Report of Council Meeting-I

Discussions:

The meeting started with a silent prayer. Dr. Murugan R, Associate Professor, Department of Computer Applications welcomed the faculty members from various departments. He imparted an awareness about MHRD's Innovation Cell and about the Institution's Innovation Council. The requirement for the updation from IIC 1.0 to IIC 2.0 were also discussed with the members. Ms. Shareena E M, Assistant Professor, Department of Electronics shared the experience related to IIC Mentoring and Orientation session she had from Marian College of Engineering, Thiruvananthapuram on 7th August 2019. The committee decided to select at least 10 student members from each department representing IIC council.

Decisions:

1. Constitution of IIC Council:

   a) President - Dr. Murugan R
   b) Convener - Ms. Shareena E M
   c) Innovation activity Coordinator (Faculty) - Ms. Jishna T Hassan
   d) Start-up activity Coordinator (Faculty) - Mr. Ajith Rajan
   e) Internship Coordinator (Faculty) - Dr. Mamatha C

f) IPR activity Coordinator (Faculty) - Adv. Mohan Raj

g) Social Media Coordinator (Faculty) - Mr. Sachin K

h) ARIIA Coordinator (Faculty) - Lt. Ibrahim Salim

i) NIRF Coordinator (Faculty) - Dr. Jasmine P M

2. Schedule of -IIC Calender activities:

Sl. No.	Particulars	Proposed Date
1	Field Visit - Maker Village, Kinfra Park, Kalamassery, Kochi	Third week of September, 2019
2	Motivational Speak – by an Entrepreneur	First week of October, 2019
3	Motivational Speak – by an Innovator	Second week of October, 2019

IEEE PAPER PRESENTATION

REPORT

As part of the Electronics Research Forum and IIC this year the department conducted the electronics paper presentation for the first year MSc. Electronics(2019admn) students on 29 August 2019. Though this is not part of their syllabus, the prime objective is to develop the presentation skills of the students and to familiarize various journals in the electronics field. All the students (27 nos) presented papers which have been published in reputed journals.

LITERATURE SURVEY PRESENTATION

REPORT

Under the auspice of Electronics Research Forum the final year PG students conducted a literature survey in various broad areas of Electronics. They collected fifteen or more research papers from reputed journals, discussed in the groups and presented it in the class. This has been done for the better understanding of various journals and sites in the electronics research area and to develop the presentation skills and also to inculcate a research aptitude. Afterwards the students may develop their academic projects based on these papers or may proceed with research in these areas.

The programme was inaugurated by Sri. Ajimsha Maideen, Coordinator of Vocational Studies. Dr. Raphika P M, Associate Professor of the department addressed the students and gave guidance on research as well as on career opportunities. Ms. Chika K, Coordinator of the programme proposed vote of thanks.

The 28 students of final year PG students in 10 batches presented the literature survey review on 30 August 2019 at the Main block Conference Hall. The feedback showed that the programme was effective because many of the batches intend to do the academic project in the surveyed area and also plan to present papers on the same at the earliest opportunity.

REPORT ON ENTREPRENEUR'S TALK ON IoT BASED EMBEDDED SYSTEM DESIGN

The Department of Electronics arranged a Talk on IoT based Embedded System Design on 20 September 2019 at the Conference Hall at 2 PM. Dr. Jasmine P M, Head, Department of Electronics welcomed the gathering and introduced the resource person. Mr. Jaccs Job Pottas, Director, Terra Connect Pvt. Ltd and Pottas Devices and Systems was the resource person. He discussed different layers of IoT and IoT based Embedded System Design. The talk was beneficial for the students since it gave an overview of different project areas and job areas in this field. He also discussed real time examples of current projects undergoing at his firm and also cleared the doubts of the students on various topics.

The PG students and final year UG students(105) and 11 staff members attended the talk. Ms. Anjali Sujai, PG second year student delivered the Vote of thanks. Ms. Sheeba Varghese and Ms. Roshni Alex coordinated the programme.

ICT Enabled Teaching/Learning Process

A One-day Faculty Development Programme on ICT Enabled Teaching/Learning Process conducted by the Department of Computer Applications in association with ICT CELL on 25th September, 2019. The main aim of the programme was "Transform Classrooms into High-Tech Learning Spaces". The program started at 9.45 am.

