DEPARTMENT OF ELECTRONICS

SPAN – **S**kill **P**lanning and **A**cquisitio**N** Cell

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SPAN – Skill **P**lanning and **A**cquisitio**N** Cell continued its activities in the even semester of the academic year 2018-19 to meet its objectives which are to

(i) improve employability of students by exposing them to relevant industry standard platforms

(ii) foster in students and staff the ability to design and implement projects catering to the needs
 of society

(iii) facilitate students and staff to keep up with rapidly changing technologies

(iv) make learning effective and enjoyable

SPAN ACTIVITIES - EVEN SEMESTER (2018-19)

S. NO.	DATE	PROGRAM	BATCH
1	1.2.19	Virtual Instrumentation using LabVIEW	S6 ECE, S2 M.Tech VLSI &Embedded Systems
2	8.3.19	Electronics Made EZ – Analog Electronics Workshop	S2, S4 ECE
3	15.3.19	Electronics Made EZ – Analog Electronics Workshop	S2, S4 ECE
4	26.3.19	Antenna Design & Analysis	S2 M.Tech Wireless Technology
5	27.3.19	Analog Custom IC Design Flow using Cadence Tools	S1 ECE, S5 SF
6	29.3.19	Electronics Made EZ – Analog Electronics Workshop	S2, S4 ECE

Electronics Made EZ – Analog Electronics Workshop

Technology graduates today are working in disruptive environments with changing job roles which require up-skilling and fine tuning of fundamentals. In major thrust areas such as Robotics and Automation and Artificial Intelligence, it is not enough to be able to code for or build digital

hardware, it is essential to have a sound fundamental base in Analog Electronics. (Reference - Article in 'The Times of India, 25.2.19')

The objective of the workshop is the formation of a thorough base in the fundamentals of analog electronics through learning by application and exploration. This workshop shows participants how easy and enjoyable it is to assemble and test electronic circuits .

WORKSHOP ON VIRTUAL INSTRUMENTATION USING LabVIEW

SPAN conducts one day workshops to familiarize students with **Laboratory Virtual Instrument Engineering Workbench** (**LabVIEW**). LabVIEW is a system-design platform and development environment for a visual programming language from National Instruments. The objective of the workshop is to enable participants to use Lab VIEW for Virtual Instrumentation. Participants learn to create VIs and use graphical programming for the acquisition, processing and display of analog and digital signals. Graphical decision making structures are used in various applications including signal processing, monitoring and control.

WORKSHOP ON ANTENNA DESIGN AND ANALYSIS

SPAN conducts one day workshop to familiarize students with Antenna Design & Analysis. The objective of the workshop is to make aware of the participants about the progress of research, development in innovative antenna technology. The session started with the basics of microstrip patch antennas, which have become very popular in recent decades due to their thin planar profile that can be incorporated into the surfaces of consumer products, aircraft and missiles. They learn to design microstrip patch antenna for specific resonant frequency. The analysis of the antenna is also carried out.

WORKSHOP ON ANALOG CUSTOM IC DESIGN FLOW USING CADENCE TOOLS

SPAN conducts one day workshops to familiarize students with Cadence ASIC design Tools. Participants are given practical training on various aspects of Custom analog IC design flow that includes:

- Circuit schematic and symbol generation using Virtuoso Schematic Editor
- Simulation using ADE L
- Layout using Layout XL
- DRC, LVS, RC Extraction using Assura
- Back Annotation and Post Layout Simulation
- GDS II file generation.

The Department of Electronics and Communication Engineering has always recognized the need for upgrading the skills of students and faculty to keep up with the rapidly changing requirements of the technology industry. Various workshops have been conducted by the department keeping these technological requirements in mind. In order to **bridge** the gap between industry and academics, the ECE department is launching **SPAN – Skill Planning and AcquisitioN Cell** that will identify and plan skill development programs according to current industrial requirements. The objectives of this cell are to

(i) improve employability of students by exposing them to relevant industry standard platforms

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Inauguration of Skill Planning and Acquisition Cell SP🌉N

INTER DISCIPLINARY PROGRAMS

SPAN will also conduct workshops for students from other departments to promote the culture

 of inter disciplinary projects.

SPAN Workshops were conducted for ME, IT and SF Departments

SOCIAL OUTREACH

As a part of our **social outreach programme** in fostering an interest in technology in our neighborhood, SPAN also proposes to conduct workshops for school students.
It is an effort to bridge the gap between school education and engineering education enabling school students to undertake interesting technical projects.


