ST JOSEPH ENGINEERING COLLEGE

Affiliated to VTU-Belagavi & Recognized by AICTE

NBA-Accredited: BE (CSE, ECE, EEE, & ME)

Action Taken Report 2016-17

Industry Alumni Advisory Board (IAAB) Meeting 2016

"Service and Excellence"

Vision

"To be a global premier Institution of professional education and research"

Mission

- **Provide opportunities to deserving students of all communities, the Christian students in particular, for quality professional education.**
- **Design and deliver curricula to meet the national and global changing needs through student centric learning methodologies.**
- **Attract, nurture and retain the best faculty and technical manpower.**
- **Consolidate the state of art infrastructure and equipment for teaching and research activities.**
- **Promote all round personality development of the students through interaction with alumni, academia and industry.**
- **Strengthen the Educational Social Responsibilities of the institution.**

Table of Contents

List of Figures

List of Tables

1. Agenda of the IAAB Meeting Scheduled on 25 Nov 2017

1. Review of Minutes of the previous IAAB Meeting dated 26th November 2016.
2. Attainment of Program Outcomes (POs) and Program Specific Outcomes (PSOs) in the five UG programs, MBA & MCA.
3. Continual Improvement Action Items for each of the POs and PSOs.
4. Review of attainment of Vision, Mission, and Program Educational Objectives (PEOs) of all departments.
5. Any other matter.

2. Review of Minutes of the previous IAAB Meeting

Table 1: Actions Items suggest during the previous IAAB meeting for Continual Improvement

Action Item No.	**Action Item**	**Person Responsible to Coordinate**	**Time schedule for completion**	**Status as on (15 Jan 2017)**
I/2016-17/1	More MOUs	Respective Departmental HODs	30 June 2017	Three MOUs: V&GIT, IPR Gujarat, SELCO
I/2016-17/2	Awareness of OBE system among the students	Accreditation Coordinators – College and Department	01 March 2017	Will Start after commencement of Even Sem
I/2016-17/3	Strengthen Alumini network and activities	Dean-SW&AA	30 June 2017	Annual get-together and Decennial Batch get-together
I/2016-17/4	More Entrepreneurship Activities	Coordinator - EDC	30 June 2017	Will Start after commencement of Even Sem
I/2016-17/5	More Career Counselling Programmes	Placement and Training Officer	30 June 2017	Will Start after commencement of Even Sem
I/2016-17/6	Students' Project of social impact	Respective Departmental HOD	01 March 2017	MOU with SELCO

3. Action Taken Report (ATR)

3.1 Action item 1 (More MoU's)

- The Department of Mechanical Engineering at SJEC signed a MoU with **V&G Industrial Testing Laboratories Pvt. Ltd – Mangaluru** on 9th July 2016. The MOU relates to the training and use of Non-Destructive Testing (NDT) techniques among the students and faculty of SJEC.
- Dr Purushothama Chippar was awarded a grant of 13.5 Lakhs by **Institute for Plasma Research, Gujarat** (Department of Atomic Energy, Government of India), May 2016 through an MoU to conduct research in fuel cell development.
- SJEC has entered into an MoU titled "SOCIAL LOCAL" with Ms. Myriam Shankar Krafft, Co-Founder, "**The Anonymous Indian Charitable Trust" (TAICT), Bangalore** and Mr. Wolfram Thurm, Product Designer from Bauhaus University in Weimar, Dresden, Germany during in 2016 with an funding of Rs. 5,00,000/- to take up the work to design and develop two projects namely:
    1. PROJECT 1: "Design and Fabrication of Washing and Shredding Machine for processing of Commingled Waste Plastics".
    2. PROJECT 2: "Design and Development of a Two Stage Extruder-Injection Moulding machine for manufacturing of Plastic Lumber using Commingled Waste Plastics".

Figure 1: MOU with V&G Industrial Testing Laboratories Pvt. Ltd

Figure 2: MOU with The Anonymous Indian Charitable Trust (TAICT), Bangalore

- SJEC and SELCO Foundation India, signed up an MoU on 18th November 2016 to initiate Social Innovations in the field of Renewable Energy. On behalf of SELCO FOUNDATION India, Ms Santhi Devadu, the Programme Manager - Education Lab, exchanged the MOU with Rev. Fr Joseph J Lobo, Director - SJEC. The MOU was initiated by the Department of Electrical and Electronics Engineering at SJEC.

Figure 3: MoU with SELCO Foundation, India

- A MoU was signed between **SJEC and Kanara Small Industries Association (KSIA)** Mangaluru on 31st March 2017 and was initiated by the **Department of Business Administration** at SJEC.

Figure 4: MoU with Kanara Small Industries Association (KSIA) Mangaluru

- **Infosys Campus Connect** MoU Renewed for a period of two years from 03 Nov 2016 to 02 Nov 2018. The Campus Connect MoU was first signed in Nov 2007 and it is anchored by the CSE department. The prestigious Foundation Program is conducted for students every year, under this MoU.
- The Department of Electronics and Communication Engineering has initiated the process of Signing the **MoU with Fr Muller Hospital** and soon it will be materialized.

3.2 Action item 2 (Awareness of OBE system among students)

Following Measures have been taken to strengthen the awareness among the students:

1. Displayed Vision, Mission, POs and PSOs in the class notice boards.
2. Printed POs and PSOs in all the Lab Manuals.
3. Course Instructors discuss the Course plan at the beginning of each Semester which gives students awareness about the Course Outcomes (COs), Topic Learning Outcomes (TLOs), Assessment tools, Course-PO matrix and attainment levels.

4. OBE awareness drive has been arranged to First Year (FY) students during the time of their enrollment to the respective programs by IQAC Cell.

3.3 Action item 3 (Strengthen Alumni networks and activities)

- Regular updates on technical as well as non-technical achievements of our Alumni have been made on the Alumni portal (maintained by Fourth Ambit) and the SJEC Alumni Facebook page.
- A career guidance talk delivered by **Ms Madhura Bharadwaj** on November 04, 2017 was very well received by our student community. **'Daan Utsav 2017'** was very successfully implemented at SJEC from 02nd October to 08th October 2017. Preparations are being made to organize the **Annual alumni meet on December 02, 2017**.

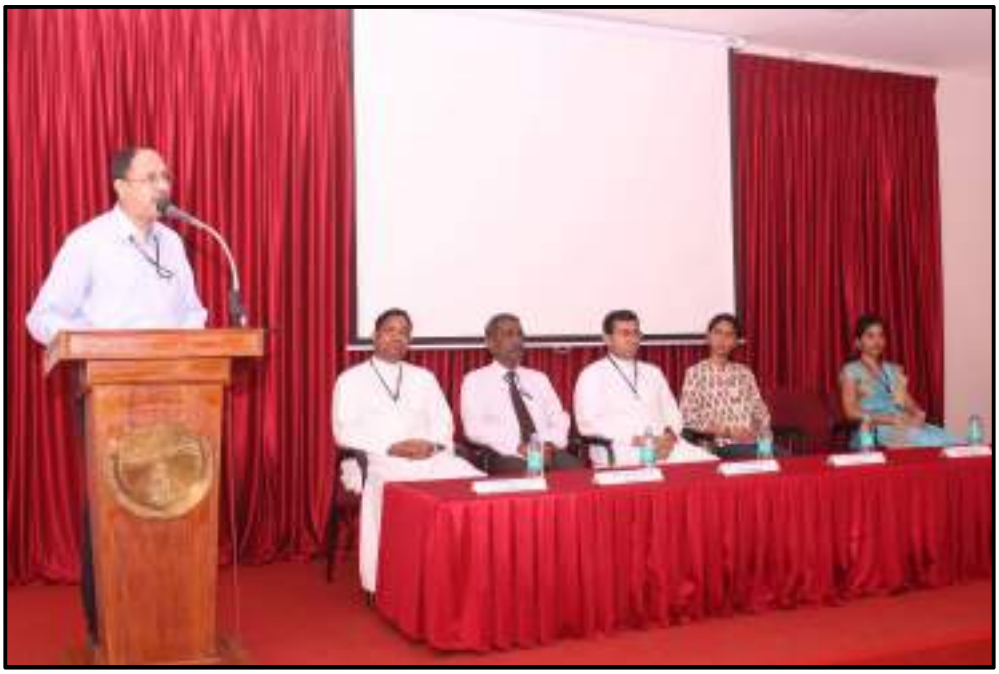

Figure 5: Ms Madhura Bharadwaj – Alumni of Batch 2015 – Computer Science Engineering

- The Department of Mechanical Engineering organized an interaction with **Mr John Rodrigues**, Mechanical Engineering-SJEC Alumnus from the Batch of 2016 on 8th August 2017, who was recently featured in the reputed **New York Times – United States**, for his innovative **CoffeeBot** – a bot that delivers Coffee within office space and controlled via smart phone.

Figure 6: Mr John Rodrigues – Alumnus of Batch 2016 – Mechanical Engineering

- **Mr. Preetham Winston Dsouza**, an Alumnus of the batch of 2009 Electrical and Electronics Engineering, has provided a **fund amount of Rs. 30,000/-** for the winners of the contest - "Best Ideas for Innovative Projects/Business Plans" held on 9th March 2017.
- The Department of E&E in association with IIC organized a technical talk on Electrical & Electronics in Chemical Plants by **Mr B. L. Naveen**, an Alumnus of SJEC & Assistant Manager Electrical Maintenance, MCF Mangaluru on 27th August 2016.

Figure 7: Mr B. L. Naveen – Alumnus of Electrical & Electronics Engineering

- Hands-on Workshop on “PCB Design” was organised by **Mr. Suhas shenoy**, an Alumnus of SJEC & Electrical Engineer on 20th-27th August 2016.

Figure 8: Mr Suhas Shenoy – Alumnus of Electrical & Electronics Engineering

- A seminar on “Lighting technologies and its solutions” was conducted by **Ms Renita pinto**, an Alumnus of SJEC on 4th October 2016.

Figure 9: Ms Renita Pinto – Alumnus of Electrical & Electronics Engineering

- A seminar on “Present scenario in Domestic Wiring” was organized for the Final Year students as a finishing school activity. Entrepreneurs, **Mr Pradeep Rao & Mr Ratheesh**, **Managing Directors of Global Spark Electro Engineers - Mangaluru** (Alumni of EEE - SJEC Batch of 2014) were the resource persons. The programme was conducted in the Electrical Seminar Hall at 3.00 pm on 7th April 2017

Figure 10: Mr Pradeep Rao – Alumnus of Electrical & Electronics Engineering

- Hands-On workshop on “Application of Arduino to Projects” was conducted from 11th -15th April 2017 for the final year students of E&E as a Finishing School activity. **Mr. Claran Martis**, Alumnus of SJEC & Proprietor- CVision trained the students from fundamentals to advanced level of programming.

Figure 11: Mr. Claran Martis – Alumnus of Electronics & Communication Engineering

- A series of various technical events were conducted from 18th to 21st February 2017 by the Electrical and Electronics Engineering departments through their esteemed alumni. Talk on "Bits & Bytes of learning" by **Mr Hithesh Bhat** (Alumnus E&E 2014 Batch) Engineer Jnaapti Private Ltd., Bengaluru held on 18th February 2017. Seminar on "MEMS & Application of Electronics to Control System" by **Ms Nanditha Shenoy** (Alumnus E&E 2015 Batch), M.Tech Research Scholar, IGCAR Chennai held on 18th February 2017. Seminar on "Main frame Computers in Software Industryt" by **Mr Anup Rao** (Alumnus E&E 2015 Batch), System Engineer, TCS, Bengaluru held on 18th February 2017. Motivational talk on "How to apply what you learn" by **Mr Norwin Rego** (Alumnus E&E 2013 Batch), Research Scholar, MIT, Manipal held on 20th February 2017.Seminar on "Effect of Climate Changes on Water Resources" by **Mr Amog Mudbhatkal**, Research Scholar, NITK, Surathkal held on 21st February 2017.

3.4 Action item 4 (More Entrepreneurship activities)

- Industry Interaction Cell and EDC in Department of Mechanical Engineering conducted a Technical talk on 25th April 2017 at 3.30 PM on the topic "**Role of youth in Water Management & Advance in Water Technology**" by **Mr Avin Kajekar**, Management Professional, Genio Management Pvt. Ltd, Mangaluru.
- Department of E&E organized a motivational talk on "**Innovation & Entrepreneurship**" was delivered by Mr. Vinish P, Asst. Prof., Department of MBA, SJEC, Mangaluru on 9th September 2016.
- On the occasion of World Intellectual Property Day, the Department of E&E Engineering organized a workshop to motivate students and provide them vital information on Technical and Financial support available from government agencies like MSME (Micro, Small & Medium Enterprise). The resource person for this seminar was **Mr Kalai Socrates**, Deputy Director of Ministry of MSME - Yeyyadi, Mangaluru.

Figure 12: Mr. Kalai Socrates – Talk on Entrepreneurship

- Workshop on '**Entrepreneurial opportunities'** was conducted by the Department of Business Administration, St. Joseph Engineering College on 27th October 2017 by a team from **Pranava Souharda Sahakari Ltd**.

Figure 13: Talk on Entrepreneurship by Pranava Souharda Sahakari Ltd

3.5 Action item 5 (Career Counseling Programs)

- Placement Cell of the college has organized following activities to strengthen the employability among the students.

Table 2: Career counselling activities by the placement cell

SI. No	Date	Event	Speaker / Institute	Designation / Team details	Audience
1	06.08.16	IGNITIA - A Series of motivational talk	Mr. Pradeep Gopi	VP & Head HR - Robosoft Technologies	Final Year Students
2	1.08.2016	Talk by TCS on Aptitude and preparation	Mr. Kishore / Mr. Rohith	Human Resources Team - TCS	Final Year Students
3	26.09.17	Magnus career orientation program on opportunities for core engineering branches		Marketing Team	3rd & 4th Year Mechanical & Civil Engineering Students
4	27.01.17 to 31.01.17	Aptitude training preparation	JV Global LLP Services	Training team	Final Year Students
5	01.03.17	Higher Studies in USA	The American Consulate – Consular Information Unit - Mr. Krishna Prasanth Dhandapani	Senior Adviser - Education USA	Final Year Students
6	09.03.17	Launch of Brand Ambassador Program	L&T Infotech	Ms. Kavita Raman	Pre-Final & Final

SI. No	Date	Event	Speaker / Institute	Designation / Team details	Audience
					Year Students
7	07.08.16	IGNITIA - A Series of motivational talk	Ms. Ivy Saldhana	Head HR - Tata Power SED	Final Year Students
8	07.08.17	Opportunities through CoCubes - Online assessment partner	Mr. Giridhar	CoCubes Technologies Pvt. Ltd	Final Year students
9	21.09.17 to 05.10.17	Technical Training	Ms. Pavithra & Mr. Vikas	NIIT Bejai	Final Year Students
10	23.09.17	Awareness session on higher education abroad	Planet Education	Mr. Imran / Ms. Priya Kotian	Final Year Students
11	26.09.17	Career Awareness	Mr. Umesh Kamath	VP - HR - Robosoft Technologies	Final Year MBA Students
12	30.09.17	Online Assessment for various job opportunities	AICTE - Wheebox	Team - Wheebox	Final Year Students
13	13.10.17	Awareness session - Opportunities & Mutual Funds	HDFC Assest Managemen t Company	Mr. Vijay Prabhu	Pre Fianl & Final Year MBA Students

- The Department of Mechanical Engineering in association with TORQUE- Mechanical Engineering Students' Association and TIME Institute of Management had organized a "**Career Guidance"** talk on pre-final year students held on 7th March 2017 and 21st March 2017 by **Mr Arun Gundmi**, Regional Manager, TIME Institute of Management.
- TORQUE' Mechanical Engineering Students Association along with TIME Institute of Management has organized a career guidance talk by Mr Ashith Poojary, Manager, TIME Institute of Management on the topic "**Orientation on Aptitude & Career opportunities available after Engineering"** for pre-final year students of Mechanical Engineering Department on 23rd October 2017.

- Department of E&E Engineering arranged "**Career guidance"** program by **Mr. Ganesh Hebbar**, Managing Director, Triumphant institute of Management Education (T.I.M.E) Pvt. Ltd., Mangaluru conducted on 24th September 2016

Figure 14: Mr. Ganesh Hebbar – Seminar on Career Guidance

- **Mr. Hilary Donald D'Souza**, Training Manager, Birla Sun Life Insurance delivered a special lecture on **"Insurance Sector in India and Career Opportunities"** for II MBA students on 17th August 2016.

Figure 15: Mr. Hilary Donald D'Souza – Talk on Insurance Sector in India and Career Opportunities

3.6 Action item 6 (Students Projects having Social Impact)

- SJEC awarded "**Best Performing College in the State of Karnataka"** by Karnataka State Council for Science and Technology (KSCST) – Bengaluru, in the recently held 40th series of Students Projects Programme organized at NMAM Institute of Technology, Nitte on 11th and 12th August 2017. A total of 541 projects were sanctioned for sponsorship this year across the state. A total of 230 projects were shortlisted for exhibition and seminar from 102 Colleges across the state.
- A total of **Six Projects** from St Joseph Engineering College was **sponsored by KSCST** in the academic year 2016-2017.
- Two two projects won the prestigious "**Project of the Year"** award for their technical excellence and innovation. The project on **"Aero-Blending of Ethanol for Internal Combustion Engine"** from the **Department of Mechanical Engineering** carried out by Rohan D'Souza and team and guided by Dr Joseph Gonsalvis, Principal – SJEC, won the Project of the Year award. From the **Department of Electrical and Electronics Engineering**, the project **"Arecanut Tree Climber and Pesticide Sprayer"** by Jnanasagar Kamath and team, guided by Assistant Professor Ms Divya Pai, also won the "**Project of the Year"** award. The above two awards along with the other four sponsored projects helped SJEC secure the Best Performing College in the State.
- The Department of Mechanical Engineering students are participated in "INNOVATA-2K17" held at S.D.M Institute of Technology, Ujire on 20th May 2017 and the project titled **"Effect of copper oxide nano practices on the performance and emission characteristics of CI engine"** has been adjudged as a **Best Engineering Students Innovative Project** in State Level Project and exhibition.

Figure 16: Best Performing College in the State of Karnataka award by KSCST

- **SELCO Foundation India** has selected three projects in the Department of Electrical and Electronics Engineering for a total amount of Rs. 44,019/-. These projects are "Arecanut Tree Climber", "Sonar Based Rover" and "Anti-Theft Mechanism for PV Panels".
- **Mr. Preetham Winston Dsouza**, an Alumnus of the batch of 2009, BE-E&E Engineering has provided a **fund amount of Rs. 30,000/-** for the winners of the contest - "Best Ideas for Innovative Projects/Business Plans" held on 9th March 2017. The first place was secured by the project title "Smart Cane for the Blind" and the second place was secured by the project titled "Block Based Home Automation".
- Department of E&E Engineering organized a workshop on "**Incubating Socially relevant & Innovative Project Ideas**" by **SELCO Foundation** held on 27th February 2017.
- Students of Civil Engineering have studied on **"Water contamination around Vamanjoor Dump yard"** which was a Mini-project for the students of 5th Sem.
- A total of **90 Students from Sixth semester ECE department** have taken projects in teams of size 02-16 members as a part of **Industry Orientation Activity (IOA)** for the academic year 2016-2017.
- To encourage good interface design when building software projects, the Department of Computer Science and Engineering has conducted Peer-to-Peer Learning Sessions on CGV Project Display in Feb/Mar 2017.

Figure 17: Peer-to-Peer Learning Sessions on CGV Project Display

4. Attainment of Program Outcomes (POs) and Program Specific Outcomes (PSOs), and Continual Improvement Action Items for each of the POs and PSOs.

4.1 BE in Mechanical Engineering

Table 3: Attainment Gap Analysis of BE-Mechanical Engineering (I shift)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	1.31	Moderately	Conduct quiz, Seminars etc. on basic concepts
PO2	Solve Problems	2	1.18	Moderately	An activity can be given to identify real life practical problems and find the solution
PO3	Design/ Development of Solution	2	0.86	Low	Mini projects can be given for certain subjects
PO4	Conduct Investigations	2	0.63	Low	Perform extra experiments in lab other than the ones prescribed in syllabus
PO5	Use Modern Tools	2	0.65	Low	More classes on CATIA, Virtual labs can be conducted
PO6	Engineer and Society	2	0.36	Low	Encourage students to undergo internship programs and industrial projects

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO7	Environment and Sustainability	2	0.34	Low	Encourage students to develop more projects to solve contemporary issues in society
PO8	Professional Ethics	2	0.37	Low	Arrange more talks by industrial experts, give case studies from industries as an activity to students, Purchase of plagiarism software
PO9	Individual and Team Work	2	0.63	Low	Encourage students to do mini projects, seminars, assignments in a group.
PO10	Communicate Effectively	2	0.69	Low	Conduct I-Point classes
PO11	Project Management and Finance	2	0.35	Low	Arrange talks on Industrial and financial management
PO12	Lifelong Learning	2	0.26	Low	Arrange talks in various domains
PSO1	Qualify in competitive Exam	2	0.86	Low	Conduct aptitude training classes (Technical and

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					Non-Technical topics)
PSO2	Conduct Research	2	0.71	Low	Conduct talks or class on research methodology and encourage projects related to research

Table 4: Attainment Gap Analysis BE-Mechanical Engineering (II shift)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	1.35	Moderately	Conduct quiz, Seminars etc. on basic concepts
PO2	Solve Problems	2	1.21	Moderately	An activity can be given to identify real life practical problems and find the solution
PO3	Design/ Development of Solution	2	0.89	Low	Mini projects can be given for certain subjects
PO4	Conduct Investigations	2	0.56	Low	Perform extra experiments in lab other than the ones prescribed in syllabus
PO5	Use Modern Tools	2	0.67	Low	More classes on CATIA, Virtual labs can be conducted
PO6	Engineer and Society	2	0.36	Low	Encourage students to undergo

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					internship programs and industrial projects
PO7	Environment and Sustainability	2	0.31	Low	Encourage students to develop more projects to solve contemporary issues in society
PO8	Professional Ethics	2	0.36	Low	Arrange more talks by industrial experts, give case studies from industries as an activity to students
PO9	Individual and Team Work	2	0.59	Low	Encourage students to do mini projects, seminars, assignments in a group.
PO10	Communicate Effectively	2	0.72	Low	Conduct I-Point classes
PO11	Project Management and Finance	2	0.39	Low	Arrange talks on Industrial and financial management
PO12	Lifelong Learning	2	0.25	Low	Arrange talks in various domains
PSO1	Qualify in competitive Exam	2	0.92	Low	Conduct aptitude training classes (Technical and Non-Technical topics)
PSO2	Conduct Research	2	0.65	Low	Conduct talks or class on research

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					methodology and encourage projects related to research

Table 5: Attainment Gap Analysis BE-Mechanical Engineering (First Year – I shift)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	0.95	Moderately	Conduct quiz, Seminars etc. on basic concepts
PO2	Solve Problems	2	0.70	Moderately	An activity can be given to identify real life practical problems and find the solution
PO3	Design/ Development of Solution	2	0.68	Low	Mini projects can be given for certain subjects
PO4	Conduct Investigations	2	0.30	Low	Perform extra experiments in lab other than the ones prescribed in syllabus
PO5	Use Modern Tools	2	0.30	Low	More classes on CATIA, Virtual labs can be conducted
PO6	Engineer and Society	2	0.64	Low	Encourage students to undergo internship programs and industrial projects

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO7	Environment and Sustainability	2	0.30	Low	Encourage students to develop more projects to solve contemporary issues in society
PO8	Professional Ethics	2	0.30	Low	Arrange more talks by industrial experts, give case studies from industries as an activity to students
PO9	Individual and Team Work	2	0.68	Low	Encourage students to do mini projects, seminars, assignments in a group.
PO10	Communicate Effectively	2	0.65	Low	Conduct I-Point classes
PO11	Project Management and Finance	2	0.30	Low	Arrange talks on Industrial and financial management
PO12	Lifelong Learning	2	0.64	Low	Arrange talks in various domains
PSO1	Qualify in competitive Exam	2	0.08	Low	Conduct aptitude training classes (Technical and Non-Technical topics)
PSO2	Conduct Research	2	0.20	Low	Conduct talks or class on research methodology and encourage projects related to research

Table 6: Attainment Gap Analysis BE-Mechanical Engineering (First Year – II shift)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	1.30	Moderately	Conduct quiz, Seminars etc. on basic concepts
PO2	Solve Problems	2	1.05	Moderately	An activity can be given to identify real life practical problems and find the solution
PO3	Design/ Development of Solution	2	0.73	Low	Mini projects can be given for certain subjects
PO4	Conduct Investigations	2	0.30	Low	Perform extra experiments in lab other than the ones prescribed in syllabus
PO5	Use Modern Tools	2	0.30	Low	More classes on CATIA, Virtual labs can be conducted
PO6	Engineer and Society	2	0.64	Low	Encourage students to undergo internship programs and industrial projects
PO7	Environment and Sustainability	2	0.30	Low	Encourage students to develop more projects to solve contemporary issues in society
PO8	Professional Ethics	2	0.30	Low	Arrange more talks by industrial experts,

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					give case studies from industries as an activity to students
PO9	Individual and Team Work	2	0.73	Low	Encourage students to do mini projects, seminars, assignments in a group.
PO10	Communicate Effectively	2	0.67	Low	Conduct I-Point classes
PO11	Project Management and Finance	2	0.30	Low	Arrange talks on Industrial and financial management
PO12	Lifelong Learning	2	0.64	Low	Arrange talks in various domains
PSO1	Qualify in competitive Exam	2	0.13	Low	Conduct aptitude training classes (Technical and Non-Technical topics)
PSO2	Conduct Research	2	0.20	Low	Conduct talks or class on research methodology and encourage projects related to research

4.2 BE in Electrical and Electronics Engineering

Table 7: Attainment Gap Analysis of BE-Electrical and Electronics Engineering

PO/ PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO 1	Apply Knowledge	2	1.1954	Moderately Attained	Create Demo Models
PO 2	Solve Problems	2	0.7536	Not Attained	
PO 3	Design/ Development of Solution	2	1.3056	Moderately Attained	Encouraging creative ideas for innovative projects
PO 4	Conduct Investigations	2	1.3933	Moderately Attained	
PO 5	Use Modern Tools	2	1.2517	Moderately Attained	Arduino and programming languages as Vocational Courses
PO 6	Engineer and Society	2	0.7726	Not Attained	• Problem solving on energy saving and water management. • Safety Practices
PO 7	Environment and Sustainability	2	1.705	Moderately Attained	
PO 8	Professional Ethics	2	1.232	Moderately Attained	
PO 9	Individual and Team work	2	1.9814	Moderately Attained	Creating open ended problem statements for student projects
PO 10	Communicate effectively	2	3	Attained	
PO 11	Project Management and Finance	2	1.36	Moderately Attained	
PO 12	Lifelong Learning	2	1.55	Moderately Attained	Arduino and programming

PO/ PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PSO 1	Hardware and Software tools	2	0.87	Not Attained	languages as Vocational Courses
PSO 2	Entrepreneurship and Financial Management	2	0.48	Not Attained	Finishing School Activities

Table 8: Attainment Gap Analysis BE-Electrical and Electronics Engineering (First Year)

PO/ PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO 1	Apply Knowledge	2	2.14	Attained	Create Demo Models and Electrical Wiring Practice
PO 2	Solve Problems	2	2.66	Attained	
PO 3	Design/ Development of Solution	2	2.81	Attained	Assignments on IEEE
PO 4	Conduct Investigations	2	0	Not Attained	
PO 5	Use Modern Tools	2	2.86	Attained	Vocational Courses
PO 6	Engineer and Society	2	3	Attained	Educational seminars on energy saving, water management and Safety Practices
PO 7	Environment and Sustainability	2	0	Not Attained	
PO 8	Professional Ethics	2	0	Not Attained	
PO 9	Individual and Team work	2	3	Attained	Creating open ended problem statements for student projects
PO 10	Communicate effectively	2	3	Attained	
PO 11	Project Management and Finance	2	0	Not Attained	
PO 12	Lifelong Learning	2	3	Attained	Vocational Courses
PSO 1	Hardware and Software tools	2	1.34	Moderately Attained	

PO/ PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PSO 2	Entrepreneurship and Financial Management	2	0	Not Attained	Finishing School Activities

4.3 BE in Electronics and Communication Engineering

Table 9: Attainment Gap Analysis of BE-Electronics and Communication Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 1	Apply Knowledge	2	2.39	Moderately Attained	VACT & Gate Coaching Class
PO 2	Solve problems	2	2.41	Moderately Attained	Students should come up with more mini projects
PO 3	Design / Development of Solutions	2	2.28	Moderately Attained	Students should come up with more mini projects
PO 4	Conduct and analyze experiments	2	2.5	Moderately Attained	-
PO 5	Use Modern tools	2	2.42	Moderately Attained	Students should come up with more mini projects
PO 6	Contemporary Engineering Problems	2	2.39	Moderately Attained	1. Initiate the procedure for MOU's with program specific firms 2. Students must update their domain specific

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					knowledge by registering to certified online courses
PO 7	Society and Environment	2	2.63	Moderately Attained	1.Students of the department should visit nearby schools to educate them on higher education, career perspective and stimulate interest in engineering by showcasing simple electronic working models/ projects 2.Organize a Talk on engineering solution in societal and environmental context
PO 8	Professional Ethics	2	2.49	Moderately Attained	1.Organize a program to educate students on Plagiarism 2.Organize a Talk on professional ethics