Dr. Murugan R, Head of the Department of Computer Applications welcomed the gathering. Principal Dr. A Biju inaugurated the function. Vice Principal Dr. Manzur Ali P P felicitated the programme and Mr. Joseph Deril, Associate Professor, Department of Computer Applications delivered the vote-of-thanks.

Dr. Murugan R taken a hands-on session on Google Drive facilities, various Cloud Storage platforms, etc. He explained a novel model for maintaining "Class-Room Blogs" and various tips for Advanced Bloggers. He facilitates opportunity to manage various themes and layouts and finally integrates class room activities like, distribution of lecture notes, assignments with deadlines, self-evaluation modules like Quiz with multiple choices and fill in the blanks models, in a Blog. The session concluded 4.30 pm.

Hands on Workshop - "Creative Likhitha"

Department of Animation & Graphic Design conducted a hands on workshop for the first year & second year students in Graphic Designing by a famous graphic designer Sri.Nazeerkutty, Director ,Wings Creations, on 1st October 2019.

Graphic Design is all around us! This workshop make our students more confident in foundational skills that are common in all areas of graphic design practice. Through visual examples, they learned a lot about how to see / frame data, and ways to present it visually to convey a message.Our thoroughly inspired and got lots of brilliant ideas.

REPORT ON ONE DAY WORKSHOP ON INTRODUCTION TO MACHINE LEARNING
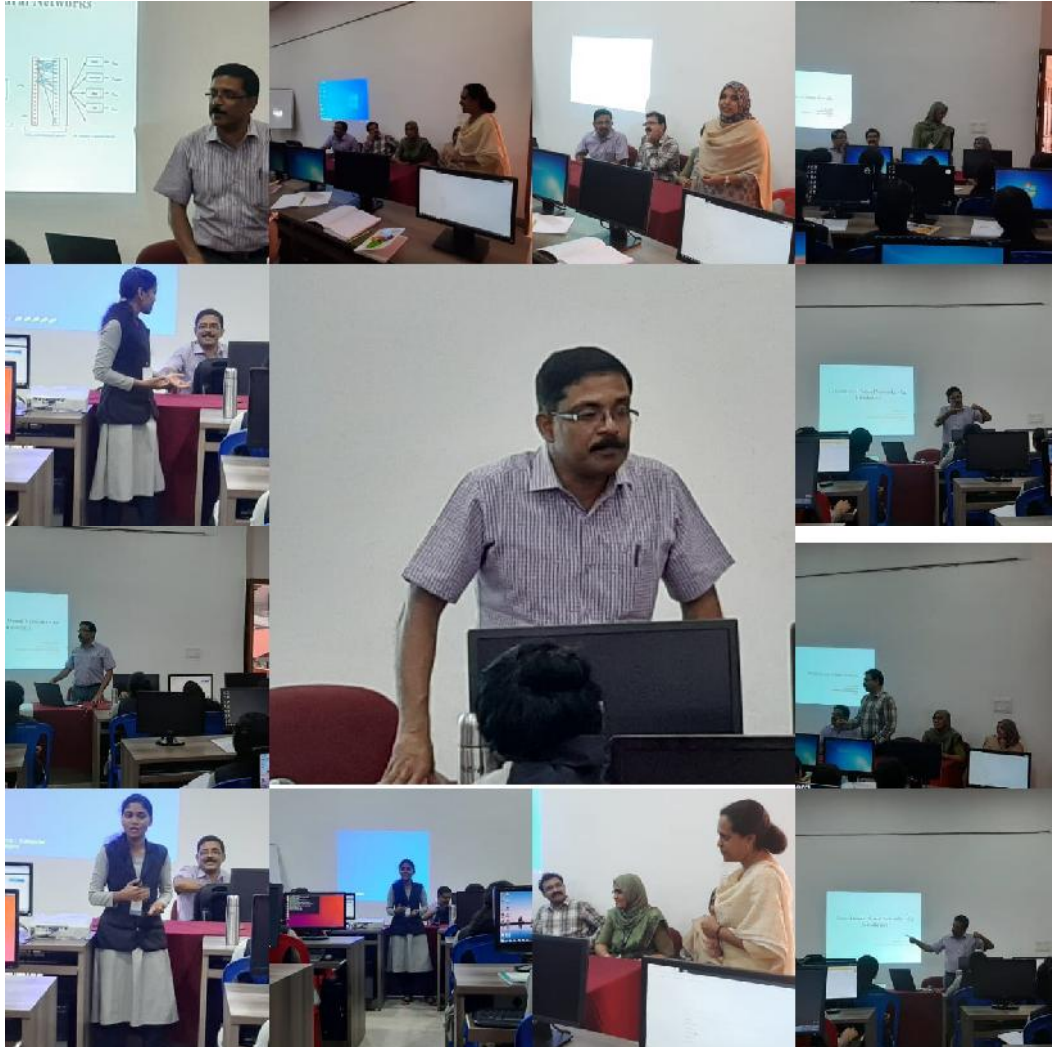
The department of Electronics organized an One Day Workshop on Introduction to Neural Netwoks on 9 October 2019. The programme was presided by Dr. Jasmine P M, Head, Department of Electronics and she also introduced the resource person, Dr. Sabu M K, Head, Department of Computer Applications, CUSAT and former Head of Computer Applications, MES College Maramally. The workshop was inaugurated by Dr. Manzur Ali P P, Vice Principal of our college.

