Toc H INSTITUTE OF SCIENCE & TECHNOLOGY TIST
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DEPARTMENT OF ELECTRONICS, TIST

SPAN – Skill Planning and AcquisitioN Cell

SPAN – Skill Planning and AcquisitioN Cell continued its activities in the even semester of the academic year 2021-22 to meet its objectives.

SPAN ACTIVITIES - EVEN SEMESTER (2021-2022)

S. NO.	DATE	PROGRAM	BATCH	NUMBER OF STUDENTS
1	29.4.2022	Image Processing using OpenCV-Python	S6 ECE	9
			S6 RA	14
2	27.5.2022	Embedded C programming and simulation of AVR Microcontrollers using Proteus	S4 ECE	6
			S4 RA	10
3.	2.6.2022, 9.6.2022	DOBOT Magician Robotic Arm- A Customized Workshop	EC, RA Teaching and Lab Faculty	10
4.	13.6.2022 to 30.7.2022	Core Python programming and Data Science using Python	EC, RA students	7
			EC, RA Faculty	4

WORKSHOP ON IMAGE PROCESSING USING OpenCV-PYTHON

It is seen that there is no lab for exposing students to concepts of image acquisition, image processing and also modern tools for Computer Vision. After identifying this gap in the syllabus, in order to enhance the understanding of concepts and to enable students with skills required for doing projects in image processing, a workshop was conducted. The students were equipped with fundamental skills to enable them to continue practice independently using open-source software OPENCV-PYTHON. Concepts

covered included getting started with images, videos, basic operations on images, thresholding, concepts of color, thresholding, edge detection.

Embedded C programming and simulation of AVR Microcontrollers using Proteus

Embedded C programming is not addressed sufficiently within the syllabus. To bridge this gap and to introduce the students to the power and flexibilities of Embedded C programming, SPAN conducted a workshop on 27.5.2022. The target microcontrollers were chosen from the AVR ATmega seriesmicrocontroller family. This workshop was also designed to expose students to the industry standard Proteus VSM software tool.

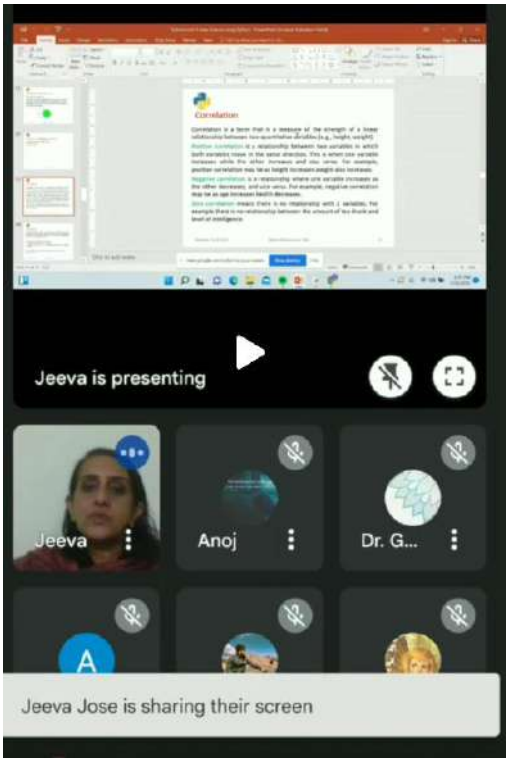
DOBOT Magician Robotic Arm- A Customized Workshop

