

<b>Course Title</b>	<b>Parallel &amp; Distributed Computing</b>
<b>Course Code</b>	<b>DC-323</b>
<b>Credit Hours</b>	3
<b>Category</b>	Domain Core
<b>Prerequisite</b>	Operating Systems
<b>Co-Requisite</b>	None
<b>Follow-up</b>	None
<b>Course Description</b>	Asynchronous/synchronous computation/communication, concurrency control, fault tolerance, GPU architecture and programming, heterogeneity, interconnection topologies, load balancing, memory consistency model, memory hierarchies, Message passing interface (MPI), MIMD/SIMD, multithreaded programming, parallel algorithms & architectures, parallel I/O, performance analysis and tuning, power, programming models (data parallel, task parallel, process-centric, shared/distributed memory), scalability and performance studies, scheduling, storage systems, synchronization, and tools (Cuda, Swift, Globus, Condor, Amazon AWS, OpenStack, Cilk, gdb, threads, MPICH, OpenMP, Hadoop, FUSE).
<b>Text Book(s)</b>	Distributed Systems: Principles and Paradigms, A. S. Tanenbaum and M. V. Steen, Prentice Hall, 2nd Edition, 2007
<b>Reference Material</b>	Distributed and Cloud Computing: Clusters, Grids, Clouds, and the Future Internet, K Hwang, J Dongarra and GC. C. Fox, Elsevier, 1st Ed.