

SAIC4004	ENGINEERING IN COMMUNITY SERVICES	L	T	P	Credits	Total Marks
		3	0	0	3	100

COURSE OBJECTIVES

- To gain knowledge to incorporate a multidisciplinary perspective in their research and critical analysis.
- To conceptualize, analyze, articulate, and propose solutions to social issues expressed by the needs of individuals, families and groups.
- To make conceptualize the characteristics and meaning of community.
- To integrate and articulately demonstrate their grasp of the diversity.
- To help the student integrate and demonstrate the values of community service.

UNIT 1 INTRODUCTION

9 Hrs.

Introduction to the community, student input into nature of the course, proposed course content, assignments, expectations, evaluation measures, grading, possible community service activities, the meaningful journal, recording volunteer time, sharing in class, the electronic conference, use of the Internet.

UNIT 2 LOCATING RESOURCES IN COMMUNITY SERVICE

9 Hrs.

Orientation to Grade A, course use of e-mail, the electronic conference, accessing library resources, locating community service links on the Internet, locating service learning centers in higher education.

UNIT 3 GETTING STARTED IN COMMUNITY SERVICE

9 Hrs.

Introduction to the history and nature of volunteerism, and the role of volunteerism in Indian value, social, and political systems, thinking about volunteerism, values and value dilemmas, humanism, altruism, building a working relationship, empowering people.

UNIT 4 PREPARING AND DOING COMMUNITY SERVICE

9 Hrs.

Usefulness of the multidisciplinary approach. How theories guide our thinking and understanding. Relating theory to real life situations. Theories: ecological theory, systems theory, symbolic interaction, and discipline specific contributions, compatibility with the perspective.

UNIT 5 REPORTS AND CELEBRATION

9 Hrs.

Celebrating the service learning experience, integrating service learning and the multidisciplinary perspective, synthesizing experience and learning.

Max.45 Hours

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1 :** Demonstrate all competencies consistent with the objectives of this service learning course in their journal.
- CO2 :** Understand through their journals, discussion groups, and community service activities..
- CO3 :** Demonstrate in a scholarly paper, their ability to research, integrate and analyze their individual volunteer project
- CO4 :** Expected to attend all seminars, complete all assignments, participate in all seminar activities,
- CO5 :** Understand to assume active responsibility for their own learning by independent reading, literature search, and research
- CO6 :** Participation in community service activities.

TEXT/REFERENCE BOOKS

1. Coles, R. (1993). The call of service. New York: Houghton Mifflin Company
2. Albert, G (Ed.). (1994). Service-learning reader: Reflections and perspectives on service .
3. **Corporate Social Responsibility: Doing the Most Good for Your Company and Your Cause** by Philip Kotler and Nancy Lee.
4. **Soul of a Citizen: Living with Conviction in Challenging Times** by Paul Rogat Loeb.
5. **Good Works!: Marketing and Corporate Initiatives that Build a Better World...and the Bottom Line** by Philip Kotler , David Hesekiel and Nancy Lee

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks: 100

Exam Duration: 3 Hrs

PART A :

10 questions of 2 marks each - No choice

20 Marks

PART B :

2 questions from each unit of internal choice; each carrying 16 marks

80 Marks

SCSA2303	IoT LAB	L	T	P	Credits	Total Marks
		0	0	2	1	100

COURSE OBJECTIVES

- To identify the different technologies and different platforms in IoT
- To understand how to use sensors and actuators for design of IoT.
- To learn different protocols used in IOT.
- To learn the concepts of smart city development in IOT.
- To learn how to analysis the data in IOT.

SUGGESTED LIST OF EXPERIMENTS

1. Monitor the soil moisture level using Raspberry pi.
2. Monitor the surrounding air's quality using Arduino & sensors connected to a Raspberry Pi. 3. Implement Raspberry Pi as a local server by installing Apache, PHP, and MySQL.
3. Interface PIR sensor with ESP8266 WiFi module on NodeMCU platform.
4. Posting temperature and humidity of the environment to Thing speak cloud service using NodeMCU.
5. Implement Raspberry Pi Temperature System with Ubidots cloud service.
6. Implement smart cities Sensor Board v3.0 using Wasp mote platform for measuring temperature, humidity and pressure.
7. Measure light intensity and pollution level using Wasp mote platform.
8. Receiving and storing data in Meslium gateway for Wasp mote platform.
9. Implement barometric pressure monitoring using BMP280 sensor for Zolertia module.

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1:** Remember the concept of IoT components for implementing real time applications
- CO2:** Understand basic concepts about the hardware kits Auduino & Raspberry Pi and supported software.
- CO3:** Apply and implement various IoT applications like monitoring air quality, soil moisture etc.
- CO4:** Analyze IoT applications connected with Cloud servers
- CO5:** Design an IoT System for integrating smart city services.
- CO6:** Create an IoT system for real time monitoring applications.

SCSA2404	ROBOTICS LAB	L	T	P	Credits	Total Marks
		0	0	2	1	50

COURSE OBJECTIVES

- To introduce different types of robotics and demonstrate them to identify different parts and components.
- To learn the fundamentals of Robot program to perform various operations
- To model and simulate a Robot with pick and place operations.
- To Map the simulated robot into real world applications
- To Design a simple robot to recognize the individual components to assemble industrial applications

LIST OF EXPERIMENTS

1. Determination of maximum and minimum position of links.
2. Verification of transformation (Position and orientation) with respect to gripper and world coordinate system
3. Estimation of accuracy, repeatability and resolution.
4. Robot programming and simulation for pick and place
5. Robot programming and simulation for Color identification
6. Robot programming and simulation for Shape identification
7. Robot programming and simulation for machining (cutting, welding)
8. Robot programming and simulation for writing practice
9. Robot programming and simulation for any industrial process (Packaging, Assembly)
10. Robot programming and simulation for multi process.

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1** : Remember the concept of Robotics programming
CO2 : Understand basic concepts about Robot operations
CO3 : Apply and implement various Robot operations through simulation
CO4 : Analyse Robot programs for industrial applications
CO5 : Design a Robot to perform machining operations.
CO6 : Create a AI Robot to perform the task navigation, sense and calculate their reaction