Mizan Tepi University Information Technology Program					
Program	Information Technology				
Course Code	ITec3102				
Course Title:	Introduction to Distributed System				
Degree Program	Information Technology				
Module Name	**Computer Networks**				
Module Number	10				
CP Credits (CP)	5				
Contact Hours	**Lecture**	**Tutorial**	**Lab/Practical**	**Home Study**	**Total**
	2	0	3	5	10
Target Group:	3rd Year Information Technology Students				
Year /Semester	Year: III, Semester: II				
Pre-requisites	ITec2102, ITec3021				
Status of the Course	Core				
Course description	This course covers the foundations of distributed systems including models of computing, logical clocks and synchronization, consensus, distributed indexing, concurrency, consistency, failures, reliability and security. We will examine popular applications of distributed computing; analyze how the foundations manifest themselves in different ways depending on real-world constraints. Such applications include distributed file systems, peer-to-peer systems, distributed transactions, and web services.				
Course objective	At the end of the course the students should be able to: ❖ understand the importance of distributed computing ❖ Differentiate the uni-scalar machines with that of high-end parallel systems				
Course Outline	• **Introduction to Distributed Systems:** • **Issues and Architectures;** Characterization of Distributed Systems; Networking, internetworking and interposes communication. • **Naming and Threads:** Naming and name services; Remote Invocation, Processes and threads;				

	• **Models of Distributed Computing: Performance, Replication, Virtualization, Scalability;** Synchronous network model and leader election; Asynchronous shared memory model, fairness, and mutual exclusion ; Data-Centric Consistency Models; Multicore architectures and benchmarks; • **Client-Centric Consistency Models**
Assessments	• Final Exam • Lab • Project • Test
Reference	**Text** book k.Hwang "Advanced computer Architecture , Parallelism , Scalability , Programmability", Tata Mc Graw Hill , 1994 **Reference** A. Tannenbaum , "Modern Operating Systems" , PHI , 1995