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 9	Multidisciplinary Teams	2	2.39	Moderately Attained	More number of students should be encouraged to take up multidisciplinary projects
PO 10	Communicate Effectively and team work	2	2.49	Moderately Attained	More number of students should be encouraged to take up multidisciplinary projects
PO11	Project Management and Leadership	2	2.09	Moderately Attained	1. More number of students should be encouraged to take up multidisciplinary projects 2. Organize programs to help the graduates to come up with their own startup firms.
PO 12	Lifelong Learning Mode	2	2.27	Moderately Attained	Students must update their domain specific knowledge by registering to certified online courses
PSO 1	Competitive Exams	2	2.11	Moderately Attained	VACT & Gate Coaching Class
PSO-2	Industry Interaction	2	2.53	Moderately Attained	Initiate the procedure for MOU’s with

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					program specific firms

Table 10: Attainment Gap Analysis BE-Electronics and Communication Engg (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 1	Apply Knowledge	2	2.8	Strongly Attained	
PO 2	Solve problems	2	2.75	Strongly Attained	
PO 3	Design / Development of Solutions	2	2.66	Strongly Attained	
PO 4	Conduct and analyze experiments	2	3	Strongly Attained	
PO 5	Use Modern tools	2	2.9	Strongly Attained	
PO 6	Contemporary Engineering Problems	2	3	Strongly Attained	
PO 7	Society and Environment	2	2.28	Moderately Attained	Organize a Talk on engineering solution in societal and environmental context
PO 8	Professional Ethics	2	-	-	Organize a Talk on professional ethics
PO 9	Multidisciplinary Teams	2	2.41	Moderately Attained	

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 10	Communicate Effectively and team work	2	2.77	Moderately Attained	
PO11	Project Management and Leadership	2	-	-	
PO 12	Lifelong Learning Mode	2	3	Strongly Attained	
PSO 1	Competitive Exams	2	2.72	Strongly Attained	
PSO-2	Industry Interaction	2	2.93	Strongly Attained	

4.4 BE in Civil Engineering

Table 11: Attainment Gap Analysis of BE-Civil Engineering

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO1	Apply Knowledge	2	1.66	Moderate	Conduct quiz, seminars, assignment on complex engineering problem
PO2	Solve Problems	2	1.14	Moderate	Conduct quiz, seminars, assignment on complex engineering problem
PO3	Design/ Development of Solution	2	0.81	Low	Conduct quiz, seminars, assignment on complex engineering problem
PO4	Conduct Investigations	2	0.68	Low	Conduct classes on Virtual labs
PO5	Use Modern Tools	2	0.08	Low	Classes on Staad Pro, ETabs can be conducted

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO6	Engineer and Society	2	0.21	Low	Encouraging students to give awareness program about society issues
PO7	Environment and Sustainability	2	0.22	Low	Encouraging students to give awareness program about society issues
PO8	Professional Ethics	2	0.06	Low	Arrange more talks by industrial experts
PO9	Individual and Team Work	2	0.2	Low	Encourage students to do seminars and assignment in group
PO10	Communicate Effectively	2	0.2	Low	Encourage students to present seminars
PO11	Project Management and Finance	2	0.08	Low	Arrange talks on financial management and material management
PO12	Life-long Learning	2	0	Low	Encouraging students to do mini projects and to arrange talks on various domains.
PSO1	Real field challenges and Conduct research	2	0	Low	Encouraging students to do mini projects related to field challenges.
PSO2	Qualify in competitive exam	2	0	Low	Conduct aptitude classes on technical topics

Table 12: Attainment Gap Analysis BE-Civil Engineering (First Year)

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO1	Apply Knowledge	2	2.04	High	Conduct quiz, seminars, assignment on complex engineering problem
PO2	Solve Problems	2	1.89	Moderate	Conduct quiz, seminars, assignment on complex engineering problem
PO3	Design/ Development of Solution	2	0.83	Low	Conduct quiz, seminars, assignment on complex engineering problem
PO4	Conduct Investigations	2	0.00	Low	Perform extra experiments in lab other than the ones prescribed in syllabus
PO5	Use Modern Tools	2	0.57	Low	Conducting classes on Soft skills training
PO6	Engineer and Society	2	0.31	Low	Encouraging students to give awareness program about society issues
PO7	Environment and Sustainability	2	0.31	Low	Encouraging students to give awareness program about society issues
PO8	Professional Ethics	2	0.00	Low	Arrange more talks by industrial experts
PO9	Individual and Team Work	2	0.00	Low	Encourage students to do seminars and assignment in group
PO10	Communicate Effectively	2	0.92	Low	Encourage students to present seminars
PO11	Project Management and Finance	2	0.00	Low	Arrange talks on financial management

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO12	Life-long Learning	2	0.00	Low	Arrange talks on various domains.
PO1	Apply Knowledge	2	2.04	High	Conduct quiz, seminars, assignment on complex engineering problem
PO2	Solve Problems	2	1.89	Moderate	Conduct quiz, seminars, assignment on complex engineering problem

4.5 BE in Computer Science and Engineering

Table 13: Attainment Gap Analysis of BE-Computer Science and Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO1	Apply Knowledge	2	1.27	Moderate	Conduct Technical Talks and Seminars
PO2	Solve Problems	2	1.12	Moderate	Mini projects for a subject or a combination of subjects
PO3	Design/ Development of Solution	2	0.92	Low	Perform extra laboratory experiments other than the ones prescribed in syllabus
PO4	Conduct Investigations	2	0.69	Low	Conduct Virtual Labs, Campus Connect Programs
PO5	Use Modern Tools	2	0.83	Low	Encourage students to take up Industry related projects and projects that provide solutions to societal and environmental needs
PO6	Engineer and Society	2	0.53	Low	Talks by Industrial Experts
PO7	Environment and Sustainability	2	0.51	Low	Encourage students to undergo Internship programs
PO8	Professional Ethics	2	0.52	Low	Conduct Spoken Tutorials and I-Point Classes
PO9	Individual and Team Work	2	0.58	Low	Technical Fests

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO10	Communicate Effectively	2	0.79	Low	Conduct talks on Industry, Finance Management, Different domains of IT etc.
PO11	Project Management and Finance	2	0.52	Low	Conduct aptitude training classes (Technical and Non-Technical topics)
PO12	Lifelong Learning	2	0.68	Low	Conduct Talks on Research Methodologies to encourage Students publish/present Project or Research work in Conferences and Journal Papers
PSO1	Entrepreneurship and Freelancing	2	0.64	Low	Conduct Technical Talks and Seminars
PSO2	Competitive Exams and Higher Studies	2	0.77	Low	Mini projects for a subject or a combination of subjects

Table 14: Attainment Gap Analysis BE- Computer Science Engineering (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO1	Apply Knowledge	2	0.63	Low	Mini projects for a subject or a combination of subjects
PO2	Solve Problems	2	0.56	Low	Mini projects for a subject or a combination of subjects
PO3	Design/ Development of Solution	2	0.35	Low	Perform extra laboratory experiments other than the ones prescribed in syllabus
PO4	Conduct Investigations	2	0.50	Low	Conduct Virtual Labs
PO5	Use Modern Tools	2	0.59	Low	Conduct Virtual Labs
PO6	Engineer and Society	2	0.59	Low	Conduct Technical Talks and Seminars
PO7	Environment and Sustainability	2	0.40	Low	Conduct Technical Talks and Seminars
PO8	Professional Ethics	2	0.40	Low	Conduct Technical Talks and Seminars
PO9	Individual and Team Work	2	0.40	Low	Technical Fests
PO10	Communicate Effectively	2	0.43	Low	• Technical Fests • Conduct Spoken Tutorials and I-Point Classes

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO11	Project Management and Finance	2	0.54	Low	• Mini projects for a subject or a combination of subjects • Encourage students to undergo Internship programs
PO12	Lifelong Learning	2	0.50	Low	Conduct Spoken Tutorials and I-Point Classes
PSO1	Entrepreneurship and Freelancing	2	0.39	Low	• Encourage students to undergo Internship programs
PSO2	Competitive Exams and Higher Studies	2	0.39	Low	Conduct aptitude training classes (Technical and Non-Technical topics)

4.6 Master of Business Administration

Table 15: Attainment Gap Analysis of Master of Business Administration

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.311		
PO2	Analytical and critical thinking	2	2.33		
PO3	Value based Leadership ability	2	1.1	Moderately	Inviting lectures on leadership, Entrepreneurship/Practical component on leadership
PO4	Analyze global, and ethical aspects of business	2	2.45		
PO5	Team environment	2	1.3	Moderately	Team Building activities to be undertaken
PO6	Soft skills	2	1.615	Moderately	Outward Bound Training to enhance soft skills

Note: Attainments exclude 2nd and 4th Sem, as revaluation results are available yet.

4.7 Master of Computer Application

Table 16: Attainment Gap Analysis of Master of Computer Applications

PO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Computational Knowledge	50	64.70	Moderate	Hands on sessions through guest lectures/ Assignments based on basic concepts
PO2	Problem Analysis	50	77.18	Moderate	Activity can be given to analyze real life problem
PO3	Design/Development of Solutions	50	55.27	Moderate	Micro project can be given
PO4	Conduct Investigations of Complex Problems	50	51.34	Moderate	Out of box problems/ open ended problems can be given
PO5	Modern Tools Usage	50	36.97	Low	Specific tools can be mentioned while giving assignments or micro project
PO6	Professional Ethics	50	13.23	Low	Talks on ethical issues/ Industrial visits can be arranged
PO7	Life-Long Learning	50	22.87	Low	Guest lectures by subject matter experts can be arranged/ topics for self-study

PO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO8	Project Management and Finance	50	5.59	Low	Guest lectures/ Micro project can be given
PO9	Communication Efficacy	50	6.36	Low	Seminars for each course and project presentations can be included
PO10	Societal and Environmental Concern	50	14.89	Low	Outreach programs can be arranged/ Conduct Quiz
PO11	Individual and team work	50	15.17	Low	Seminar/ project / assignments can be given/ technical activity
PO12	Innovation and Entrepreneurship	50	8.40	Low	Encourage students to develop innovative projects/ Entrepreneurship guidance
PO13	Research Environment	50	0.00	Low	Encourage students to take up research oriented projects and publish/ present papers

ST JOSEPH ENGINEERING COLLEGE

Affiliated to VTU-Belagavi & Recognized by AICTE

NBA-Accredited: BE (CSE, ECE, EEE, & ME)

Action Taken Report 2017-18

Industry Alumni Advisory Board (IAAB) Meeting 2017

"Service and Excellence"

Vision

"To be a global premier Institution of professional education and research"

Mission

- **Provide opportunities to deserving students of all communities, the Christian students in particular, for quality professional education.**
- **Design and deliver curricula to meet the national and global changing needs through student centric learning methodologies.**
- **Attract, nurture and retain the best faculty and technical manpower.**
- **Consolidate the state of art infrastructure and equipment for teaching and research activities.**
- **Promote all round personality development of the students through interaction with alumni, academia and industry.**
- **Strengthen the Educational Social Responsibilities of the institution.**

Table of Contents

List of Figures

List of Tables

1. Agenda of the IQAC Meeting Scheduled on 16th November 2018

1. Review of Minutes of previous IAAB Meeting date: 25th November 2017.
2. Accreditation status updates
3. IQAC modalities
4. Quality Circle at SJEC
5. Attainment of POs and PSOs in the five UG programs, MBA & MCA.
6. Continual Improvement Action Items for each of the POs and PSOs.
7. Any other matter with the permission of the chair.

2. Review of Minutes of the previous IAAB Meeting

Table 1: Actions Items suggest during the previous IAAB meeting for Continual Improvement

Action Item No.	**Action Item**	**Person Responsible to Coordinate**	**Time schedule for completion**	**Status as on (05 Nov 2018)**
I/2017-18/1	Effective action items for POs and PSOs	Program Coordinators	15 January 2018	Course-PO Matrix has been revamped to address all POs across the semesters to establish effective action items
I/2017-18/2	Segregation of students into Bright, Progressive and Slow learners. More attention towards slow learners	Respective Departmental HODs	30 June 2018	Segregation has been made based on the marks, and remedial classes are arranged for slow learners to uplift their learning levels
I/2017-18/3	More Industry Institute Interaction	Coordinator - EDC	30 June 2018	The EDC cell is revamped and re-coined as Industry Interaction and

Action Item No.	Action Item	Person Responsible to Coordinate	Time schedule for completion	Status as on (05 Nov 2018)
				Entrepreneurship Development Cell (IIEDC) to reinforce the Industry Interaction
I/2017-18/4	Rigorous alumni interaction and strengthening of the network	Coordinator Alumni Affairs	30 June 2018	All the possible social media platforms are utilized to strengthen the Alumni network. Also, more activities are conducted at departmental level to tap their potential
I/2017-18/5	Alumni involvement in guiding student projects	Coordinator Alumni Affairs	30 June 2018	All the departments have involved alumni in the final project evaluation/exhibition, and some departments even during interim project evaluation
I/2017-18/6	Training for aptitude and problems solving	Respective Departmental HODs	30 June 2018	Value Education, Aptitude, Career Guidance & Training (VACT) programme has been introduced to streamline all the Knowledge-Skill-

Action Item No.	Action Item	Person Responsible to Coordinate	Time schedule for completion	Status as on (05 Nov 2018)
				Attitude development process
I/2017-18/7	Frequent quality assurance meetings	Accreditation Coordinators – College and Department	31 March 2018	Quality Assurance (QA) Cell has been established to streamline and sustain the quality initiatives. In addition, weekly meetings are ensured at departmental level to confirm quality at source
I/2017-18/8	Certification courses for students and staff	Respective Departmental HODs	30 June 2018	Staff and Students are encouraged to undergo certification courses. Further, financial assistance are provided to the staff wherever necessary

3. Action Taken Report (ATR)

3.1 Action item 1 (Effective action items for POs and PSOs)

The Course-PO matrix has been revamped to ensure balanced attainment of POs & PSOs across all the semesters. Further, in the first year UG engineering programme Course-PO Matrix only relevant POs arte included to ensure effective attainment of the attributes.

3.2 Action item 2 (Segregation of students into Bright, Progressive and Slow learners. More attention towards slow learners)

The students are segregated into Bright, Progressive and Slow learners based on the marks scored in the internal and external examinations. College has taken following actions to help slow learners to improve their academic performance.

- Conducting the meeting with them year-wise in the presence of HOD and student welfare coordinator.
- Providing them detailed information about the syllabus, examination scheme, old question papers, level of preparation required, subjects/topics that need more attention.
- Conducting the remedial classes for slow learners in the difficult subject, semester-wise on their request.
- Inviting the parents of slow learners for meeting in the presence of students.
- ECE Department has a designed online (canvas) add on course for bright students which includes beyond the syllabus contents. Further, Industry Orientation Activity is being conducted in department to introduce students to simulation tools and virtual labs. Students are also introduced to systematic project design procedure in a Project Based Learning environment.

3.3 Action item 3 (More Industry Institute Interaction)

Fig. 1: INGENIOUS-2K18 (Business Pan Contest) on 23 March 2018, by MBA Department

Fig. 2: IGNITE 2018 - An Exhibition of 300 Indian Entrepreneurs, on 2 April 2018, by MBA Department

Fig. 3: Visit to Bankers Institute of Rural Development, on 3 April 2018, by MBA Department

Fig. 4: Industrial visit to Mangalore Chemicals and Fertilizers Limited, on 17 October 2018, by MBA Department

Fig. 5: The second SJEC Distinguished Lecture Series, by Mr. Praveen Kamath, General Manager & Head of HR for Technology Practice Units, Wipro Limited, on 25 November 2017, by MBA Department

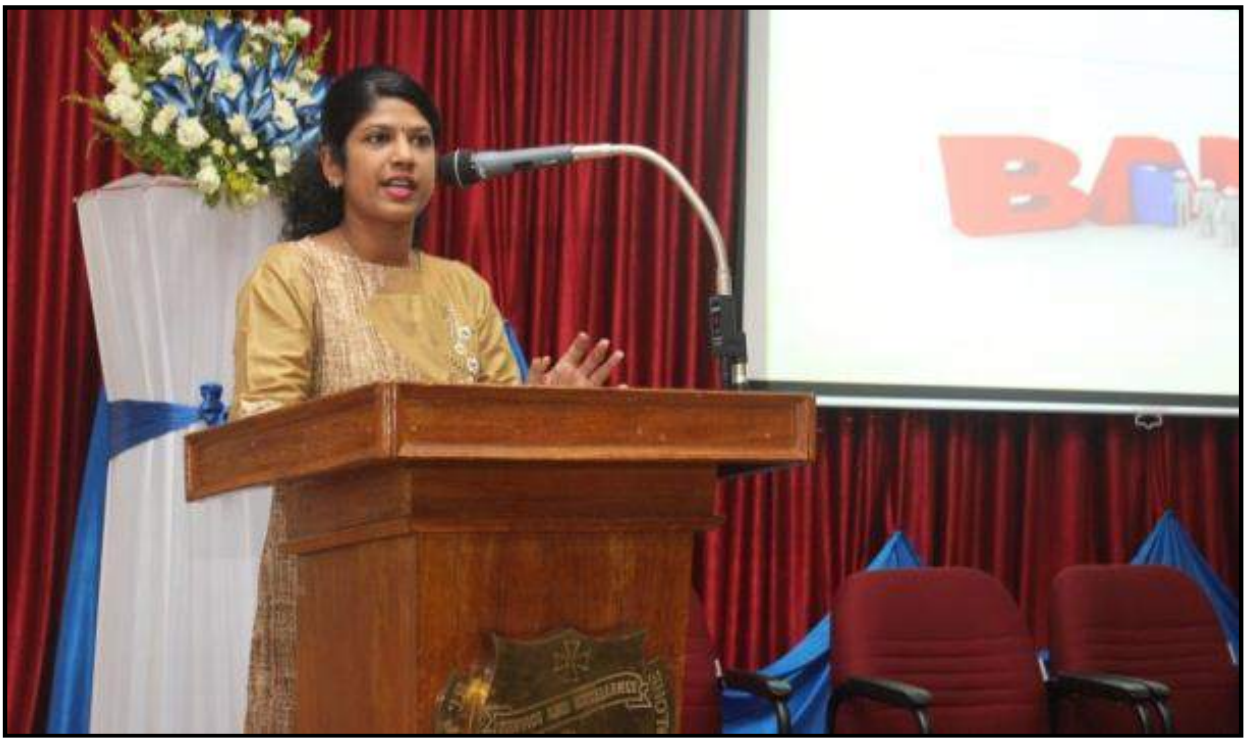

Fig. 6: Session on Career opportunities for MBA students in Banking, by Ms Swathi K, Manager, Canara Bank – Padubidri, on 28 April 2018, by MBA Department

Fig. 7: Visit to Varahi Hydro-Electric Project, on 8 May 2018, by Civil Engg. Department

Industrial Visit to V&G Laboratory, Baikampady & New Mangalore Port

Final year BE Civil Engineering students accompanied by three faculty members visited V&G laboratory, Baikampady as well as New Mangalore Port, Panamboor, Mangaluru on 4 May 2018. The visit to V&G laboratory was mainly organized to make aware the students about the use new advanced techniques and equipment's in the industry in addition to their curriculum requirements.

The visit to New Mangalore Port, was to meet the purpose of showing certain steel structures, such as Gantry Girders and its functioning, as well as to show the students live examples of boarding of ships through the marked channels near jetty etc.

Fig. 8: Technical talk on Ready Mix Concrete/Special Concretes and Cracks in Buildings, by Er Sudhir Shetty, Director, IRC Concrete mix India PVT. LTD Mangaluru and Er Ekanath Andakeri, Structural Engineer, Sigma Consultants, Mangaluru, on 28 March 2018, by Civil Engg. Department

Fig. 9: Industrial Visit to Dakshina Kannada Milk Producers Union Limited (KMF), Mangaluru, on 24 March 2018, by Civil Engg. Department

Fig. 10: Talk on Entrepreneurship, by Mr Gopalakrishna Bhat Kakunje, CEO and Managing Director from Kakunje Software Private Ltd, Mangaluru and Ms Namitha Bhat, Software Developer, Kakunje Software Private Ltd, Mangaluru., on 23 March 2018, by CSE Department

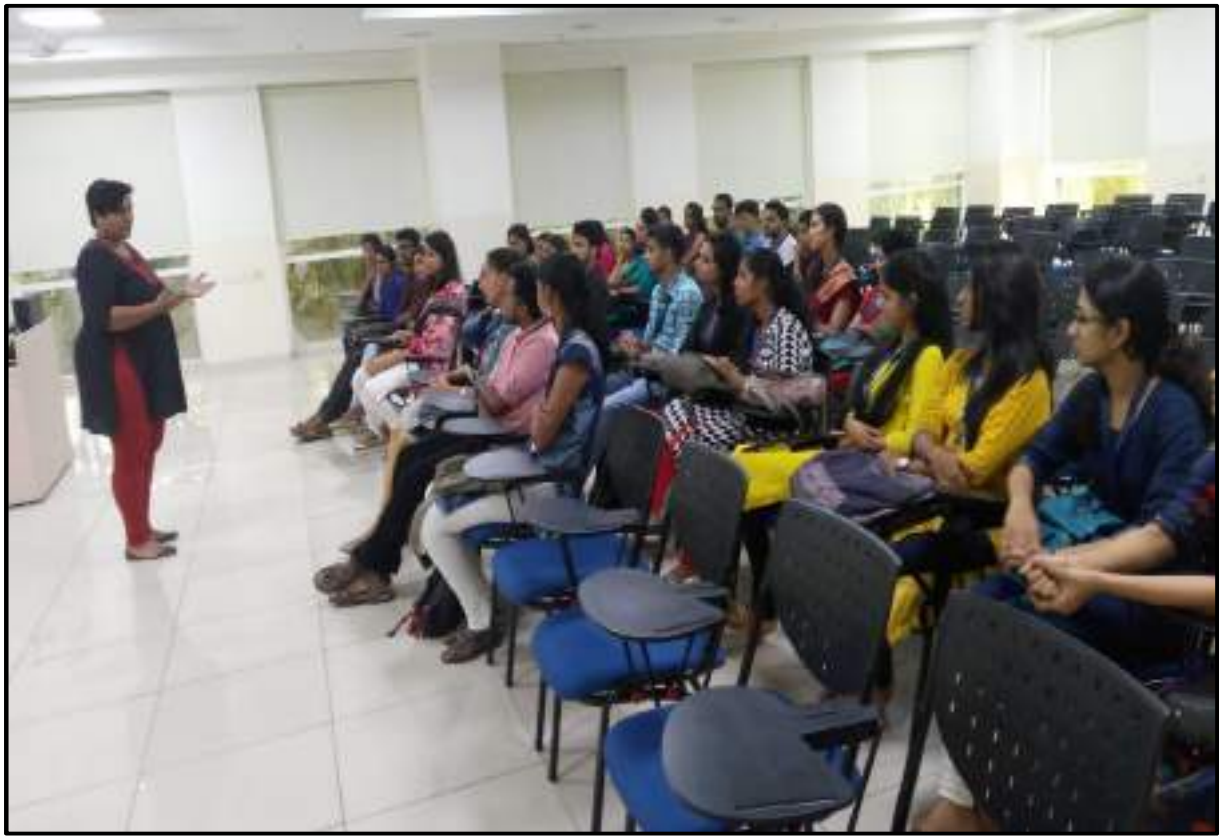

Fig. 11: Industrial visit to Infosys PVT LTD, Mudipu, on 23 May 2018, by CSE Department

Fig. 12: Technical Talks on Artificial Intelligence Machine Learning and Deep Learning and Dot NET Framework and Application Development, by Mr. Sanjeeth Veigas – AI consultant at Tech Mahindra, on 12 August 2017, by CSE Department

Talk on "Big Data and Internship": The **CSI-SJEC Chapter** conducted a talk on **"Big Data and Internship"** by Mr. Deepak, Hewlett Packard Enterprise(HPE), Mangaluru for 6th semester CSE students on April 19th 2018. The resource person began the first session with a introduction on Big data. He also briefed about the applications of big data in several areas. Mr. Deepak gave introduction of Hewlett Packard Enterprise (HPE) where students can do the internship. He also briefed about the different projects which can be taken up by the students in their internship

Fig. 13: Technical Talk on Digitalization and its Impact & Communication and Creativity, by Mr Vidyabhushana H from Siemens Technology, Bengaluru, on 28 April 2018, by ECE Department

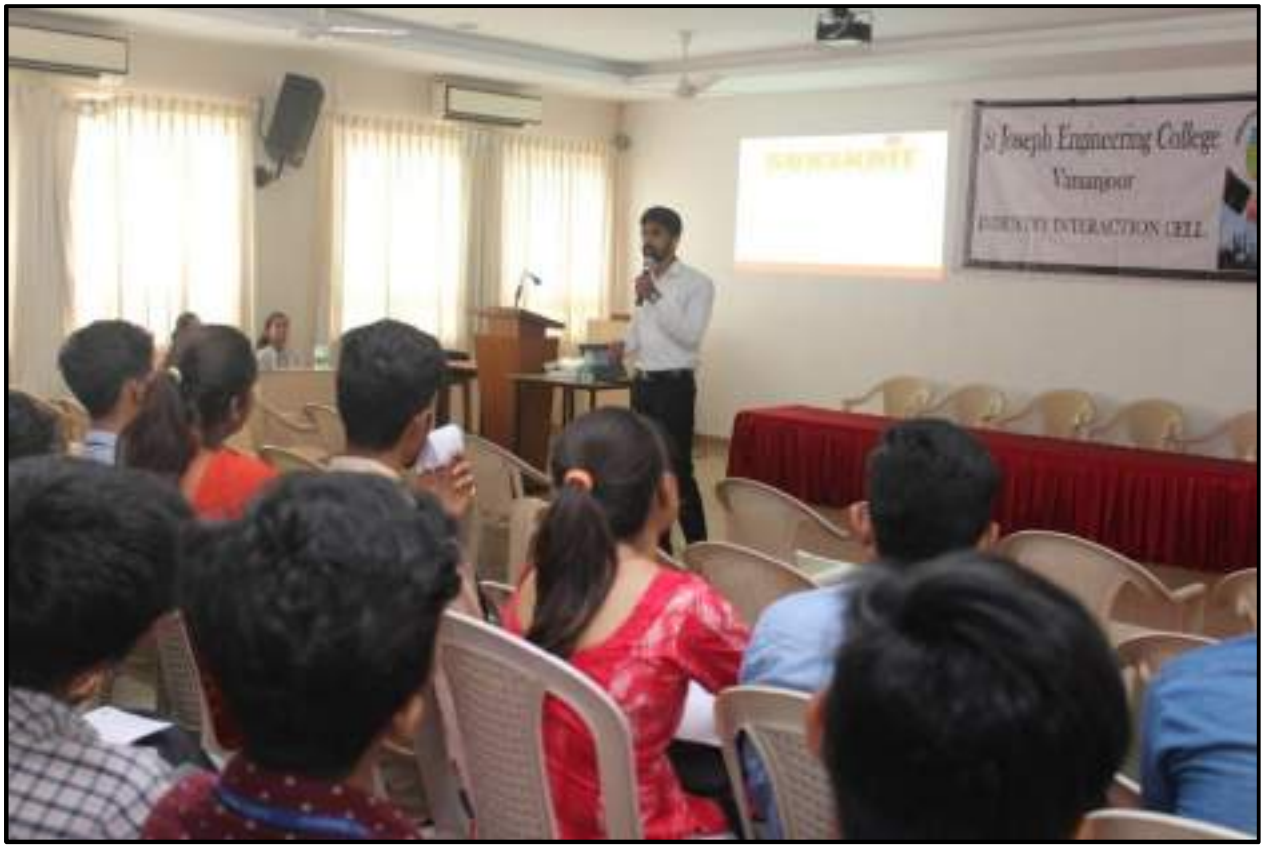

Fig. 14: Technical Talk on An Entrepreneur at Ground Zero, by Mr Shivraj D Poojary, Software Engineer at Telenetix Private Limited, on 23 April 2018, by ECE Department

Fig. 15: Industrial Visit to Adani Power Plant (UPCL), on 23 April 2018, by EEE Department

Fig. 16: Industrial Visit to KPTCL Kavoor Substation, on 7 April 2018, by EEE Department

Fig. 17: Technical Seminar on Synchronous Generator-An Industrial Perspective, by Mr Manoj Kumar T, Alumnus from the Batch of 2016 & Engineer at Kirloskar Electricals Bangalore on 22 March 2018, by EEE Department

Fig. 18: Industrial visit to Varahi Hydro-Electric Project, on 8 March 2018, by EEE Department

