Course Name	**CONCURRENT PROGRAMMING**	Course Code	**COMP 418**		

Credit Hours	3	Contact Hours	**Theory**	**Lab**	**Total**
			2	2	4

Offered as	☐ University Requirement ☐ College Requirement ☒ Program Requirement ☐ Core ☒ Elective
	☐ ITEC ☒ COMP ☐ CNET

Level	8	Prerequisite	NIL

Course Description:

Concurrent programming with processes and threads, monitors and synchronization, and volatile variables. Traditional building blocks of concurrency, data-parallel collections using parallel and concurrent collections together. Concurrent programming with reactive extensions, software transactional memory, and working with actors.

- ♦ Explain the fundamental concepts, techniques, synchronization and communication mechanisms and environments used in concurrent programming.

- ♦ Provide the necessary knowledge in programming models.

- ♦ Describe the concepts of threads and processes related with parallel and distributed programming.

Grading	☒ **Exam 1**	10%	☒ **Exam 2**	10%	☒ **Assignment(s)**	20%
	☒ **Final**	40%	☒ **Lab**	20%	☐ **Mini Project**	

Text Book:

- ♦ Learning Concurrent Programming in Scala, Aleksandar Prokopec, 2nd Edition, 2017, Packt Publishing Ltd., ISBN-13: 9781786466891

References:

- ♦ Concurrent Programming: Algorithms, Principles and Foundations, Michel Raynal, 2011, Springer, ISBN-13: 9783642320262
- ♦ Foundations of Multithreaded, Parallel, and Distributed Programming, Gregory R. Andrews, 1st Edition, 2000, Addison-Wesley, ISBN-13: 9780201357523