Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO1	✓		✓	✓
CO2	✓	✓	✓	✓
CO3	✓		✓	✓
CO4	✓	✓	✓	✓

MDC- Kerala Studies

VAC

1. CODING STANDARDS AND PRACTICES

Discipline	COMPUTER SCIENCE
Course Code	UK3VACCSC200
Course Title	CODING STANDARDS AND PRACTICES
Type of Course	**VAC**

Semester	III				
Academic Level	2				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-		3 hours
Pre-requisites	None				
Course Summary	Students will develop a thorough understanding of clean coding principles and practices, recognizing the importance of functions in programming for maintaining clean code. They will practise writing clear and concise comments and documentation to improve code readability and understanding. Additionally, they will grasp the principles of unit testing and Test-Driven Development (TDD) to ensure code quality and apply code refactoring techniques to enhance maintainability and extensibility. Finally, they will utilize refactoring tools and techniques to further improve code quality and readability.				

Detailed Syllabus:

Module	Unit	Content	Hrs (L)
I		**Introduction to Clean Coding**	9
	1	• Importance of clean code in software development • Introduction to code readability, maintainability, and scalability. • Bad Code • Boy Scout rule	
	1.1	**Meaningful Names** • Importance of meaningful variable, function, and class names • Guidelines for choosing descriptive and consistent names	

II	**Functions in Clean Coding**		**9**
	2	**Introduction to Functions** ● Role of functions in programming ● Key characteristics of clean functions. ● Descriptive and meaningful function names ● Guidelines for choosing appropriate function names ● Switch statements. ● Function Argument	
III	**Code Formatting and Style**		**9**
	3	● Consistent code formatting ● Coding style guides and conventions ● Using tools for automated code formatting ● Comment-Bad comment,Good comment ● Introduction to documentation tools and practices	
IV	**Testing and Test-Driven Development (TDD)**		**9**
	4	● Introduction to unit testing and test-driven development (TDD) ● Writing testable code ● Identifying testable units ● Implementing unit tests using testing frameworks	
v	5	**Flexi Module: Not included for End Semester Exams**	**9**

		• **Introduction to Code Refactoring** • Understanding the concept of code refactoring and its importance. • Common refactoring techniques and patterns. • Refactoring legacy code and its challenges. • **Refactoring Tools and Techniques:-** • Introduction to refactoring tools and IDE plugins. • Automating refactorings to improve efficiency. • Best practices for safe and effective refactoring.	

References

1. Robert C. Martin, “A Handbook of Agile Software Craftsmanship"
2. Steve McConnell, "Code Complete: A Practical Handbook of Software Construction"
3. Martin Fowler**, "**Refactoring: Improving the Design of Existing Code"
4. Roy Osherove, **"**The Art of Unit Testing: with Examples in C#"

Web Resources

https://cleancode.com/

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Summarize principles and practices of clean coding .	U	PSO-1
CO-2	Cite the role of functions in programming and their importance in clean coding.	U	PSO-1, 2
CO3	Demonstrate writing clear, readable and concise comments and documentation.	U	PSO-1, 2
CO-4	Prepare unit test cases.	Ap	PSO-1,2

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: CODING STANDARDS AND PRACTICES

Credits: 3:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/ PSO	Cognitive Level	Knowledge Category	Lecture (L)/ Tutorial (T)	Practical (P)
CO 1	Summarize principles and practices of clean coding.	PO-6,7,8 PSO-1	U	F, C	L	-
CO2	Cite the role of functions in programming and their importance in clean coding.	PO-6,7,8 PSO-1	U	F, C	L	-
CO 3	Demonstrate writing clear, readable and concise comments and documentation.	PO-6,7,8 PSO-1, 2	U	F, C	L	-
CO 4	Prepare unit test cases.	PO- 6,7,8 PSO-1, 2	Ap	F, C, P	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CO 1	-	-	-	-	-	2	2	3	3	2	-	-
CO 2	-	-	-	-	-	2	2-	3	3	2	-	-
CO 3	-	-	-	-	-	2	2	3	3	2	-	-
CO 4	-	-	-	-	-	2	2	3	3	2	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

CO No	Internal Exam	Assignment	Seminar	End Semester Examinations
CO 1	✓			✓
CO 2	✓		✓	✓
CO 3	✓	✓		✓
CO 4	✓	✓		✓

2. PROFESSIONAL ETHICS IN COMPUTER SCIENCE

Discipline	COMPUTER SCIENCE				
Course Code	UK3VACCSC201				
Course Title	Professional Ethics in Computer Science				
Type of Course	**VAC**				
Semester	III				
Academic Level	2				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-		3 hours