CS1316 – Where it Fits

College of Computing
Georgia Institute of Technology has six Colleges

- College of Architecture
- College of Computing
- College of Engineering
- Ivan Alan College of Liberal Arts
- College of Management
- College of Sciences
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GaTech Computer Science Requirement

• All students at Georgia Tech must complete courses in math, science, humanities, social science, computing, and health & performance science.
• CS 1301 is one of three classes that fulfills the computing requirement.
• The three classes that fulfill the computing requirement are:
  • CS 1301 – Introduction to Computing (robots)
  • CS 1315 – Media Computation
  • CS 1371 – Introduction to Computing(matlab)
Georgia Tech CS 1 Options:

- **CS 1301 – Introduction to Computing**
  - Taught in Python with robots.
- **CS 1315 – Media Computation**
  - Taught in Python, students manipulate media (images/sounds).
- **CS 1371 – Introduction to Computing**
  - Taught in MATLAB.
  - Taken by all School of Engineering students.
What comes after CS 1301 / 1315 / 1371?

- After completing CS 1, computer science majors typically complete:
  - CS 1331 – Introduction to Object Oriented Programming
  - CS 1332 – Data Structures
CS 1331

- CS 1331-Introduction to OOP
  - Taught in Java
  - Introduces Object Oriented Programming
  - Reinforces skills learned in CS1301
- CS 1331 is required by all 8 possible threads in the CS major
- Also a prerequisite for the CS minor.
1316 teaches basic Java syntax, introduces object oriented programming and basic data structures.

It focuses on Media and Simulation more than 1331.

A student who has completed CS 1316 will have a large head start over other students enrolling in CS 1331.

A student with strong performance in CS 1316 can jump directly to CS 1332.
CS1332

- CS 1332 – Data Structures
  - Taught in Java
  - Teaches data representation and manipulation (advanced data structures).
- CS1332 is required by all but the People thread.
Minor in Computer Science

- CS 1331 (Prerequisite)
- 18 semester hours of computer science coursework, 12 of which must be 3000 level or higher.
  - Usually includes 1332
- At least 2 courses must be in the same thread to develop a depth in that thread.
The College of Computing is currently divided into three schools:

- School of Computer Science
- School of Interactive Computing
- School of Computational Science and Engineering
Undergraduate degrees such as the Bachelors of Science (BS) are “owned” by the College of Computing in general, and are not controlled by a School.

Undergraduate classes are taught by professors from all three schools.

To receive a bachelors degree in Computer Science, students must complete two “Threads”.
Threads

- A thread is a coordinated path through multiple courses so that the end result for the student is expertise in the area of the thread.
- Threads contain both CS courses as well as courses from outside Computer Science.
- A BS in Computer Science at Georgia Tech is defined as completing any two threads.
• **Modeling & Simulation:** Computing for representing the world, as in computational sciences. Examples include weather simulations, protein folding, crash simulations, epidemic modeling, etc.

• **Devices:** Computing meets the physical world, in such areas as robotics and real-time embedded systems such as cell phones.
• **Theory**: Fundamentals of computing, such as computer science theory. Examples include Algorithmic complexity, Automata Theory, Computability.

• **Information Internetworking**: Computing for storing, recalling, and communicating information. Includes aspects of databases, searching, and networking.
List of Threads (3/4)

- **Intelligence**: Computing as cognition, its representation and processes. Artificial Intelligence, Machine Learning are examples.

- **Media**: Computing for processing, creating, and presenting multimedia. Video compression, special effects, and image enhancement are examples.
• **People:** Computing meets people, including the design of human-centered systems. Examples include user interface design, recommender systems, social networks.

• **Platforms:** Computing across different kinds of hardware, with different characteristics and infrastructures. Computer architecture, operating systems, and programming languages.
Threads related to CS 1316

- The two threads that are most similar to CS 1316:
  - Modeling and Simulation
  - Media
- This class is a small sample of those two threads.