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

4

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.
PO7	Environment and Sustainability	2	2.17	Attained	2. Safety Practices

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