**Instructor:** B. Melis ÖZYILDIRIM (E-mail: mozyildirim\_at\_cu.edu.tr)

**Course Description:**

This course introduces the student to Binary Representations, IEEE 754 Floating Point Format, Algorithm design tools: flowcharts, pseudocodes, C programming language primitives, I/O functions, Random Numbers, Operations, Type Conversions, Precedence of Evaluation, Conditions, Loops, Functions, Recursive Functions, Arrays.

**Textbooks:**

“How to Think Like a Computer Scientist C Version”, Allen B. Downey, C-Version by Thomas Scheffler,2018

“Computer Science: A Structured Programming Approach Using C (3rd Edition)”, Behrouz A. Forouzan, Richard F. Gilberg

**Required Software:** Raptor Flowchart based Programming Environment (Algorithm Design)

Microsoft Visual Studio ( For C Programming Language)

**References:**

“Computer Systems A Programmer’s Perspective 3rd Edition”, Randal E. Bryant, David R. O’Hallaron

“Computational thinking for the modern problem Solver”, David D. Riley and Kennya. Hunt

“Pre-programming: Algorithmic Thinking Problem Solving and Programming Practices

Jorge Vasconcelos.Course” <https://www.cs.jhu.edu/~jorgev/cs106/>

“C Dersi: Programlamaya Giriş”, Nergiz Ercil Çağıltay,C. Fügen Elbes, Gül Tokdemir, Çiğdem Turhan

# Course Schedule:

Week 1: Introduction (Computer System, What is programming language?)

Week 2: Algorithmic Thinking Steps (Flowcharts/Pseudocodes)

Week 3: Problem Solving

Week 4: Representing Information (Binary Representations, IEEE 754 Floating Point Representation)

Week 5: Typical C Program Development Environment/Structure of a C Program (Preprocessor Commands, Comments)

Week 6: Variable Names, Data Types, Constants, Declarations

Week 7: Operators (Arithmetic, Relational and Logical) and Type Conversions

Week 8: Increment and Decrement Operators, Precedence of Evaluations

Week 9: Conditional Expressions

Week 10: Control Flows (If/Else If/Else; Switch/Case, Loops, Break/Continue)

Week 11: Basics of Functions (Scope Rules, Block Structure)

Week 12: Recursion

Week 13: Arrays I

Week 14: Arrays II – Homework Evaluation

**Grading**: Midterm 30 %, Homework 10%, Final exam 60 %.

**Notes:**  Follow [**https://gitlab.com/cen111**](https://gitlab.com/cen111)for resources, announcements and homework

Register our department’s Facebook group ÇÜ Bilgisayar Mühendisliği to follow announcements. For registration, you have to send your Student ID, Name and Surname as a message to group Administrator.