Ms. Chika K, Coordinator of the workshop welcomed the gathering and Ms. Shareena E M, MSc. Coordinator gave vote of thanks.

In the first session Dr. Sabu M K gave an introduction about Machine Learning and Artificial Neural Network. In that he elucidated the concepts of Neuron, Perceptron, Model of an Artificial Neuron, how to train a system etc. In the afternoon session the students were given training on how to write the program for training a machine and concluded the session with an introduction about Convolutional Neural Network.

The final year PG students (30nos) and four students attended the workshop. In the feedback session the students told that the content was great and significant and gave an insight in the research field of Machine Learning and Neural Networks

Motivational Speech-Entrepreneur's Life-My Story
REPORT

As part of IIC quarter 1 calender activities a Motivational Speech was organized at MES College Marampally.Conference hall on 14th October 2019. Mrs Indu Menon ,Co-Founder, Kara Weaves was the resource person. She is a social anthropologist, Co-author of Woman Weavers, Co-Founder 'Friends of Chendamangalam'. Kara weaves is an enterprise supporting rural weaving traditions through the infusion of design thinking, technology and online marketing strategies. Kara weaves is a certified member of the Fair trade Forum of India.

The programme started with a silent prayer. Smt. Shareena E M, IIC Convener welcomed the gathering. Dr. Manzoor Ali P P, Vice Principal delivered the Presidential address. Mrs. Indu Menon shared her experience as an innovative Entrepreneur. From her experience sharing students got an idea about how to transform perceived challenges in the society to opportunities. About 95 students and 27 faculties attended the session. The programme was concluded by the vote of thanks of IIC member faculty, Ms. Geethu Merin Antony.

Poster Presentation-INGENIOUS THOUGHTS
REPORT

As part of Innovation day celebration in commemoration of the Birthday Anniversary of Bharat Ratna APJ Abdul Kalam, IIC, MES College Maramaplly conducted a poster presentation competition on innovative ideas-INGENIOUS THOUGHTS to the students of the college on 15 th October 2019 at seminar hall. About 320 students and 30 faculty members attended the programme. Different ideas such as Automatic dual axis solar tracker ,Smart water management,Augmented reality,Block chain,Plastic Fuel,Multiple Stage Microscope etc were presented. Mr. Abdul Rasheed K A, External expert from Speechlogix Tecnologies was the judge of the competition. Nimi Sasidharan and Anjaly Sujai of Third semester MSc Electronics won the first prize for their presentation on 'Smart water Management',YadhuKrishnan M R,Third

semester BSc Microbiology and Jenisiya P N fifth semester BSc Biotechnology won the second prize for their presentation on…The prizes for the winners were presented by the Principal Dr. A Biju in the valedictory session on the same day.

This programme helped the students to inculcate innovative idea thinking among students and the students acquire a base to set up a prototype of their ideas

Report of Maker Village Visit

On 23rd October 2019, the students of S4 MSc Electronics of MES College Marampally received an opportunity to visit KINFRA (Kerala Industrial Infrastructure Development Corporation) Hi Tech Park, Kalamassery in short "The Maker Village". The students along with all four faculty members of the electronics department reached KINFRA by 10 am. One of the KINFRA member introduce us about KINFRA and their purpose to encouraging the youth inventors.