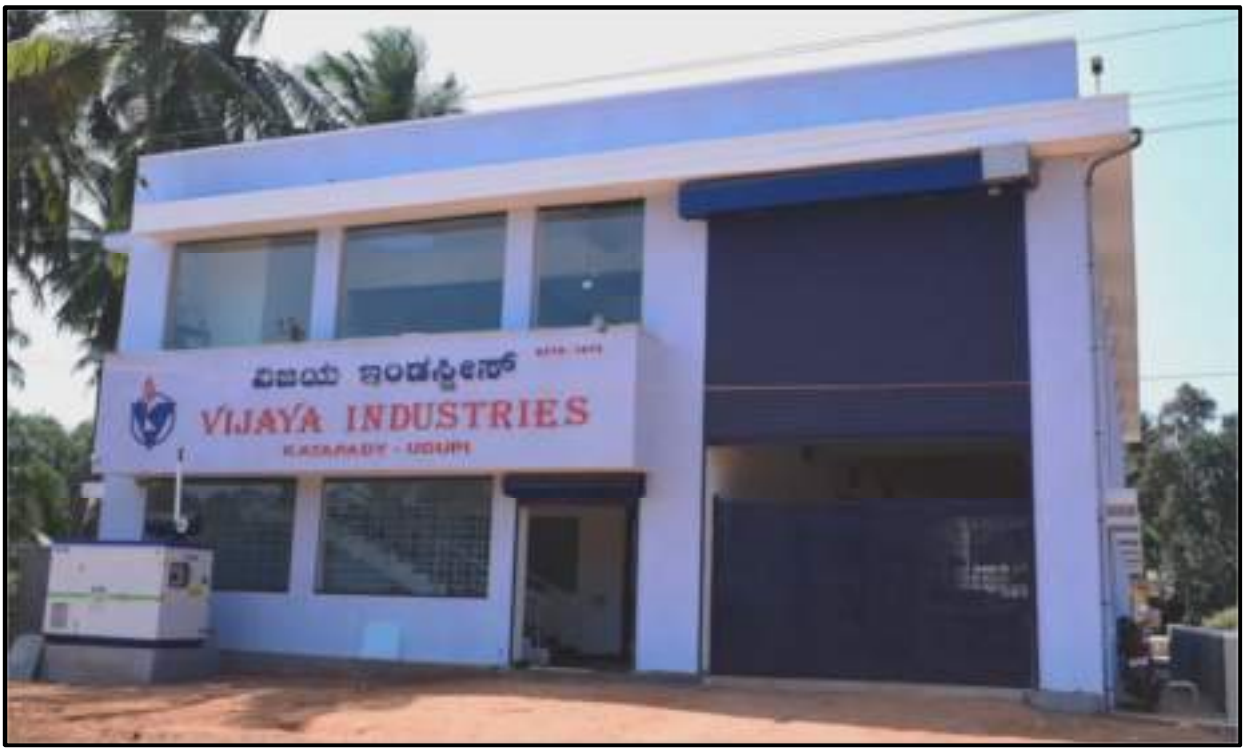

Fig. 19: Industrial visit to Vijaya Industries, on 7 November 2017, by EEE Department

Fig. 20: Talk on Career prospective for Engineers, by Mr. Alric D'Souza, Project Consultant, SELCO Foundation, on 8 August 2017, by EEE Department

Fig. 21: Workshop on Igniting the young minds towards Community Based Projects, by Mr. Alric D'Souza, Project Consultant, SELCO Foundation, on 12 February 2018, by EEE Department

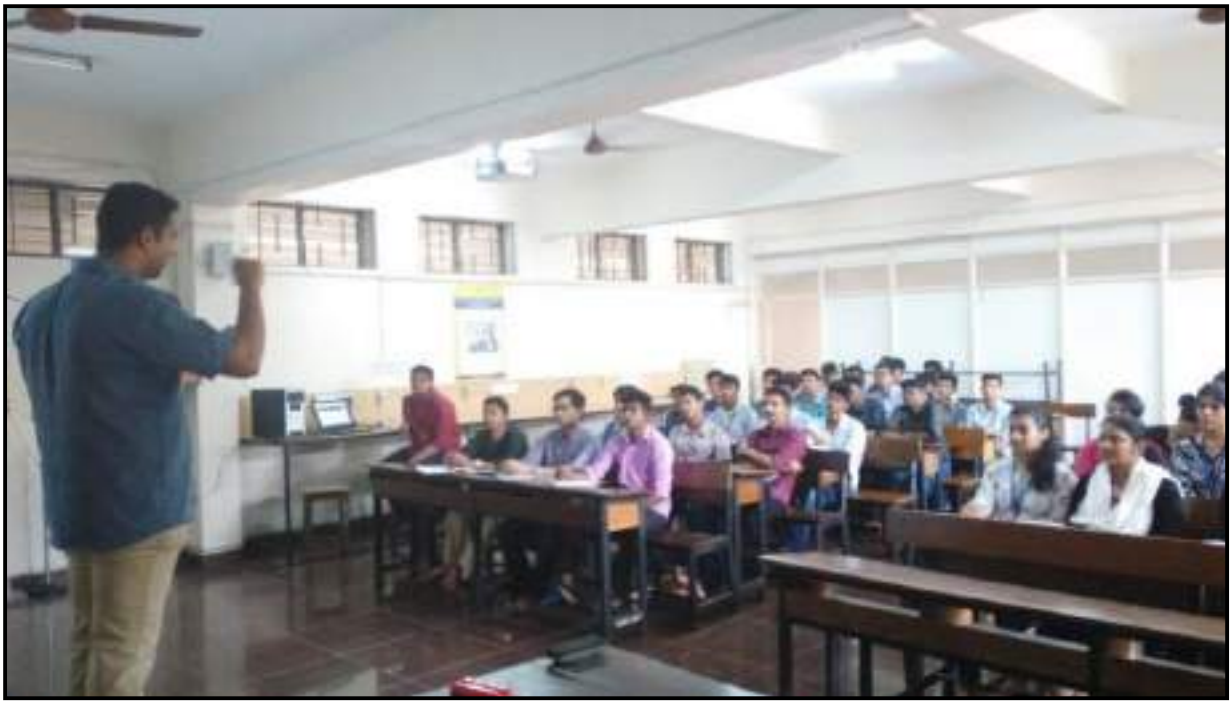

Fig. 22: Technical seminar on Electrical Design & Estimation, by Mr. Suhas Shenoy, Alumnus batch -2016, Engineer, SELCO Foundation, on 13 February 2018, by EEE Department

Fig. 23: Technical seminar on Entrepreneurial Skill Development, by Mr. K. Socrates, Dy. Director, MSME, Mangalore, on 14 February 2018, by EEE Department

Fig. 24: Technical seminar on PLC and Drives, by Mr. Ajeya B, Alumnus Batch -2013, Engineer, Jindal Steels, on 17 February 2018, by EEE Department

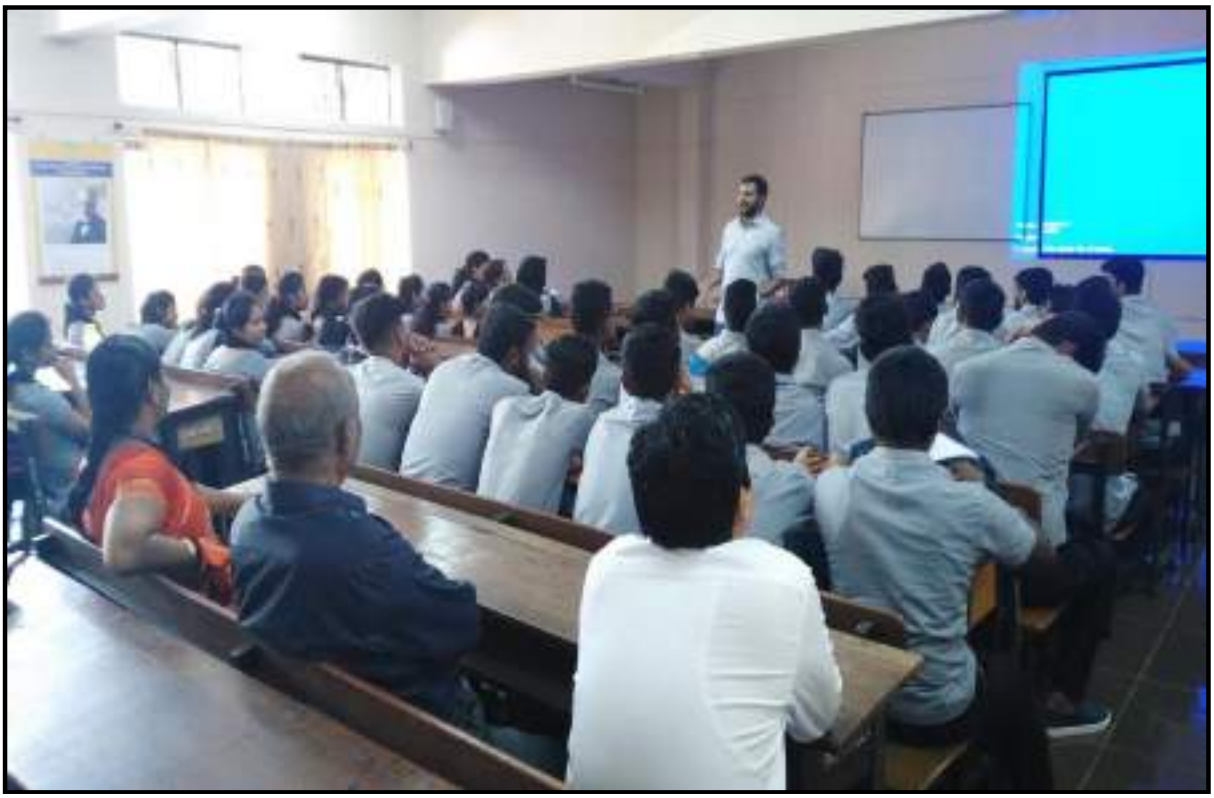

Fig. 25: Technical seminar on Introduction to PYTHON, by Mr. Merryl D'Mello, Alumnus Batch 2007, senior Consultant, Ardelis Tech, Bengaluru, on 17 February 2018, by EEE Department

Fig. 26: Visit to KPTCL Kavoor Substation, on 7 April 2018, by EEE Department

Fig. 27: Safety Awareness Program at MCF, on 27 April 2018, by ME Department

Fig. 28: Industrial visit to Lamina Suspension Products Ltd, on 22 March 2018, by ME Department

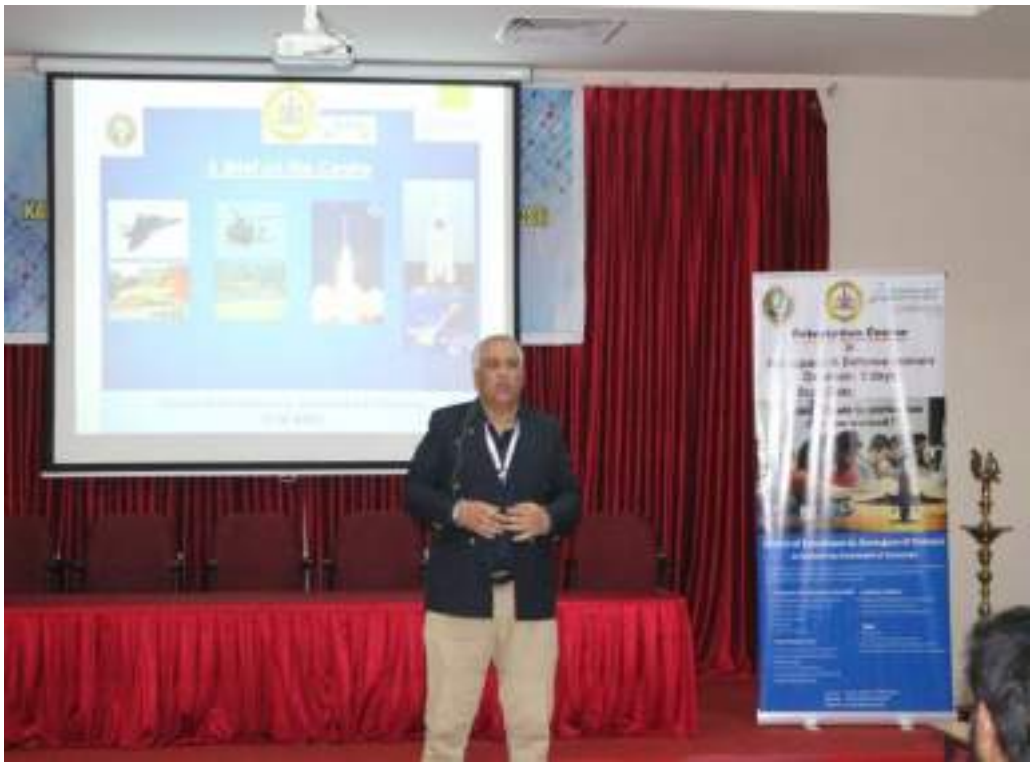

Fig. 29: Orientation Course in Aerospace & Defense Domain, on 24 May 2018, by ME Department

Fig. 30: Industrial visit to GWASF - Quality Casting, Baikampady, on 27 October, 2017 by ME Department

Fig. 31: Technical talk on “Robotics”, by Mr Sudeep Devashya, Chief Executive Officer, Epitas Software, Mangaluru, on 30 October 2017, by ME Department

3.4 Action item 4 (Rigorous alumni interaction and strengthening of the network)

- The Alumni Association organized the annual Alumni Conclave NOSTOS 2017 on 02 December 2017.
- Team SJEC Racing of SAEINDIA Collegiate Club received technical help and guidance during the development of TURTLE 2.0 (An All-Terrain Vehicle) from Mr. Dilish Joy Lobo, Mr. Devaiah, Mr. Shreedhar and Mr. Glen Pinto, Alumni of 2017 batch.

Fig. 32: Motivational talk by Ms Ashmitha Castelino, Alumni of SJEC and Gold medalist under VTU, currently working as Design Engineer, at Roy & Shenoy, Mangaluru, on 15 March 2018, by Civil Engg. Department

Fig. 33: Workshop on Arduino Rapid Programming, by Mr Claran Martis and Mr John Rodrigues, Alumni of SJEC, on 19-20 January 2018, by CSE Department

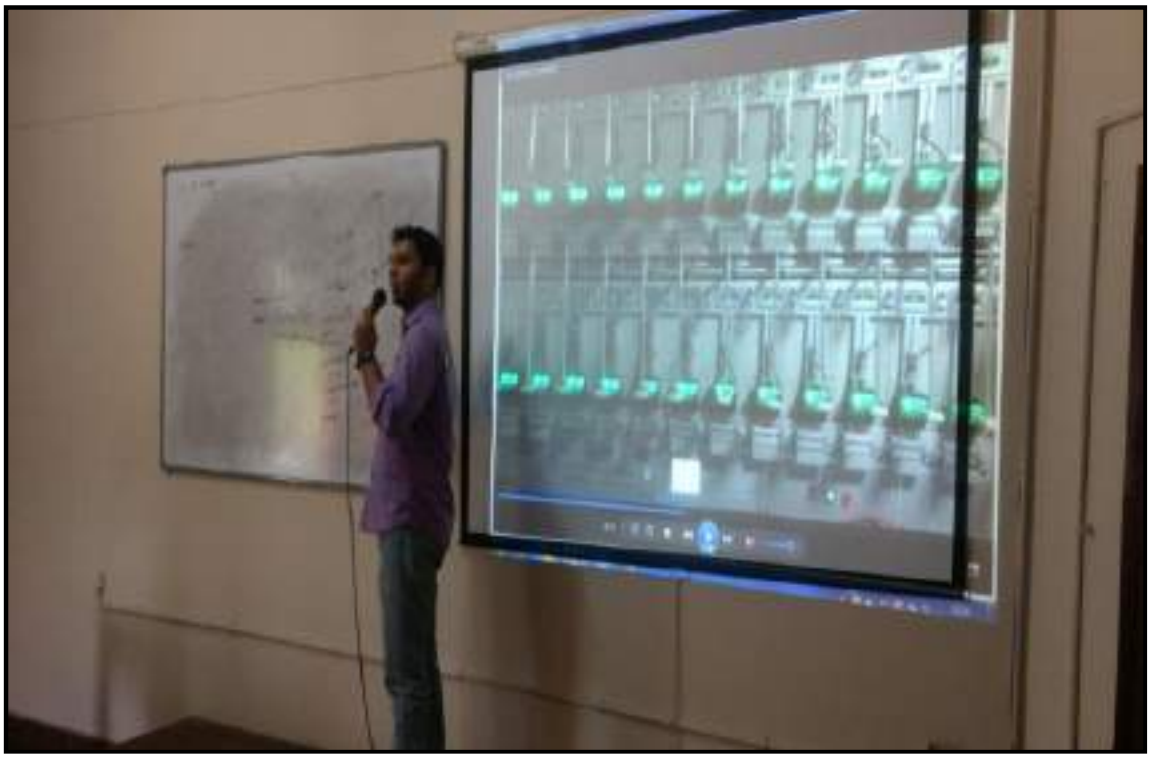

Fig. 34: Technical Seminar on Transformers and Plant Maintenance, by Mr Ramesh B Tantri, Engineer, Birla Chemicals, Karwar. And Mr.Sreekesh Udupa , Engineer, L&T Metering, Mysuru, Alumni of SJEC, on 23 September 2017, by EEE Department

Fig. 35: Technical Talk on Building Information Modelling [BIM]-Future of Construction, by Mr Glenn Noronha , Energy Specialist , United States Green Building Council, Alumni of SJEC, on 25 October 2017, by EEE Department

3.5 Action item 5 (Alumni involvement in guiding student projects)

All the departments have called alumni during the final year project exhibition to evaluate the project.

Fig. 36: Involved alumni during the interim evaluation of project work held from 4-11 April 2018, by ME Department

3.6 Action item 6 (Training for aptitude and problems solving)

- Value Education, Aptitude, Career Guidance & Training (VACT) courses are being conducted for students of all the departments to excel in placements.
- Syllabus had been framed for the aptitude training keeping the Gate Examination Syllabus as a model, which included Technical and Non-Technical topics covering the domain expertise at respective departments.
- Faculties of the department have been assigned an hour per week in the Time-Table for conducting the training sessions for every section.
- Students are being trained in every semester on developing skills to understand, infer and solve the problems pertaining to both Technical & Non-Technical aspects of curriculum.
- Technical Aptitude included the topics from the courses learned in the previous semester for all section of the students from II, III & IV years and Non-Technical syllabus included topics from Quantitative aptitude, Logical Reasoning, Verbal deduction & puzzle etc which are frequently been asked during the recruitment drive in the campus/competitive exams.

- At the end of semester, End semester MCQ Computer based test (including question from both Technical & Non-Technical domain, consisting 30 questions for the time duration of 45 min) is used to assess the level of learning happening during the training sessions.
- The pre-final year students of all the departments are assessed by CoCubes – an online assessment and hiring platform.
- Management students are given 6 day aptitude training from professionals and industry experts in the month of July 2018. The programme was arranged by Training and Placement cell of St Joseph Engineering College.

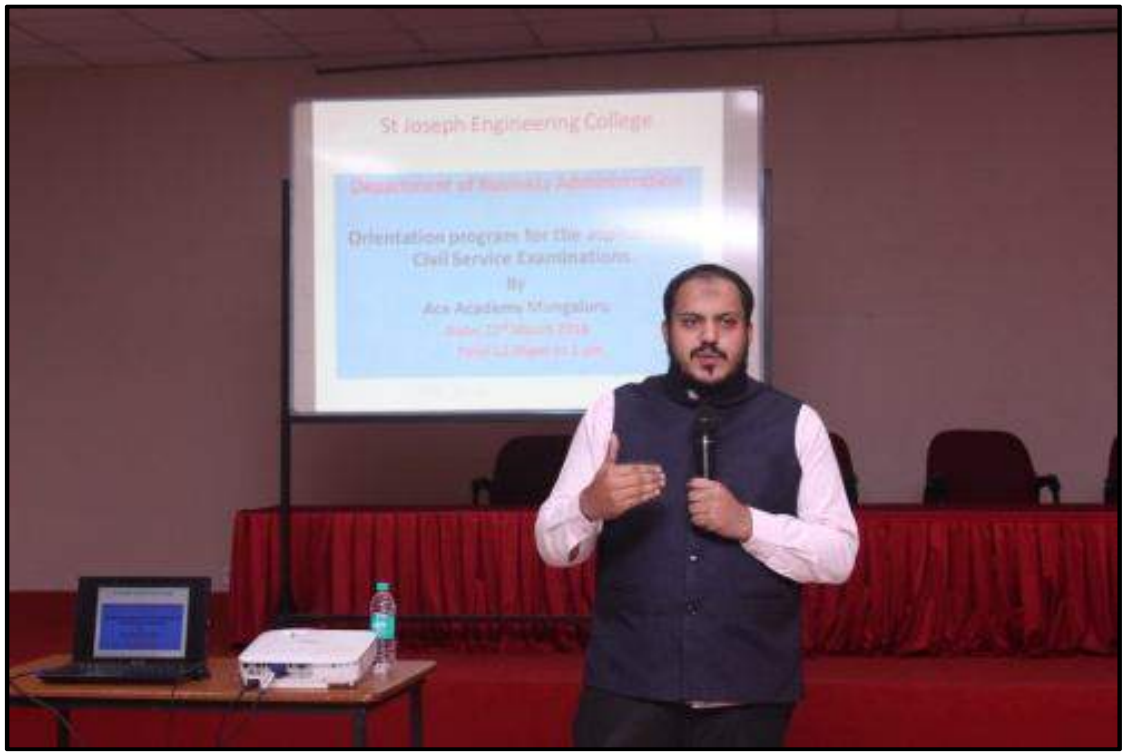

Fig. 37: Seminar on Civil Service Examination, by Mr Shahid Hashmi and Mr Nazeer Ahmed from Ace IAS Academy, Mangaluru, on 21 March 2018, by MBA Department

Fig. 38: Practical Sessions on Leadership, by Dr Shakila B, Assistant Professor, Department of Business Administration and Ms Sangeetha Ferrao, Placement Officer, Mangaluru, during 9-11 October 2018, by MBA Department

Fig. 39: Outbound training at Madikeri, during 12-13 October 2018, by MBA Department

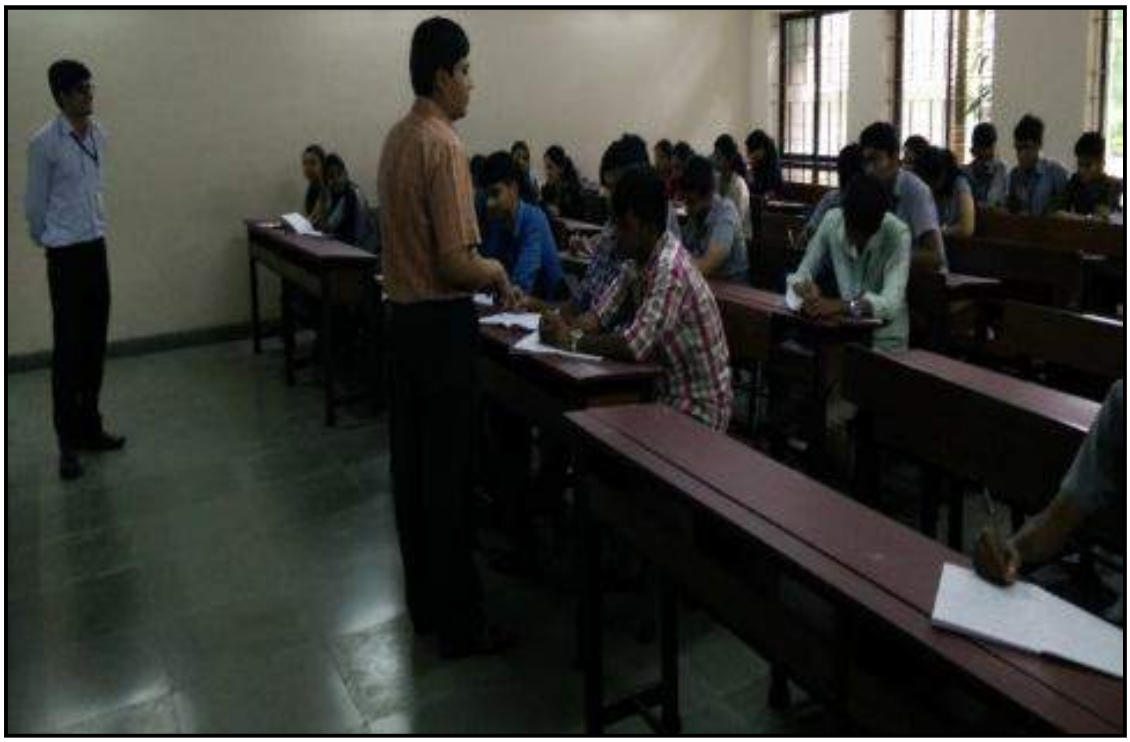

Fig. 40: Workshop on Quantitative Aptitude, by Mr. Deepesh S Kanchan, Asst Prof, EEE, SJEC, on 17 August 2017, by EEE Department

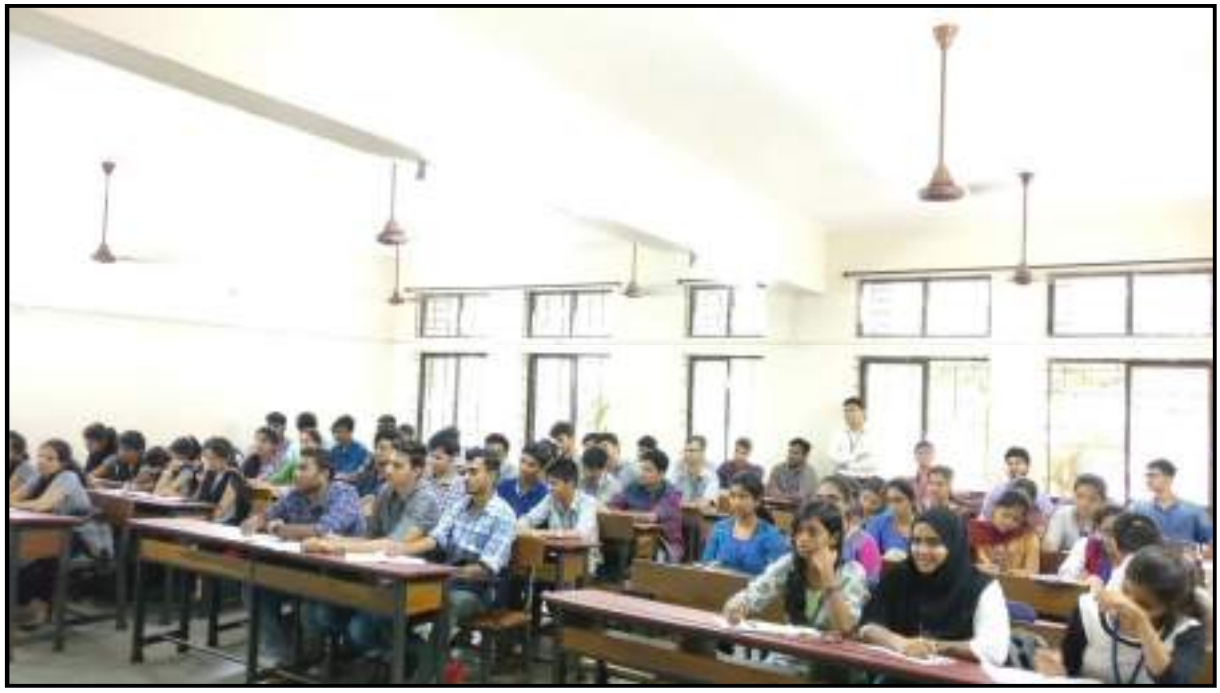

Fig. 41: A session on Technical Training with focus on GATE and other Competitive Exams, by Mr. Praveena Krishna P S, Asst. Prof, EEE, SJEC, on 17 August 2017, by EEE Department

Fig. 42: Motivational talk on Career Guidance, by Mr. Arun Gundmi, Regional Manager, T.I.M.E, Manipal, on 24 October 2017, by EEE Department

Fig. 43: Workshop on Power Supply Design, by Mr Subramanya K, Asst. Professor E&E, during 15-16 February 2018, by EEE Department

3.7 Action item 7 (Frequent quality assurance meetings)

- The Quality Assurance (QA) Cell has been established at the college level to streamline and sustain the accreditation process which meets every month.
- Program coordinators meet once in a week in all the departments to discuss the progress of accreditation related work.
- Meeting with Criteria heads were arranged at least once in a semester to monitor the progress of SAR updates.
- Assessment Tool Review committee established in the department ensures the quality of IA question paper and other assessment tools used to measures Course Outcomes.
- Module Coordinators will monitor the quality of course plan prepared by Course Coordinators.

3.8 Action item 8 (Certification courses for students and staff)

- Dr Shreeranga Bhat and Mr Vijay V. S, completed the Indo-Universal Collaboration for Engineering Education (IUCEE), USA (IUCEE-OBE) 'Outcome Based Education' Course conducted by K.L.E Technological University Faculty from September 2017 to January 2018.
- Dr Shreeranga Bhat has achieved and qualified Master Black Belt in Six Sigma from ISI, Bangalore.
- Mr Rolvin S D'Silva has completed the course Heat Transfer 67% from NPTEL Online Certification at IIT Bombay.
- Mr Sushanth H G has completed the course Engineering Thermodynamics from NPTEL Online Certification at IIT Kanpur.
- Dr Nalini Rebello, Mr Chittaranjan M, and Mr Aditya Rao of Civil Engg. Department have completed NPTEL course "Introduction to Geographical Information System". Also 11 students of the department completed courses under NPTEL.
- Dr Sridevi Saralaya has successfully completed the courses on "Transparency in peer review", "Funding Hacks for Researchers", "10 tips to write a truly terrible review", "Make a career in Research" and "How do editors look at your paper" offered by Elsevier Publishing Campus, an open online training and advice center.
- Ms Smitha V George has successfully completed the courses on "Introduction to Internet of things" and "Cryptography and Network Security" offered by IIT Madras through NPTEL (National Programme on Technology Enhanced Learning), a joint initiative of the IITs and IISc.
- Ms Supriya Salian has successfully completed the course on "Introduction to Internet of things" offered by IIT Madras through NPTEL.

