

Course Title	PARALLEL PROGRAMMING
Course Code	CSC 406
Course Purpose and Objectives	The purpose of this course is to provide students with knowledge about the concepts of parallel programming and enable them to use multicore computers to make their applications run faster by using multiple processors at the same time. Students will also gain an understanding of identifying dependencies, and critical sections and avoid critical errors when converting an algorithm in parallel. Finally, students will be exposed to various distributed paradigms and the use of OpenMP libraries for implementing parallel processing on multicore computers and IoT boards (e.g Raspberry Pi)
Learning Outcomes	<ol style="list-style-type: none"> 1. Apply parallel programming techniques for converting sequential algorithms into parallel 2. Execute and evaluate the performance of parallel algorithms on various multicore devices 3. Develop an understanding of concurrency, critical section and isolation. 4. Implement simple distributed data-parallel systems.
Course Content	<ul style="list-style-type: none"> • Introduction • Elements of parallel computing • Design and algorithm analysis • Basic parallel algorithm techniques • Parallel programming in practice