What is Computer Science?

Welcome to CS 1011

- Course Description
  - An exploration of the essential ideas of Computer Science with emphasis on computers, computational thinking, and problem solving. This course also offers a brief examination of the modern information society and the influences of technological advances on society and culture.

- Basically:
  - What is computer science and what does it mean to be a computer scientist?
  - What kind of topics and sub-disciplines are a part of computer science?
  - How does that affect me and my daily life?
  - What if I'm interested in being a computer scientist?
  - (See course objectives on Blackboard for more details)

CS 1011 Topics

- What is Computer Science?

- How Computers Work

- Data And Resource Management

- Networks and Internet

- Security

- Artificial Intelligence

- Diversity and Social Impact

Introductions - Your Instructor

- Name: John Heaps
- Degree: PhD in Computer Science
- School: UTSA
- Research: Software Engineering, Vulnerability Detection, Privacy, Natural Language Processing, and Machine/Deep Learning
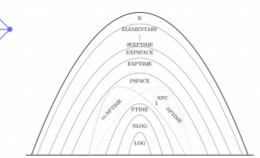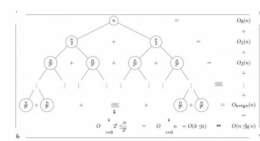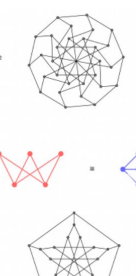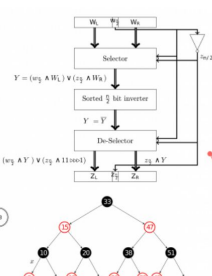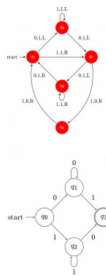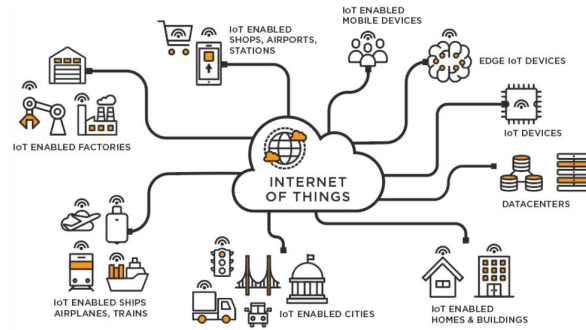
Introductions - Students

- Three major groups of students:
  - Those who know they want to be a CS major
  - Those who maybe want to be a CS major
  - Those who do not want to be a CS major

- First In-Class Assignment
  - Take a survey!
  - https://docs.google.com/forms/d/e/1FAIpQLScA9ZExanatuPV-JuoueWH7MDAx2v90vS1QbE0uEgtceG9IZA/viewform?usp=sf_link

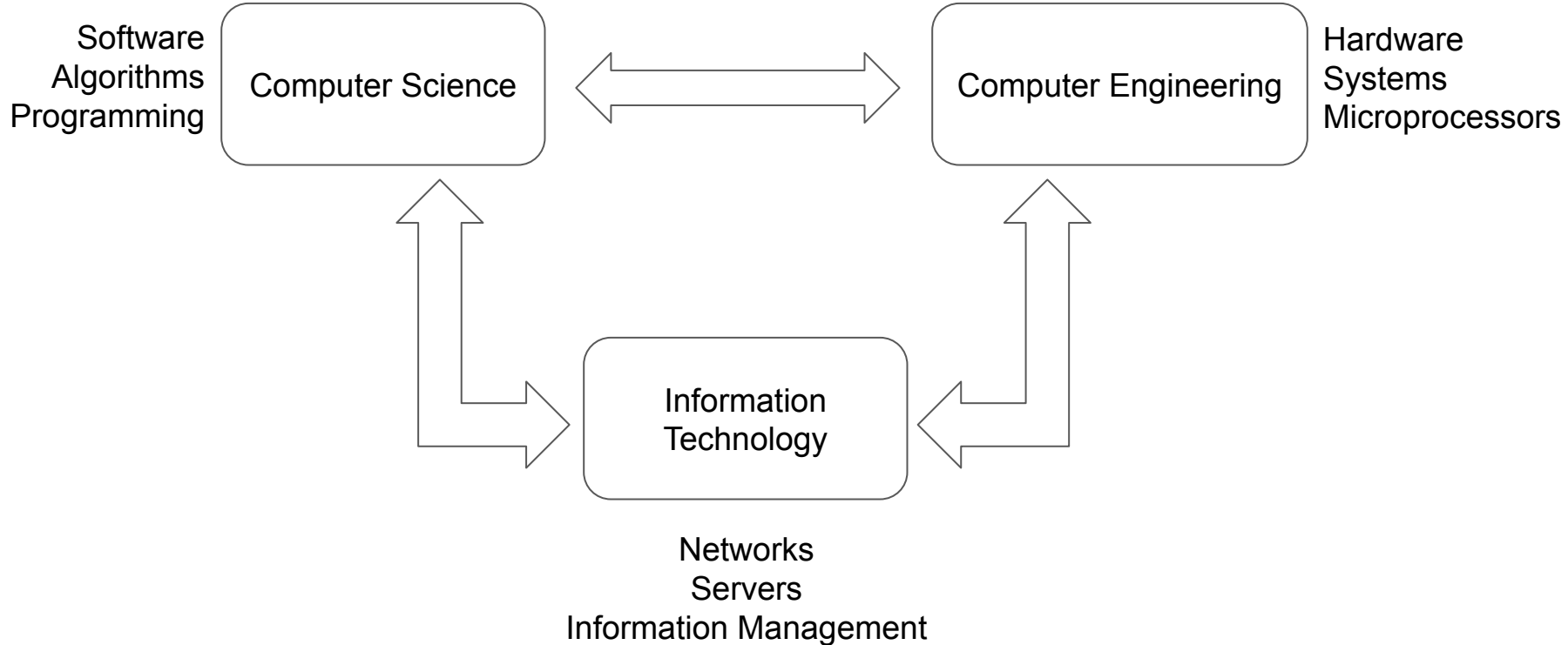# Syllabus and Schedule

What is Computer Science?

- The study of computers and algorithmic processes, including their principles, their hardware and software designs, their applications, and their impact on society.

Map of Computer Science

- How many topics and different disciplines of Computer Science are there, really?

- https://www.youtube.com/watch?v=SzJ46YA_RaA

The Big Three Computer Degrees

Software
Algorithms
Programming

Computer Science

Computer Engineering

Hardware
Systems
Microprocessors

Information
Technology

Networks
Servers
Information Management

Computer Science Degree Plan and Concentrations

Additional Activities

- Rowdy Hacks

- Senior Design

- Independent Studies (Undergrad Research Opportunities)

- Internships

- Student Organizations

What is a Computer?

- Hardware vs. Software

- Analog vs. Digital

- Turing Machine
  - https://www.youtube.com/watch?v=E3keLeMwfHY