Topics Covered

- **Algorithms (~2 weeks)**
  - Algorithm discovery
  - Algorithm design and pseudocode
  - Algorithm efficiency
  - Order of magnitude
  - Search & sort algorithms
  - Recursion
  - Abstraction
  - Unsolvable problems

- **Hardware (~4 weeks)**
  - Binary numbers
  - Boolean logic and gates
  - Circuit design
  - Data compression
  - Machine language
  - Computer systems
  - Networks
  - Security and privacy
  - Embedded systems
  - Virtual machines

- **Software (~4 weeks)**
  - Assembly language
  - Operating systems
  - The Internet Protocols
  - High-level programming languages
  - Functional programming
  - Logic programming
  - Parallel programming
  - Python

- **Application: Artificial Intelligence (~2 weeks)**
  - Data Science
  - Machine Learning
  - Knowledge representation model
  - Neural networks
  - Robots

- **Social Issues in Computing (~1 week)**
  - Social, ethical, and legal issues