

INST 346 Exam 1 Topic List  
As of February 16, 2018

Computers

- Processing cycle
- Moore's Law
- Computations using frequency (e.g., GHz) and time (e.g., ms)

Mobile Phones

- Sensors (e.g., gyroscope, compass, proximity)
- Position determination (GPS, WiFi, Cellular)

Wearables

- Fitness trackers
- Lifelogging
- Augmented reality
- Virtual reality

Storage

- (Magnetic) Hard disks
- RAID-5
- Optical disks (e.g., CD, DVD)
- Solid state "drives"
- Magnetic tape

File Types

- Text
- Images
- Audio
- Video
- Compression (lossy, lossless)

Backup and Recovery

- Types of risks to file integrity
- Strategies for mitigating risks
- Decorrelating risk
- White house email loss (Analysis Team 1)

Software Stack

- BIOS functions
- Operating system functions
- Mapping files to disk sectors
- Virtual memory

## Virtualization

- Virtual machines (emulation, paravirtualization)
- Containerization

## Encryption

- Symmetric key encryption (e.g., AES)
- Public key encryption (e.g., RSA)
- Hashing (e.g., SHA-2)
- Digital Signatures

## Access Control

- Multi-factor authentication (something you know, something you have, something about you)
- Desirable characteristics of passwords
- Usable security

## Malware

- Definition
- Types of malware
- Delivery mechanisms
- Prevention