New Master of Science in Applied Cybersecurity and Digital Forensics

Revised Master of Cyber Forensics and Security
New Master of Science in Applied Cybersecurity and Digital Forensics

◆ Proposal is comprehensive and complete
  ▪ Consistent with existing programs at other institutions
  ▪ Shares courses from Kent Law
  ▪ Meets a clear market demand
    ● 36.5% projected growth rate
    ● 2 million person shortage in qualified cybersecurity personnel by 2019
New Master of Science in Applied Cybersecurity and Digital Forensics

◆ Research degree requiring a project or a thesis
  ▪ Department already has a large body of published graduate student research in applied steganography and cybersecurity management
  ▪ Supervise M.S. research for joint-degree students from Spain & France
  ▪ Next two tenure-track faculty hires will have significant potential for cybersecurity research
New Master of Science in Applied Cybersecurity and Digital Forensics

◆ PhD faculty concerns
  ▪ Half of full-time ITM faculty hold a PhD
  ▪ Six adjunct faculty members have PhDs
  ▪ No requirement or expectation for PhD faculty for ABET accreditation in cybersecurity
    • Impacts feeder Bachelor of Science in Applied Cybersecurity and Information Technology

◆ Substantive research degree is necessary to attract top cybersecurity faculty talent
Master of Cyber Forensics & Security

◆ Changes allow delivery of degree entirely online
  ▪ University of Maryland has online M.S. degrees in Cybersecurity Management & Policy and Cybersecurity Technology with over 12,000 students enrolled

◆ Degree retains research option

◆ Law classes in current degree are replaced with courses in Legal & Ethical Issues and Digital Evidence
Need for Degrees (NICE)

Source: National Initiative for Cybersecurity Education

1.5 Million MORE cybersecurity professionals will be needed to accommodate the predicted global shortfall by 2020

Source: (ISC)² 2015 Global Information Security Workforce Study

On average, 52% of IT professionals surveyed stated fewer than 25% of all applicants were qualified


The biggest skill gaps of today's cybersecurity professionals

72% Ability to Understand the Business
46% Technical Skills
42% Communication Skills


Cybersecurity job postings took 8% longer to fill than IT job postings overall

Fastest cybersecurity demand sectors are in industries managing consumer data

30% Other
40% Professional Services
14% Manufacturing and Defense
16% Finance and Insurance

Source: Job Market Intelligence: Cybersecurity Jobs, 2015-2016 Burning Glass Technologies

Expertise required for various cybersecurity roles in demand

- Information Security
- Network Setup
- Auditing
- Network Protocols

Approximately 10% of the current cybersecurity workforce are comprised of women
Need for Degrees

- Armed services
  - Services require graduate degrees for O-5s
    - They contract out delivery of these degrees
  - Massive growth in U.S. Cyber Command
    - U.S. Army Cyber Command
    - U.S. Navy Fleet Cyber Command / U.S. 10th Fleet
      - 16,000 personnel
      - Navy Information Forces
      - Information Warfare Corps
    - Twenty-Fourth Air Force (24 AF)
      - 14,000 personnel
    - U.S. Marine Corps Forces Cyberspace Command (MARFORCYBER)
Role in Cybersecurity

- Existing core for cybersecurity at Illinois Tech
- National Center of Academic Excellence in Cyber Defense Education
- SAT Center for Cyber Security & Forensics Education (C²SAFE)
- ForenSecure Conference in 15th year
- Most published peer-reviewed research in applied steganography—from a non-research department
Role in Cybersecurity

- Available DoD and NSF scholarship opportunities due to our status as a National Center of Academic Excellence in Cyber Defense Education
  - 2 year or 3 year, full tuition, books, and $33,000/year grad student stipend
  - Only open to U.S. citizens/permanent residents
  - Require 1-for-1 year payback
Role in Cybersecurity

Illinois Tech cybersecurity course offerings by course subject area:

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(PA courses are cross-listed with ITM)
800/801 Proposals

- Online under “Draft Documents” at http://www.itm.iit.edu/faculty/#draft
- Also includes this presentation
The End

Questions?

ILLINOIS TECH

ITM

INFORMATION TECHNOLOGY & MANAGEMENT