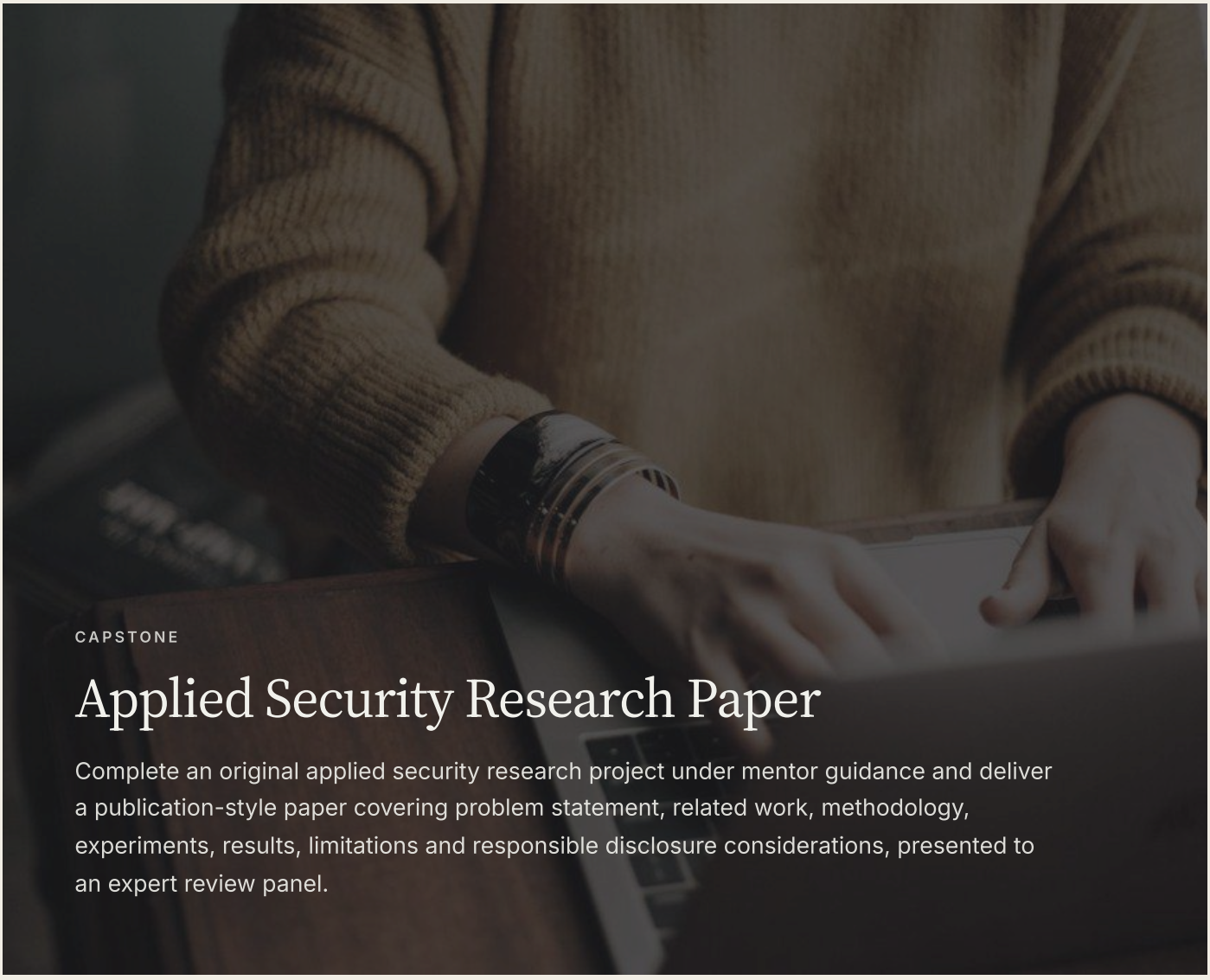
Reproducible Research Lab

Build an isolated, documented lab environment and automation scripts that others can use to reproduce your experiments.

03

Defensive Technique Evaluation

Design and run experiments comparing defensive techniques or detection approaches, reporting results with clear metrics and limitations.



CAPSTONE

Applied Security Research Paper

Complete an original applied security research project under mentor guidance and deliver a publication-style paper covering problem statement, related work, methodology, experiments, results, limitations and responsible disclosure considerations, presented to an expert review panel.

CERTIFICATION

SAM-IITCS

Awarded on successful completion of the program assessments.