KINFRA Parks are the welcome hubs in Kerala for entrepreneurs. KINFRA is credited for empowering industrial growth across Kerala through its industrial parks and industry-specific infrastructure. By enabling growth and by cultivating a social plus business linkage, KINFRA Parks also acts as a role model for social ventures by creating communities who are uplifted with getting better and steady income. The most fascinating feature of KINFRA is that it offers single window clearance facilities. Attractive incentives and excellent opportunities for expansion and diversification are the specialties of KINFRA.

Inside KINFRA there are several labs and sections which provide new entrepreneurs to work their project which will be sponsored by different project sectors. Inside the KINFRA compound they also provide an FAB LAB, which is capable of 3D Printing, CNC-Milling, Circuit Production, Laser, Precision Milling and Vinyl Cutting. KINFRA is a great inspiration for upcoming invention.

Report of Council Meeting-II(20/11/2019)

Discussions:

The meeting started with a silent prayer. Dr. Murugan R, Associate Professor, Department of Computer Applications welcomed the faculty members from various departments. He discussed about the activities of first semester MHRD's Innovation Cell and about the Institution's Innovation Council. The requirement for the implementation of second semester activity was also discussed. The committee decided to select ambassadors for training series

1. Ambassadors Selected

    a) Design Thinking and Innovations   Shareena E M
    b) IPR and Technology Transfer   Adv. Mohan Raj
    c) Entrepreneurship Development Programme Rahmath M K
    d) Preincubation and Incubation Management   Muhammed Sajad K E

2. Schedule of IIC Calender activities:

Sl. No.	Particulars	Proposed Date

1	Internship (on-going)	First and Second week of November 2019
2	Fab Lab Visit	Third week of November, 2019
3	Paper Presentation	First week of December, 2019
3	Story Telling	Second week of January, 2020
4	PoC Demo /Exhibition/Mentorship Session	Last week of February,2020

3. Schedule of Self Driven activities:

Sl. No.	Particulars	Proposed Date
1	HR Fest	Second week of November
2	Video Presentation promoting Start up	Third week of November, 2019
3	Fab Lab -Maker Village Visit	First week of January, 2019
4	Workshop on advanced software-VHDL/Verilog	Second week of January, 2020

Webinar

Topic :Entrepreneurship, Start up and Innovations

Webinar on Entrepreneurship, start up and innovations arranged on 22 nd November 2019.The event conducted in conference hall .60 students and 11 teachers attended the webinar. Students got an idea about the development and innovation of products and services and there by increasing the employment rate. Webinar included small videos about various innovative Products.

Report FabLab Visit

On 28th November 2019, about 47 IIC members of MES College Marampally received an opportunity to visit FAB Lab (Fabrication lab) in Adi Shankara College of Engineering, Mattoor, Kerala. This lab is meant for the faculties as well as for the students to make any creative designs as project. This digital fabrication facility is open for all disciplinary in the field of technology.

The students along with faculty members of Electronics department reached Adi Shankara College by 09:30am. The FAB Lab is a perfect platform for innovation and invention. The FAB Lab has many facilities as follows: -

1. 3D printing
2. **3D scanning**
3. **Precision Milling**
4. CNC Milling
5. Vinyl Cutting

The Lab and machines are well maintained and a number of projects is being developed. The first session of our visit was 'the introduction and basics of 3D printing' by the faculty in charge, Mr. Anuroop Bharathan. The session was very interactive and understanding. Anuroop sir gave a detailed information regarding 3D printing. The 3D printing process involves building of three-dimensional objects via software design model by successively adding material layer by layer. Hence 3D printing is also called additive Manufacturing. The raw material used in 3D printing is PLA (polylactic acid) because its biodegradable, environment friendly and safe. PLA plastic have a good odor while heating and is available in various colors. Fusion360, AutoCAD, Rhino etc. are the software packages we use for 3D printing. A 3D file format is used for storing information about 3D models. Common used extension files are .stl, .obj etc. G-code is the programming language we use in 3D printing. Using G-code or Geometric code, a computer tells 3d printer when, where and how to move and how much to extrude throughout the entire print process. G-Code is generated by slicing program such as Cura.