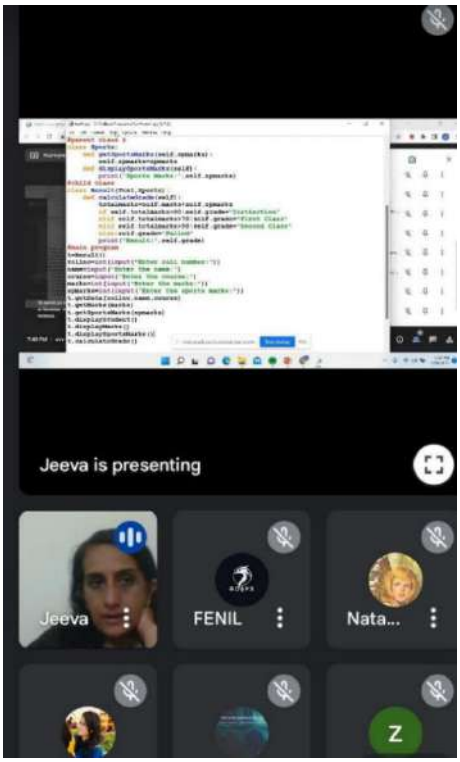
DOBOT Magician is a multifunctional small-sized desktop robotic arm for practical training education, deploying multiple functions, such as pick and place operations, sorting, 3D printing, laser engraving etc. This robotic arm supports secondary development in 13 interfaces and 20 programming languages.

Mr. Senthil and Mr. Siddharth Vijay resource persons from Autobots Inc led the session for Department of Electronics (ECE and RA) faculty on 2nd June 2022 and 9th June 2022. This custom workshop covered topics such as the DOBOT Magician's input and output ports, sensors, conveyor belts, sliding rails, vision cameras, joint space and Cartesian space trajectory planning for a pick and place task, object tracking, and visual servoing.

Core Python programming and Data Science using Python

SPAN in association with ELECTRAA and RSI organized a 30 hour online training program on Core Python programming and Data Science using Python for students and faculty. The resource person was Associate Professor Dr. Jeeva Jose, Department of Computer Applications, BPC College, Piravom – renowned Python Trainer and author of multiple books in the field. The workshop covered basic and advanced concepts of the Python Programing Language, Data Science using Python, Data visualization and open source libraries (numpy, pandas and matplotlib etc) essential for advanced mathematical operations and representing mathematical functions and data. The hands on training sessions with numerous practical examples and programs was well appreciated by students and faculty.





SPAN ACTIVITIES - ODD SEMESTER (2021-2022)

SPAN takes great pride in announcing that AICTE has acknowledged our efforts and funded our activities for the year 2021-22 under the Scheme for Promoting Interests, Creativity and Ethics among Students (SPICES). We are very grateful to AICTE-SPICES and the Management of TIST for their support.

S. NO.	DATE	PROGRAM	BATCH	NUMBER OF STUDENTS
SPAN Programs for TIST Students				
1	18.10.2021	Ideathon 2021 (Theme: Innovative and Socially Relevant Projects) in association with IMPaCT Lab, DoE	S7 ECE	35
2	26.11.2021	Arduino Microcontroller Board and Applications	S3 ECE	12
			S3 RA	12
3	29.11.2021 to 1.12.2021	Robot operations and programming – Fanuc India Pvt. Ltd.	S5 RA	45
4	6.12.2021	Agrithon 2021 (Theme: Technology based solutions for current problems in Agriculture) in association with IMPaCT Lab, DoE	S3 ECE	28
			S3 RA	46
5	6.12.2021	Healthcare Hackathon 2021 (Theme: Affordable Healthcare Technologies) in association with IMPaCT Lab, DoE	S5 ECE	34
			S5 RA	59
6	10.12.2021	IoT with NodeMCU	S5 ECE	24
			S5 RA	35
7	17.12.2021	Arduino Microcontroller Board and Applications	S3 ECE	11
			S3 RA	9
8	17.12.2021	Aurora, Technozerre, Project Expo 2021 (Theme: Project Competition) in association with IEEE Student Chapter, TIST	S1, S3, S5, S7 (all branches)	All BTech students of TIST
9	4.01.2022	Capture - Photography Contest (Theme: Engineering in Nature)	S1, S3, S5, S7 (ECE, RA)	270
10	4.01.2022	Diseno - Poster Contest (Theme: Eco-friendly and Sustainable Development)	S1 ECE	26
			S1 RA	42

11	13.01.2022	Jai Ho - Patriotic Song Contest (Theme: Patriotic Songs)	S1, S3, S5, S7 (ECE, RA)	270

