Course Overview

Coursework & Evaluation

- **Assignments: 55%**
  - **Homework assignments (9): 10%**
    - deadline: hard deadline, due by class time on the given due date
    - submission: email to me with the subject follows the format “CS232 Fall2016 HW# — Your Name”, grade based on submission
  - **Projects (9): 45%**
    - deadline: due by the midnight on the due date, late submission will be penalized up to 50%, two four-day extensions (except the final project)
    - submission: source codes to filer.colby.edu, write-up on wiki

- **Exams: 40%**
  - **Weekly quizzes (9): 25%**
    - usually every Friday
    - the lowest one can be dropped
  - **Final: 15%**

- **Class Participation: 5%**
  - attendance
  - ask and answer questions

Overview of Computer Organization

Why do we care?

- The hardware no longer becomes a magic black box
- Software runs on hardware: write better software
- Low-level software needs to know hardware details
- Understand the internals of computer networks better

Hardware parts of a computer?
Basic Concepts

Terminology
• Bit & Byte (KB, MB, GB, TB, PB)
• Hz (kHz, MHz, GHz, THz)

Base 2 integer encoding
• Everything in a computer is encoded into a string of 0’s and 1’s.
• Base 10 arithmetic
  - 346 is really $3 \times 10^2 + 4 \times 10^1 + 6 \times 10^0$
• Base 2 to base 10
  - 1101 is really $1 \times 2^3 + 1 \times 2^2 + 0 \times 2^1 + 1 \times 2^0 = 13$