

Brochure

South Indian Education Society's
GRADUATE SCHOOL OF TECHNOLOGY, Navi Mumbai.
DEPARTMENT OF ELECTRONICS AND
TELECOMMUNICATION

Introduction to Arduino, R-Pi and IoT

January 01 to January 6, 2024

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There is difference between education and knowledge. Education provides learning. While knowledge translates that learning into a career that earns a living. But the truth is, our education system is largely structured around academic learning, leaving the task of turning it into a career to the individual. For the less-privileged though, the only barrier that stands between them and a technocrat is knowledge of practical aspects of technology.

This course is meant to be a hands-on type of course, giving students a chance to learn rpi and its programming.

About Instructors:

This course will be taught by a team of expert from Industry and SIESGST faculty members of the Electronics and Telecommunication Department.

Industry Expert:

Dr. Y.S.Rao, Emtron Technologies, Mumbai

Faculty Members:

1. Prof. Vaishali Mangrulkar
2. Prof. Nita Patil
3. Prof. Pratibha Joshi

Course Objectives:

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To develop the background knowledge and core expertise of an embedded system design.
To know the importance of different peripheral devices and their interfacing to Arduino & RPi board.
To know the sensor interfacing and its programming.
To write python programs for Arduino, RPi for various applications.
To know the working of different sensors and their use in an embedded system
To understand the basic concept of OS and installation of OS

Course Outcomes:

Students will be able to

- Install OS for RPi
- Interface different sensors and actuators with RPi
- Write programs for Arduino & RPi using python.
- Understand the various python commands for Arduino& RPi.

Course Content:

Module	Contents	Hours
1.	Introduction to microprocessor and microcontroller, microcontroller interfacing, introduction to Arduino uno, IDE & R-Pi	6 hrs
2.	Configuration of GPIO pins of Arduino as an input or output for interfacing of different devices. Introduction to simulator and interfacing of sensor with Arduino board	6 hrs
3.	Introduction to potentiometer ,LDR t sensors and its interfacing with Arduino. Implementation of program using simulator	6 hrs
4	IoT and Sensors	6 hrs
5	Interfacing of following sensors and programming for RPi 1. LDR Sensor 2. Ultrasonic Sensor 3. DHT11 Sensor 4. Motion Sensor 5. LCD Sensor	10 hrs
6	Mini project based Arduino , RPi and sensors	11 hrs

Assessment:

1. Module wise assignments and quizzes should be completed by students.
2. 15 Days Internship will be provided subject to the successful completion of Mini Project.

Course Coordinators:

Prof. Vaishali Mangrulkar

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Department of Electronics and Telecommunication Engineering
Event Report

Introduction to Arduino, R-Pi and IoT

January 01 to January 6, 2024

Event Information

Event Type: Value added course

Event title: Introduction to Arduino, R-Pi and IoT

Resource Person:

1. Prof. Vaishali Mangrulkar
2. Prof. Nita Patil
3. Prof. Pratibha Joshi

Event date: January 01 to January 6, 2024

Organized for: SE & TE Students

Organized by: Department of Electronics and Telecommunication

Target audience (branch & nos.): SE & TE students all branches

Attachments: 1. Photographs (in JPEG/PNG)

2. Attendance report

3. Feedback

4. Certificate

Event Description

SDP on Arduino, RPi and IoT was started with session by prof. Vaishali Mangrulkar. During these six days of program students were introduced about Arduino Uno board, RPi board, sensor interfacing and IoT. Industrial visit was organised at Idea lab at SPIT, Mumbai as a part of SDP. Students explored use of different project setups available there for their project use. After completion of program, students submitted projects on different titles.

