

Course	BCA (Bachelor of Computer Applications)
Program Code	CS101
Subject Code	2CS1010603
Subject Title	SENSOR TECHNOLOGY-II
Pre-requisite	Basic Knowledge of Circuits Board(Raspberry pi, Arduino Uno) and Sensor

Course Objective:

The course provide good knowledge of working of different types of sensors used in various application areas. The course also provide knowledge of interfacing of electronic circuits with different sensors for its applications in different fields.

Teaching Scheme(Hours per week)				Evaluation Scheme (Marks)								
Lecture	Tutorial	Practical	Credit	Theory				Practical				Total
				University Assessment		Continuous Assessment		University Assessment		Continuous Assessment		
				Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	
2	--	2	3	28	70	12	30	12	30	08	20	150

Subject Contents			
Sr. No	Topics	Total Hours	Weight (%)
1	Concept of Voltage What is voltage, process of voltage, difference between voltage and current, resistance and Ohm Laws?	6	20
2	Working with Temperature & Gas difference between temperature and pressure, gas based temperature and pressure	6	20
3	Principle of Sensor Solid state and proximity sensor, switch with proximity sensor diagram and working principle	6	20
4	Working with Ultrasonic Sensor History and concept of ultrasonic sensor, How it works? Pros and cons of ultrasonic sensor	6	20
5	Working with Arduino and Raspberry Main components of rainfall and motion sensor , technology and programming use in rainfall and motion sensor , utility of Arduino and raspberry pi with this sensor with application use , case study of this all sensor base devices	6	20

Practical concept under SENSOR TECHNOLOGY-II

1. Create Voltage and Current Detection Circuitry.
2. Create Temperature and Pressure Detection Circuitry.
3. Create Proximity sensors (inductive) Circuitry.
4. Create Distance (Ultrasonic) Detection sensor Circuitry.
5. Create Rainfall Detection Circuitry.
6. Create Motion sensor Detection Circuitry.

Course Learning Outcomes (CLO.):

At the end of this course, the student would be able

CLO1. To have fundamental knowledge of Voltage and Current Detection Sensors.

CLO2. To have fundamental knowledge of Temperature and Pressure Detection Sensors.

CLO3. To have fundamental knowledge of Proximity sensors.

CLO4. To have fundamental knowledge of Distance and Rainfall Detection.

CLO5. To have fundamental knowledge of Motion Sensor Detection Sensors.

Mapping of CLO, PO and PSO

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO.1	PSO. 2	PSO.1 3
CLO.1		L		M	M	H	L	L			L	L	L	M	
CLO.2		L	L	M	M	H	L	L			L	L	L	M	
CLO.3		L	L	M	M	H	L	L			L	L		L	
CLO.4		L		M	M	H	L	L			L	L	L	M	
CLO.5		L	L	M	M	H	L	L			L	L	L	M	

Course outcomes:

At the end of this course, the student will be able to

1. Understand the concept of sensor and its characteristics.
2. Know the various sensor materials and technologies used to design sensors
3. To connect and code a practical approach in the design of technology based on various sensors and circuits.

List of References:

1. <https://sites.google.com/site/srmsalab/lab-manual/sensors-and-signal-conditioning/2018---2019-lab-manual>
2. <http://www.eeedept.griet.ac.in/document/labmanuals/III-I%20SMI%20Lab%20Manual.pdf>
3. <https://docs.arduino.cc/>
4. <https://www.raspberrypi.org/>