S. NO.	DATE	PROGRAM	SCHOOL
SPAN Programs @ School			
1	22.10.2021	Social Outreach Program – Recent Trends in Electronics	Fathima Matha School, Piravom
2	19.01.2022	Social Outreach Program – Engineering your future with Electrobotics	MKM Higher Secondary School, Piravom
3	21.02.2022	Social Outreach Program – Project Competition	Fatima Central School, Piravom, St.Sebastian's HSS, Palluruthy, S.N.D.P Higher Secondary School, Udayamperoor

S. NO.	DATE	PROGRAM	Attended by
SPAN Programs for TIST Faculty			
1	12.11.2021	Workshop on 8051/Arduino Microcontroller Programming	Faculty of EEE and EL

ARDUINO MICROCONTROLLER BOARD AND APPLICATIONS

SPAN conducted workshops to familiarize students with the Arduino Microcontroller board and its applications. Students learnt to build circuits that use the analog and digital I/Os of the Arduino board. Serial communication to monitor and control applications, interfacing of sensors and actuators and decision making structures were utilized in various applications. Speed and direction control of motors using various techniques were carried out.

IoT with NodeMCU

The workshop on IOT with NodeMCU covered the basics of IoT, Arduino Uno board and NodeMCU. The students then developed an IoT-based system application. An app was also developed to control the system. The programming for the system was done in Arduino IDE and Firebase was used to develop the app and control it.

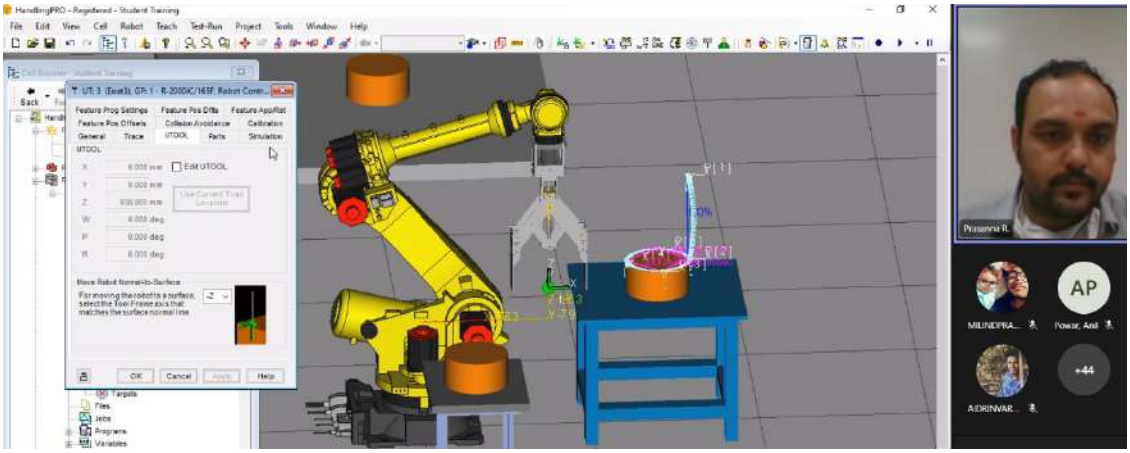
Robot Operations and Programming – Fanuc India Pvt. Ltd.

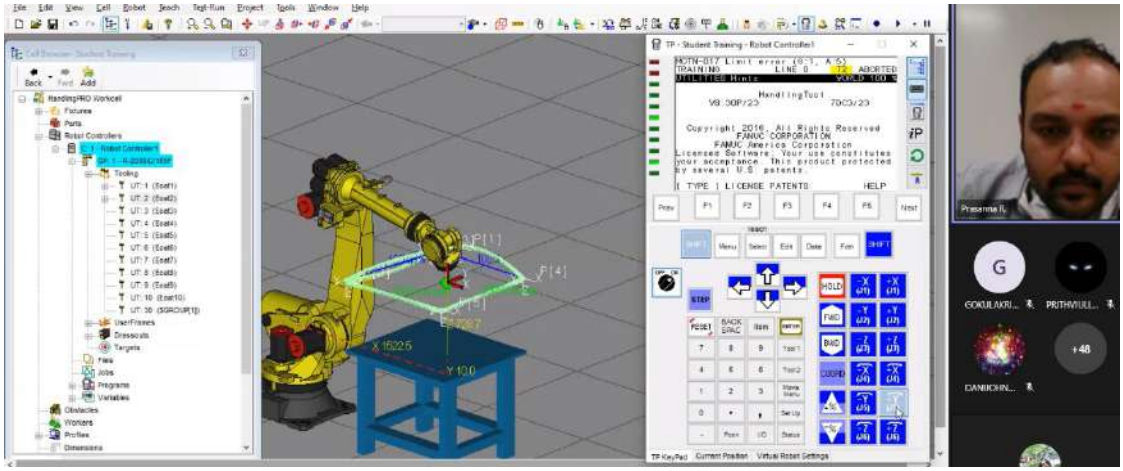
This program was conducted in association with FANUC India Pvt. Ltd. Students of BTech Robotics and Automation participated in the program to develop their skills in robot programming and to develop real industrial robotics application using FANUC's development tool 'ROBOGUIDE'