- Ms Gayana M N has successfully completed the courses on “Introduction to Internet of things” and “Cryptography and Network Security” offered by IIT Kharagpur through NPTEL (National Programme on Technology Enhanced Learning), a joint initiative of the IITs and IISc.
- Ms Gayana M N has successfully completed the course on “Programming, Data structures and Algorithms using Python” offered by IIT Madras through NPTEL (National Programme on Technology Enhanced Learning), a joint initiative of the IITs and IISc.
- Ms Sujatha M has successfully completed the course on “Cryptography and Network Security” offered by IIT Kharagpur through NPTEL (National Programme on Technology Enhanced Learning), a joint initiative of the IITs and IISc.
- Ms Renuka Tantry has successfully completed the course on “Cryptography and Network Security” offered by IIT Kharagpur through NPTEL (National Programme on Technology Enhanced Learning), a joint initiative of the IITs and IISc.
- Ms Supreetha R has successfully completed the courses on “Introduction to Internet of things” and “Cryptography and Network Security” offered by IIT Kharagpur through NPTEL (National Programme on Technology Enhanced Learning), a joint initiative of the IITs and IISc.
- Ms Nisha Jenifer Roche has successfully completed the course on “Mobile Application Development” offered by IIT Madras through NPTEL (National Programme on Technology Enhanced Learning), a joint initiative of the IITs and IISc.
- Ms Anusha M M has successfully completed the course on “Introduction to R programming language – R basics” offered by Udemy.
- Dr Anjali Ganesh has completed course - Soft skills & personality Development from NPTEL Online Certification at IIT Bombay.
- Dr Babitha Rohith has completed course- research methodology from NPTEL Online Certification at IIT Bombay.
- Dr Shakila B has completed course - Soft skills & personality Development from NPTEL Online Certification at IIT Bombay.
- Ms Chitralekha Acharya J has completed course -Soft skills & personality Development from NPTEL Online Certification at IIT Bombay.
- Ms Manjula K has completed course - Emotional Intelligence from NPTEL Online Certification at IIT Bombay.

4. Attainment of Program Outcomes (POs) and Program Specific Outcomes (PSOs), and Continual Improvement Action Items for each of the POs and PSOs.

4.1 BE in Mechanical Engineering

Table 2: Attainment Gap Analysis of BE-Mechanical Engineering (I shift)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	1.54	Moderately	Use Quiz, assignment to encourage students to solve real life practical or open ended problems.
PO2	Solve Problems	2	1.49	Moderately	
PO3	Design/ Development of Solution	2	0.88	Low	Use case studies or open ended problems
PO4	Conduct Investigations	2	2.08	High	Use virtual lab or open ended experiments
PO5	Use Modern Tools	2	1.1	Moderately	Use of Virtual Lab, Simulation , Modelling and Analysis tools like CATIA, ANSYS
PO6	Engineer and Society	2	0.87	Low	Encourage students to develop more capstone or mini projects related to industry and solve contemporary issues in society
PO7	Environment and Sustainability	2	1	Moderately	

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					related to environment and sustainability
PO8	Professional Ethics	2	1.23	Moderately	Develop awareness about Professional Ethics by using Plagiarism software, Rubrics to assess late submission and study of case studies related to the effect of wrong ethical practices
PO9	Individual and Team Work	2	1.76	Moderately	Encourage students to do mini projects, seminars, assignments in a group, assess these using technical reports and presentations to improve communications both technical and personal
PO10	Communicate Effectively	2	1.92	Moderately	
PO11	Project Management and Finance	2	0.89	Low	Include project management concepts in Mini

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					and Final year projects and arrange talks on Industrial and financial management.
PO12	Lifelong Learning	2	1.24	Moderately	Arrange Industrial visits, talks in various domains, Industrial visits and promote self-learning by encouraging students to learn using MOOCs like NPTEL etc
PSO1	Qualify in competitive Exam	2	0.92	Low	Conduct aptitude training classes (Technical and Non-Technical topics)
PSO2	Conduct Research	2	1.4	Moderately	Arrange a seminar or poster presentation of technical papers and encourage projects related to research

Table 3: Attainment Gap Analysis BE-Mechanical Engineering (II shift)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	1.67	Moderately	Use Quiz, assignment to encourage students to solve real life practical or open ended problems.
PO2	Solve Problems	2	1.13	Moderately	
PO3	Design/ Development of Solution	2	0.72	Low	Use case studies or open ended problems
PO4	Conduct Investigations	2	2.1	High	Use virtual lab or open ended experiments
PO5	Use Modern Tools	2	1.14	Moderately	Use of Virtual Lab, Simulation , Modelling and Analysis tools like CATIA, ANSYS
PO6	Engineer and Society	2	0.82	Low	Encourage students to develop more capstone or mini projects related to industry and solve contemporary issues in society related to environment and sustainability
PO7	Environment and Sustainability	2	1.11	Moderately	
PO8	Professional Ethics	2	1.09	Moderately	Develop awareness about Professional Ethics by using Plagiarism software, Rubrics to assess

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					late submission and study of case studies related to the effect of wrong ethical practices
PO9	Individual and Team Work	2	1.71	Moderately	Encourage students to do mini projects, seminars, assignments in a group, assess these using technical reports and presentations to improve communications both technical and personal
PO10	Communicate Effectively	2	1.89	Moderately	
PO11	Project Management and Finance	2	0.87	Low	Include project management concepts in Mini and Final year projects and arrange talks on Industrial and financial management.
PO12	Lifelong Learning	2	1.19	Moderately	Arrange Industrial visits, talks in various domains, Industrial visits and promote self-learning by encouraging students

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					to learn using MOOCs like NPTEL etc
PSO1	Qualify in competitive Exam	2	0.89	Low	Conduct aptitude training classes (Technical and Non-Technical topics)
PSO2	Conduct Research	2	0.93	Low	Arrange a seminar or poster presentation of technical papers and encourage projects related to research

Table 4: Attainment Gap Analysis BE-Mechanical Engineering (First Year – I shift)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.2	High	Use Quiz, assignment to encourage students to solve real life practical or open ended problems.
PO2	Solve Problems	2	2.48	High	
PO3	Design/ Development of Solution	2	1.4	Moderate	Use case studies or open ended problems
PO4	Conduct Investigations	2	1.77	Moderate	Use virtual lab or open ended experiments
PO5	Use Modern Tools	2	1.2	Moderate	Use of Virtual Lab or Simulation tools

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO6	Engineer and Society	2	1.4	Moderate	Encourage students to develop more mini projects or course related to industry and solve contemporary issues in society related to environment and sustainability
PO7	Environment and Sustainability	2	1.12	Moderate	
PO8	Professional Ethics	2	0.6	Low	Develop awareness about Professional Ethics by using Plagiarism software, Rubrics to assess late submission and study of case studies related to the effect of wrong ethical practices
PO9	Individual and Team Work	2	1.5	Moderate	Encourage students to do mini projects, seminars, assignments in a group, assess these using technical reports and presentations to improve communications both technical and personal

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO10	Communicate Effectively	2	1.76	Moderate	
PO11	Project Management and Finance	2	0.6	Low	Include project management concepts in Mini or course projects and arrange talks on Industrial and financial management.
PO12	Lifelong Learning	2	0.87	Low	Arrange Industrial visits, talks in various domains, Industrial visits and promote self-learning by encouraging students to learn using MOOCs like NPTEL etc
PSO1	Qualify in competitive Exam	2	NA		
PSO2	Conduct Research	2	NA		

Table 5: Attainment Gap Analysis BE-Mechanical Engineering (First Year – II shift)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.14	High	Use Quiz, assignment to encourage students

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					to solve real life practical or open ended problems.
PO2	Solve Problems	2	1.62	Moderate	
PO3	Design/ Development of Solution	2	0.6	Low	Use case studies or open ended problems
PO4	Conduct Investigations	2	2.15	High	Use virtual lab or open ended experiments
PO5	Use Modern Tools	2	1.24	Moderate	Use of Virtual Lab or Simulation tools
PO6	Engineer and Society	2	0.6	Low	Encourage students to develop more mini projects or course related to industry and solve contemporary issues in society related to environment and sustainability
PO7	Environment and Sustainability	2	1.35	Moderate	
PO8	Professional Ethics	2	0.6	Low	Develop awareness about Professional Ethics by using Plagiarism software, Rubrics to assess late submission and study of case studies

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					related to the effect of wrong ethical practices
PO9	Individual and Team Work	2	1.65	Moderate	Encourage students to do mini projects, seminars, assignments in a group, assess these using technical reports and presentations to improve communications both technical and personal
PO10	Communicate Effectively	2	1.94	Moderate	
PO11	Project Management and Finance	2	0.6	Low	Include project management concepts in Mini or course projects and arrange talks on Industrial and financial management.
PO12	Lifelong Learning	2	0.94	Low	Arrange Industrial visits, talks in various domains, Industrial visits and promote self-learning by encouraging students

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					to learn using MOOCs like NPTEL etc
PSO1	Qualify in competitive Exam	2	NA		
PSO2	Conduct Research	2	NA		

4.2 BE in Electrical and Electronics Engineering

Table 6: Attainment Gap Analysis of BE-Electrical and Electronics Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.22	Attained	Create Demo Models
PO2	Solve Problems	2	2.06	Attained	
PO3	Design/ Development of Solution	2	1.87	Moderately Attained	Encouraging creative ideas for innovative projects
PO4	Conduct Investigations	2	1.61	Moderately Attained	
PO5	Use Modern Tools	2	1.52	Moderately Attained	Arduino and programming languages as Vocational Courses
PO6	Engineer and Society	2	1.88	Moderately Attained	1. Problem solving on energy saving and water management. 2. Safety Practices
PO7	Environment and Sustainability	2	2.17	Attained	

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO8	Professional Ethics	2	1.63	Moderately Attained	
PO9	Individual and Team Work	2	2.61	Attained	Creating open ended problem statements for student projects
PO10	Communicate Effectively	2	2.14	Attained	
PO11	Project Management and Finance	2	1.39	Moderately Attained	
PO12	Lifelong Learning	2	1.27	Moderately Attained	Arduino and programming languages as Vocational Courses
PSO1	Qualify in competitive Exam	2	1.43	Moderately Attained	
PSO2	Conduct Research	2	1.39	Moderately Attained	Finishing School Activities

Table 7: Attainment Gap Analysis BE-Electrical and Electronics Engineering (First Year)

PO/ PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO 1	Apply Knowledge	2	2.74	Attained	Create Demo Models
PO 2	Solve Problems	2	2.84	Attained	
PO 3	Design/ Development of Solution	2	2.76	Attained	Encouraging creative ideas for innovative projects
PO 4	Conduct Investigations	2	2.66	Attained	
PO 5	Use Modern Tools	2	0	Not Attained	Arduino and programming languages as Vocational Courses

PO/ PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO 6	Engineer and Society	2	3.00	Attained	1. Problem solving on energy saving and water management. 2. Safety Practices
PO 7	Environment and Sustainability	2	2.70	Attained	
PO 8	Professional Ethics	2	0	Not Attained	
PO 9	Individual and Team work	2	2.97	Attained	Creating open ended problem statements for student projects
PO 10	Communicate effectively	2	3.00	Attained	
PO 11	Project Management and Finance	2	0	Not Attained	
PO 12	Lifelong Learning	2	0	Not Attained	Arduino and programming languages as Vocational Courses
PSO 1	Hardware and Software tools	2	0	Not Attained	
PSO 2	Entrepreneurship and Financial Management	2	0	Not Attained	Finishing School Activities

4.3 BE in Electronics and Communication Engineering

Table 8: Attainment Gap Analysis of BE-Electronics and Communication Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 1	Apply Knowledge	2	2.38	Moderately Attained	VACT & Gate Coaching Class
PO 2	Solve problems	2	2.41	Moderately Attained	1. Students should come up with

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					more mini projects 2. Student conclaves and blogs for sharing project experiences and outcomes
PO 3	Design / Development of Solutions	2	2.38	Moderately Attained	1. Students should come up with more mini projects 2. Student conclaves and blogs for sharing project experiences and outcomes
PO 4	Conduct and analyze experiments	2	2.80	Strongly Attained	-
PO 5	Use Modern tools	2	2.67	Moderately Attained	1. Students should come up with more mini projects 2. Student conclaves and blogs for sharing project experiences and outcomes 3. Conduct Training on

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					Industry relevant aspects by experts from industry
PO 6	Contemporary Engineering Problems	2	2.29	Moderately Attained	1. Initiate the procedure for MOU's with program specific firms 2. Students must update their domain specific knowledge by registering to certified online courses 3. Conduct Training on Industry relevant aspects by experts from industry
PO 7	Society and Environment	2	2.57	Moderately Attained	1. Students of the department should visit nearby schools to educate them on higher education, career perspective and stimulate interest in engineering by

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					showcasing simple electronic working models/ projects 2. Organize a Talk on engineering solution in societal and environmental context 3. Conduct Training on Industry relevant aspects by experts from industry
PO 8	Professional Ethics	2	2.89	Strongly Attained	1. Organize a program to educate students on Plagiarism 2. Organize a Talk on professional ethics 3. Awareness programs on Copyrights& Patents.
PO 9	Multidisciplinary Teams	2	3.00	Strongly Attained	1. More number of students should be encouraged to take up

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					multidisciplinary projects 2. Include components for assessing Individual accountability & team work in rubrics for major and minor project evaluation 3. Student conclaves and blogs for sharing project experiences and outcomes
PO 10	Communicate Effectively and team work	2	2.71	Strongly Attained	1. More number of students should be encouraged to take up multidisciplinary projects 2. Include components for assessing Individual accountability & team work in rubrics for major and minor project evaluation

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					3. Student conclaves and blogs for sharing project experiences and outcomes
PO11	Project Management and Leadership	2	2.76	Strongly Attained	1. More number of students should be encouraged to take up multidisciplinary projects 2. Student conclaves and blogs for sharing project experiences and outcomes 3. Include components for assessing Individual accountability & team work in rubrics for major and minor project evaluation 4. Organize programs to help the graduates to come up with their own startup firms.

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 12	Lifelong Learning Mode	2	2.59	Moderately Attained	1. Students must update their domain specific knowledge by registering to certified online courses 2. Conduct Training on Industry relevant aspects by experts from industry
PSO 1	Competitive Exams	2	2.35	Moderately Attained	VACT & Gate Coaching Class
PSO-2	Industry Interaction	2	2.85	Moderately Attained	1. Initiate the procedure for MOU's with program specific firms 2. Conduct Training on Industry relevant aspects by experts from industry

Table 9: Attainment Gap Analysis BE-Electronics and Communication Engg (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 1	Apply Knowledge	2	2.72	Strongly Attained	
PO 2	Solve problems	2	2.72	Strongly Attained	

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 3	Design / Development of Solutions	2	3.00	Strongly Attained	
PO 4	Conduct and analyze experiments	2	2.89	Strongly Attained	
PO 5	Use Modern tools	2	2.94	Strongly Attained	
PO 6	Contemporary Engineering Problems	2	0.45	Not Addressed	
PO 7	Society and Environment	2	2.65	Moderately Attained	Organize a Talk on engineering solution in societal and environmental context
PO 8	Professional Ethics	2	2.16	Moderately Attained	Organize a Talk on professional ethics
PO 9	Multidisciplinary Teams	2	2.52	Moderately Attained	
PO 10	Communicate Effectively and team work	2	2.45	Moderately Attained	
PO11	Project Management and Leadership	2	0.45	Not Addressed	
PO 12	Lifelong Learning Mode	2	2.13	Moderately Attained	
PSO 1	Competitive Exams	2	2.44	Moderately Attained	
PSO-2	Industry Interaction	2	2.85	Strongly Attained	

4.4 BE in Civil Engineering

Table 10: Attainment Gap Analysis of BE-Civil Engineering

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO1	Apply Knowledge	2	2.35	Complex assignment were given to the students to attain the PO	Conduct quiz, assignment on complex engineering problem
PO2	Solve Problems	2	2.37	Complex assignment were given to the students to attain the PO	Conduct quiz, assignment on complex engineering problem
PO3	Design/ Development of Solution	2	2.43	Complex assignment were given to the students to attain the PO	Conduct quiz, assignment on complex engineering problem
PO4	Conduct Investigations	2	2.84	Students conducted investigations on Various types of soils.	Conduct Investigations on various Building material
PO5	Use Modern Tools	2	2.74	Students were introduced to usage of Virtual labs. Analysis and Design of RC Structures using Staad Pro.	Classes on Staad Pro, Virtual labs can be conducted

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO6	Engineer and Society	2	2.68	Students were taken to the neighboring schools to give awareness about environment issues .	Encouraging students to give awareness program about society issues
PO7	Environment and Sustainability	2	2.88	Students were taken to the neighbouring schools to give awareness on how to sustain the natural resources.	Encouraging students to give awareness program about society issues
PO8	Professional Ethics	2	2.88	Arranged a talk on Law for Civil Engineers & Code of Ethics to Practice Civil Engineering	Arrange more talks by industrial experts
PO9	Individual and Team Work	2	2.68	For Enhancing Team work among students, they were made to submit the report.	Encourage students to do seminars and assignment in group

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO10	Communicate Effectively	2	2.72	For enhancing the communication skill students were told to present the seminar	Encourage students to present seminars
PO11	Project Management and Finance	2	2.62	Arranged a talk on Financial Management on Live Projects	Arrange talks on financial management and material management
PO12	Life-long Learning	2	2.88	We have framed the syllabus for the Mini Project and totally, 3 groups have carried out the Mini Project and assessment has been done for the academic year 2017-18. Also, Technical Talks were arranged on various domains.	Encouraging students to do mini projects and to arrange talks on various domains.

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PSO1	Real field challenges and Conduct research	2	2.47	5 Groups have carried out the Mini Project specifically related to Practical aspects .	Encouraging students to do mini projects related to field challenges.
PSO2	Qualify in competitive exam	2	1.62	Technical Aptitude classes were taken for the students in only 3 subjects.	Conduct aptitude classes on technical topics

Table 11: Attainment Gap Analysis BE-Civil Engineering (First Year)

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO1	Apply Knowledge	2	2.38	High	Conduct quiz, Seminars etc. on basic concepts
PO2	Solve Problems	2	2.24	High	An activity can be given to identify real life practical problems and find solution
PO3	Design/ Development of Solution	2	1.90	Moderate	Conduct quiz, assignment on complex engineering problem
PO4	Conduct Investigations	2	2.82	High	Classes on Virtual Lab
PO5	Use Modern Tools	2	2.53	High	Classes on Virtual Lab

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO6	Engineer and Society	2	0.33	Low	Encouraging students to do seminar on environment and sustainability
PO7	Environment and Sustainability	2	2.79	High	
PO8	Professional Ethics	2	2.11	High	Encourage students to do seminar on Professional Ethics
PO9	Individual and Team Work	2	2.21	High	Encourage students to do seminars and assignment in group
PO10	Communicate Effectively	2	1.62	Moderate	Continue V-Act Classes
PO11	Project Management and Finance	2	0.29	Low	Arrange talks on financial management and material management
PO12	Life-long Learning	2	0.33	Low	Encouraging students to learn using NPTEL etc.
PO1	Apply Knowledge	2	NA		
PO2	Solve Problems	2	NA		

4.5 BE in Computer Science and Engineering

Table 12: Attainment Gap Analysis of BE-Computer Science and Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO1	Apply Knowledge	2	1.6	Moderate	Conduct quiz, seminars on basic concepts

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO2	Solve Problems	2	1.7	Moderate	Perform extra experiments in lab other than the ones prescribed in the syllabus.
PO3	Design/ Development of Solution	2	2.1	High	Mini projects can be given for a subject/ group of subjects
PO4	Conduct Investigations	2	1.7	Moderate	An activity to identify real life practical problems and propose a solution.
PO5	Use Modern Tools	2	1.8	Moderate	Conduct workshops, hands on sessions on modern tools and technologies
PO6	Engineer and Society	2	2.0	High	Encourage students to develop projects to solve contemporary issues in the society.
PO7	Environment and Sustainability	2	1.8	Moderate	An activity to identify real life practical problems and propose a solution.
PO8	Professional Ethics	2	2.3	High	Activity to examine and apply moral and ethical principles to known case studies
PO9	Individual and Team Work	2	1.7	Moderate	Encourage students to do mini projects, seminars, assignments in a group

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO10	Communicate Effectively	2	2.0	Moderate	Encourage students to contribute technical articles for magazines, engage in peer learning sessions etc.
PO11	Project Management and Finance	2	1.7	Moderate	Train the students to manage an engineering activity within time and budget constraint.
PO12	Lifelong Learning	2	1.8	Moderate	Arrange talks in various domains
PSO1	Entrepreneurship and Freelancing	2	2.2	High	Conduct talks by Entrepreneurs
PSO2	Competitive Exams and Higher Studies	2	1.8	Moderate	Train students for competitive exams

Table 13: Attainment Gap Analysis BE- Computer Science Engineering (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO1	Apply Knowledge	2	2.7	High	Conduct quiz, seminars on basic concepts
PO2	Solve Problems	2	2.7	High	Perform extra experiments in lab other than the ones prescribed in the syllabus.
PO3	Design/ Development of Solution	2	2.3	High	
PO4	Conduct Investigations	2	3.0	High	Conduct virtual labs
PO5	Use Modern Tools	2	2.7	High	

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO6	Engineer and Society	2	3.0	High	Conduct Technical talks and seminars
PO7	Environment and Sustainability	2	2.5	High	
PO8	Professional Ethics	2	0.3	Low	Induction classes
PO9	Individual and Team Work	2	3.0	High	Encourage students to do seminars, assignments in a group
PO10	Communicate Effectively	2	2.2	High	Conduct spoken tutorials and I-point classes.
PO11	Project Management and Finance	2	0.3	Low	Induction classes
PO12	Lifelong Learning	2	3.0	High	Arrange talks in various domains
PSO1	Entrepreneurship and Freelancing	2	NA		
PSO2	Competitive Exams and Higher Studies	2	NA		

4.6 Master of Business Administration

Table 14: Attainment Gap Analysis of Master of Business Administration

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.73	Target Attained – attainment level to be increased.	Practical cases in all the courses
PO2	Analytical and critical thinking	2	2.66	Target Attained- Attainment level to be increased.	• Exposure to financial apps to induce self-learning • V-act sessions on aptitude
PO3	Value based Leadership ability	2	2.92	Target Attained –Attainment level to be increased. Value based leadership to be included as a part of either case, role play and seminars so that the Programme Outcome (PO3) gets strengthened and the attitude of the graduates towards value based leadership ability is positive.	• Industry connect and Socially relevant student activities • Industry visits and interaction with the core business managers
PO4	Analyze global, and ethical aspects of business	2	2.77	Target Attained –Attainment level to be increased. Live cases of the companies must be investigated by the graduates to develop the skill	• Live projects • Guest lectures and Alumni interactions

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
				of analyzing global, and ethical aspects of business.	• Long cases analysis
PO5	Team environment	2	2.7	Target Attained –Attainment level to be increased. Learning focused suggestions must be given by the course co coordinators rather than just the teaching focused suggestions.	• Business Plan Contest • Business plan workshop • Public speaking workshop
PO6	Soft skills	2	2.73	Target Attained – Attainment level to be increased. Continue conducting activities for the graduates so as to enable them to develop and imbibe soft skills throughout.	• Zephyr 2019 • Rendition 2019 • Add-on-course soft skills, personality development & Aptitude (Part of V-act Programme)

4.7 Master of Computer Application

Table 15: Attainment Gap Analysis of Master of Computer Applications

PO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Computational Knowledge	1	0.25	Low	Team Activity based on Programming concepts
PO2	Problem Analysis	1	0.39	Low	Activity can be given to analyze real life problem
PO3	Design/Development of Solutions	1	0.33	Low	Micro project can be given
PO4	Conduct Investigations of Complex Problems	1	0.29	Low	Out of box problems can be given
PO5	Modern Tools Usage	1	0.27	Low	Specific tools can be mentioned while giving assignments or micro project
PO6	Professional Ethics	1	0.23	Low	Industrial visits/ Talks on Ethical issues can be arranged
PO7	Life-Long Learning	1	0.10	Low	Online courses are to be made compulsory
PO8	Project Management and Finance	1	0.12	Low	Introduction of Add on Courses

PO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO9	Communication Efficacy	1	0.19	Low	Seminars and project presentations can be included
PO10	Societal and Environmental Concern	1	0.13	Low	Outreach programs can be arranged
PO11	Individual and team work	1	0.23	Low	Seminar/ project / assignments/participation in technical events
PO12	Innovation and Entrepreneurship	1	0.20	Low	Encourage students to take part in IDEATION events / build innovative Projects
PO13	Research Environment	1	0.11	Low	Encourage students to take up research oriented projects and publish/ present papers

ST JOSEPH ENGINEERING COLLEGE

Affiliated to VTU-Belagavi & Recognized by AICTE

NBA-Accredited: BE (CSE, ECE, EEE, & ME)

Action Taken Report 2018-19

Internal Quality Assurance Cell (IQAC) Meeting 2019

"Service and Excellence"

Vision

"To be a global premier Institution of professional education and research"

Mission

- **Provide opportunities to deserving students of all communities, the Christian students in particular, for quality professional education.**
- **Design and deliver curricula to meet the national and global changing needs through student centric learning methodologies.**
- **Attract, nurture and retain the best faculty and technical manpower.**
- **Consolidate the state of art infrastructure and equipment for teaching and research activities.**
- **Promote all round personality development of the students through interaction with alumni, academia and industry.**
- **Strengthen the Educational Social Responsibilities of the institution.**

Table of Contents

List of Figures

List of Tables

1. Agenda of the IQAC Meeting Scheduled on 23thNovember 2019

1. Review of Minutes of previous IQAC Meeting date: 16th November 2018.
2. Updates related to Accreditation.
3. Attainment of POs and PSOs in the five UG programs, MBA & MCA.
4. Continual Improvement Action Items for each of the POs and PSOs.
5. Any other matter with the permission of the chair.

2. Review of Minutes of the previous IAAB Meeting

Table 1: Actions Items suggested during the previous IQAC meeting for Continual Improvement

Action Item No.	Action Item	Person Responsible to Coordinate	Status as on (5 Nov 2019)
I/2018-19/1	Documentation of Specific outcomes for each of the activities related to the POs & PSOs	Departmental accreditation coordinators	Every activity has been mapped to POs and PSOs. Course File has been revamped to ensure meticulous documentation. Documentation produced during DAB meetings of respective departments.
I/2018-19/2	Certification courses for students and staff	Respective Departmental HODs	Certification Courses have been made part of Faculty Performance Appraisal. Moreover, pupils have been persuaded through mentors to take-up certification courses.
I/2018-19/3	Establishing/offering online courses	Faculty	Faculty have been made tech savvy through FDPs in harnessing the power of technology in teaching, and e-Platforms for TLP have been mandatory for every course. In addition TLP Center has been established to facilitate the faculty in new age TLP. Moreover, management has approved to establish state of art recording lab to strengthen the TLP.

Action Item No.	Action Item	Person Responsible to Coordinate	Status as on (5 Nov 2019)
I/2018-19/4	Rigorous alumni interaction and strengthening of the network	Chairperson - Alumni Association	All the possible social media platforms are utilized to strengthen the Alumni network. Also, more activities are conducted at departmental level to tap their potential.
I/2018-19/5	Community based, and socially relevant Capstone and Mini Projects	Respective Departmental HODs	Students are motivated to take-up mini-projects and capstone projects facilitating them to apply for KSCST and other funding agencies. Moreover, community engagement cell has been established to initiate the social innovation.
I/2018-19/6	Goal oriented entrepreneurship activities	Dean-MBA & Coordinator - IIEDC	Panel Discussion, MDPs, and Guest lecturers have been arranged. Incubation and IPR Cell have been established to reinforce the system.
I/2018-19/7	More Design Development Patent related activities	Coordinator – Innovation Club	New Age Incubation Network (NAIN) has been established.

