



Course Objective and Outcome Form

Department of Electrical and Computer Engineering

School of Engineering and Physical Sciences

North South University, Bashundhara, Dhaka-1229, Bangladesh

1. **Course Number and Title:** CSE115
2. **Number of Credits:** 3+1
3. **Type:** Core, Engineering, Lecture + Lab
4. **Prerequisites:** N/A
5. **Contact Hours:** 3 hours (theory) + 3 hours (lab)
6. **Course Summary:** This is the first course in the computer science programming and is required for all computer science and engineering majors. This course introduces the fundamental concepts of structured programming. Topics include fundamentals of computers and number systems, algorithms & flowcharts, fundamental programming constructs: syntax and semantics of a higher-level language, variables, expressions, operators, simple I/O to console and files, conditional and iterative control structures, functions and parameter passing, dynamic memory allocation; fundamental data structures: arrays, structures, strings and string processing; and testing and debugging strategies.
7. **Course Objectives:** The objectives of this course are to
 - a. learn fundamental knowledge on basics of computers, hardware, software, and number systems,
 - b. familiarize about the basic terminologies used in computer programming,
 - c. proficiently transform designs of problem solutions into a standard programming language,
 - d. use an integrated development environment (IDE) to write, compile, and execute programs involving a small number of source files,
 - e. proficiently use fundamental programming elements including: variable declaration, data types and simple data structures (arrays, strings, and structures), decision structures, loop structures, functions/methods, input and output for console and text files,
 - f. apply debugging and testing techniques to locate and resolve errors and to determine the effectiveness of a program, and
 - g. have understanding of professionalism, codes of ethics and responsible conduct.

8. Course Outcomes (COs):

Upon Successful completion of this course, students will be able to:

Sl.	CO Description	Weightage (%)
1.	explain number systems as well as the basics of computer programming such as hardware, software, types of programming languages, compiler, etc.	5
2.	use an integrated programming environment to write, compile, and execute a C program as well as apply debugging techniques to locate and resolve errors.	5
3.	apply different programming elements such as variables, simple data structures (arrays/strings), selection structures, repetition structures, functions, structure, pointer, file manipulation, etc. to solve different problems.	80
4.	design a simple information management system that requires using array of structures, function, and file processing.	10

9. Mapping of CO-PO:

Sl.	CO Description	POs	Bloom's taxonomy domain/level	Delivery methods and activities	Assessment tools
CO1	Explain number systems as well as the basics of computer programming such as hardware, software, types of programming languages, compiler, etc.	a	Cognitive/ Apply	Lectures, Notes	Quiz/Exam
CO2	Use an integrated programming environment to write, compile, and execute a C program as well as apply debugging techniques to locate and resolve errors.	e	Psychomotor/ Manipulation	Lab classes	Lab work/ project
CO3	Apply different programming elements such as variables, simple data structures (arrays/strings), selection structures, repetition structures, functions, structure, pointer, file manipulation, etc. to solve different problems.	a	Cognitive/ Analyze	Lectures, Notes, Lab classes	Quiz/Exam

CO4	Design a simple information management system that requires using array of structures, function, and file.	c	Cognitive/ Create	Lectures, Notes, Lab classes	Exam or Lab project
-----	---	----------	----------------------	------------------------------------	------------------------

10. Resources

Text books:

No	Name of Author(s)	Year of Publication	Title of Book	Edition	Publisher's Name	ISBN
1	J Hanly and E Koffman	2012	Problem Solving and Program Design in C	7 th	Pearson	ISBN-13: 978-0132936491

Reference books:

No	Name of Author(s)	Year of Publication	Title of Book	Edition	Publisher's Name	ISBN
1	H. Schildt	2000	C: The Complete Reference	4 th	Osborne / McGraw-Hill	ISBN-13: 978-0070411838
2	Y. P. Kanetkar	2008	Let us C	8 th	Jones & Bartlett Learning	ISBN-13: 978-1934015254
3	B. S. Gottfried	1996	Schaum's Outline of Programming with C	2 nd	Mcgraw Hill	ISBN-13: 978-0070240353
4	Deitel & Deitel	2012	C: How to Program	7 th	Prentice Hall	ISBN-13: 978-0132990448

Online resources:

11. Weightage Distribution among Assessment Tools:

Theory

Assessment Tools	Weightage (%)
Class Performance	10
Quizzes	25
Midterm	30
Final Exam	35

Lab

Assessment Tools	Weightage (%)
Class Performance	10

Lab Quizzes	30
Lab Assignments	10
Midterm	20
Final Exam	20
Term Project	10

12. **Grading policy:** As per NSU grading policy available in

<http://www.northsouth.edu/academic/grading-policy.html>