SPAN Workshop conducted for Bhavan's Munshi Vidyashram, Thiruvankulam

SPAN ACTIVITIES - ODD SEMESTER (2018-19)

S. NO.	DATE	PROGRAM	BATCH
1	17.7.18	Arduino Microcontroller and Applications	S7 ME
2	4.8.18	Virtual Instrumentation using LabVIEW	S5 ECE
3	10.8.18	Analog Custom IC Design Flow using Cadence Tools	S7 ECE
4	28.9.18	Arduino Microcontroller and Applications	S1, S3 ECE
5	5.10.18	Arduino Microcontroller and Applications	S1 ECE, S5 SF
6	9.11.18	Arduino Microcontroller and Applications	S7 IT
7	16.11.18	Arduino Microcontroller and Applications	S1 ECE
8	26.11.18	Arduino Microcontroller and Applications	Bhavan's Munshi Vidyashram, Thiruvankulam
9	4.12.18	Arduino Microcontroller and Applications	Bhavan's Newsprint Vidyalaya, Velloor
10	11.12.18	Arduino Microcontroller and Applications	Fatima Central School, Piravom

ARDUINO WORKSHOP

SPAN conducts one day workshops to familiarize students with the Arduino Microcontroller and its applications The objective of the workshop is to enable participants to use the Arduino Microcontroller in an embedded application in their domain. Participants learn to program the Arduino UNO board using the Arduino IDE. They learn 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 are utilized in various applications. Speed and direction control of motors using various techniques are carried out.
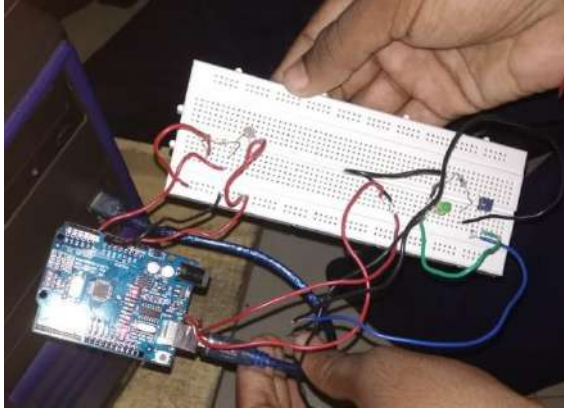
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Exercise 9: Filtering

In Block Diagram - Functions palette – Signal Analysis
•Simulate Signal
•Filter
•Spectral
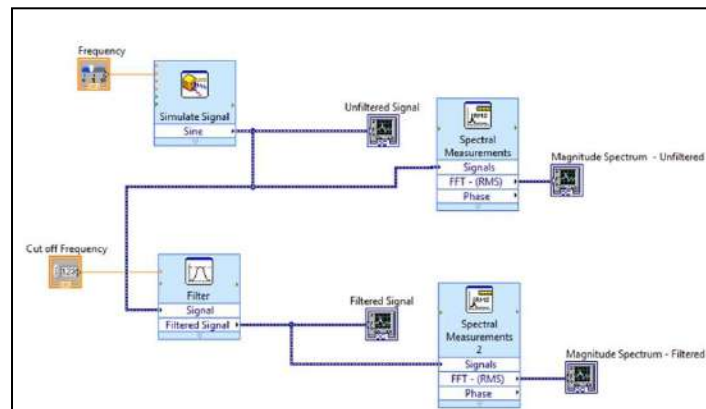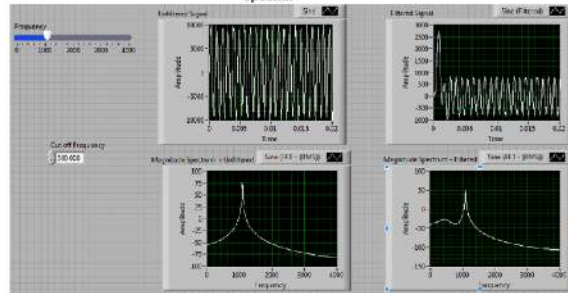
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Layout

S5 Construct the Circuit

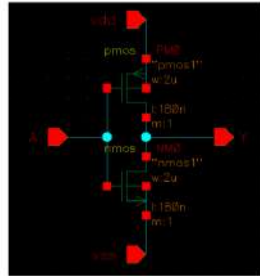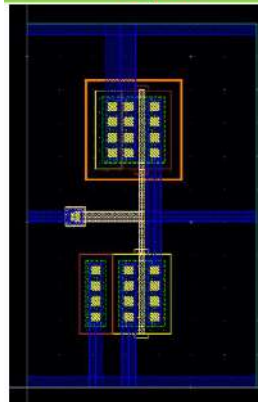**Shortcuts**
- i – Adding instance
- p – Adding pin
- r – Rotation
- w - wiring

 Check and Save

Dr. Georgina Binoy Joseph,

Coordinator,