SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi / Affiliated to Anna University, Chennai / Accredited by NAAC NBA Accredited-Mech, EEE and ECE programs)
Dindigul – Palani Highway, Dindigul 624 002

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

VAC

ON

ARTIFICIAL INTELLIGENCE AND ROBOTICS

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal
SSM Institute of Engineering and Technology
Kuttathupatti Village, Sindalagundu (Po),
Palani Road, Dindigul - 624 002.

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VAC
ON

ARTIFICIAL INTELLIGENCE AND ROBOTICS

Institute of Engineering and Technology * SSM * DINDIGUL-624002

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Palani Road, Dindigul - 624 002.

SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Sindalagundu Post,Dindigul-624002,Tamilnadu Ph:0451-2448800

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CIRCULAR

The Department of ECE has planned to conduct a **Short Term Course-"Artificial intelligence and robotics"** for Third year ECE students from 21.10.2019 to 25.10.2019 and 29.10.2019. Henceforth all the Third year ECE students are asked to use this opportunity to learn about the Artificial intelligence and robotics concepts clearly.

Schedule Details:

S.No	Date	No of days	Total Hours
1	21.10.2019 to 25.10.2019	5 days(50 hours)	55 hours
2	29.10.2019	1 day(5 hours)	

Resource person:

B.Angumaselvan

CEO

Base equipments

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S. Kanthkar
HOD

Artificial intelligence and robotics-Course Content

Phase I: Introduction

- **Introduction to Robotics**
- **Introduction to Microcontroller**

This session would deal with the basics of Microcontroller. The focus will be on the Arduino micro controller- ATMega328.

- ✓ What is Microcontroller?
- ✓ Difference between Microcontroller and Microprocessor
- ✓ Microcontroller Architecture and Interfacing
- ✓ How can we use Microcontroller in our Own Circuits?

Phase II: Introduction to Controlling Circuit

- ✓ Introduction to Motor
- ✓ Types of Motors
- ✓ Difference between DC motor and DC geared motor
- ✓ Motor Controlling IC (L293D)

Phase III: Introduction to Programming Languages

- ✓ Programming Languages- Assembly vs Embedded C.
- ✓ Microcontroller Programming using 'Embedded C'.
- ✓ Installation of Software and Debugging
- ✓ Writing your First 'Embedded C' Program
- ✓ Program Compilation and Debugging
- ✓ Loading Compiled 'C' Program into Microcontroller

Phase IV: Assembling the kit

- ✓ Assembling plays a major role that deals with the mechanical section of Robotics including mounting of components and mechanical stability.

Phase V: Analog to Digital Converter

- ✓ What is ADC? & Use of ADC

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- ✓ How it works
- ✓ Different mode and registers of ADC
- ✓ Programming ADC

Phase VI: Interfacing LCD Display

- ✓ Types of Display Devices
- ✓ 2x16 Characters LCD Display
- ✓ Pin out of LCD Display
- ✓ Interfacing of LCD with Atmega8

Phase VII: Interfacing IR Sensor

- ✓ Introduction to IR
- ✓ How connect digital Sensor?
- ✓ Controlling Motor using Digital value
- ✓ Project 1: Obstacle avoidance Robot

Phase VIII: Introduction to RF

- ✓ What is RF?
- ✓ How wireless technology works?
- ✓ Application of RF
- ✓ Programming of RF
- ✓ Project 2: Remote Controlled Robot

Phase IX: Introduction to Accelerometer

- ✓ What is Accelerometer?
- ✓ Types of Accelerometer
- ✓ Difference between Accelerometer and Gyro Sensor
- ✓ Application of Accelerometer
- ✓ Programming of Accelerometer
- ✓ Project 2: Hand Gesture Controlled Robot

Phase X: Introduction to Bluetooth Module

- ✓ What is Bluetooth
- ✓ Types of Communication
- ✓ Application of Bluetooth

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- ✓ Connecting Arduino with Mobile Device.
- ✓ Using the Bluetooth Module
- ✓ Programming of Bluetooth

Phase XI: Android Software Development

- Creating own Android App using MIT App Inventor 2
- Design an App for Bluetooth Module
- Prepare Backend Codes for App Development
- Back up & Installing Bluetooth App in Android device
- Interfacing Arduino Bluetooth Module with Android Device
- Controlling Arduino connected devices using Bluetooth App.

