

EECS 10: Computational Methods in Electrical and Computer Engineering

Lecture 1

Rainer Dömer

doemer@uci.edu

The Henry Samueli School of Engineering
Electrical Engineering and Computer Science
University of California, Irvine

Lecture 1.1: Overview

- Introduction
 - Course overview
- Introduction to Computers
 - What is a computer?
 - What is programming?
- Course administration
 - Course web pages

Introduction

- Course Contents
 - Introduction to computers
 - Introduction to structured programming
 - C, a high-level structured programming language
 - Binary data representation
 - Introduction to algorithm efficiency
 - Solving engineering problems
 - Applications of structured programming
 - Hands-on experience
 - Laboratory and discussion sessions

Introduction to Computers

- What is a computer?
 - Digital device capable of executing programs
 - performing computations
 - making logical decisions
- What is a program?
 - Set of instructions which process data
 - input data (e.g. from keyboard, mouse, disk)
 - output data (e.g. to monitor, printer, disk)
- What is programming?
 - Creation of computer programs by use of a programming language

Introduction to Programming

- Categories of programming languages
 - Machine languages (stream of 1's and 0's)
 - Assembly languages (low-level CPU instructions)
 - High-level languages (high-level instructions)
- Translation of high-level languages
 - Interpreter (translation for each instruction)
 - Compiler (translation once for all code)
 - Hybrid (combination of the above)
- Types of programming languages
 - Functional (e.g. Lisp)
 - Structured (e.g. Pascal, C, Ada)
 - Object-oriented (e.g. C++, Java, Python)

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Course Administration

- Course web pages online at <http://eee.uci.edu/13z/18010/>
 - Instructor information
 - Course description and contents
 - Course policies and resources
 - Course schedule
 - Homework assignments
 - Course communication
 - Message board (announcements and technical discussion)
 - Email (administrative issues)

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