Semester Lecture Plan

Name of F			ege of Arts, S	cience and Commer	ce, Sanquelim Goa		
Name of F		-					_
	aculty: Shubha	Name of Faculty: Shubha Kamat			r Science		
Paper code: CSC110 Internet of Things				Program/Course:	Program/Course:TYBSc Division: A		
			-	_			<i>,</i>
Academic	year: 2024- 20	25		Semester: VI		Total Lectures	: 60
Course Ob	jectives:						
To introdu	ice concepts of	TOT and diffe	erent devices	involved in IOT.			
10 Introdu Gain Hanc	ice Cioua Con Is on experien	cepts and its u	se III IUI . with different	t sensors/ actuators a	and their use in IOT	nrojects	
To gain Ki	nowledge of A	rduino. NodeN	fcu. Raspher	ry Pi boards and to	develop IOT projec	ts by integrating t	these boards with
cloud platf	form.		, -			~~;g	
Course Le	arning Outcor	ne:					
Explain th	Explain the requirements and components of an IOTsystem.						
Develop di	Develop different IOT projects using cloud technology.						
Develop di	fferent IOT p	rojects using A	rduino,Node	Mcu,Raspberry Pi B	Soards and cloud pla	atform such as No	dered.
		,	N				
Month	Leo	ctures	INO. OI lectures	Topic, Subtopic	Learning	ICT Tools	Reference
WIUIIII	From:	To:	allotted	to be covered	outcome	101110015	books
December				IOT introduction		/Power point	IOT by
	9/12/2024	14/12/2024	3	Definition,		presentation	Arshdeep
1				appplications,			Bagha, Vijay
				Baseline			
							Madishetti
				Technologies-			Madishetti
				Technologies- M2M,WoT			Madishetti
				Technologies- M2M,WoT Categories-	Explain the		Madishetti
				Technologies- M2M,WoT Categories- Industrial and	Explain the requirements and components of		Madishetti
Course Les Explain the Develop di Develop di Month December	arning Outcor e requirement fferent IOT pr fferent IOT pr Lec From: 9/12/2024	ne: is and compone rojects using cl rojects using A ctures To: 14/12/2024	ents of an IO loud technolo rduino,Node No. of lectures allotted 3	Tsystem. by: Mcu,Raspberry Pi E Topic, Subtopic to be covered IOT introduction Definition, appplications, Baseline	Boards and cloud pla Learning outcome	atform such as No ICT Tools /Power point presentation	dered. Reference books IOT by Arshdeep Bagha, Vijay

	16/12/2024	21/12/2024	3	Sensors and Actuators : sensors, Transducers, features, resolution, analog sensors and digital, scalar , vector, sensor types	Explain the requirements and components of an IOTsystem.	/Power point presentation	IOT by Arshdeep Bagha, Vijay Madishetti
	10/12/2024	21/12/2024		Actuators- types		/Power point	
Ianuary	2/1/2025	4/1/2025	2	Hydraulic, pneumatic, electrical, Thermal, mechanical, Motors-DC, Servo, Stepper. Relays, motor drivers for interfacing	Explain the requirements and components of an IOTsystem	presentation	do
January		11/1/2023		IOT Networks: IoTWF Architecture, connectivity protocols-	Develop different IOT projects using	/Power point presentation	
	6/1/2025	11/1/2025	4	MQTT,SMQTT Communication Protocol- 802,15.4.802.11, LORA Wireless, ZigBee	Arduino, Develop different IOT projects using Arduino	/Power point presentation	do

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				Arduino programming: Features, IDE,			
				sketch, sketch			
				structure,			
				Data types,		/Power point	
				Libraries,		presentation	
				operators, control			
				statements,			
	20/1/2025	25/1/2025	4	arrays, Suring			da
	20/1/2023	23/1/2023	4			/Down point	00
				interrupts, sensor		/Power point	
				Anduine DUT		presentation	
				Arduino, DH I			
				sensor norary,			
				Types of motor			
				actuators,			
	07/1/0005	1/0/2025		Arduino servo			
	27/1/2025	1/2/2025	4	library			do
				Raspberry Pi:		/Power point	
				Introduction,	D 1 1100	presentation	
				specifications,	Develop different		
				GPIOs, Features	IOT projects		
				of ESP 8266,	using Raspberry		
				nodemcu and	P1 Boards		
Februry	3/2/2025	8/2/2025	4	applications			do
				Comparitive		/Power point	
				study of Uno,		presentation	
				Raspberry pi and	Develop different		
				nodemcu	IOT projects		
				Cloud computing:	using NodeMcu		
	10/2/2025	15/2/2025	4	definition			do
				Cloud computing:	Develop different	/Power point	
				Characteristics,	IOT projects	presentation	
				components,	using cloud		
	17/2/2025	22/2/2025	4	Service Models:	technology.		do

				IaaS			
				PaaS, SaaS,		/Power point	
				Deployment		presentation	
				Models: public,			
				Private and			
				Hybrid, Open	Develop different		
				source and	IOT projects		
				commercial	using cloud		
				clouds examples,	technology.		
	24/2/2025	1/3/2025	4	facilities offered,			do
				Case Studies:		/Power point	
				Azure,: - features,		presentation	
				as PaaS, as IaaS			
				OpenStack:			
				components and			
March	3/3/2024	8/3/2025	4	features			do
					Develop different	/Power point	
				Firebase cloud	IOT projects	presentation	
				service features	using cloud		
					platform such as		
				NodeRed and its	Nodered.		
	10/3/2024	15/3/2025	3	features,			do
				Installing on		/Power point	
				Raspberry Pi		presentation	
				Wireless Sensor			
				Networks:			
	17/2/2024	22/22025	4	Definition and			1
	17/3/2024	22/32025	4	limitations			do
				Sensor Cloud:		/Power point	
				Definition,		presentation	
				Difference with			
				W SIN, ACTORS IN			
	24/2/2024	20/2/2025	4	Architecture			do
	24/3/2024	29/3/2023	4	Fog Computing:		/Dowon noint	u0
				Tog Computing:		prosentation	
	31/3/2024	5/4/2025	3	Why Fog when		presentation	do
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				Fog, architecture, Fog nodes, Working of Fog,	
				Applications of FOG. Revision,	
April	7/4/2025	11/4/2025	3	solving	

Week	Content
1	Installing Arduino
2	Blink LED, Traffic lights control
3	Night Security light using PIR sensor
4	Weather station with temperature and Humidity
5	Controlling a Servo motor
6	Setting up Raspberry Pi
7	Blinking of an LED using RPi
8	Capturing an image using RPi
9	DHT interface with RPi
10	Setting up a server on RPi and sending recorded temperature to the server
11	Installing NodeRed
12	Controlling an LED with NodeRed
13	Use of smoke, gas sensor with ESP8266, MQTT and NodeRed
14	Controlling lamps using Arduino and MQTT
15	Revision