



GUJARAT TECHNOLOGICAL UNIVERSITY

Master of Engineering

Subject Code: 3726105

Semester – II

Subject Name: Communication Busses and Interfaces

Type of course: Elective

Prerequisite: NA

Rationale:

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE(E)	PA (M)	PA (V)	PA (I)		
3	0	2	4	70	30	30	20	150

Content:

Sr. No.	Content	Total Hrs
1	Serial Busses: Physical interface, Data and Control signals, features	
2	limitations and applications of RS232, RS485, I2C, SPI	
3	CAN - Architecture, Data transmission, Layers, Frame formats, applications	
4	PCIe - Revisions, Configuration space, Hardware protocols, applications	
5	USB - Transfer types, enumeration, Descriptor types and contents, Device driver	
6	Data Streaming Serial Communication Protocol - Serial Front Panel Data Port (SFPDP) using fibre optic and copper cable	

Reference Books:

1. Jan Axelson, “Serial Port Complete - COM Ports, USB Virtual Com Ports, and Ports for Embedded Systems”, Lakeview Research, 2nd Edition
2. Jan Axelson, “USB Complete”, Penram Publications
3. Mike Jackson, Ravi Budruk, “PCI Express Technology”, Mindshare Press
4. Wilfried Voss, “A Comprehensive Guide to Controller Area Network”, Copperhill Media Corporation, 2nd Edition, 2005.
5. Serial Front Panel Draft Standard VITA 17.1 – 200x
6. Technical references on www.can-cia.org, www.pcisig.com, www.usb.org

Course Outcome:

After learning the course the students should be able to:



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Sr. No.	CO statement	Marks % weightage
CO-1	Select a particular serial bus suitable for a particular application.	
CO-2	Develop APIs for configuration, reading and writing data onto serial bus	
CO-3	Design and develop peripherals that can be interfaced to desired serial bus.	