3. Action Taken Report (ATR)

3.1 Action item 1 (Documentation of specific outcomes for each of the activities related to the POs & PSOs)

- Every activity has been mapped to POs and PSOs.
- Course File has been revamped to ensure meticulous documentation.
- Documentations produced during DAB meetings of respective departments.
- Segregations are made with special reference to KSA (Knowledge-Skill-Attitude)

3.2 Action item 2 (Certification courses for students and staff)

Table 2: Certifications courses by Staff

SI. No.	Faculty Name	Course Title	Examination Authority
1	Dr Shreeranga Bhat	International Qualified Six sigma Master Black Belt	Indian Statistical Institute, Bangalore
		Foundation course on learning and development intervention, Orientation to Human Resource Development and Leadership	CLHRD Mangalore
		IUCEE International Engineering Educator Certification Program	IUCEE
2	Mr Sushanth H G	Outcome Based Pedagogic Principles for Effective Teaching	NPTEL online Certification
		Introduction to Thermodynamics: Transferring Energy from Here to There	Online non-credit course authorized by the University of Michigan and offered through Coursera
3	Dr Sudheer M	Effective Engineering Teaching inpractice	NPTEL online Certification
		Course on Dynamic Response of Advanced Composites	
4	Mr Pavana Kumara and Mr Poornesh M	Course on Dynamic Response of Advanced Composites	NPTEL online Certification

SI. No.	Faculty Name	Course Title	Examination Authority
		Effective Engineering Teaching inpractice	NPTEL online Certification
5	Mr SharunMendonca	Introduction to Thermodynamics: Transferring Energy from Here to There	Online non-credit course authorized by the University of Michigan and offered through Coursera
		Foundation course on learning and developmentintervention, Orientation to Human Resource Development and Leadership	CLHRD Mangalore
6	Mr Rahul Kumar B and Mr Jinu Mathew	Introduction to Materials Science and Engineering	NPTEL online Certification
7	Mr John Paul Vas	Six Sigma	NPTEL online Certification
		Foundation course on learning and development intervention, Orientation to Human Resource Development and Leadership	CLHRD Mangalore
8	Mr Akshay N H	Product Design and Development	NPTEL online Certification
9	Mr Canute Sherwin	Manufacturing Guidelines for Product Design	NPTEL online Certification
10	Mr Swaraj Lewis	Inspection and Quality Control in Manufacturing	NPTEL online Certification
11	Mr RavikanthPrabhu	Introduction to Research	NPTEL online Certification

SI. No.	Faculty Name	Course Title	Examination Authority
		Foundation course on learning and developmentintervention, Orientation to Human Resource Development and Leadership	CLHRD Mangalore
12	Dr Binu K G	IUCEE International Engineering Educator Certification Program	IUCEE
		Foundation course on learning and development intervention, Orientation to Human Resource Development and Leadership	CLHRD Mangalore
13	Mr Joel D'Mello, Mr Rudolf D'Souza, Mr Alister D'Souza, Mr Neil Vaz and Mr RolvinD'Silva	Foundation course on learning and development intervention, Orientation to Human Resource Development and Leadership	CLHRD Mangalore
14	Mr Vijay V S	IUCEE International Engineering Educator Certification Program	IUCEE
15	Ms Ramya M	Effective Engineering Teaching inpractice	NPTEL Online certification
16	Ms Sumangala N	Data Mining	NPTEL online Certification
		Machine Learning, ML	
		Programming, Data Structures and Algorithms using Python	
17	Ms Sadhana Kumble	Introduction to Machine Learning Machine Learning for Engineering and Science Applications	NPTEL online Certification

SI. No.	Faculty Name	Course Title	Examination Authority
		IIEECP Certification	IUCEE
18	Mr Sathyendra Bhat	Educational Leadership Introduction to Machine Learning	NPTEL online Certification
		IIEECP Certification	IUCEE
19	Mr Hareesh B	IIEECP Certification	IUCEE
20	Mr. Gururaja S	Machine Learning, ML Real- time Operating System Digital Image Processing	NPTEL online Certification
21	Mr RageshRaju	Google Cloud Platform Fundamentals: Core Infrastructure Essential Cloud Infrastructure: Foundation Essential Cloud Infrastructure: Core Services Elastic Cloud Infrastructure: Scaling and Automation Elastic Cloud Infrastructure: Containers and Services Reliable Cloud Infrastructure: Design and Process	Coursera
22	Ms Chitralekha J	Introduction to Cognitive Psychology	Swayam/NPTEL
		Enhancing Soft skill and Personality	
23	Dr Shakila B	Financial Statement Analysis and Reporting	Swayam/NPTELonline Certification

SI. No.	Faculty Name	Course Title	Examination Authority
24	Dr Prakash Pinto	Financial Statement Analysis and Reporting	Swayam/NPTELonline Certification
25	Dr Anjali Ganesh	Emotional Intelligence	Swayam/NPTELonline Certification
		Enhancing soft skills and personality	
26	Ms Manjula K	Foundation Course in Managerial Economics	Swayam/NPTEL online Certification
		Emotional Intelligence	
27	Mr Rolen Rodrigues	Educational Leadership Introduction to Cognitive Psychology	NPTEL online Certification
		IIEECP(International Engineering Educator Certification Program)	IUCEE
28	Mr Franco Menezes	Introduction to Cognitive Psychology	NPTEL online Certification
		IIEECP	IUCEE
29	Mr Ajithanjaya	IIEECP	IUCEE
30	Mr Subramanya K	IIEECP	IUCEE
31	Ms Nandini Maninarayana	Using Databases with Python Using Python to Access Web Data The Arduino Platform and C Programming Introduction to the Internet of Things and Embedded Systems	Coursera
32	Ms Reshma K J	Introduction to Research	NPTEL online

SI. No.	Faculty Name	Course Title	Examination Authority
			Certification
33	Ms Arya Shri	Introduction to Coding Theory	NPTEL online Certification
34	Mr Uday J	Hardware Modelling using Verilog	NPTEL online Certification
35	Ms Jennifer Saldanha	Biomedical Signal Processing	NPTEL online Certification
36	Ms Preetha D'Souza	Semiconductor Devices and Circuits	NPTEL online Certification
37	Ms Sandhya Dass	Outcome based pedagogic principles of Effective Teaching	NPTEL online Certification
38	Ms Priya Miranda	CMOS Digital VLSI Design	NPTEL online Certification
		Principles of communication systems	
39	Ms Sadhika Shetty	Digital Image Processing	NPTEL online Certification
40	Ms Avila Pinto	Microprocessors & Microcontrollers	NPTEL online Certification
41	Ms Chaithra U R	Digital Circuits	NPTEL online Certification
		Cryptography and Network security	
		Customized Course from Training Services	MathWorks
42	Ms Rupal D'Souza	Cryptography and Network Security	NPTEL online Certification

SI. No.	Faculty Name	Course Title	Examination Authority
43	Ms Jayalakshmi K P	Psychiatry-An Overview	NPTEL online Certification
44	Ms VinithaPrasanna	Microprocessors & Microcontrollers	NPTEL online Certification
45	Ms Deepthi S R	Digital Circuits	NPTEL online Certification
46	Ms Shama B	Customized Course from Training Services	MathWorks
47	Dr Kavitha K Mahesh	Introduction to R Software	NPTEL online Certification
		Big Data Computing	
48	Mr Shreenath Acharya	Big Data Computing	NPTEL online Certification
		Programming in Java	
		Apache PIG Fundamentals	EDUCBA (Corporate Bridge Consultancy Pvt Ltd by IIT and IIM graduates)
		IUCEE International Engineering Educator	IUCEE
49	Ms Gayana M N	Data Science for Engineers	NPTEL online Certification
		Introduction to Machine Learning	
50	Dr Sridevi Saralaya	Big Data Computing	NPTEL online Certification
		Data Science for Engineers	

SI. No.	Faculty Name	Course Title	Examination Authority
		IUCEE International Engineering Educator	IUCEE
51	Ms Supriya Salian	Introduction to Internet of Things	NPTEL online Certification
52	Ms Supreetha R	Data Science for Engineers	NPTEL online Certification
		Introduction to Machine Learning	
53	Ms Smitha V George	Big Data Computing	NPTEL online Certification
		Introduction to Machine Learning	
54	Ms Sunitha Guruprasad	Introduction to Soft Computing	NPTEL online Certification
55	Ms Evita Coelho	ICT based STTP on problem based learning	NITTR
		IUCEE International Engineering Educator	IUCEE
56	Ms Anusha M M	IUCEE International Engineering Educator	IUCEE
57	Dr Rachana P	Introduction to Internet of Things	NPTEL online Certification
58	Dr Usha Divakarla	Introduction to Internet of Things	NPTEL online Certification
59	Ms Babitha	Joy of computing Python	NPTEL online Certification
		Big Data Computing	
		Machine Learning: A-Z Hands on Python	Udemy

SI. No.	Faculty Name	Course Title	Examination Authority
60	Ms Lavina D'Silva	Big Data Computing	NPTEL online Certification
		IUCEE International Engineering Educator	IUCEE
61	Ms Vijetha U	Google App Script Complete Course - Beginner to Advanced	Udemy
62	Ms Sujatha	Beginner's guide to writing manuscript in LateX	Researcher academy Elsevier
		Basics of Scrum, Agile ad Project delivery	Udemy
		Programming with Python	
		Introduction to abstract and linear algebra	NPTEL online Certification
63	Dr Vincent Crasta	Teaching and learning in general program	NPTEL online Certification
64	Dr Rajesh Kumar P C	Course on EER	IUCEE
65	Ms Venita Monteiro	Teaching and learning in general program	NPTEL online Certification

Table 3: Certification courses by Students

Sl No.	Student Name	Course Title	Examination Authority (NPTEL, Udemy, Coursera, etc)
1	Nigel D'Costa	Introduction to programming using Python	Microsoft Technology Associate
		Introduction to programming using	

Sl No.	Student Name	Course Title	Examination Authority (NPTEL, Udemy, Coursera, etc)
		JavaScript	
2	Preetham Pai D	Introduction to programming using JavaScript	Microsoft Technology Associate
3	Anwitha A	Problem Solving Through Programming in C	NPTEL online Certification
		Programming Data Structures and Algorithms Using Python	
4	Glen Lobo	Python Programming	NPTEL online Certification
		InfyTQ	Infosys
5	Pragathi S Beedu	Introduction to modern application development	NPTEL online Certification
6	Priyadarshini	Introduction to modern application development	NPTEL online Certification
7	Nikitha Kini	Introduction to modern application development	NPTEL online Certification
8	Swathi S Karanth	Introduction to modern application development	NPTEL online Certification
9	Suman R Nayak	Introduction to modern application development	NPTEL online Certification
10	Prajna P J	Introduction to programming using JavaScript	Microsoft Technology Associate
11	Aishwarya	Introduction to programming using JavaScript	Microsoft Technology Associate
12	Sandhyashree	Introduction to programming using JavaScript	Microsoft Technology Associate
13	Reddy Ashok	Introduction to programming using JavaScript	Microsoft Technology Associate
14	Winston Pereira	Programming in Java	NPTEL online Certification
15	39 MBA Students	Business Analytics with R tool &	ATS Infotech

Sl No.	Student Name	Course Title	Examination Authority (NPTEL, Udemy, Coursera, etc)
		MOS certification	
16	55 Students	Personality Development & Public Speaking sessions	MBA Dept., SJEC
17	55 Students	IT for Business	MBA Dept. , SJEC
18	36 Students	Python	Spoken tutorial by IITs
19	4 Students	C	Spoken tutorial by IITs
20	5 Students	C++	Spoken tutorial by IITs
21	51 Students	Google Analytics	Google Analytics

More than 250 students from the ECE department have taken up online courses in the Academic Year 2018-19. Some of the courses are listed below:

- SQL Fundamentals, Javascript Tutorials, HTML Fundamentals in SOLOLEARN
- C Programming, C++ and Arduino in Spoken Test Project, IIT Bombay
- Matlab Onramp, Matlab for Data Processing and Visualization – Mathworks
- Various NPTEL Courses

3.3 Action item 3 (Establishing/offering online courses)

- Faculty have been made tech savvy through FDPs in harnessing the power of technology in teaching, and e-Platforms for TLP have been mandatory for every course.
- In addition TLP Center has been established to facilitate the faculty in new age TLP.
- Moreover, management has approved to establish state of art recording lab to strengthen the TLP.

3.4 Action item 4 (Rigorous alumni interaction and strengthening of the network)

The following actions were taken to strengthen the alumni network and alumni interaction.
At the institutional level:

1. A complete database of all the alumni (students who have successfully completed the programme) is maintained.
2. Regular communication mailers to connect with the alumni.

3. Alumni portals and social media platforms showcasing alumni achievers and activities on campus.
4. Annual alumni meet which enables alumni to connect with each other, with the management, with the students and with the faculty members.

Department of Electrical &Electronics Engineering

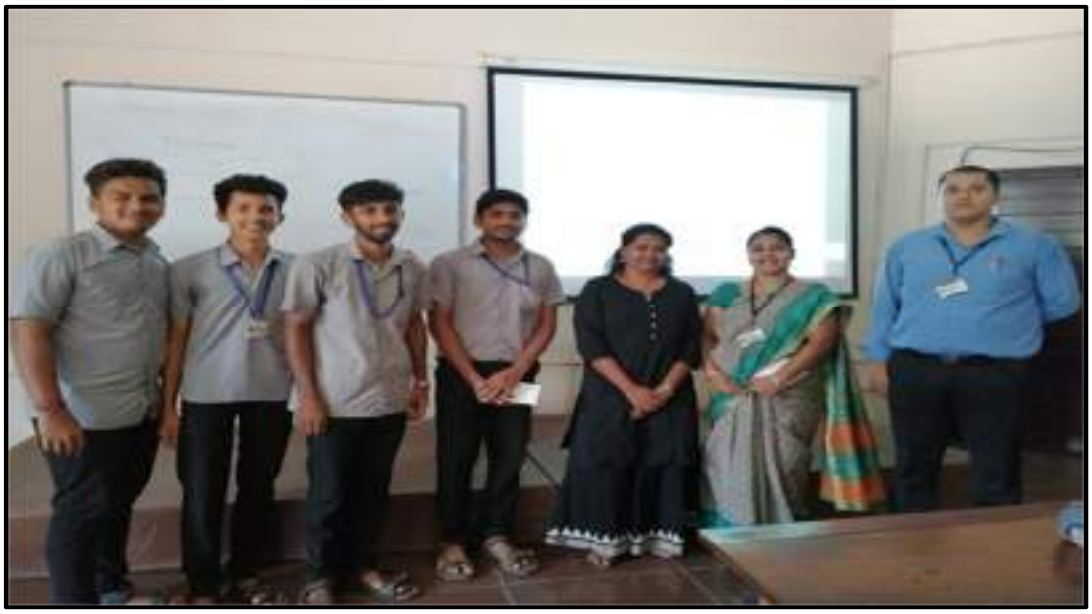

Fig. 1: Electrical Distribution Systems by Ms Prarthana Rao, Alumni Batch 2017, on 15 April 2019, by EEE Department

Fig. 2: Project Management and CommunicationbyMr Sanjay Khan, on 29 January 2019, Alumni Batch 2012, organizedby EEE Department

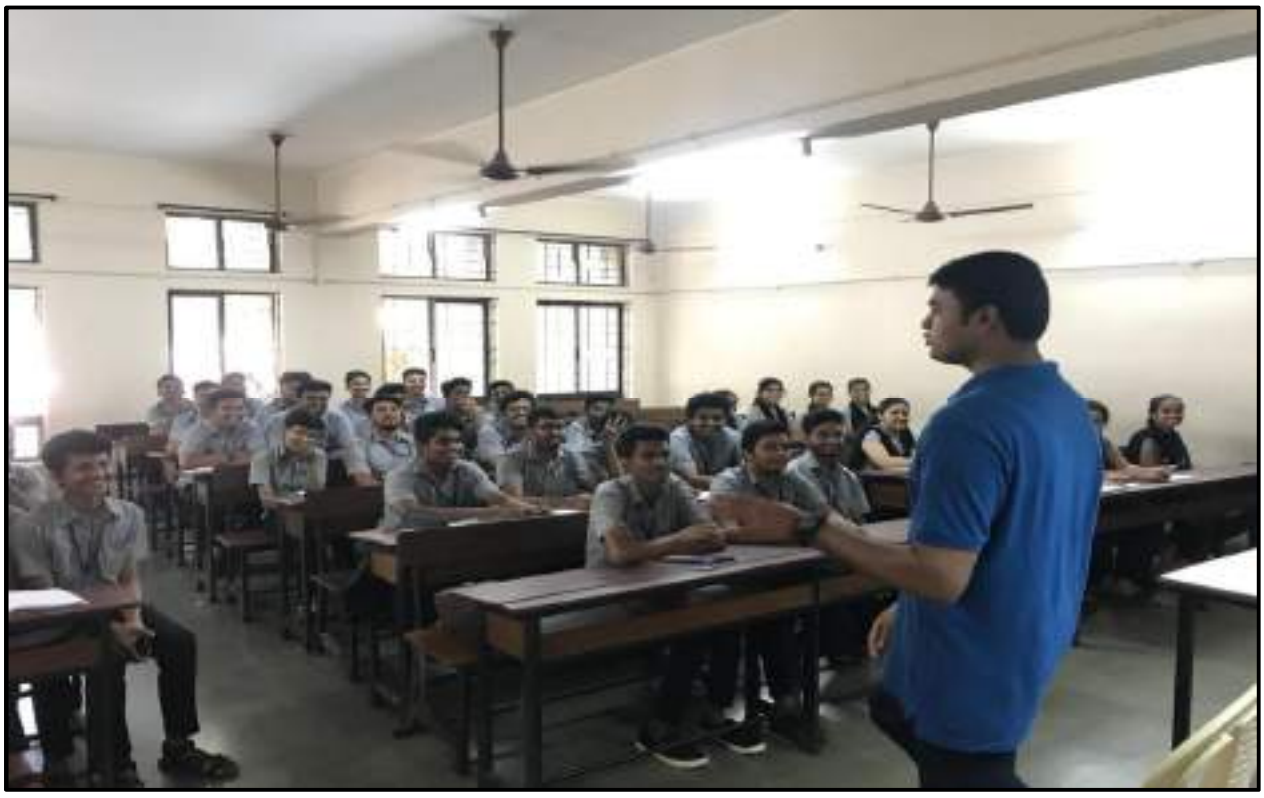

Fig. 3: Route to Higher Studies in Western Universities by Mr Cedric D'Souza, on 28 January 2019, Alumni Batch 2017, by EEE Department

Fig. 4: Motivational Talk by Ms Janashree Anchan, Alumni batch 2016, on 13 November 2018, organized by EEE Department

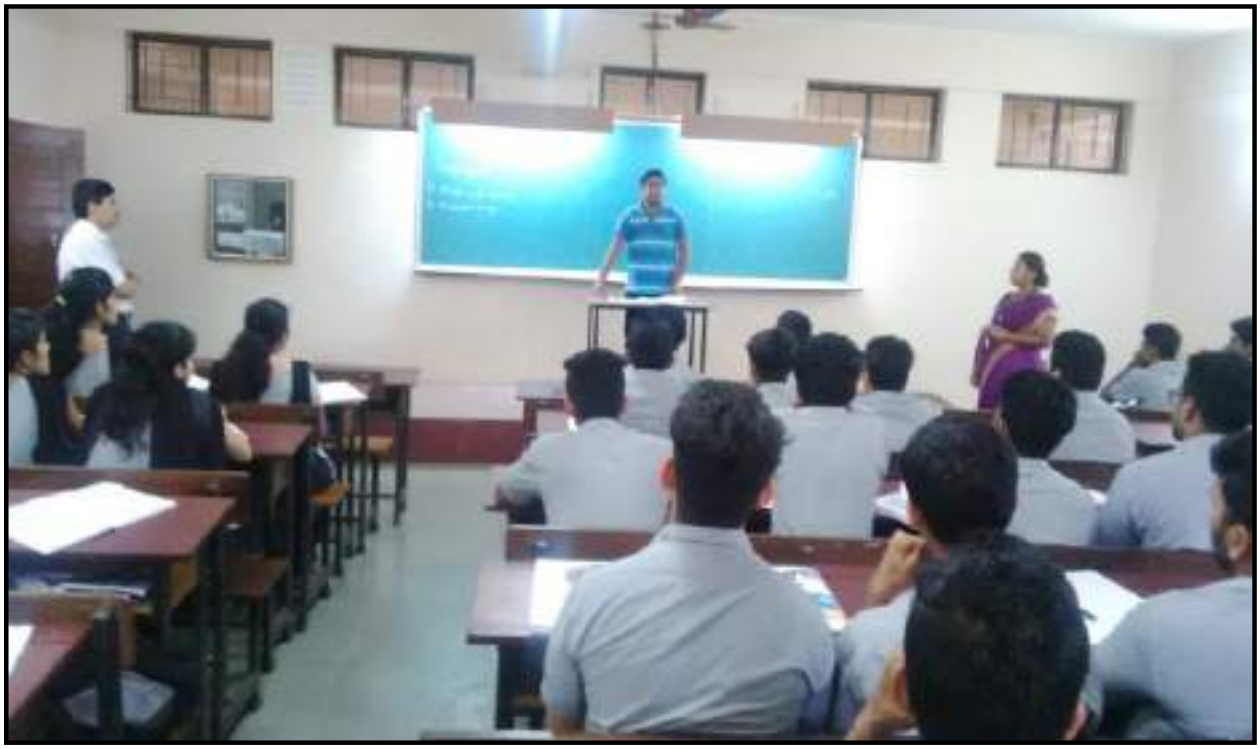

Fig. 5: Igniting Young Minds for Higher Studies on 10 August 2018 by Mr. B Jayaprakash, Alumni Batch 2016, organized by EEE Department

Department of Electronics & Communication Engineering

Fig. 6: Technical talk on “Opportunities abroad and Industry expectations” by Ms Raksha Janet Jathanna, Alumna of Electronics and Communication Engineering, for Sixth semester students, on 5 March 2019, organized by ECE Department

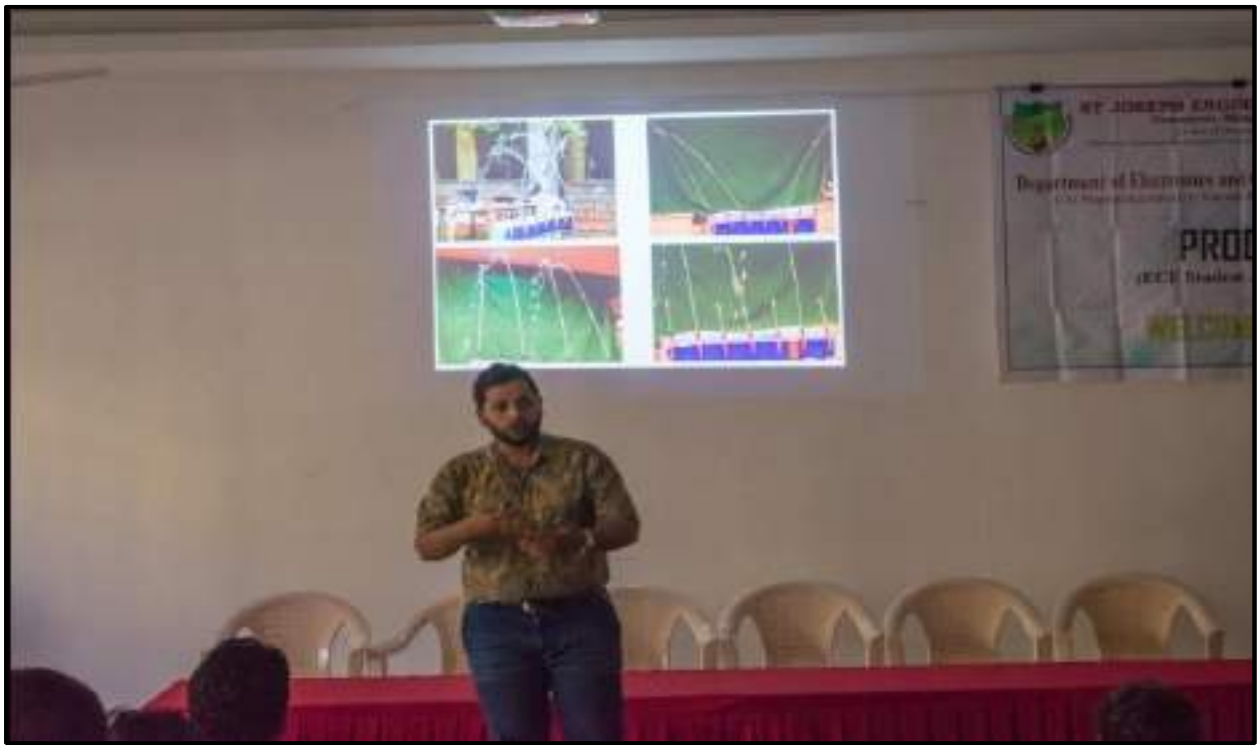

Fig. 7: Technical talk on “Roadmap to successful Project Deployment” by Mr David John Saldanha, Alumnus of Electronics and Communication Engineering for Sixth semester students, on 21 February 2019, organized by ECE Department.

Department of Computer Science & Engineering

The following actions were taken to strengthen the alumni network and alumni interaction:

1. Alumni are involved in the various phases of project evaluation as panelists which allow them to give constructive feedback on the students’ ongoing projects.
2. Alumni are invited as resource persons for technical talks and workshops which facilitate them to interact with the students and faculty members.
3. Alumni are invited as members of Department advisory board which enable them to give constructive feedback and suggestions regarding issues for the betterment of the department, identifying curriculum gaps and bridging those gaps etc.

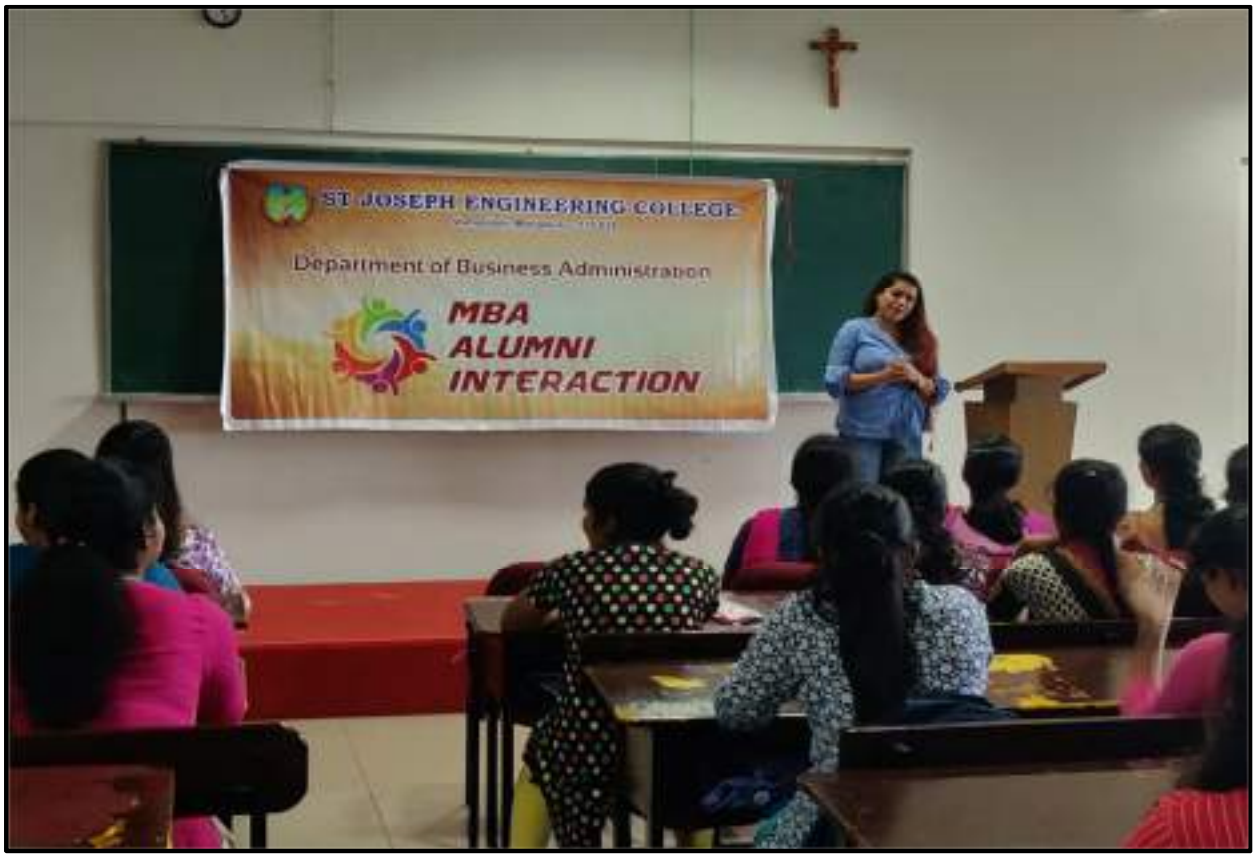

Fig. 8: Interaction with Alumni Ms ZeebaNaaz, Lead-Talent Acquisition at Phoenix Global DMCC, Hyderabad, from the batch 2010-12, for Second year MBA Students, on 14 August 2019

Fig. 9: Interaction session with Alumni Ms Prajna Jyothi Dsouza, Manager-HR, Mangalore Internet City and Batch of 2010, for First year MBA students, on 17 December 2018

Fig. 10: Interaction session with alumni, Mr Johnson Stephen Mascarenhas, HR Coordinator at Starlink DMCC, Dubai, for I year MBA Students, on 30 November 2018

Fig. 11: Interaction with alumni, Ms Varsha Baliga, Sr. Tax Analyst, Pricewaterhouse Coopers for the First and Second year MBA Students, on 5 November 2018

Department of MCA

Alumni have been identified and invited for conducting technical talks in the coming semester. All the departments have called alumni during the final year project exhibition to evaluate the project.

