

1. Course Profile

1.1 Course Summary

Course ID:	Course Title:	Credit Hours:	Year: 1 st
CSE 1101	Structured Programming	3.0	Term: 1 st
CSE 1102	Structured Programming Laboratory	1.5	

1.2 Rationale

Computer programming is very basic for CSE students. This Course intends to develop programming skills in the students, using a popular structured programming language 'C'. The students will learn step by step procedure of any program development process.

1.3 Course Content

Programming Concepts and Structured Programming Language: Data types, Variables, Operators, Type of expressions, Control structures.

Functions and Program Structures: Function basics, Parameter passing conventions, Scope rules and storage classes, Recursion, Header files, Preprocessor, Arrays.

String and Pointers: Pointers and memory addressing, Arrays and pointer arithmetic, Strings, Algorithms.

User Defined Data Type: Structure, Structure bit fields, Structure padding, Unions, Enumeration.

Input and Output: Standard input and output, Formatted input and output, File access, Dynamic memory allocation, Valgrind, Garbage collection, Variable length argument list, Command line parameters, Error handling, Introduction to graphics routines, Compiling, Make file, Debugging.

1.4 CLO to PLO mapping

Course Learning Outcome (CLO) Matrix							
CLOs	CLO Description	Bloom's Learning Levels				PLO Assessed	CLO-PLO Correlation
		C	A	P	S		
CLO1	Comprehend fundamental concepts of structured programming along with problem solving techniques and analytical thinking.	3				PLO1, PLO2	3, 2
CLO2	Demonstrate the use of arrays, pointers, characters and strings, formatted input/output, and other data structures in real-life computational problems	3	2	2		PLO1	3
CLO3	Construct self-defined functions and apply the techniques used to process text files.	2		3		PLO1	3
CLO4	Design complete structured computer programs for solving a complex engineering problem.			3	3	PLO2, PLO5, PLO9, PLO10	3, 3, 2, 2

1.5 Lesson Planning with Mapping of CLO, Teaching and Assessment Strategies

	Week	Topic	Teaching-Learning Strategy	Assessment Strategy	Corresponding CLOs
CSE	1	Data types, Variables, Operators	Lecture (3h) x 13 weeks	Class Test-1, Class Test-2, Class Test-3	CLO1, CLO2, CLO3
	2	Type of expressions, Control structures			
	3	Function basics, Parameter passing conventions, Scope rules and storage classes			

1 1 0 1 (T h e o r y)	4	Recursion, Header files, Preprocessor, Arrays			
	5	Pointers and memory addressing			
	6	Arrays and pointer arithmetic, Strings, Algorithms			
	7	Structure, Structure bit fields			
	8	Structure padding, Unions, Enumeration			
	9	Standard input and output, Formatted input and output			
	10	File access, Dynamic memory allocation			
	11	Valgrind, Garbage collection, Variable length argument list			
	12	Command line parameters, Error handling			
	13	Introduction to graphics routines, Compiling, Make file, Debugging			
CSE 1102 (Laboratory)	1	Environment Setup, IDE, Data types, Variables	Lab (2.5h) x 13 weeks	Viva-Voce conducted in Lab Class, Regular Lab Work	CLO4
	2	Operators, Type of expressions, Control structures			
	3	Function basics, Parameter passing conventions, Scope rules and storage classes			
	4	Recursion, Header files, Preprocessor, Arrays			
	5	Pointers and memory addressing			
	6	Arrays and pointer arithmetic, Strings, Algorithms			
	7	Structure, Structure bit fields			
	8	Structure padding, Unions, Enumeration			
	9	Standard input and output, Formatted input and output			
	10	File access, Dynamic memory allocation			
	11	Valgrind, Garbage collection, Variable length argument list			
	12	Command line parameters, Error handling, Graphics routines, Compiling, Make file, Debugging			
	13	Final Evaluation		Final Lab Test, and Quiz, etc.	

1.6 References

- Let Us C by Yashwant Kanetkar.
- Teach Yourself C by Herbert Schildt.
- Programming in ANSI C by Balagurusamy.

1.7 Tools

- CodeBlocks IDE

1.8 Assessment and Evaluation

	Assessment Type	Assessment Tools	Allotted Marks	Assessment No	CLO Assessed	Blooms Category	Sub Total
--	-----------------	------------------	----------------	---------------	--------------	-----------------	-----------

CSE 1101 (Theory)	Continuous Assessment	Class Participation, Attendance, Assignments	10%				30%
		Class Test, Quizzes, Spot Test, etc.	20%	Class Test-1	CLO1,	Comprehend, Demonstrate, Construct	
				Class Test-2	CLO2,		
				Class Test-3	CLO3		
	Summative Assessment	Term Final Examination	70%		CLO1, CLO2, CLO3	Comprehend, Demonstrate, Construct	70%
Total							100%
CSE 1102 (Laboratory)	Continuous Assessment	Class participation, Attendance	10%		CLO4	Apply, Use, Design	30%
		Quizzes, Viva-Voce conducted in Lab Class, Regular Lab Work	20%				
	Summative Assessment	Viva-Voce Conducted Centrally	20%				70%
		Performance (Final Lab Test, and Quiz, etc.), Report	50%				
	Total						