

COMP B12: Programming Concepts and Methodology II

Student Learning Outcomes	Measure	PLO	ILO	GE
1. Design and implement programs that use arrays, records/structs, strings, linked lists, stacks, queues, hash tables, and trees.	• Written exams	1	I	
	• Programming Exams	2 3	III	
	• Programming Assignments			
2. Design, implement, test, and debug recursive functions and procedures.	• Written exams	1	I	
	• Programming Exams	2 3	III	
	• Programming Assignments			
3. Evaluate the tradeoffs in lifetime management of data when using manual memory management versus reference counting or tracing garbage collection.	• Written exams	1	I	
	• Programming Exams	2 3	III	
	• Programming Assignments			
4. Explain how abstraction mechanisms support the creation of reusable software components.	• Written exams	1	I	
	• Programming Exams	2 3	III	
	• Programming Assignments			
5. Design, implement, test, and debug programs in an object-oriented language.	• Written exams	1	I	
	• Programming Exams	2 3	III	
	• Programming Assignments			
6. Compare and contrast object-oriented analysis and design with structured analysis and design.	• Written exams	1	I	
	• Programming Exams	2 3	III	
	• Programming Assignments			

PLOs:

1. Identify the appropriate software development technologies, algorithms, and scientific and mathematical principles to apply to a given problem.

Assessment: The department will evaluate using examinations.

2. Effectively design and implement programming constructs, including functions, control structures, arrays/lists, classes and objects for a given programming problem.

Assessment: The department will evaluate using examinations.

3. Effectively implement the appropriate data structures using the principles and techniques of object-oriented programming for a given programming problem.

Assessment: The department will evaluate using examinations.

ILOs:

- I. Think critically and evaluate sources and information for validity and usefulness.**
- II. Communicate effectively in both written and oral forms.**
- III. Demonstrate competency in a field of knowledge or with job-related skills.**
- IV. Engage productively in all levels of society – interpersonal, community, the state and nation, and the world.**