Department of EEE

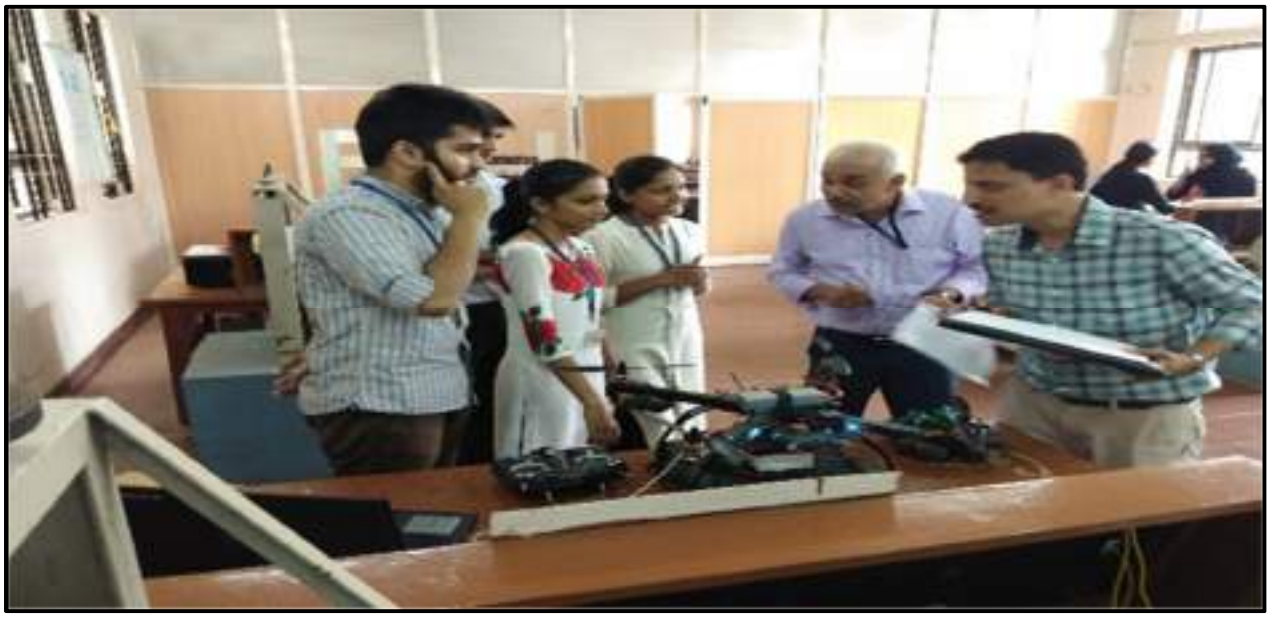

Fig. 12: Technova 2019 Project showcase cum competition for final year students on 20May 2019, Evaluated by Mr Mahesh J, organized by EEE Department

Department of ECE

- Winston Vishal D'Souza, Alumnus ECE and Manager D & D Smart Labs, Incubated at SJEC is actively involved in Mentoring and Guiding ECE students for their internships and Final Year Projects.
- Mr Sourabh Jain (99 Games), Mr ShivarajPujary (Manipal Technologies), Mr VigneshAithal (Cadence Technologies), Ms ShilpaShenoy (KarMic Design Pvt. Ltd) all alumni of ECE Dept are members of Department Advisory Board.

Department of CSE

The initial project idea and the synopsis presentation involved the following Alumni for the evaluations and suggestions to further strengthen the ideas and also possible modifications that could be applied for improvements.

- Mr Mohammed Awsaf Ali, Engineer Komquest solutions. (2015 batch student)
- Mr Vishal Archie Rego, CEO - AstheticA – Web sites, software, hosting, branding, marketing and service (UG as well as 2012 batch PG student).

Fig. 13: Involved alumni Ms Archana Bhat during the Technova 2019, Project Evaluation on May 20, 2019, by the Department of Computer Science & Engineering

Department of MBA

Ms Pooja Bhat K, proprietor, Hanuman Printers, Vittal, an alumnus of 2017 batch has visited the MBA department as an examiner for internship viva-voce held on 27th October 2018 for the graduates of 2019.

Department of MCA

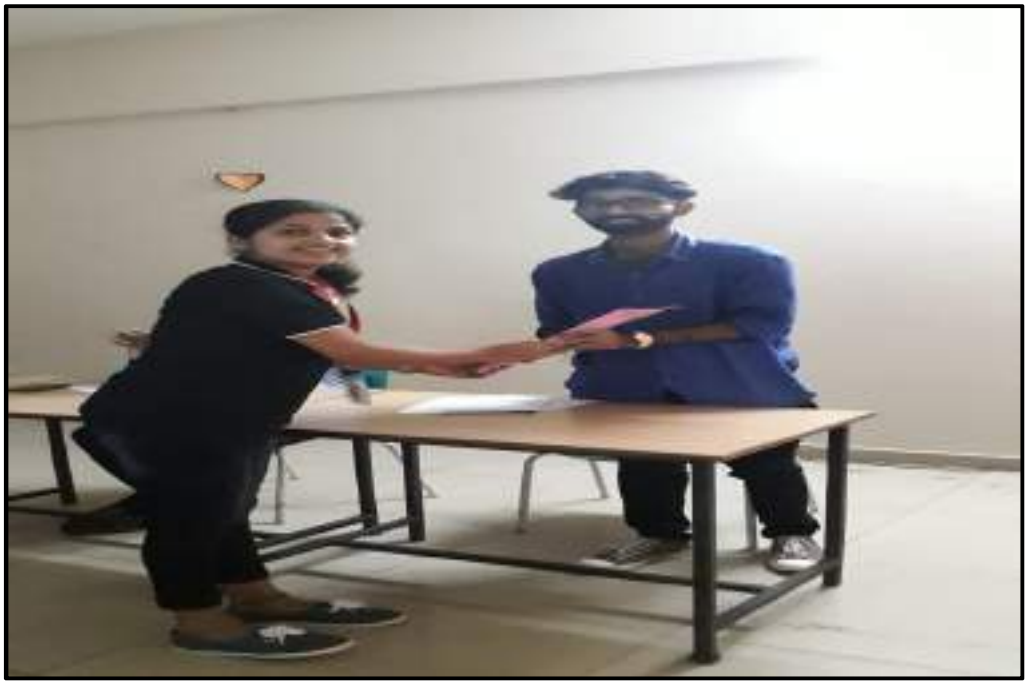

Fig. 14: Alumni involvement during the Technical event, by the Department of Computer Applications

3.5 Action item 5, 6, 7 (Community based, and socially relevant Capstone and Mini Projects, Goal oriented entrepreneurship activities, More Design Development Patent related activities)

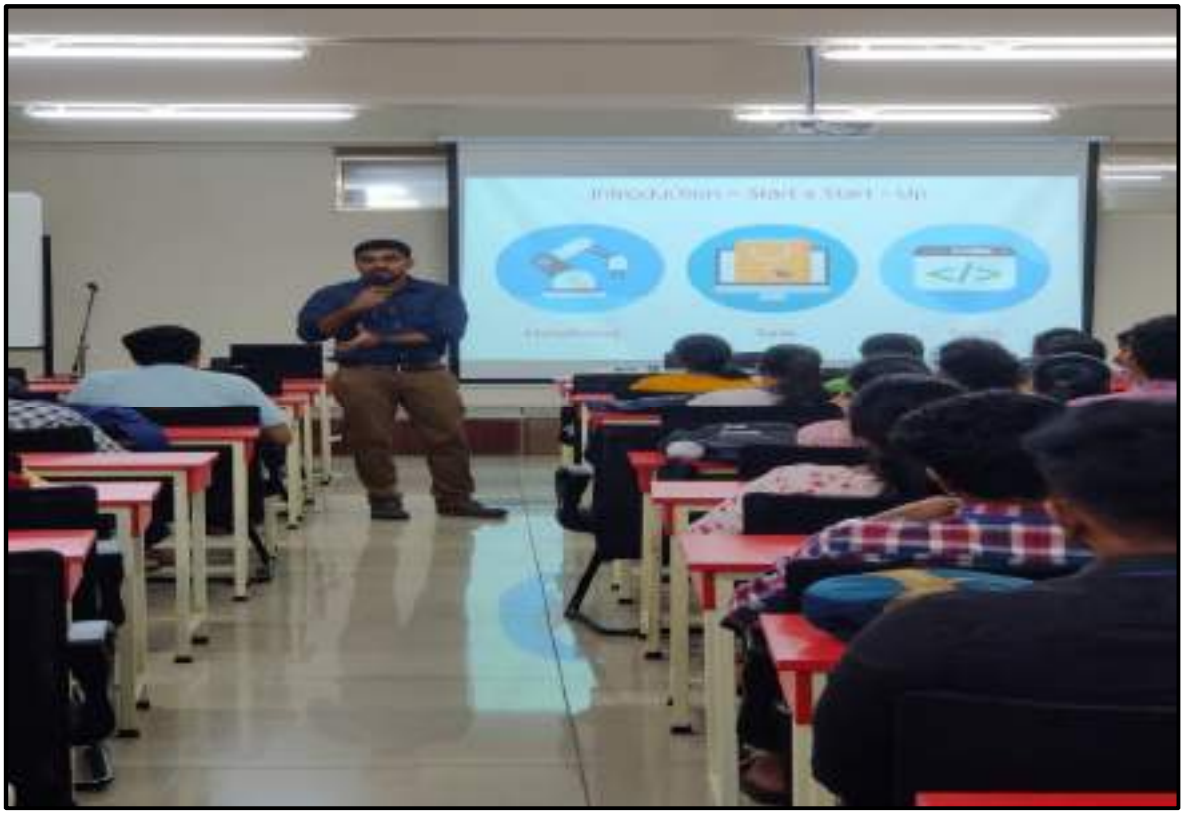

Fig. 15: Entrepreneurial Talk on “Start a start-up: Become an Entrepreneur” on 26 October 2019, by CSE Department in association with Industry and Innovation Group (IIG) and NAIN.

Fig. 16: Industrial visit to New Mangalore Port Trust (NMPT), on 25 October 2019, by Department of Mechanical Engineering

Fig. 17: Entrepreneurial Talk by Hallimane Rotti Shilpa, on 24 October 2019, by MBA Department and IIG

Fig. 18: Industrial visit to GWASF-Quality Casting Pvt Ltd, Baikampady, on 23 October 2019, by Industry and Innovation Cell of Mechanical Engineering

Fig. 19: Industrial Visit to IRC Ready Mix Concrete Plant, Ganesh Cement Spun Poles & Pipes factory at Industrial Area, Baikampady and construction site visit to Westline Signature for the Final Year Civil Engineering Students, on 17 October 2019

Fig. 20: Campaign for students of St Jacobs Higher Primary School, Farla, to celebrate Innovation Day, on 11 October 2019, by The Industry and Innovation Group, SJEC

Fig. 21: Technical Talk on Avenues for Civil Engineers by Mr Maninarayan K T, Construction and Contract Management Expert, Eptisa-BETS JV, Kathmandu, Nepal., on 9 October 2019, by Department of Civil Engineering

Fig. 22: MOU with AIESEC in MAHE, on 30 September 2019, by Industry and Innovation Group (IIG) and Collaborations office.

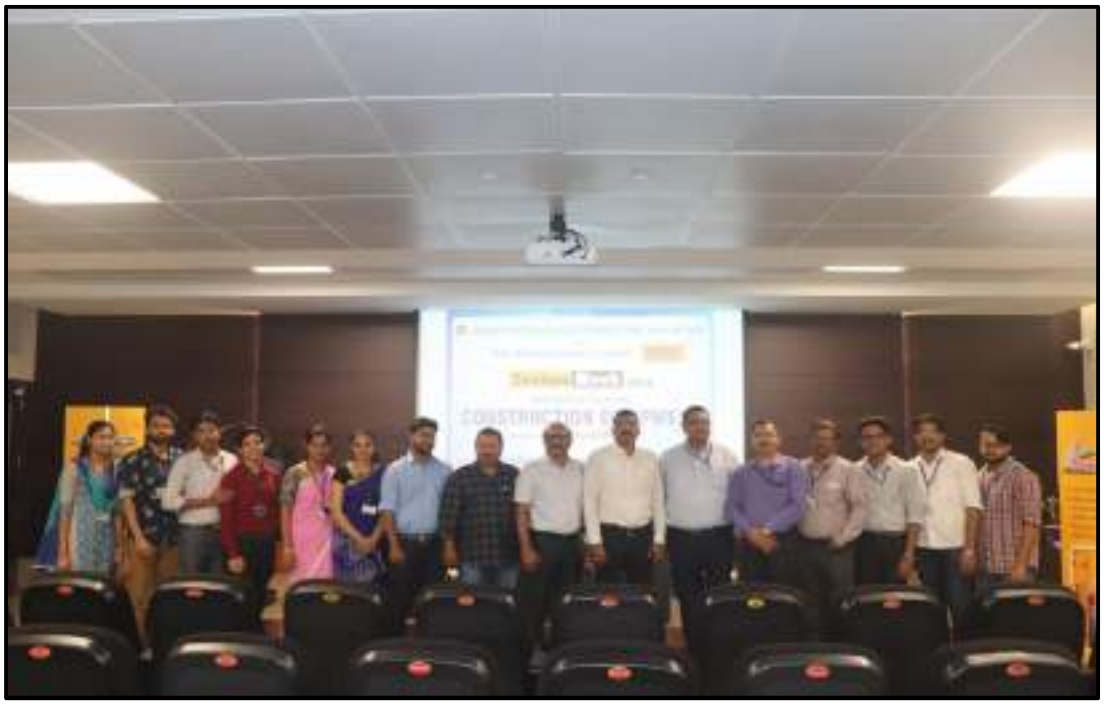

Fig. 23: Technical Talk on Rainwater Harvesting and Construction Equipment by ErBharath J and ErUjwal D'Souza, on 30 September 2019

Fig. 24: Technical Talk on Innovative World of Civil Engineering and Construction Safety, by Dr K S Babunarayan, Professor and Eminent Structural Engineer, Dept of Civil Engineering-NITK Surathkal, Er. Ashok Kumar, Consulting Engineer, Mangaluru,
Er. Kennet D'Souza, Consulting Engineer and ACCE(I) Office Bearer, Er. Sathyaranjan Rao, Consulting Engineer and Vice-Chairman ACCE(I) Mangaluru Centre and Er. Ashwil, RAMCO Cement Rep., on 26 September 2019, by the Department of Civil Engineering

Fig. 25: Industrial Visit to Westline Signature and Marian Park for third-year students, on 25 September 2019, by the Department of Civil Engineering

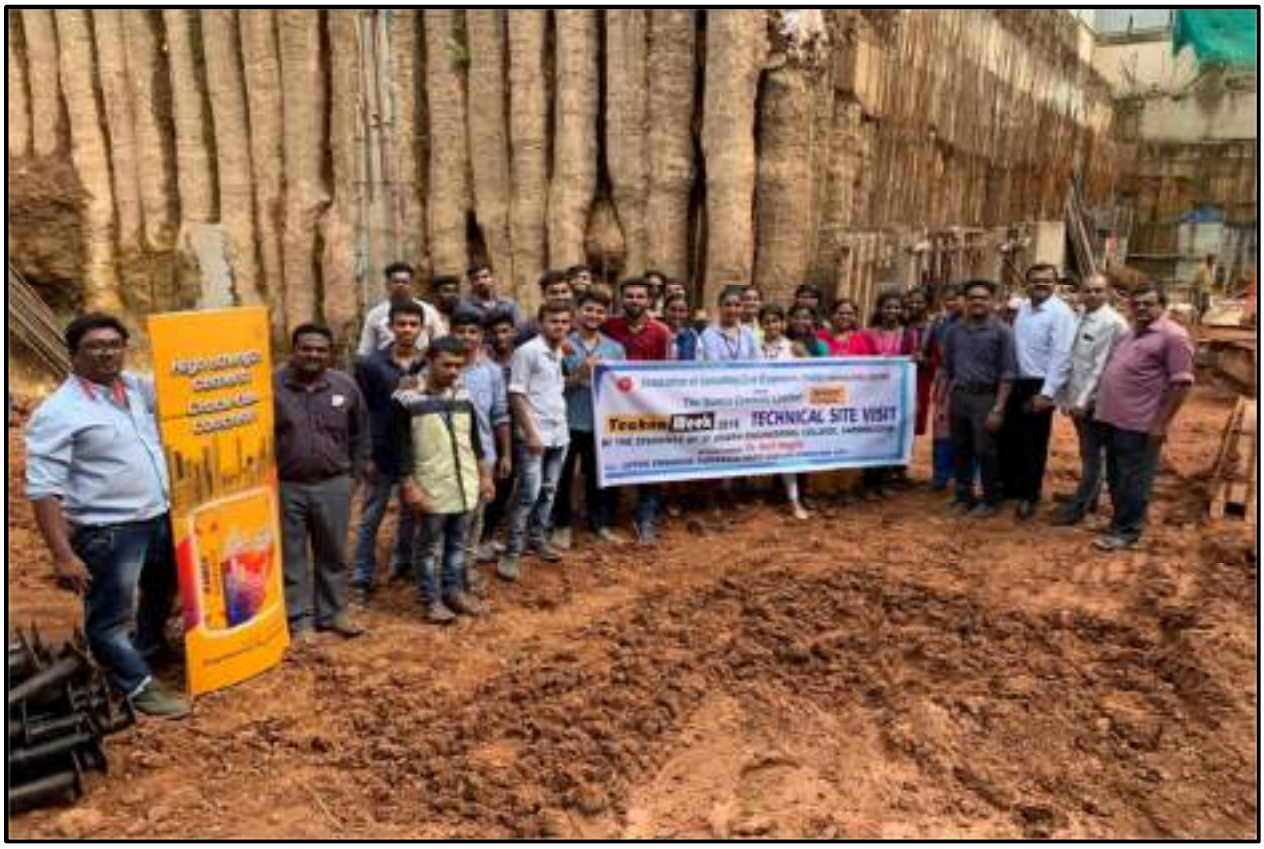

Fig. 26: Industrial Visit to Skyline Signature and Marian Park for Fifth Semester Civil Engineering students, on 24 September 2019, by the Department of Civil Engineering

Fig. 27: Industrial Visit to Nirmithi Kendra, Surathkal for second year students, on 23 September 2019, by the Department of Civil Engineering

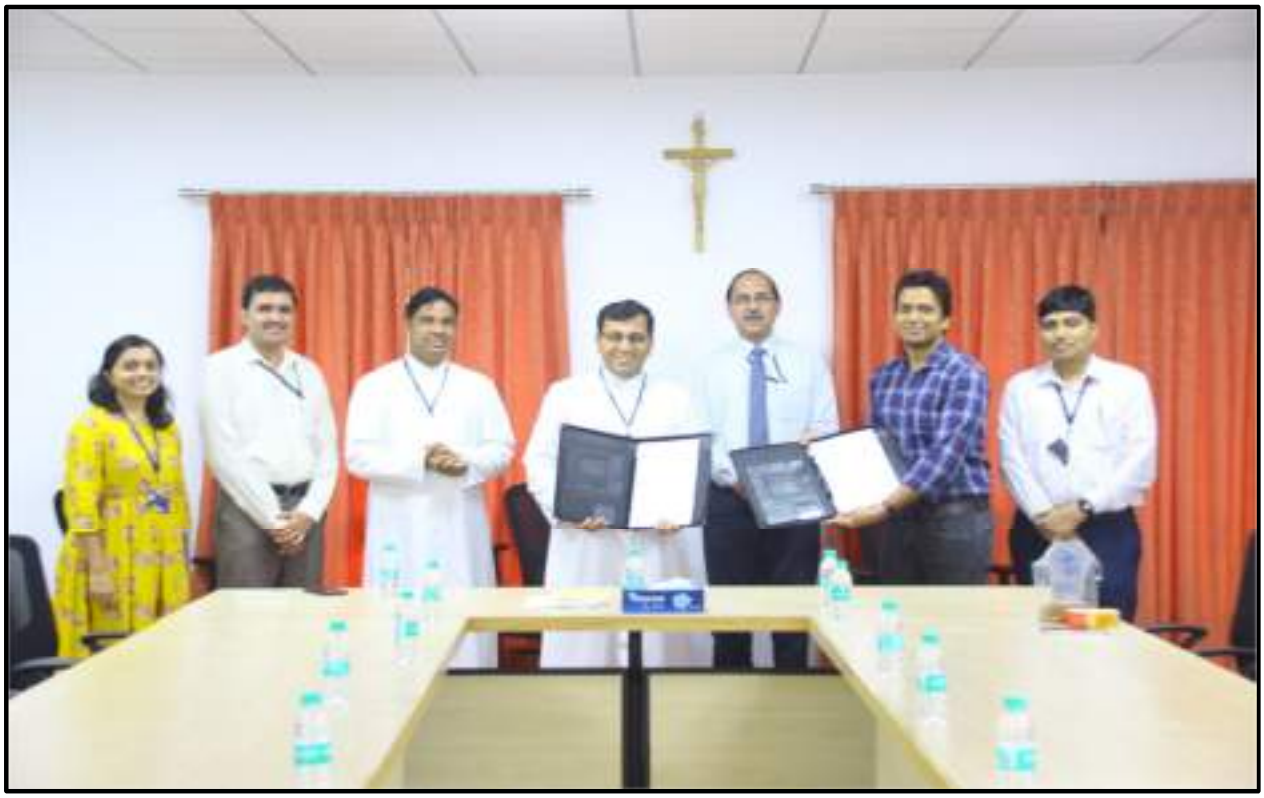

Fig. 28: MOU with SELCO Foundation, on 21 September 2019, to be anchored by the Department of E & E

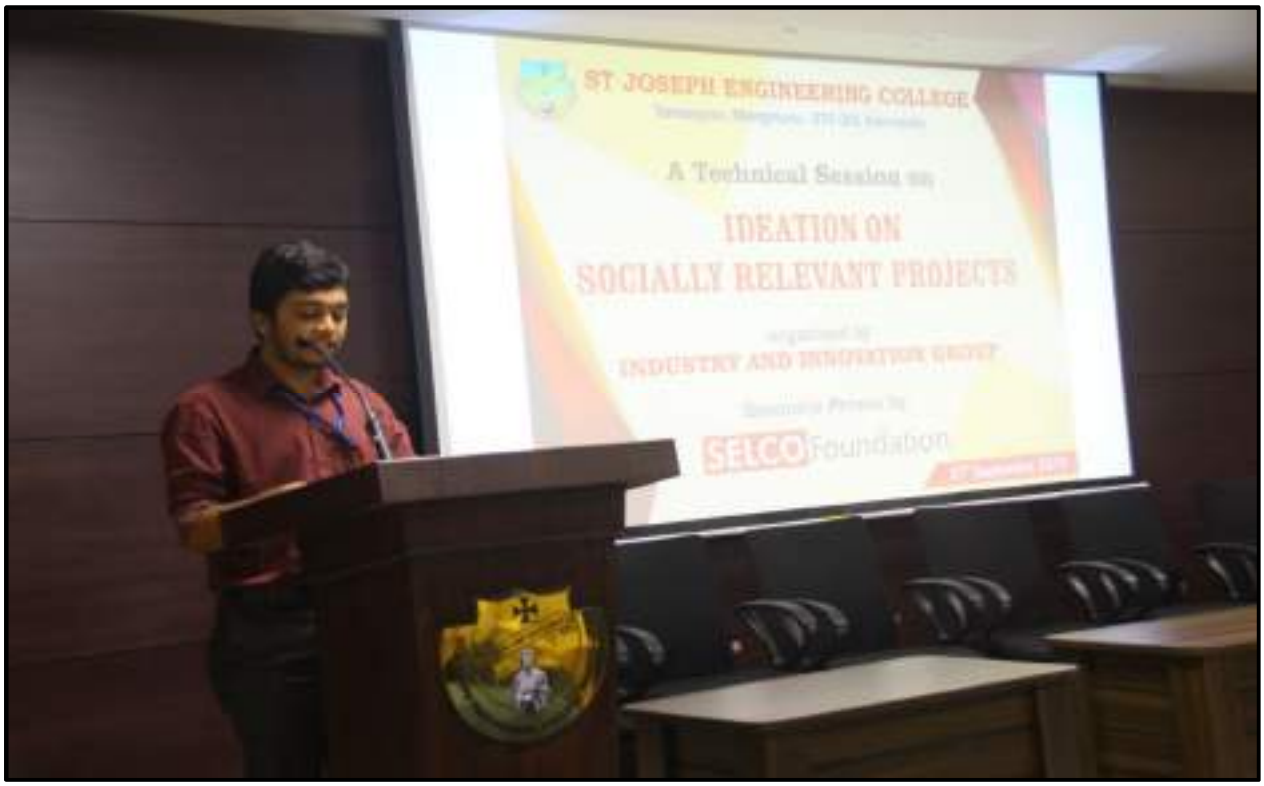

Fig. 29: Technical Session on Ideation on Socially Relevant Projects, on 21 September 2019, by Mr Adithya, Mr Mohsim and Mr Ashwin, Program Managers at SELCO Foundation

Fig. 30: Industrial visit to Varahi hydropower plant, Hosangadi and Mani Dam, Yadur, on 17 September 2019 & 5 October 2019, by the Department of Mechanical Engineering

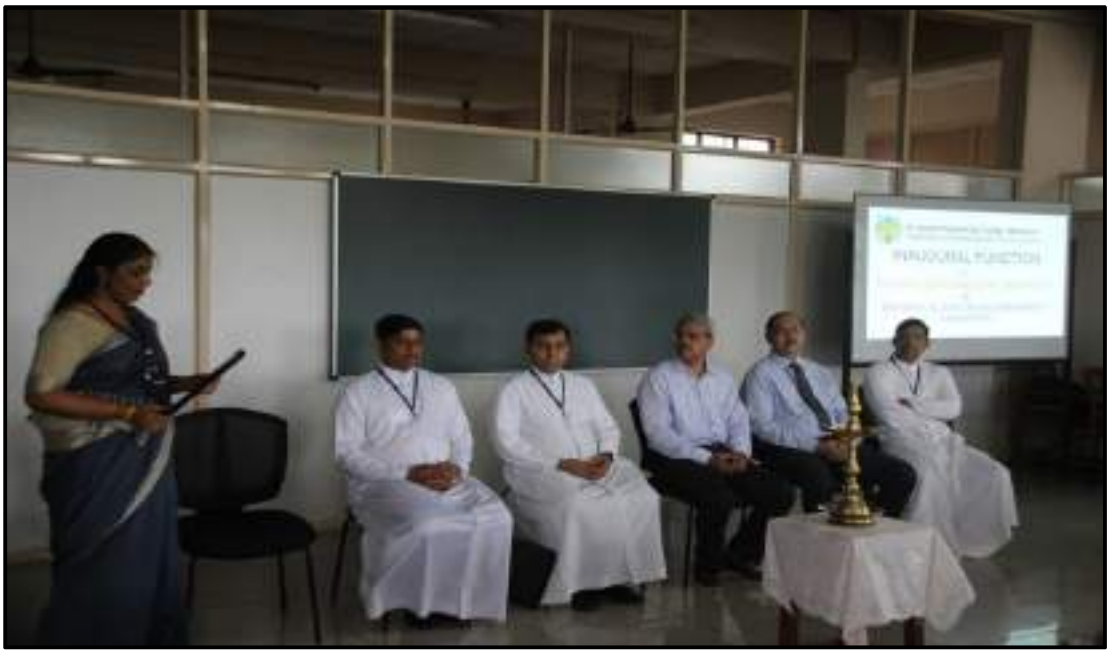

Fig. 31: Inauguration of Tessolve Semiconductor Laboratory and Bio-medical Electronics Research Laboratory, on 14 September 2019, by the Department of Electronics and Communication Engineering in association with Industry & Innovation Group (IIG)

Fig. 32: Display of recycling projects at 10th Edition of International Plastics Exposition 2019 (IPLEX 2019), from 23-25 August 2019, by Department of Mechanical Engineering and Civil Engineering

Fig. 33: E-STEP Start-up Bootcamp, on 22 August 2019, by The New Age Incubation Network (NAIN) Incubation Centre in association with Karnataka Innovation and Technology Society (KITS)

Fig. 34: Interaction with Doctors of FMMC by ECE Faculty, on 7 August 2019

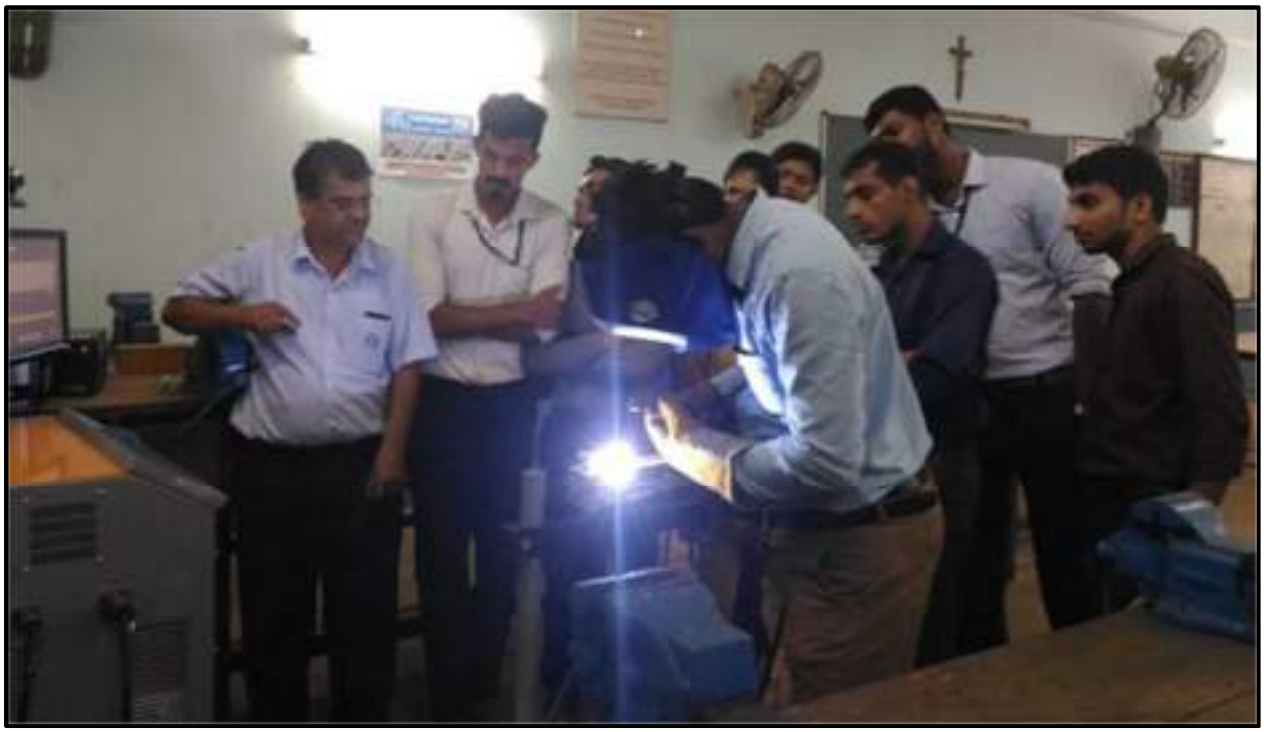

Fig. 35: Demonstration of ‘AReal Arc Welding Simulator’ by Mr Sanjay Hubli, Regional Manager and Mr Manjunath – Engineer from Mogora Cosmic Pvt. Ltd Pune,on 13 June 2019, in the Mechanical Workshop

