

What competencies do MTIS students gain?

MTIS

Professional and Program-specific competencies

Competencies are the skills, knowledge and attributes gained through every work, educational, volunteer and life experience. UVic students in the Master of Engineering in Telecommunications & Information Security (MTIS) program develop the following competencies.

Design and Analysis of Computer Communication Networks

Understands fundamental probability theory, random process, finite-state Markov chains and analyze network performance

- Queuing theory and discrete time queues
- Queuing models for media access, error control and traffic management protocols
- Quality of service
- Modelling of traffic and inter-arrival time
- Self similar distributions and traffic
- Switch design alternatives and performance modelling
- Simulation of networks

Advanced Network Security

Underlies principles and techniques of network security

- Ethical hacking and penetration testing
- Various protection methods, used in practice to detect and respond to malicious network attacks
- Successful security policies and defense mechanisms and strategies
- Intrusion detection and response
- Virtual private networks, and biometrics technologies

Computer Forensics Methodologies

Demonstrates knowledge of methods and tools used to conduct forensics examination

- Digital forensics notions and techniques used in the investigation of cybercrimes
- Legal awareness of computer security and forensics
- Computer forensics methodologies with an emphasis on computer incident response
- Ethics, rules of evidence, effective communications, search and seizure relative to privacy legislation
- Threats, how they can be detected, and controls to reduce the likelihood of their occurrence

Professional Practice and Career Development

Familiarizes with professional engineering practice, standards and ethics, and soft skills

- Digital forensics notions and techniques used in the investigation of cybercrimes
- Conflict resolution strategies
- Presentation and technical communication skills
- Project, risk, and time management
- Entrepreneurship and new ventures
- Career development and exploration
- Professional network building
- Cultural intelligence
- Health and safety in the workplace and for the general public

The UVic Faculty of Engineering develop this competency document.

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