ST. ANN'S COLLEGE OF ENGINEERING &TECHNOLOGY: CHIRALA
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

LESSON PLAN

Subject: CONCURRENT AND PARALLEL PROGRAMMING **Academic Year: 2019-20**
Name : A. YUGANDHAR REDDY **Year & Sem/Section: IV-II-'C'**

Unit/ Topic No.	Topics Planned to be Covered	No. of classes required
I	Concurrent versus sequential programming. Concurrent programming constructs and race condition. Synchronization primitives.	10
II	Processes and threads. Interprocess communication. Livelock and deadlocks, starvation, and deadlock prevention. Issues and challenges in concurrent programming paradigm and current trends.	08
III	Parallel algorithms – sorting, ranking, searching, traversals, prefix sum etc.,	06
IV	Parallel programming paradigms – Data parallel, Task parallel, Shared memory and message passing, Parallel Architectures, GPGPU, pthreads, STM	10
V	OpenMP, OpenCL, Cilk++, Intel TBB, CUDA	06
VI	Heterogeneous Computing: C++AMP, OpenCL	06
	Total Number of Classes	**46**

TEXT BOOKS:

1. Mordechai Ben-Ari. Principles of Concurrent and Distributed Programming, Prentice-Hall International.
2. Greg Andrews. Concurrent Programming: Principles and Practice, Addison Wesley.
3. GadiTaubenfeld. Synchronization Algorithms and Concurrent Programming, Pearson.
4. M. Ben-Ari. Principles of Concurrent Programming, Prentice Hall.
5. Fred B. Schneider. On Concurrent Programming, Springer.
6. Brinch Hansen. The Origins of Concurrent Programming: From Semaphor

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