- MCQ assessments
- Practical lab evaluation
- Project & capstone review
- Final presentation

HOW YOU LEARN · THE SAM LEARNING FRAMEWORK™

01 Scenario

Real-world attack and use-case scenarios open every module.

02 Apply

Hands-on lab work, CTF challenges and live projects.

03 Master

Assessment, peer review and certification prep.

04 Mentor

Post-program career guidance and support.



Delivery: Instructor-Led (ILT) · Virtual Instructor-Led · Self-Paced Online · E-Learning Licensing · Blended Learning · Corporate Onsite

Where this program fits

Advanced
You are here

Expert
3 programs

BEFORE THIS

A starting point — no prerequisite program needed.

UP NEXT

Capture The Flag (CTF) Academy	Ongoing
Bug Bounty Training & Mentorship	3 Months
Startup Technology Incubation Support	6 Months



Questions, answered

Do I need prior experience to join?

Yes. This is an advanced-level program that assumes prior experience in networking, operating systems, Linux and Python. It moves quickly into frameworks, case studies and hands-on work, so participants should meet the listed prerequisites before enrolling.

How is the program delivered and scheduled?

The 3 months program is instructor-led and mentor-guided, delivered live virtual or in a blended format with partner institutions. It combines scheduled sessions, mentor check-ins and independent project work planned around the academic calendar.

Will I receive a certificate?

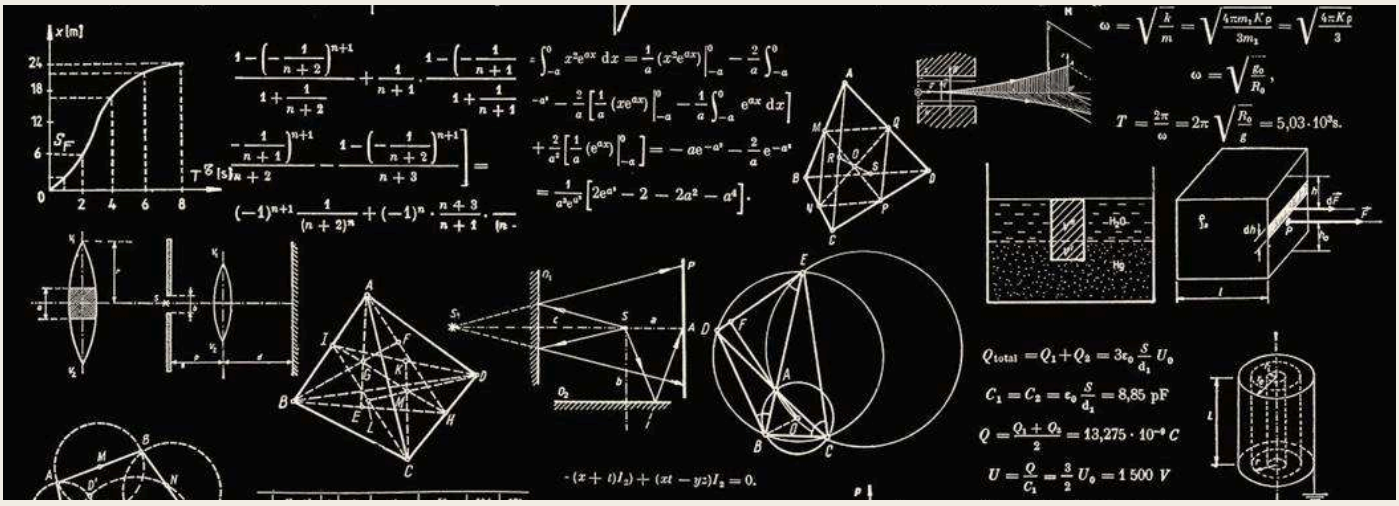
Yes. Participants who meet attendance requirements and successfully complete the assessments receive the Samcommunity Academy SAM-IITCS certificate. Assessments may include quizzes, practical exercises and a final capstone review, depending on the program format.

Will I get access to labs and tools?

Yes. Hands-on work uses a prepared lab environment with tools such as Kali Linux, Python, Linux. Access details are shared before the program starts, and all exercises run in isolated, authorised environments rather than live production systems.

Is career support included?

Participants receive mentor feedback, portfolio guidance and help presenting their work professionally. Samcommunity Academy may share relevant opportunities where available, but does not guarantee internships, jobs, rewards, bounty earnings or salary outcomes.





Begin with Advanced Cybersecurity Research Internship.

INDIVIDUALS

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CORPORATE & INSTITUTIONS

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