The topics covered were:

- Robot selection and application
- Robot controllers and mechanical parts
- Safety standards on robots
- Different operating modes, Coordinate systems, jogging of robot

- Creation, selection of program, motion instructions, control instructions
- Loading and unloading application for a machine tool
- Application development and simulation using roboguide software

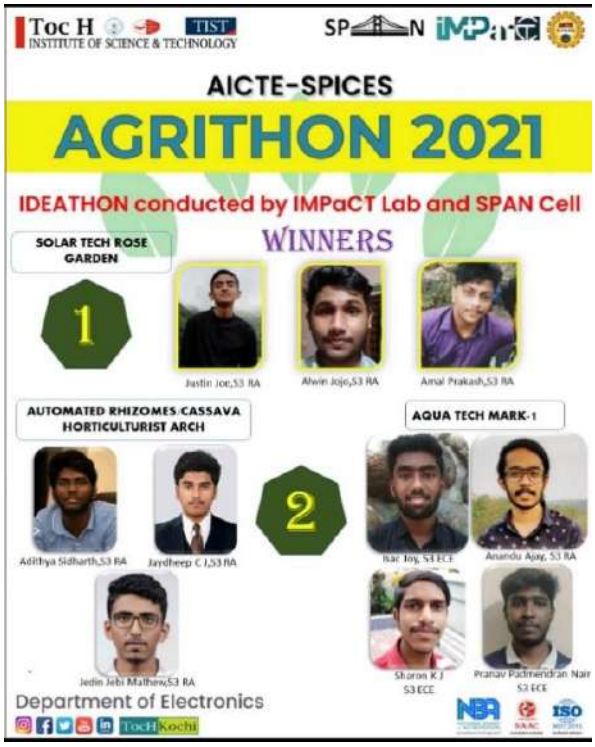




SPAN also conducted Ideathons, Hackathons in association with IMPaCT Lab of the Department of Electronics and a Project Expo in association with IEEE to encourage students to identify relevant problems in society and ideate and implement technological interventions to tackle these problems.

Ideathon 2021 (Theme: Innovative and Socially Relevant Projects) in association with IMPaCT Lab, DoE

Agrithon 2021 (Theme: Technology based solutions for current problems in Agriculture) in association with IMPaCT Lab, DoE



Healthcare Hackathon 2021 (Theme: Affordable Healthcare Technologies) in association with IMPaCT Lab, DoE

Aurora, Technozerre, Project Expo 2021 (Theme: Project Competition) in association with IEEE Student Chapter, TIST

Social Outreach Program – Recent Trends in Electronics

A Social Outreach program on "Recent trends in Electronics" was conducted for the students of Fathima Matha School, Piravom on 22nd October 2021. The technical social outreach initiative of SPAN aims to create awareness among school students about various aspects of engineering and electronic devices and components to enable them to build their own projects and participate in competitions.

Social Outreach Program – Engineering your future with Electrobotics

As a part of the Social Outreach Program 2021-22, a session on "Engineering your future with Electrobotics" was conducted by SPAN for the students of MKM Higher Secondary School, Piravom on 19th January 2022. This technical social outreach program of SPAN gave the students an introduction to the scope of Electronics and Robotics to prepare them to make suitable career choices and also to help them gain an understanding of the application of the various concepts learnt in science.