1. Photographs (in JPEG/PNG)





2. Attendance report

SIES Graduate School of Technology Department of Electronics and Telecommunication Arduino,RPI,IoT Value added course -FH2024 Attendance										
Sr No	Name	Roll number	Cl. Sec	Branch	1/1/2024	2/1/2024	3/1/2024	4/1/2024	5/1/2024	6/1/2024
1	BHAKTI BHANUSHALI	122A2009	SE	EXTC						
2	JEEVITHA GOWDA	122A2018	SE	EXTC						
3	BOBBY MEHTA	122A2011	SE	EXTC						
4	ABDULLA PERAMPALLI	122A6002	SE	MECH						
5	PRANAV DESHMUKH	122A2030	SE	EXTC						
6	RUTVIK ZAGADE	122A2042	SE	EXTC						
7	ADITYA PILLAI	122A1010	SE	CE						
8	KRISH YAGYIK	122A2021	SE	EXTC						
9	POSHANJEET MANDAL	122A2029	SE	EXTC						
10	KUSHAL MOHITE	122A7022	SE	ECS						
11	PRANJAL	122A2031	SE	EXTC						
12	YASH JUVEKAR	122A2061	SE	EXTC						
13	SHRAVANI THANGE	122A2050	SE	EXTC						
14	TANISHQ WADHWAN	122A6020	SE	MECH						
15	SAKSHI THALI	122A2044	SE	EXTC						
16	VIGNESH MUDALIYAR	122A2059	SE	EXTC						
17	SEJAL KESHRI	122A2049	SE	EXTC						
18	SANSKRUTI MURGUNDE	122A2048	SE	EXTC						
19	SUKANYA PAWAR	122A2054	SE	EXTC						
20	SHRAVANI INDALKAR	122A2051	SE	EXTC						
21	NEHA ROGE	122A2025	SE	EXTC						
22	CHITRALEKHA RAUT	122A2013	SE	EXTC						
23	TANISHQ SHINDE	122A2054	SE	EXTC						
24	ADITHYA	122AX005	SE	IoT						
25	LUKSSHAN NAIDU	223A2066	SE	EXTC						
26	VEDANT MANKAR	122A2057	SE	EXTC						
27	SIDDHI DHANAWADE	223A2063	SE	EXTC						

28	ARPITA RAUT	122A2006	SE	EXTC	1/1/2024	2/1/2024	3/1/2024	4/1/2024	5/1/2024	6/1/2024
29	SUJAL GHODKE	122A2052	SE	EXTC						
30	AARYAN RANADE	223A2067	SE	EXTC						
31	ESHAAN RANADE	122A2068	SE	EXTC						
32	GOURI HUILGOL	122A2016	SE	EXTC						
33	JASPRIT KOHLI	223A2065	SE	EXTC						
34	NIRAV LOKHANDE	122A2027	SE	EXTC						
35	CHETANSHU BORSE	122A2012	SE	EXTC						
36	PRAVYA SHETTY	122A2034	SE	EXTC						
37	SWARANG WAGHMARE	223A2069	SE	EXTC						
38	DEEP PANCHAL	122A2012	SE	IT						
39	Shreyas Marathe	122A	SE	IoT						
40	Mayuresh	122A2023	SE	EXTC						
41	Sanjana	122A2046	SE	EXTC						
42	Kritika	122A2021	SE	EXTC						
43	Apurva	122A2005	SE	EXTC						
44	Aryan Thakur	122A2007	SE	EXTC						
45	Umair Khan	122A2024	SE	EXTC						

