



Topics Covered

- **Algorithms (~2 weeks)**
 - Algorithm design and pseudocode
 - Algorithm efficiency
 - Order of magnitude
 - Search & sort algorithms
 - Abstraction
- **Hardware (~4 weeks)**
 - Binary numbers
 - Data representation
 - Boolean logic and gates
 - Circuit design
 - Machine language
 - Computer systems
 - Computer networking
 - Security and privacy
- **Software (~4 weeks)**
 - Assembly language
 - Operating systems
 - Internet Protocols
 - High-level programming languages
 - Python (covered in CSCI 102; tested in CSCI 101)
- **Application: Artificial Intelligence (~2 weeks)**
 - Data Science
 - Machine Learning
 - Neural networks
 - Robotics
 - HCI
- **Social Issues in Computing (~1 week)**
 - Social, ethical, and legal issues

Course Modules (social issues throughout)

- Introduction
- Algorithms
- Binary Numbers
- Logic/Gates/Circuits
- Computer Hardware
- Operating Systems
- Networking and the Internet
- Security and Privacy
- Data Science
- Artificial Intelligence (ML, Robotics, AR/VR)
- HCI