Social Outreach Program – Project Competition

In addition to this, SPAN sponsored prizes for project competitions in three selected schools from the AICTE SPICES grant.

The selected schools are:

1. Fatima Central School, Piravom

2. St.Sebastian's HSS, Palluruthy

3. S.N.D.P Higher Secondary School, Udayamperoor

SPAN has also agreed to mentor and train school students as when required to prepare them to meet the technological challenges of the present and future.

In order to provide a platform for showcasing the talents of our students and blending with socially relevant themes, SPAN conducted poster designing, photography and singing competitions.

The details of the competitions are given below.

Capture - Photography Contest (Theme: Engineering in Nature)

Diseno - Poster Contest (Theme: Eco-friendly and Sustainable Development)

Toc H INSTITUTE OF SCIENCE & TECHNOLOGY
TIST
SPAN
SPAN Cell Presents
Diseño
Design your posters now!
2K
1st Prize
1K
2nd Prize
Theme :
Eco-Friendly & Sustainable Development
Hand painted • Digital • Combination of both
Register at
bit.ly/diseno2k22
Registration date
20 Dec 2021
Submission date
4th Jan 2022
For Queries
Sreelakshmi: 7994154908
Jayakrishnan: 7559813299
Department of Electronics
TocHKochi

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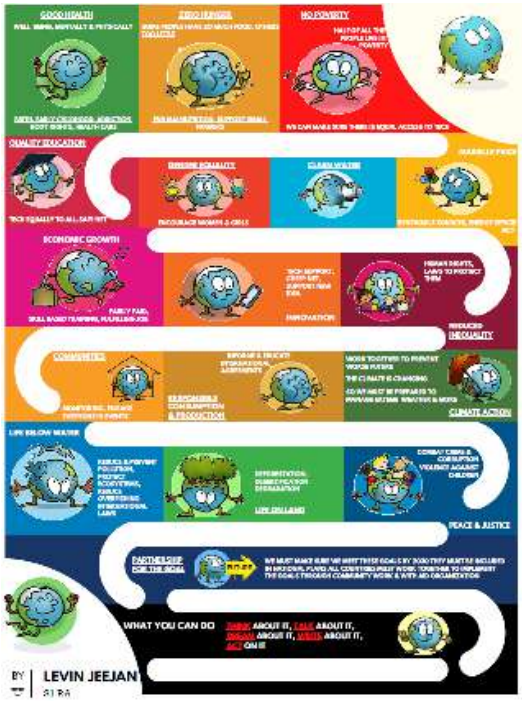
TIST
Department of Electronics
SPAN
AICTE-SPICES
DISENO (Poster Contest)
Conducted by SPAN Cell
Theme:
Eco-Friendly &
Sustainable Development
WINNERS
Congratulations
1
LEVIN JEEJAN
S1 RA
2
NAZRIN K.N
S1ECE
TERESA MEENU K J
S1RA
SIDDARTH R
S1RA
Toc H Kochi


GOOD HEALTH
NO POVERTY
QUALITY EDUCATION
ECONOMIC GROWTH
REDUCED INEQUALITY
CLIMATE ACTION
LIFE BELOW WATER
PEACE & JUSTICE
WHAT YOU CAN DO
THINK ABOUT IT, TALK ABOUT IT, DRAW ABOUT IT, WRITE ABOUT IT, ACT ON IT
BY
LEVIN JEEJAN
S1 RA

SAVE IT or WASTE IT
BIO
What next generation will drink?
What will your children breathe?
What would nature do?
When there is a doubt, don't throw it out
When you refuse to reuse, its our earth you abuse
Recycle
the Green life
GO GREEN
THINK GREEN

Jai Ho - Patriotic Song Contest (Theme: Patriotic Songs)

Workshop on 8051/Arduino Microcontroller Programming

A workshop was conducted by SPAN on 12th November 2021 for the faculty of Electrical and Electronics Engineering department, TIST. The session gave the participants an opportunity to familiarize and practice programming of 8051 and Arduino microcontrollers.

Dr. Georgina Binoy Joseph,

Coordinator, SPAN