✓ Project 3: Bluetooth App Controlled Robot

Phase XII: LandRover Kit Demo

✓ After the hand on theory and practical experience from the workshop, demo will beprovided by the participants.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added Course Summary 2019-2020

Course Name: Artificial Intelligenge and Robotics

Course Duration: 55 hours

Year Offered: 2019-2020

Course Instructors: Angumaselvan,CEO
Base Equipments

Course Outcome:

On completion of the course, students will be able gain knowledge and skills required to understand, design, and implement intelligent systems and robotic applications

Course Type: Self Framed/ Collaboration with industry

Assessment Mode

Attendance: 55 hours

Number of Participants: 40

Scheme of Exam: MCQ

Course Co-ordinators

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HoD/ECE

SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Year / Section : III ECE B

VAC

ARTIFICIAL INTELLIGENCE AND ROBOTICS-STUDENT NAMELIST

S.No.	Reg. No.	Name of the Student	Signature of the Student 21.10	22/10	23/10	24/10	25/10	29/10
1	922117106041	KAARTHIC SHANKAR S						
2	922117106042	KALAIARASAN S						
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40	18LECE03	VISHNU				AB		

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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15	922117106055	MONICA P M	/	/	/	/	/	/
16	922117106056	MOUNIKA M	/	/	/	/	/	/
17	922117106057	NAGALAKSHMI N	/	/	/	/	/	/
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34	922117106074	PRAVEEN K	/	/	AB	/	/	/
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
VAC
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ARTIFICIAL INTELLIGENCE AND ROBOTICS

Name:
Reg No:
Year:

ASSESSMENT QUESTION PAPER

1. How many types of arduinos do we have?
a) 5
b) 6
c) 8
d) 7

2. What is the microcontroller used in Arduino UNO?
a) ATmega328p
b) ATmega2560
c) ATmega32114
d) AT91SAM3x8E

3. What does p refer to in ATmega328p?
a) Production
b) Pico-Power
c) Power-Pico
d) Programmable on chip

4. Arduino shields are also called as _____
a) Extra peripherals
b) Add on modules
c) Connectivity modules
d) Another Arduinos

5. What is the default bootloader of the Arduino UNO?
a) Optiboot bootloader
b) AIR-boot
c) Bare box
d) GAG

6. Does the level shifter converts the voltage levels between RS-232 and transistor-transistor logic.
a) True
b) False

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7. Which is the software or a programming language used for controlling of Arduino?
a) Assembly Language
b) C Languages
c) JAVA
d) Any Language

8. Do Arduino provides IDE Environment?
a) True
b) False

9. A program written with the IDE for Arduino is called _____
a) IDE source
b) Sketch
c) Cryptography
d) Source code

10. Arduino IDE consists of 2 functions. What are they?
a) Build() and loop()
b) Setup() and build()
c) Setup() and loop()
d) Loop() and build() and setup()

11. How many digital pins are there on the UNO board?
a) 14
b) 12
c) 16
d) 20

12. _____ board allows sewn into clothing.
a) UNO
b) RedBoard
c) LilyPad
d) Mega

13. How many analog pins are used in Arduino Mega board?
a) 16
b) 14
c) 12
d) 8

14. Which board is first to use microcontroller within build USB?
a) LilyPad
b) UNO
c) RedBoard
d) Leonardo

15. _____ are pre built circuit boards that fit on top of Android.
a) Sensor
b) Data types
c) Breadboard
d) Sheilds

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VAC
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ARTIFICIAL INTELLIGENCE AND ROBOTICS

Name: S. Vinyan
Reg No: 922117106065
Year: III

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15/15

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Year / Section : III ECE B

VAC

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19	922117106059	NAMPERUMAL M	5
20	922117106060	NANDHA KUMAR M	14
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SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY,DINDIGUL.

DEPARTMENT OF ECE

ARTIFICIAL INTELLIGENCE AND ROBOTICS PROGRAM FEEDBACK

Instructions:

Give your rating

(SDA-Strongly disagree,DA-Disagree,N-Neutral,A-Agree&SA-Strongly Disagree)

Student Name(Optional):

Year/Semester: 3rd year

Items	SDA	DA	N	A	SA
Clearly understood the objectives of the program					✓
The learning content of the modules are suited to the level of understanding of the learners					✓
The time given in conducting the program is appropriate					✓
I hope this program satisfied me					✓
This program really influenced me					✓

1. What did you learn from this program?

   I learnt about programming for controlling the robots

2. Other Suggestions/Comments

   All practical sessions are needed

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SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Certificate

OF COMPLETION

This is to certify that

P.NANDHINI

of III-ECE has attended value added course on" Artificial intelligence and robotics" in SSM Institute of Engineering ,Dindigul.

HoD

PRINCIPAL

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
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SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Certificate

OF COMPLETION

This is to certify that

RAJKUMAR K

of III-ECE has attended value added course on" Artificial intelligence and robotics" in SSM Institute of Engineering ,Dindigul.

HoD

PRINCIPAL

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SSM Institute of Engineering and Technology * DINDIGUL-624 002

SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Certificate

OF COMPLETION

This is to certify that

k.kaviya

of III-ECE has attended value added course on" Artificial intelligence and robotics" in SSM Institute of Engineering ,Dindigul

HoD

PRINCIPAL

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