After explaining briefly about the basics of 3D printing, Anuroop Sir processed a model using 3D printer. He also briefly explained about 3D Scanning. 3D scanning is the process of analyzing real world object, collect data on its shape and then using it to construct 3D models. Anuroop sir also helped the students to convert their idea into products and also made a platform for the introduction of latest technologies like virtual reality, mixed reality, extended reality etc.

Other session of FAB lab is equipped with an array of flexible computer-controlled tools that cover several length scales and various materials, with the aim to make 'almost anything'. This include technology enabled products (generally batch production). The example for these types of innovative product is infinite 3D printer. The name is assigned to this printer because unlike conventional printer, this printer can construct 3D models with infinite dimensions. Its constructed using rods, stepper motor, PLA, heat sink, RAM etc.

The FAB lab is also equipped with various machining process like precision milling, CNC milling, Laser cutting, Vinyl cutting, etching etc. CNC milling or Computer Numerical Control milling is a machining process which employs computerized controls and rotating cutting tools to remove materials from work piece and produce custom design product. Its suitable for a wide range of materials like glass, metal, plastic, wood, etc.

Laser cutting is a technology that uses laser to slice materials. It works by directing the output of a high-power laser by optics. The focused laser beam is directed at a material, which then melts, burn, vaporizes away, leaving high quality surface finish.

Vinyl Cutter is a type of computer-controlled machine. The computer controls the movement of sharp blade over the surface of the material. This blade cut out shapes and letters from sheets of vinyl (self-adhesive plastics).

FAB lab is also a perfect platform for innovations and inventions. A no. Of products is being developed in this lab. This includes embedded system design, IOT, VLSI design, etc. as the area of interest. We saw an electronic incubator with temperature and humidity sensor used for hatching eggs. Also, there was a spoon developed by the coordinators which is used by stroke patients that could balance their hands. In order to remove the rust coating in metallic objects, a high velocity sand was introduced to the metals. Waste management application was carried out by a robotic technology where the robot could sense the dimension of the object and identify it.

We returned from the FAB lab by 3:30pm. The faculties at the lab were very supportive and the workstation were well maintained. FAB lab along with a team of dynamic coordinators made it a good resource providing Centre of the institution.

Workshop on VHDL

'Workshop on VHDL' was conducted for the S4 MSc. Electronics students on 20th January 2020. Mr. Mujeeb P Y, Design Manager, Aspire Technologies, Palarivattom was the resource person. This workshop provided students with an overview of the VHDL language and its use in logic design. By the end of the workshop, they understood the basic parts of a VHDL model and how each is used and also gain an understanding of the basic VHDL constructs used in both the synthesis and simulation environments. They are able to build complete logic structures that can be synthesized into programmable logic device hardware. Lastly, they gained the understanding required to connect entire models together to create hierarchical designs.

Webinar on 'Introduction to Machine Learning'

A webinar on 'Introduction to Machine Learning' was attended by 30 students of IIC on 4 th February 2020 .Mr. Suman Debnath Principal Developer Advocate ,AWS handled the session

AWS has the broadest and deepest set of machine learning and AI services for your business built on the most comprehensive cloud platform, optimized for machine learning with high-performance compute, and no compromises on security and analytics.

Amazon SageMaker enables developers and data scientists to quickly and easily build, train, and deploy machine learning models at any scale. It removes the complexity that gets in the way of successfully implementing machine learning across use cases and industries - from running models for real-time fraud detection, to virtually analyzing biological impacts of potential drugs, to predicting stolen-base success in baseball.

 This session provided a meaningful overview of how to get started with Machine Learning on the AWS Cloud. They also discussed how AWS customers are using ML on AWS to transform their companies and their products.

Project Exhibition Report

Department of Electronics in association with IIC conducted a project exhibition on 10 March 2020.The exhibition was inaugurated by College Managing Committee Secretary Adv. A.A. Abul Hasan. Dr. Jasmine P.M. welcomed the gathering.About 22 projects from UG and PG participated in the programme.350 students from various departments attended the exhibition. In the process of exhibiting a model, the students undergo a lot of research work to arrive at the required meaningful information. The mind develops the technical approach towards any given problem and starts analyzing the hidden facts, working, and procedure of the model.Three teams were selected from the exhibition.