About UCL

• Established in 1826
  – First institution to welcome students of any race, class or religion, and female students on equal terms with men

• Today, a globally leading university with a strong research focus
  – 29 Nobel Prize Winners and 3 Fields Medalists
  – “London’s Global University”
UCL Computer Science

- 80 faculty, 300+ researchers
- Hosts the Science of Security Institute, recognized as Academic Centre of Excellence in Cybersecurity
- Ranked #1 in the UK as per recent Research Excellence Framework
Why Study Information Security at UCL?

• World-class faculty
• Cutting-edge research
• Hands-on experience and industry collaborations
• Balanced mix of theory and practice
Our Graduates

• Keenly sought by leading security organisations
  – UCL-CS international reputation, strong links with industry, and world-class research

• Top graduate destinations:
  – IBM, Ernst&Young, Cisco, KPMG

• Top graduate roles:
  – Security consultant, secure software designer, information protection advisor, security analyst

• Avg starting salary £31,200 (Jan 2013)
What We Teach

• Computer and Network Security
• Cryptography and Cryptanalysis
• Cybercrime
• Human-centered Security
• Privacy Technologies
• Software Security Engineering
Meet Our Faculty…
Earl Barr

• Research in program analysis, information theory, optimisation

• Teaches **Malware**
David Clark

- Research in analysis and verification, understanding software and specifications
- Teaches Malware, Language Based Security
Nicolas Courtois

- Research in cryptanalysis, crypto currencies, infosec
- Teaches Cryptanalysis, Applied Cryptography
George Danezis

- Research in anonymous comms, privacy technologies, cryptography engineering

- Teaches Computer Security I, Privacy
Emiliano De Cristofaro

- Research in applied crypto, privacy technologies, measuring security and privacy issues

- Teaches *Computer Security II, Intro to Crypto*
Brad Karp

- Research in systems security, wireless networks, distributed systems, networking, operating systems

- Teaches Distributed Systems and Security
Jens Krinke

• Research in program analysis, malware analysis, taint analysis, information flow control, bug detection

• Teaches Malware, Language Based Security
Granville Moore

• Research Co-Ordinator of Institute in Science of Cyber Security (RISCS)

• Teaches Information Security Management
Steven Murdoch

- Research in authentication, passwords, banking security, anonymous comms, censorship resistance and covert channels

- Teaches Research in Information Security
Angela Sasse

• Research in human and economic aspects of security, usable security

• Teaches People and Security
Gianluca Stringhini

- Research in social network security, web security, botnet mitigation, and cyber crime
- Teaches Computer Security II, Cybercrime
Jens Groth

- Research in cryptography, zero-knowledge proofs
Sarah Meiklejohn

- Research in cryptography, crypto currencies
David Pym

- Research in security economics, policy, logic, access control
Our Modules

• Four compulsory modules
  1. Introduction to Cryptography
  2. Computer Security I
  3. Computer Security II
  4. Research in Information Security

• Four optional modules
  – From “official” MSc ISec modules
  – From other programmes
MSc ISec Optional Modules

Four **optional** modules to choose from:

- Applied Cryptography
- Cryptanalysis
- Privacy Technologies
- Malware
- Language based Security
- People and Security
- Information Security Management
- Cybercrime
- Distributed Systems and Security
Other optional modules: Examples

- Interested in **Software Security Engineering**?
  - Requirements Engineering and Software Architecture
  - Validation and Verification

- Or **Human Aspects of Security**?
  - Understanding Usability and Use
  - Organisational Psychology
  - Sociotechnical Systems: IT and the Future of Work

- **More…**
  - Human Computer Interaction, Communications and Networks, Entrepreneurship, Risk, Regulation and Compliance, Elliptic Curves, etc.
Thesis

- Independent piece of research
- Thesis (50+ pages) + oral exam
- Can be completed whilst working alongside a company
Extra-Curricular Activities

• Weekly InfoSec Seminars
  – Invited speakers
  – UCL academics, researchers, PhD students

• Weekly Hacking Seminar

• Bitcoin Research Seminar

• Industry Day
Options

• Full-time MSc programme
  – 8 modules and a thesis in one year

• Part-time MSc programme
  – 8 modules over 2 years and thesis in last year
  – Students must be available to follow modules during day time teaching hours

• Diploma
  – 8 modules but no thesis
Prerequisites

- Bachelors or Masters degree in
  - Computer Science
  - Mathematics
  - Or other quantitative discipline

- Application
  - Ability to understand theory
  - Programming and understanding of algorithms
  - Good English language skills
  - Interest in Information Security
Schedule

• Term 1: October – December
• Term 2: January – March
• Exams for all modules: May
• Thesis: June – August
  (Preparation: January - May)
• Oral exam: September
• Graduation: November
Personal tutor

• Member of academic staff
• Academic advice
  – Should I take module X or module Y?
  – My thesis adviser and I do not get along
  – ...
• Confidential
• Problem with personal tutor
  – Course director, graduate tutor, Head of Dept
Student representative

• Speaks on behalf of the MSc group

• General issues that affect the entire group
  – Scheduling conflict between core modules
  – Suggestions for improvement
  – Etc
Relevant Contacts

Programme Director
  Dr Emiliano De Cristofaro
e.decristofaro@ucl.ac.uk

Admissions Tutor
  Dr George Danezis
g.danezis@ucl.ac.uk

Programme Administrator
  Sean Taylor
  sean.taylor@ucl.ac.uk
More info

UCL MSc ISec
http://www.cs.ucl.ac.uk/admissions/msc_isec/

UCL Information Security Group
http://sec.cs.ucl.ac.uk
https://benthamsgaze.org/ (blog)

Academic Centre of Excellence in Cyber Security
http://sec.cs.ucl.ac.uk/ace_csr/

@uclisec  UCL MSc Information Security