Fig. 36: MoU with Marian Projects Pvt. Ltd, on 29 May 2019, anchored by the Deparment of Civil Engineering

Fig. 37: Industrial Visit to Udupi Power Corporation Ltd (UPCL) for second year students, on 9 May 2019, by the Department of EEE

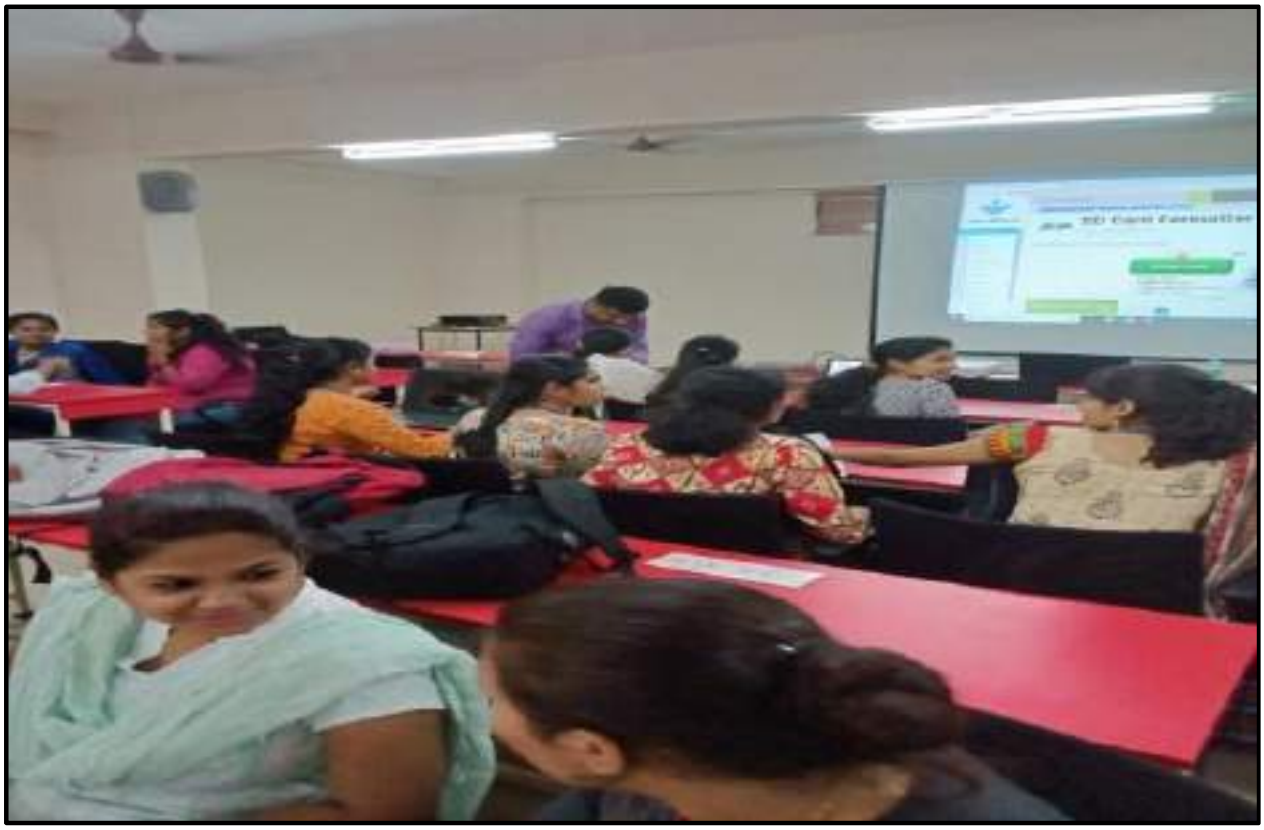

Fig. 38: Hands-on session on “Raspberry Pi programming” by Mr Gopala Krishna BhatKakunje, Director of Kakunje Software Pvt Ltd. for Fifth semester students, on 26 and 27 April 2019, by Department of CSE

Fig. 39: Talk on “Latest Designing Tools in Industry” by Mr Akshay B Gaikwad and Mr Sheik Mohammed, Faculty, CADD Centre Mangaluru, on 23 April 2019, by Mechanical Engineering Department

Fig. 40: Talk on “Electrical Distribution System” by Ms Prarthana Rao, Engineer at MESCOM, Kavoorfor second year students, on 15 April 2019, organized by EEE Department

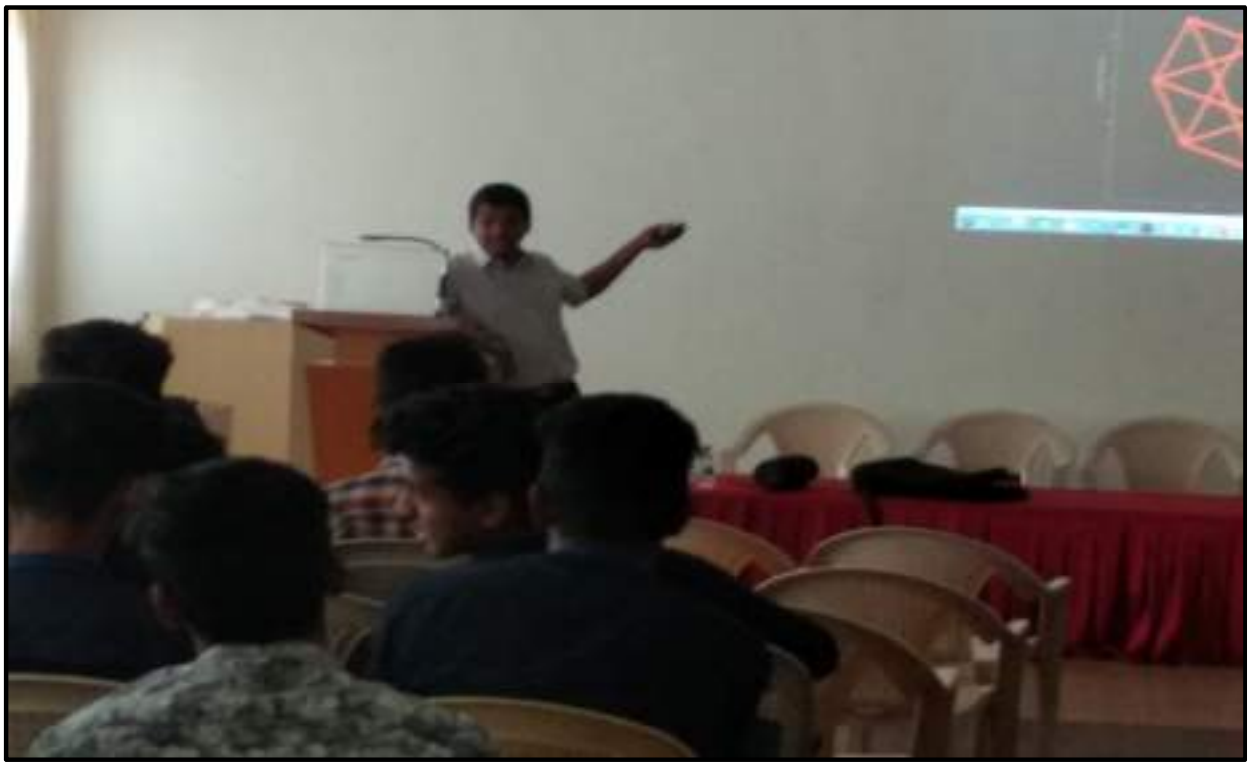

Fig. 41: Talk on “Performance Analysis of Communication Systems through Simulink and SDR”, by Dr Prashanth Kumar H, Assistant. Prof-ECE, NITK Surathkal for final year students, on 15 April 2019, by ECE Department

Fig. 42: Industrial Visit to Master PlanneryNirmithi Kendra for VI Semester students, on 15 April 2019, by the Department of Civil Engineering in association with IIEDC

Fig. 43: Talk on “Engineering and Innovation” for second year CSE students, by Dr Poornalatha G, Department of Information & Communication Technology, Manipal University on 13 April 2019, by CSE Department

Fig. 44: One-day Industrial visit to KPTCL Kavoor Substation Industrial Visit for the 4-semester students on 28 March 2019, by the Electrical and Electronics Department

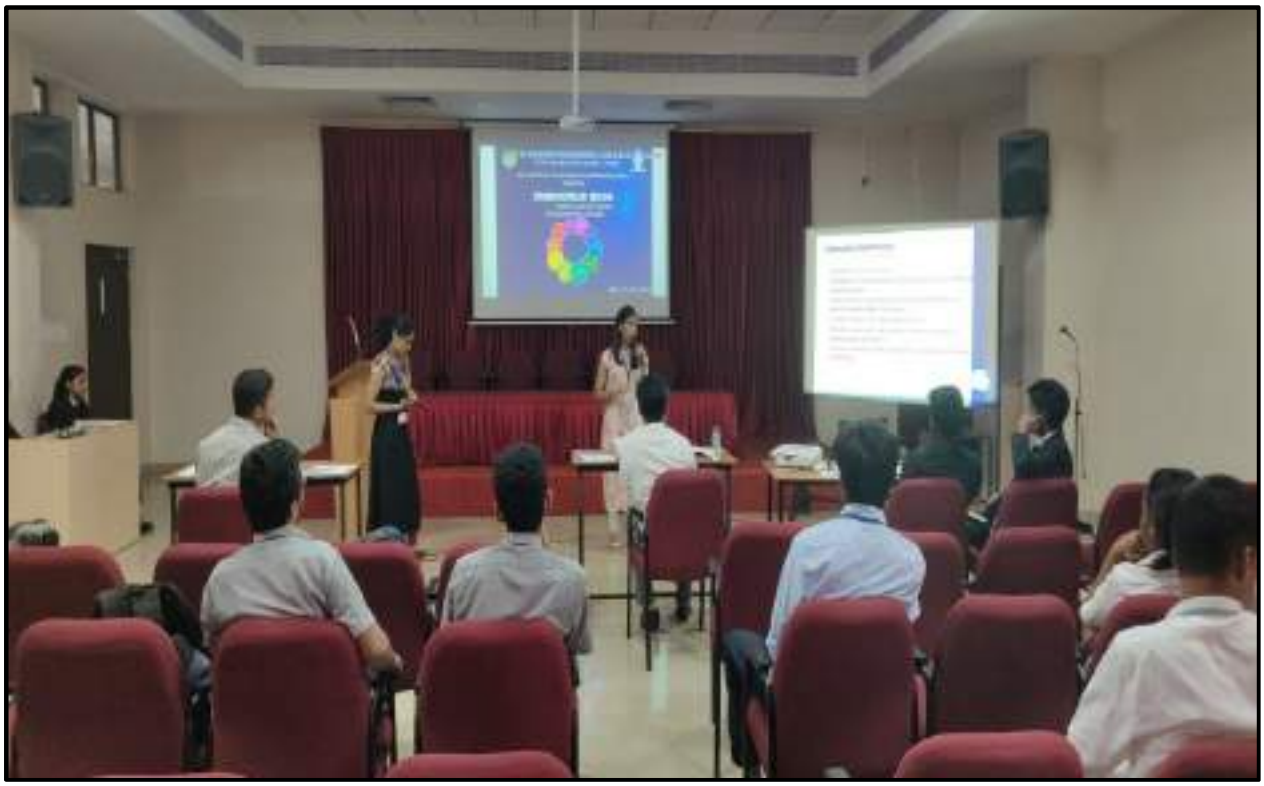

Fig. 45: Ingenious-2k19, a half-day event on Business Plan, on 25 March 2019, by the Department of Business Administration

Fig. 46: Industrial Visit to Infosys, Mudipu, Mangaluru for sixth semester students, on 12 March 2019, by the Department of CSE

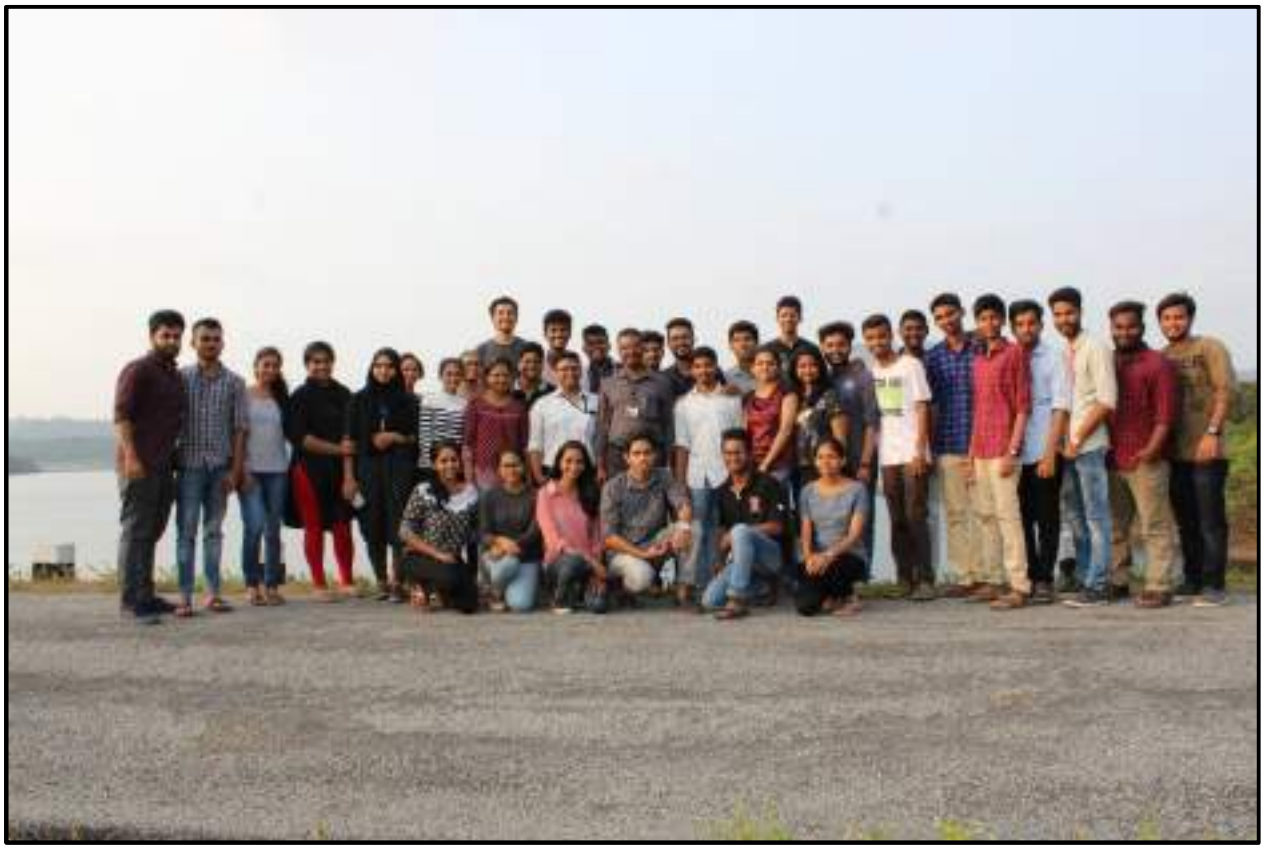

Fig. 47: Industrial Visit to Varahi Hydro-Electric Power Plant for final year students, on 11 March 2019, by the Department of EEE

Fig. 48: A talk on “Semiconductor Industry Opportunities and Challenges” by Mr Arun Mathias, Manager - Sandeepani School of Embedded System Design, Bengaluru, for Third and Fourth year ECE students, on 1 March 2019, by ECE Department

Fig. 49: Industrial visit to Varahi hydropower plant, Hosangadi and Mani dam, Yadur for final year students, on 25 February 2019, by the Industry Interaction Cell of Mechanical Engineering

Fig. 50: Memorandum of Understanding (MoU) with the Karnataka German Technical Training Institute (KGTTI), on 25 February 2019

Fig. 51: One day workshop on BlockChain by Mr. Marimuthu C, Research Scholar, Department of CSE, NITK, Surathkal for Sixth semester students, on 23 February 2019, by CSE Department

Fig. 52: Outreach Programme on Intellectual Property Awareness at ShubhodayaVidyalaya, Mudushedde, on 21 February 2019, by SJEC in association with Karnataka State Council for Science and Technology, (KSCST), IISC Campus, Bengaluru, Cell for IPR Promotion and Management (CIPAM) and Department of Industrial Policy & Promotion, Ministry of Commerce & Industry, Govt of India

Fig. 53: KarMic-St Joseph Academic Lab set up as a part of MOU signed on 5 February 2019, by ECE Department

Fig. 54: Talk on Project Management & Communication by Mr Sanjay Khan, on 29 January 2019, by EEE Department

Fig.55: Management Development Programme on “Leadership Skills for Women Entrepreneurs”, Ms Shipra Rai and Mr A. R. Nagesh, Senior Manager (Technical), KSFC, Mangaluru, on 18 January 2019, by the Department of Business Administration

Fig. 56: FDP on“Recent Trends in Medical Image Processing Using Wavelet Transforms”, during 1-5 January 2019, by ECE Department

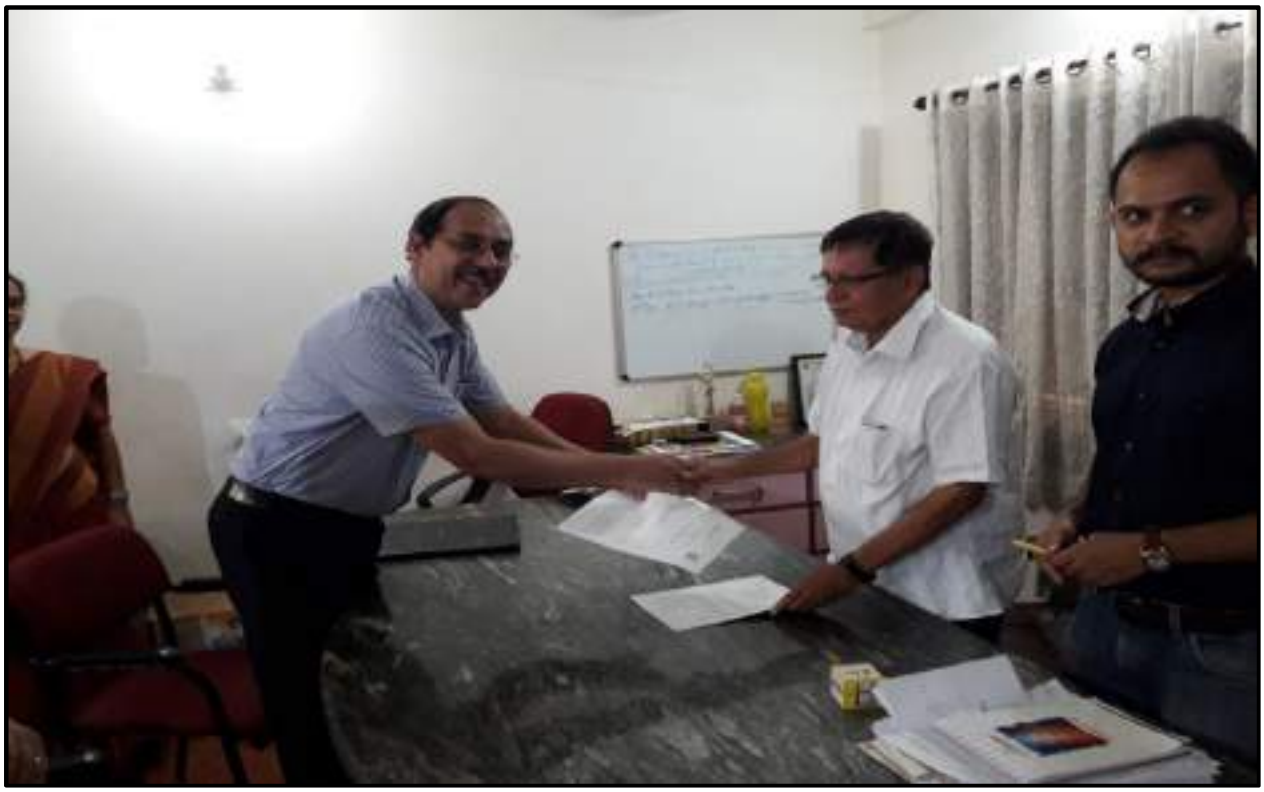

Fig. 57: MoU with Master PlanneryNirmithi Kendra, Puttur, on 18 December 2018, anchored by the Department of Civil Engineering

Fig. 58: Technical Talk on “Industrial Scenario in DK & significance of factory act for an industrial set up” by Mr K.G. Nanjappa, Deputy Director of Factories, Bengaluru, for the third year students, on 16 November 2018, by Electronics and Communication Engineering Department

Fig. 59: Colloquy-18, A Panel Discussion on the theme “Smart City Mangaluru and Business Opportunities”, on 15 November 2018, by the Department of Business Administration and Industry Interaction and Entrepreneurship Development Cell (IIEDC)

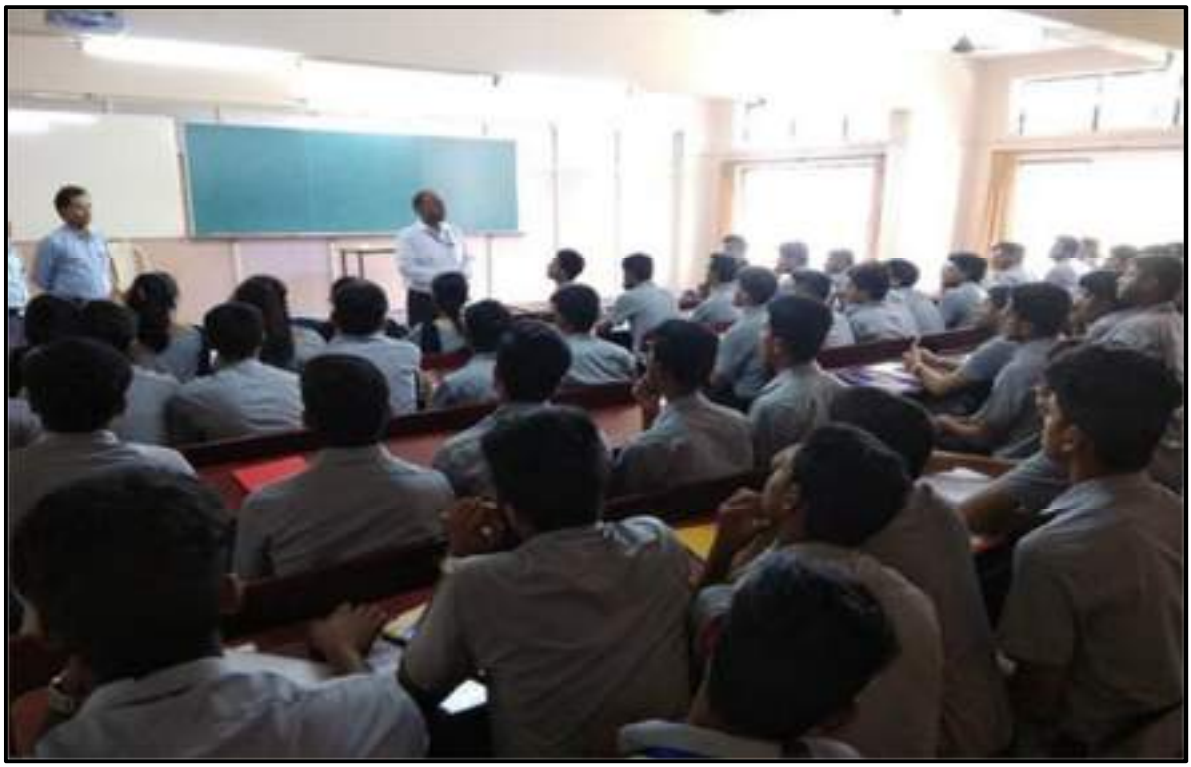

Fig. 60: Talk on “Skilling Engineers for Professional Success” by Konkan Railways for the Second and Third year students, on 14 and 15 November 2018, by ‘TORQUE’, Mechanical Engineering Students’ Association

Fig. 61: Industrial visit to “Udupi Power Corporation Ltd, Padubidri” for second year students, on 12 November 2018, by the Industry Interaction Cell of Mechanical Engineering Department

Fig. 62: Industrial visit to New Mangalore Port Trust, Panambur for V Semester students, on 2 November 2018, by the Department of Civil Engineering

Fig. 63: One Day Workshop on IP Security for pre-final year students, by Mr. Rahul Dutta, Associate Engineer in J P Morgan, Hyderabad, on 27 October 2018, by CIPHER- student association and IIEDC

Fig. 64: Industrial Visit to Water Treatment plant, Tumbe Dam and Sewage Treatment Plant, Kavoor, Mangaluru for VII Semester students, on 12 October 2018, by the Department of Civil Engineering

Fig. 65: Motivational Talk on Entrepreneurship Development by Dr G Srinikethan, In-charge Director, NITK STEP for Final year students of E&E and Civil and pre-final year students of MCA, on 10 October 2018, by the Department of Electrical and Electronics Engineering in association with IIEDC

Fig. 66: Industrial Visit to Bharath Electronics Limited (BEL), Centre for Nano Science and Engineering (CenSe) and Zreyah Semiconductors Systems Pvt Ltd., during 5-6 October 2018, by ECE Department

Fig. 67: Inauguration of Student Association – PRODIGI, with Mr Madan B, Director, KarMic Design Pvt. Ltd. and Mr KeerthanPrabhu, Founder, College Innovators, NMAMIT, Nitte, on 25 September 2018, by ECE Department

Fig. 68: Fig. 55: 'Involve - The DNA of Leadership'-Talk by Mr KeerthanPrabhu, on 25 September 2018, by ECE Department

Fig. 69: MATLAB DAY with NainiDawar, an Educational Technical Evangelist at MathWorks India, on 7 Sept 2018, by ECE Department

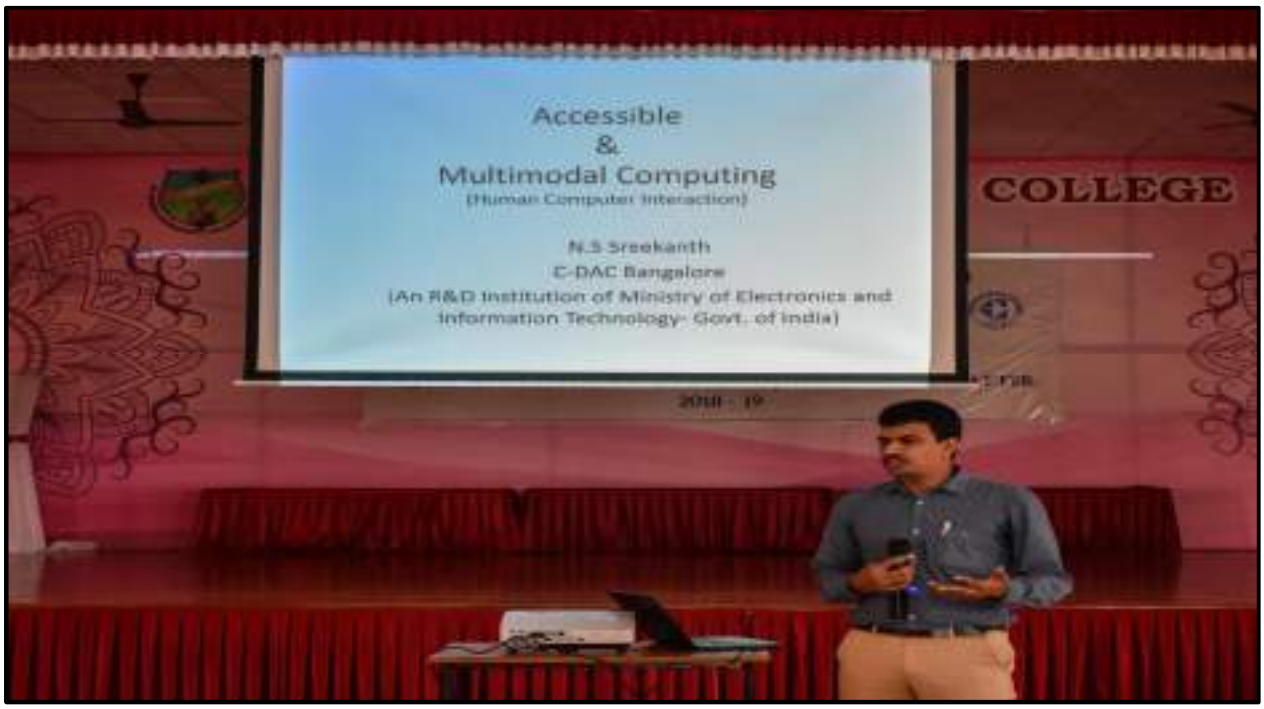

Fig. 70: Talk on “Accessible and Multimodal Computing” by Dr Sreekanth N S, Scientist ‘D’/ Principal Technical Officer, C-DAC, Bengaluru, on 7 September 2018, by Department of CSE

Fig. 71: Interactive Session on Industry Practices on Software Project Delivery by Mr Hari S, Lead-Education Training and Assessment (ETA), Infosys Trivandrum Development Centre for the CSE students, on 10 August 2018, by the Department of Computer Science and Engineering in association with Industry Interaction and Entrepreneurship Development Cell (IIEDC)

Fig. 72: Interactive Session on Industry Practices on Software Project Delivery by Mr Hari S, Lead-Education Training and Assessment (ETA), Infosys Trivandrum Development Centre for the MCA students, on 8 August 2018, by the Department of Computer Applications

Fig. 73: Infosys Campus Connect Faculty Enablement Program on Foundation Program 5.0, from 06 to 10 August 2018, by the Departments of Computer Applications in collaboration with the Department of Computer Science and Engineering

Fig. 74: Motivational Talk on "Indian Railways & Competitive Exams" by Mr. P R Pinto Superintendent Material Control Lab, Indian Railways, Mumbai for the third semester EEE students, on 6 August 2018, by the Department of EEE

Fig. 75: Industrial Visit to Master Plannery Rural Development Centre, Puttur, by the Department of Civil Engineering

A guest lecture on “Software Test Automation” was organized by the Department of Computer Applications for the students of MCA by Mr. Shrikrishna Bhat, Associate Manager – Quality Control, Glowtouch Technologies Pvt. Ltd. Mangaluru on March 9th 2019 at Bishop Aloysius Paul Hall from 10:00 am to 1:00 pm. The objective of the talk was to give an idea about the practices of Software Testing at an IT organization and understand the basic Test Concepts with respect to organization requirement

MOUs

Several MOUs/MOAs have been signed by the department of ECE at College Level, with programme specific Institutions/Organizations since AY 2018-19. Some of them are:

- KarMic design Pvt Ltd on 05-02-2019
- Tessolve Semiconductor Pvt Ltd on 04 July 2019
- Father Muller Charitable Institution on 15-02-2019
- College of Information and Electrical Engineering, Asia University, Taiwan on 18-06-2019
- ATS Infotech Pvt Ltd on 23-11-2018
- St Aloysius Collegeon 14-12-2018

Additional Training to Foster Critical Thinking

Department of Mechanical Engineering

Fig. 76: “Importance of GATE Exam” by ACE Institute for the final year students, on 30th October 2018, by TORQU, Mechanical Engineering Students’ Association.

