

CS 10B Course Outline as of Fall 2021**CATALOG INFORMATION**

Dept and Nbr: CS 10B Title: PROGRAMMING CONCEPTS 1

Full Title: Programming Concepts and Methodologies 1

Last Reviewed: 2/8/2021

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	3.00	6	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 210.00

Title 5 Category: AA Degree Applicable

Grading: Grade or P/NP

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

Catalog Description:

Introduces the discipline of computer science using C++ and utilizing programming and practical hands-on problem solving.

Prerequisites/Corequisites:**Recommended Preparation:**

Eligibility for ENGL 1A or equivalent or appropriate placement based on AB705 mandates; and Course Completion of CS 10A or equivalent experience in any programming language

Limits on Enrollment:**Schedule of Classes Information:**

Description: Introduces the discipline of computer science using C++ and utilizing programming and practical hands-on problem solving. (Grade or P/NP)

Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 1A or equivalent or appropriate placement based on AB705 mandates; and Course Completion of CS 10A or equivalent experience in any programming language

I. Fundamental Programming Constructs

- A. Basic syntax and semantics of a higher-level language
- B. Variables, types, expressions, and assignment
- C. Simple I/O
- D. Conditional and iterative control structures
- E. Functions and parameter passing
- F. Structured decomposition

II. Algorithms and Problem-Solving

- A. Problem-solving strategies
- B. The role of algorithms in the problem-solving process
- C. Implementation strategies for algorithms
- D. Debugging strategies
- E. The concept and properties of algorithms

III. Overview of Programming Languages

- A. History of programming languages
- B. Brief survey of programming paradigms
- C. Procedural languages
- D. Object-oriented languages

IV. Declarations and Types

- A. The conception of types as a set of values together with a set of operations Declaration models (binding, visibility, scope, and lifetime)
- B. Overview of type-checking

All topics are covered in both the lecture and lab parts of the course.

Assignment:

Lecture-Related Assignments:

1. Read approximately 30 pages per week
2. Complete 2-8 examinations including final exam

Lab-Related Assignments:

1. Complete 10-15 programming assignments, with documentation, using the C++ programming language

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written program documentation

Writing
10 - 20%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Programming assignments

Problem solving
20 - 60%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations
0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Exams, Final Exam: (Multiple choice, true/false, matching items, completion, programming problems)

Exams
20 - 60%

Other: Includes any assessment tools that do not logically fit into the above categories.

None

Other Category
0 - 0%

Representative Textbooks and Materials:

Starting Out with C++ From Control Structures through Objects. 9th ed. Gaddis, Tony. Pearson. 2017