3. Feedback (Analysis)

Email	Name	Br	CO1: Io devel	CO2: Io know	CO3: Io know	CO4: Io write	CO5: Io know	CO6: Io undr	Your suggestion about SDP contents	Would you like to at
abdullatpme122@gst.sies.edu.in	ABDULLA PERAMPALLI	Mech	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Somewhat well	It was good	Yes, raspberry pi
tanishqswme122@gst.sies.edu.in	TANISHQ WADHWAN	Mech	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Every thing was good	Yes, I would like to attend a mechatronics workshop
shreyashkmiot122@gst.sies.edu.in	SHREYASH MARATHE	IoT	Neutral	Neutral	Neutral	Neutral	Somewhat well	Neutral	Great it gave hands on experience	Yes, on the subjects of AI, BlockChain
kritikasextc122@gst.sies.edu.in	KRITIKA SINGH	EXTC	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Nothing	Yes, Establishing Identit
bobbyjmextc122@gst.sies.edu.in	BOBBY MEHTA	EXTC	Extremely well	Somewhat well	Extremely well	Somewhat well	Extremely well	Extremely well	The final project problem statement should be given to students so they will think on that and create a solution with the knowledge they gained in SDP.	Yes. Sensor Technology.
sukanyakpextc122@gst.sies.edu.in	SUKANYA PAWAR	EXTC	Extremely well	Somewhat well	Somewhat well	Neutral	Extremely well	Somewhat well	Nothing	Yes, bluetooth, voice detected
aryanstextc122@gst.sies.edu.in	ARYAN THAKUR	EXTC	Extremely well	Extremely well	Somewhat not	Extremely well	Extremely well	Extremely well	-	Yes. R pi

t.sies.edu.in	ARYAN THAKUR	EXTC	Extremely well	Extremely well	Somewhat not	Extremely well	Extremely well	Extremely well	-	Yes, R pi	
kushalrmecs122@gst.sies.edu.in	KUSHAL MOHITE	ECS	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Keep the curriculum updated with the latest advancements in the field of IoT. This could involve introducing new technologies like AI integration or cloud connectivity in projects. In addition to technical skills, consider incorporating workshops or sessions that develop essential soft skills like teamwork, problem-solving, and communication.	Yes, I would like to attend similar SDPs like this. For suggestion purpose I'll suggest to add SDP in Cybersecurity, Blockchain technology.
apurvamrextc122@gst.sies.edu.in	APURVA RAHATE	EXTC	Somewhat well	Extremely well	Extremely well	Neutral	Extremely well	Somewhat well	Attended for the first time and was a good experience.	--	
poshanjeetbmxctc122@gst.sies.edu.in	POSHANJEET MANDA	EXTC	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Extremely well	Topics taught during the session were really helpful and can come handy in future use as well.	Yes

Impact Analysis: In One week SDP on “Introduction to Arduino, R-Pi and IoT” Students were taught basics of Arduino, RPi and IoT, introduction to these boards and sensors. Students found the SDP useful and they want to attend such programs in future as well.

Outcome : Students were given project topics at the end of SDP in a group and they presented the projects they developed.

List of students who successfully completed Value added course on Introduction to Arduino,R-pi and IoT in FH2024					
Sr No	No	Group members name	Roll No	Branch	Title
1	1	Aaryan Thakur	122A2007	EXTC	Festival Lighting
2		Chitralkha Raut	122A2013	EXTC	
3	2	Sukanya Pawar	122A2053	EXTC	Automating lighting system using LDR
4		Sanskriti Murgunde	122A2049	EXTC	
5	5	Chetanshu Borse	122A2012	EXTC	Smart Environmental monitoring system
6		Adithya Venkat	122AX005	CSE (IoT & CSiBCT)	
7		Kushal Mohite	122A7022	ECS	
8	6	Tanishq W	122A6020	Mech	Trash bot
9		Abdullah P	122A6002	Mech	
10		Bobby Mehta	122A2011	EXTC	
11	7	Shreyash Marathe	122AX044	CSE (IoT & CSiBCT)	Alcohol Detection For Car Safety
12		Pranav Deshmukh	122A2030	EXTC	
13		Kritika Singh	122A2046	EXTC	
14		Sanjana Gupta	122A2022	EXTC	
15	8	Apurva Rahate	122A2005	EXTC	Radar Detection using Arduino Uno
16		Mayuresh Abhang	122A2023	EXTC	
17		Nirav Lokhande	122A2027	EXTC	
18		Poshanjeet Mandal	122A2029	EXTC	