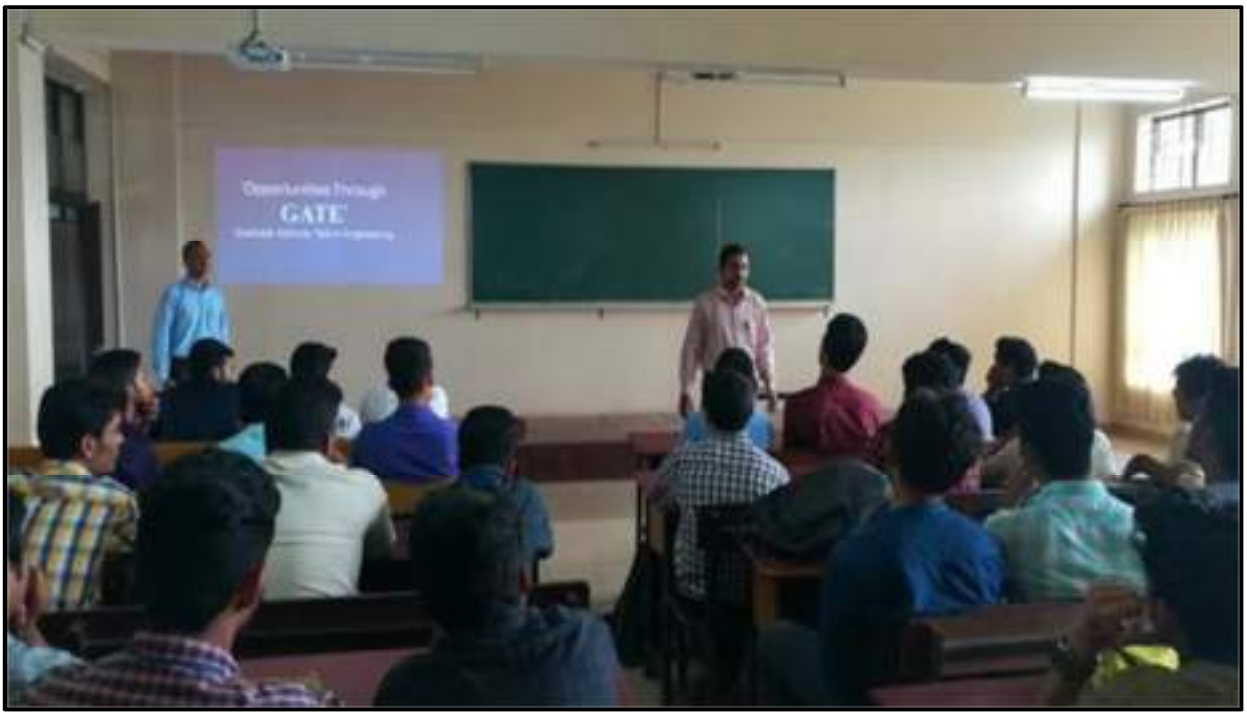

Fig. 77: “ORIENTATION THROUGH GATE” by Mr Ananth Pai and Mr. Uday Shankar, Academy in Pursuit of Engineering Excellence (APEX) for final year engineering students, on August 25, 2018

Department of EEE

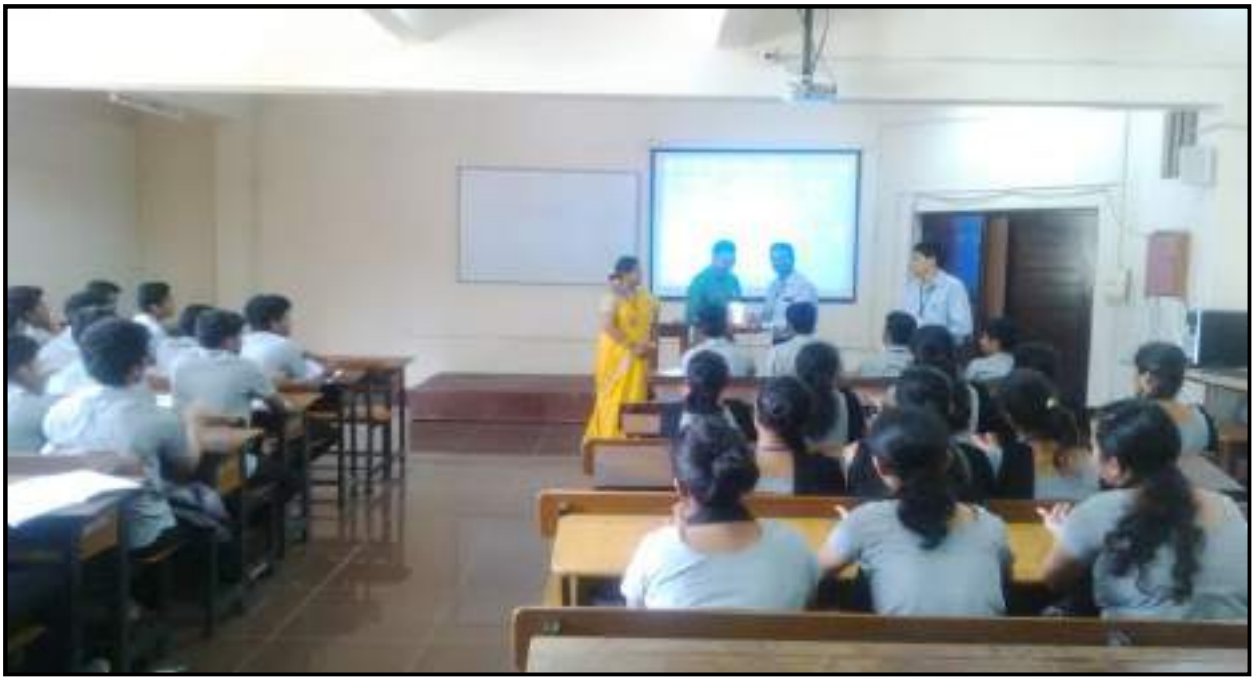

Fig. 78: “Indian Railways & Competitive Exams” by Mr. P R Pinto, Superintendent Material Control Lab, Indian Railways, Mumbai on 6th August 2018, by EEE Department

Department of ECE

Industry Orientation Lab is a part of regular time table of 2nd and 3rd Year students. This beyond the syllabus activity mainly focuses on use of Modern Tools and Project Design and Development.

Department of CSE

Individual Effectiveness Labs (IEL):

- IEL sessions were conducted by I-Point Facilitators for the II year students during the odd semester of the academic year 2018-2019. The sessions were conducted for a duration of two hours each week, on a regular basis.
- The following topics were dealt in IEL sessions: Personal Effectiveness, Goal Setting, Articulation, Group Discussion, Letter & Email, Presentation Skills and Team Work.

Organizational Effectiveness Labs (OEL):

- OEL sessions were conducted by I-Point Facilitators for the II year MCA students during the odd semester of the academic year 2018-2019. The sessions were conducted for a duration of two hours each week, on a regular basis.
- The following topics were dealt in OEL sessions: Professional Etiquette, Time Management, Group Discussion, Resume Writing, Interview, Outbound and Handling Feedback.

Department of MBA

- **V-ACT** -During the year 2018-19 V-ACT -Soft Skills, Personality Development and V-ACT Aptitude sessions were conducted for I MBA students. V-ACT -Soft Skills covered topics like Positive Attitude & Adaptability, Team Work & Professional ethics, Time Management & Communication. V-ACT Aptitude sessions covered topics like under and Number Theory & HCF and LCM, Permutations and Combinations and Average, Ratio and Proportion.
- **ATS**-Microsoft certification-Business Analytics -1st May to 4th May delivered to students and faculty.
- **Session on MOOCs**: Session on “Massive Open Online Courses (MOOCs) with special reference to NPTEL courses” on 28th December 2018 for the first year MBA students. Prof. Keith Fernandes explained the significance of online courses and the need to register for the same as these courses are delivered by experts from IITs, IIMs, and recognized foreign universities.

Fig. 79: Outbound training at Madikeri, during 12-13October 2018, by MBA Department

Department of MCA

Individual Effectiveness Labs (IEL):

- IEL sessions were conducted by I-Point Facilitators for the I year MCA students during the odd semester of the academic year 2018-2019. The sessions were conducted for a duration of two hours each week, on a regular basis.
- The following topics were dealt in IEL sessions: Personal Effectiveness, Goal Setting, Articulation, Group Discussion, Letter & Email, Presentation Skills and Team Work.

Organizational Effectiveness Labs (OEL):

- OEL sessions were conducted by I-Point Facilitators for the II year MCA students during the odd semester of the academic year 2018-2019. The sessions were conducted for a duration of two hours each week, on a regular basis.
- The following topics were dealt in OEL sessions: Professional Etiquette, Time Management, Group Discussion, Resume Writing, Interview, Outbound and Handling Feedback

Department of Physics

Fig. 80: Outreach program at Govt High School, Hosabettu on 7th Sept 2109 by Physics Department

Fig. 81: Outreach program at Govt High School Navoor, Bantawala on 16thNov. 2109 by Physics Department

4. Attainment of Program Outcomes (POs) and Program Specific Outcomes (PSOs), and Continual Improvement Action Items for each of the POs and PSOs.

4.1 BE in Mechanical Engineering

Table 2: Attainment Gap Analysis of BE-Mechanical Engineering (I shift)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	1.66	Moderately	Problem solving skills of students needs to be improved. Use of problem based learning or flip classroom and more tutorial classes have to be conducted.
PO2	Solve Problems	2	1.75	Moderately	
PO3	Design/ Development of Solution	2	2.08	High	Open ended experiments or real life based problems need to be given.
PO4	Conduct Investigations	2	2.78	High	
PO5	Use Modern Tools	2	2.08	High	Use of Virtual Lab, Simulation , Modelling and Analysis tools like CATIA, ANSYS, CFD, MATLAB etc need to be continued.
PO6	Engineer and Society	2	2.04	High	Encourage students to develop more projects related to industry and solve contemporary issues
PO7	Environment and Sustainability	2	2.06	High	

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					in society related to environment and sustainability.
PO8	Professional Ethics	2	2.17	High	Use of rubrics to assess late submission and study of case studies related to the effect of wrong ethical practices.
PO9	Individual and Team Work	2	2.30	High	Encourage students to do mini projects, seminars, assignments in a group.
PO10	Communicate Effectively	2	2.16	High	Assess group activities using technical reports and presentations to improve communications both technical and personal.
PO11	Project Management and Finance	2	1.90	Moderately	Use of time management and cost estimation tools in project work need to be continued.
PO12	Lifelong Learning	2	1.78	Moderately	TLP practices like Flip classroom and

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					promoting self learning using NPTEL video lectures will help in achieving this PO.
PSO1	Qualify in competitive Exam	2	1.16	Moderately	Assessment of aptitude classes need to be conducted. Technical quizzes need to be conducted as a part of assignment work.
PSO2	Conduct Research	2	1.82	Moderately	Encourage reading journal paper and promote research based projects.

Table 3: Attainment Gap Analysis BE-Mechanical Engineering (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.2	High	Conduct quiz, Seminars etc. on basic concepts
PO2	Solve Problems	2	2.48	High	An activity can be given to identify real life practical problems and find solution
PO3	Design/ Development of Solution	2	1.4	Moderately	Use case studies or open ended problems
PO4	Conduct	2	1.768	Moderately	Use of virtual lab or

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
	Investigations				open ended experiments
PO5	Use Modern Tools	2	1.196	Moderately	More classes on virtual lab or Simulation labs can be conducted
PO6	Engineer and Society	2	1.4	Moderately	Encourage students to develop capstone/mini projects to solve contemporary issues in society. Conduct seminar on environment and sustainability issues related to subject.
PO7	Environment and Sustainability	2	1.12	Moderately	
PO8	Professional Ethics	2	0.6	Low	Develop awareness about Professional Ethics by using plagiarism software, Rubrics to assess late submission and study of case studies related to the effect of wrong ethical practices
PO9	Individual and Team Work	2	1.56	Moderately	Encourage students to do mini projects, seminars, assignments in a group.
PO10	Communicate	2	1.76	Moderately	Continue V-ACT

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
	Effectively				Classes.
PO11	Project Management and Finance	2	0.6	Low	Arrange talks on industrial and financial management
PO12	Lifelong Learning	2	0.872	Low	Arrange talks in various domains, Industrial visits and promote self-learning by encouraging students to learn using MOOCs like NPTEL etc

4.2 BE in Electrical and Electronics Engineering

Table 4: Attainment Gap Analysis of BE-Electrical and Electronics Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	1.66	Not Attained	Create Virtual Simulation Models using Vlab, Simulink etc
PO2	Solve Problems	2	1.90	Moderately Attained	
PO3	Design/ Development of Solution	2	2.10	Attained	Form Student groups to work on creative and innovative projects.
PO4	Conduct Investigations	2	2.07	Attained	
PO5	Use Modern Tools	2	2.03	Attained	PLC and programming languages as Vocational Courses

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO6	Engineer and Society	2	2.05	Attained	1. Problem solving on energy saving and water management. 2. Safety Practices
PO7	Environment and Sustainability	2	2.02	Attained	
PO8	Professional Ethics	2	2.09	Attained	
PO9	Individual and Team Work	2	2.28	Strongly Attained	Conducting workshops and seminars on team building, soft skill and professional etiquettes.
PO10	Communicate Effectively	2	1.77	Moderately Attained	
PO11	Project Management and Finance	2	1.61	Not Attained	
PO12	Lifelong Learning	2	1.53	Not Attained	Promote students participation in GATE exams, MOOCs etc
PSO1	Qualify in competitive Exam	2	1.62	Not Attained	PLC and programming languages as Vocational Courses
PSO2	Conduct Research	2	1.75	Moderately Attained	Organizing seminars on entrepreneurship and financial management

Table 5: Attainment Gap Analysis BE-Electrical and Electronics Engineering (First Year)

PO/ PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO 1	Apply Knowledge	2	1.66	Not Attained	Create Virtual Simulation Models

PO/ PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO 2	Solve Problems	2	1.90	Moderately Attained	using Vlab, Simulink etc
PO 3	Design/ Development of Solution	2	2.10	Attained	Form Student groups to work on creative and innovative projects
PO 4	Conduct Investigations	2	2.07	Attained	
PO 5	Use Modern Tools	2	2.03	Attained	PLC and programming languages as Vocational Courses
PO 6	Engineer and Society	2	2.05	Attained	1. Problem solving on energy saving and water management. 2. Safety Practices
PO 7	Environment and Sustainability	2	2.02	Attained	
PO 8	Professional Ethics	2	2.09	Attained	
PO 9	Individual and Team work	2	2.28	Strongly Attained	Conducting workshops and seminars on team building, soft skill and professional etiquettes.
PO 10	Communicate effectively	2	1.77	Moderately Attained	
PO 11	Project Management and Finance	2	1.61	Not Attained	
PO 12	Lifelong Learning	2	1.53	Not Attained	Promote students participation in GATE exams, MOOCs etc.
PSO 1	Hardware and Software tools	2	1.62	Not Attained	PLC and programming languages as Vocational Courses.

PO/ PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PSO 2	Entrepreneurship and Financial Management	2	1.75	Moderately Attained	Organizing seminars on entrepreneurship and financial management.

4.3 BE in Electronics and Communication Engineering

Table 6: Attainment Gap Analysis of BE-Electronics and Communication Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 1	Apply Knowledge	2	2.20	Moderately Attained	--
PO 2	Solve problems	2	2.24	Moderately Attained	--
PO 3	Design / Development of Solutions	2	2.09	Moderately Attained	Use case studies or open ended problems. Maximize proposals for various project funding. Senior students mentoring juniors in project and placement related aspects.
PO 4	Conduct and analyze experiments	2	2.61	Strongly Attained	--
PO 5	Use Modern tools	2	2.53	Strongly Attained	--
PO 6	Contemporary	2	2.27	Moderately	Visit nearby schools

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
	Engineering Problems			Attained	with a line of Educational Toys. Maximize proposals for various project funding.
PO 7	Society and Environment	2	2.96	Strongly Attained	
PO 8	Professional Ethics	2	2.59	Strongly Attained	--
PO 9	Multidisciplinary Teams	2	2.84	Strongly Attained	Senior students mentoring juniors in project and placement related aspects.
PO 10	Communicate Effectively and team work	2	2.49	Strongly Attained	Maximize proposals for various project funding.
PO11	Project Management and Leadership	2	2.41	Moderately Attained	Maximize proposals for various project funding
PO 12	Lifelong Learning Mode	2	2.57	Strongly Attained	Start Gate Coaching for interested students Senior students mentoring juniors in project and placement related aspects. Train students of the programme on placement related critical concepts.

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PSO 1	Competitive Exams	2	2.02	Moderately Attained	Start Gate Coaching for interested students. Train students of the programme on placement related critical concepts.
PSO-2	Industry Interaction	2	1.90	Not Attained	Conduct more alumni interactions. Train students of the programme on placement related critical concepts.

Table 7: Attainment Gap Analysis BE-Electronics and Communication Engg (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO 1	Apply Knowledge	2	2.56	Strongly Attained	--
PO 2	Solve problems	2	2.72	Strongly Attained	--
PO 3	Design / Development of Solutions	2	1.96	Not Attained	Introduce course project for first year Basic Electronics subjects.
PO 4	Conduct and analyze experiments	2	2.70	Strongly Attained	--
PO 5	Use Modern tools	2	2.66	Strongly Attained	--
PO 6	Contemporary	2	2.36	Moderately	Visit nearby

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
	Engineering Problems			Attained	schools
PO 7	Society and Environment	2	2.55	Strongly Attained	--
PO 8	Professional Ethics	2	2.36	Moderately Attained	--
PO 9	Multidisciplinary Teams	2	2.31	Moderately Attained	
PO 10	Communicate Effectively and team work	2	1.96	Not Attained	Introduce course project for first year basic electronics subjects
PO11	Project Management and Leadership	2	2.16	Moderately Attained	
PO 12	Lifelong Learning Mode	2	2.36	Moderately Attained	
PSO 1	Competitive Exams	2	NA	-	
PSO-2	Industry Interaction	2	NA	-	

4.4 BE in Civil Engineering

Table 8: Attainment Gap Analysis of BE-Civil Engineering

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO1	Apply Knowledge	2	2.01	Moderately attained	Assignment on Civil Engineering Application problems
PO2	Solve Problems	2	1.98	Not attained	Conducting Quiz and One Minute Paper on Real

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
					world practical Problems
PO3	Design/ Development of Solution	2	2.32	Strongly attained	Assignment on Complex Engineering Problems
PO4	Conduct Investigations	2	2.64	Strongly attained	Conduct experiments beyond the syllabus in Laboratories.
PO5	Use Modern Tools	2	2.22	Moderately attained	Spoken tutorial organised by IIT Bomaby related to Q-CAD, Carrying out experiments using Virtual lab
PO6	Engineer and Society	2	2.50	Strongly attained	Encouraging students to give awareness program about environmental impact
PO7	Environment and Sustainability	2	2.79	Strongly attained	Technical Talks on “Sustainability Concepts”
PO8	Professional Ethics	2	2.55	Strongly attained	Technical Talks on Professional ethics , Law for Civil Engineers and Code of Ethics
PO9	Individual and Team Work	2	2.21	Moderately attained	Involvement of students by conducting the activities through SHILPA
PO10	Communicate Effectively	2	2.57	Strongly attained	Encourage students to present seminars
PO11	Project Management and Finance	2	2.28	Strongly attained	Technical Talks on project management and finance

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO12	Life-long Learning	2	2.64	Strongly attained	Motivating the students to Present papers in Conferences / Journals
PSO1	Real field challenges and Conduct research	2	2.79	Strongly attained	Industrial visits to Construction Sites
PSO2	Qualify in competitive exam	2	1.19	Not attained	Conduct technical aptitude training

Table 9: Attainment Gap Analysis BE-Civil Engineering (First Year)

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
PO1	Apply Knowledge	2	2.38	High	Conduct quiz, Seminars etc. on basic concepts
PO2	Solve Problems	2	2.24	High	An activity can be given to identify real life practical problems and find solution
PO3	Design/ Development of Solution	2	1.90	Moderate	Conduct quiz, assignment on complex engineering problem
PO4	Conduct Investigations	2	2.82	High	Classes on Virtual Lab
PO5	Use Modern Tools	2	2.53	High	Classes on Virtual Lab
PO6	Engineer and Society	2	0.33	Low	Encouraging students to do seminar on environment and sustainability
PO7	Environment and	2	2.79	High	--

PO/PSO No	Keywords	Target Level	Attainment level	Observations	Action to be taken
	Sustainability				
PO8	Professional Ethics	2	2.11	High	Encourage students to do seminar on Professional Ethics
PO9	Individual and Team Work	2	2.21	High	Encourage students to do seminars and assignment in group
PO10	Communicate Effectively	2	1.62	Moderate	Continue V-Act Classes
PO11	Project Management and Finance	2	0.29	Low	Arrange talks on financial management and material management
PO12	Life-long Learning	2	0.33	Low	Encouraging students to learn using NPTEL etc.

4.5 BE in Computer Science and Engineering

Table 10: Attainment Gap Analysis of BE-Computer Science and Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO1	Apply Knowledge	2	1.16	Moderate	Conduct quiz, seminars on basic concepts
PO2	Solve Problems	2	1.26	Moderate	Perform extra experiments in lab other than the ones prescribed in the syllabus.
PO3	Design/ Development of Solution	2	1.54	Moderate	Mini projects can be given for a subject/ group of subjects

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO4	Conduct Investigations	2	1.54	Moderate	An activity to identify real life practical problems and propose a solution.
PO5	Use Modern Tools	2	1.6	Moderate	Conduct workshops, hands on sessions on modern tools and technologies
PO6	Engineer and Society	2	1.67	Moderate	Encourage students to develop projects to solve contemporary issues in society.
PO7	Environment and Sustainability	2	1.47	Moderate	
PO8	Professional Ethics	2	2.52	High	Incorporate a component in assessment Rubrics to measure originality
PO9	Individual and Team Work	2	1.53	Moderate	Encourage students to do mini projects, seminars, assignments in a group Encourage students to participate in the Intercollegiate competitions.
PO10	Communicate Effectively	2	2.07	High	
PO11	Project Management and Finance	2	1.67	Moderate	Train the students to manage an engineering activity within time and budget constraint.
PO12	Lifelong Learning	2	1.04	Moderate	Arrange talks in various domains
PSO1	Entrepreneurship and Freelancing	2	1.74	Moderate	Conduct talks by Entrepreneurs

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PSO2	Competitive Exams and Higher Studies	2	1.51	Moderate	Maintain a technical questionnaire database to train students for placement and competitive exams.

Table 11: Attainment Gap Analysis BE- Computer Science Engineering (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO1	Apply Knowledge	2	2.7	High	Conduct quiz, seminars on basic concepts
PO2	Solve Problems	2	2.7	High	Perform extra experiments in lab other than the ones prescribed in the syllabus.
PO3	Design/ Development of Solution	2	2.3	High	
PO4	Conduct Investigations	2	3.0	High	Conduct virtual labs
PO5	Use Modern Tools	2	2.7	High	
PO6	Engineer and Society	2	3.0	High	Conduct Technical talks and seminars
PO7	Environment and Sustainability	2	2.5	High	
PO8	Professional Ethics	2	0.3	Low	Induction classes
PO9	Individual and Team Work	2	3.0	High	Encourage students to do seminars, assignments in a group
PO10	Communicate Effectively	2	2.2	High	Conduct spoken tutorials and I-point classes.

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Action to be taken
PO11	Project Management and Finance	2	0.3	Low	Induction classes
PO12	Lifelong Learning	2	3.0	High	Arrange talks in various domains
PSO1	Entrepreneurship and Freelancing	2	NA		
PSO2	Competitive Exams and Higher Studies	2	NA		

4.6 Master of Business Administration

Table 12: Attainment Gap Analysis of Master of Business Administration

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	1.75	Moderate	Practical cases in all the courses IT for Business course Sessions in IPR
PO2	Analytical and critical thinking	2	1.74	Moderate	Exposure to personal finance to induce self-management Crisis management MBA students to partner with computer science to develop apps in the area of management

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO3	Value based Leadership ability	2	1.90	Moderate	Industry connect and Socially relevant student activities Industry visits and internships with goal to take back to the college
PO4	Analyze global, and ethical aspects of business	2	2.12	High	Certification to students in the area of mutual funds, stock market and insurance Alumni interactions
PO5	Team environment	2	1.82	Moderate	Group discussion /Interview facing. Business Plan Contest Business plan workshop Public speaking workshop
PO6	Soft skills	2	1.60	Moderate	Development of Communication skill of the students through different programmes. Add-on-course soft skills, personality development & Aptitude. (Part of V-act Programme)

4.7 Master of Computer Application

Table 13: Attainment Gap Analysis of Master of Computer Applications

PO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Computational Knowledge	1	0.33	Low	Team Activity based on Programming concepts
PO2	Problem Analysis	1	0.36	Low	Activity can be given to analyze real life problem
PO3	Design/Development of Solutions	1	0.46	Low	Micro project can be given
PO4	Conduct Investigations of Complex Problems	1	0.20	Low	Out of box problems can be given
PO5	Modern Tools Usage	1	0.36	Low	Promoting the usage of Remote/ Virtual Labs while solving assignments or micro project
PO6	Professional Ethics	1	0.18	Low	Industrial visits/ Talk on Ethical issues can be arranged and activities to assess its effectiveness
PO7	Life-Long Learning	1	0.34	Low	Online courses are to be made compulsory
PO8	Project Management and Finance	1	0.12	Low	Collaborative learning / Project Based Learning

PO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
					activities can be introduced
PO9	Communication Efficacy	1	0.23	Low	Seminars and project presentations
PO10	Societal and Environmental Concern	1	0.23	Low	Outreach programs in villages adopted by SJEC to support MHRD initiatives
PO11	Individual and team work	1	0.27	Low	Seminar/ project / assignments/participation in technical events
PO12	Innovation and Entrepreneurship	1	0.08	Low	Encourage students to take part in IDEATION events / build innovative Projects
PO13	Research Environment	1	0.11	Low	Encourage students to take up research oriented projects and publish/ present papers