# Welcome to 6.004.2x!

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## Welcome to 6.004.2x!

Computation Structures is a three-part course on the design and implementation of digital systems:

Part 1 — Digital Circuits

Part 2 — Computer Architecture

Part 3 — Computer Organization

This is Part 2 — Computer Architecture.

Throughout the course you'll get to roll up your sleeves (or at least take out your mouse) and use the concepts you've been learning to design a 32-bit computer. You'll use your browser to enter circuit schematics and assembly language programs, then use the built-in simulators to debug your work.

Thousands of MIT students have enjoyed tackling these challenges in the on-campus course and we think you'll have fun with them too. We hope you'll join us in exploring the world of digital circuits and computer architecture in the online version of Computation Structures.

### Course format

We've designed the course expecting you'll be able to spend about six hours each week viewing the videos, trying the lecture exercises, and practicing the tutorial problems.

The course is divided into four two-week sections:

- Designing an Instruction Set, Assembly Language, Assignment 1
- Compilers, Procedures and Stacks, Assignment 2
- Building the Beta, Assignment 3
- Memory Hierarchy, Hardware Caches, Assignment 4

Each section consists of one to two lecture chapters and an assignment. The lecture chapters are divided into three sections:

- Lecture Videos — include lecture videos and exercises.
- Worked Examples — include video of a sample tutorial problem being solved for you, and the sample problem itself.
- Tutorial Problems — lots of practice problems with detailed solutions to help you master the material.

We will post new lecture chapters each week to help you keep a good pace as you work on the course. Each assignment includes traditional questions and design problems where you'll use Jade, our schematic entry and simulation tool, or BSim our tool for entering and debugging assembly language programs.

The assignment due dates are as follows:

- **Assignment 1 — Exercises, Lab 5 — Due: Jan 11, 2016 at 23:59 UTC**
- **Assignment 2 — Exercises, Lab 6 — Due: Jan 18, 2016 at 23:59 UTC**
- **Assignment 3 — Exercises, Lab 7 — Due: Exercises due Jan 25, 2016 at 23:59 UTC, Lab 7 due with Assignment 4.**
- **Assignment 4 — Exercises, Lab 7 — Due: Feb 1, 2016 at 23:59 UTC**

Note that the assignment due dates are towards the end of the course, so if you need to take a short break from the course, there will still be plenty of time to catch up.

There is one exam in this course. It will be posted on **Feb 4, 2016 at 15:00 UTC**, and it will be due on **Feb 8, 2016 at 23:59 UTC**.

The cutoff date for signing up for a verified certificate is one week before the first assignment is due, which is on **Jan 4, 2016 at 23:59 UTC**.

Good luck and have fun!

## Discussion

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| Digital Circcuit as Prerequisite<br>Is Computation Structures Part 1: Digital Circuits a prereqisite to this course? | 3 |
| How hard would it be if i started now?<br>How hard would it be to complete this course starting now? | 11 |
| ALU for Lab 7<br>I have no ALU to use for lab 7 as I did not do part 1 of the computer architecture course. What can I do? | 3 |
| Verified certificate deadline - today? or Jan 4?<br>On this web page, right above this discussion, I see the following text: "The cutoff date for signing up for a verified certificate is on... | 2 |
| Introducing my self<br>Hi professor and hi to everyone. All The best for course. | 1 |
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