

COMP200001 C Programming Language

Program : Global Summer Program

Term : Summer 2024

Duration : June 7, 2024 - July 26, 2024

Contact Hours : 54

Fudan Credits : 3

Course Description:

This course is designed to provide a comprehensive introduction to the C Programming Language, which features economy of expression, modern control flow and data structures, and a rich set of operators.

It could get new users started as soon as possible, separate chapters on each major feature and many examples. All these examples are complete, real programs and have been tested.

This course is not an introductory programming manual of statements of rules, it assumes some familiarity with basic programming concepts like variables, assignment statements, loops and functions.

Besides showing how to make effective use of the language, we also try where possible to illustrate some useful algorithms and principle of good style and sound design.

We would like to help students to cultivate “computational thinking” in solving problems with C language. The textbook we choose is also used by many other universities for undergraduate programming course.

Course Goals:

The course targets the enhancement of the following skills:

1. Understanding the fundamental concepts: variables, basic data types, operators and expressions, control flow as well as program structure, functions. Pointer and address arithmetic are also included.
2. Introducing some basic data structure and algorithms, like array, linked list, sorting algorithm, binary search etc.
3. Encouraging students to have a depth understanding of C programming language by applying them to practical problems.

Prerequisites:

Need some fundamental knowledge in Mathematics: discrete mathematics, functions.

Textbook & Reference:

- The C programming language (2nd edition), Brian W. Kernighan, Dennis M. Ritchie

Schedule:

Lecture	Date	Time	Topic
1	June 7, 2024	Online Sessions Lecture 1 - 9: 08:30-12:00 BJT (UTC+8)	Fundamentals Introduction of modern computing systems, compiler, a brief tutorial of central part of C
2	June 14, 2024		Variables Basic data type, operators and expressions
3	June 21, 2024		Control flow: if-else, switch, do-while, for clause;
4	June 28, 2024		Array (1) One-dimensional array, feature, operations on the array
5	July 5, 2024		Arrays multi-dimension array, string and operations on strings
6	July 9, 2024		Functions (1) functions, parameters, arguments, recursive functions
7	July 12, 2024		Function (2) , Pointer (1) functions, scope rules (extern, static, auto, register), pointer
8	July 16, 2024		Pointer (2) Pointer with array, pointer as parameter
9	July 19, 2024		Struct struct, array of struct, struct to pointer
10	July 22-July 26, 2024	Offline Sessions Lecture 10 – 12: TBD	Linked List Self-referenced structure, linked list vs. array
11			File processing File processing, C preprocessor, head file, macro
12			Final Exam



Assessment:

Assessment Task	Weighting
1. Usual Performance (homework, class exercise)	30%
2. Final Exam	70%

Grading Scale:

Grades	A	A-	B+	B	B-	C+	C	C-	D	F
100	90-100	85-89	82-84	78-81	75-77	71-74	66-70	62-65	60-61	<60

The instructor will use the grading system as applied by Fudan University.

Credit Point Value:

Component	Contact Hours	Fudan Credits
Academic Lectures	44	3
Thesis/Exam	4	
Field Trip	3	
Seminar	3	
Total	54	

At Fudan University, the duration of one contact hour is 45 minutes, and 18 contact hours are equivalent to 1 credit.

Note: The document is subject to change at the discretion of School of Management, Fudan University.