ST JOSEPH ENGINEERING COLLEGE

Affiliated to VTU-Belagavi & Recognized by AICTE

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

Action Taken Report 2019-2020

Internal Quality Assurance Cell (IQAC) Meeting 2020

"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.**

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1. Agenda of the IQAC Meeting Scheduled on 21st November 2020

1. Review of Minutes of previous IQAC Meeting date: 23rd November 2019.
2. Updates related to Accreditation and Autonomy.
3. Review of Scheme and Syllabus for Autonomy.
4. Inputs and Insights on Strategic Plan.
5. Any other matter with the permission of the chair.

2. Review of Minutes of the previous IQAC 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 (5th Nov 2020)**
I/2019-20/1	Inclusion and discussion of GATE questions in every module of engineering course	Respective Departmental HODs and Departmental Accreditation Coordinators	**CSE:** In-Progress **ECE:** Few subjects included GATE questions in the Various Assessment Tools **EEE:** In Progress **ME:** In Process **Civil:** Completed
I/2019-20/2	Revision of Attainment Targets (if required)		**CSE:** NIL **ECE:** Revised **EEE:** Completed **ME:** NA **Civil:** Same Attainment Level **MBA:** NA **MCA:** No change
I/2019-20/3	Reinforcement of language and literary Skills	Coordinator – Placement and Training Group	
I/2019-20/4	Attracting more core companies for the placement		16 core companies have recruited students from various branches

I/2019-20/5	Encouraging students' participation in 'Tech Summit' and 'Hackathons'	Coordinator – Industry and Innovation Group	Completed
I/2019-20/6	Incorporation of technology related courses for MBA students	Dean-MBA	Completed
I/2019-20/7	Encouraging students in open source projects	HODs – CSE and MCA	**CSE:** In-Progress **MCA:** NIL
I/2019-20/8	Add-on courses for students	Respective Departmental HODs	**CSE:** In-Progress **ECE:** One course was planned but could not be completed due to the pandemic **EEE:** In Progress **ME**: In Process **Civil:** Planned to Introduce two new courses from 2020 – 2021. 1. Introduction to Coastal Structures 2. Detailing of RCC Multistoried Structures as per SP 34 **MBA:** Completed **MCA:** Completed

3. Action Taken Report (ATR)

3.1 Action item 1 (Inclusion and discussion of GATE questions in every module of engineering course)

Name of the Department: Civil Engineering

Number of subjects where GATE questions are included: 14

Table 2: Subjects where GATE Questions are included (Civil)

SI. No.	Name of the Subject (Where GATE questions included)
1	Analysis of Indeterminate Structure
2	Design of RC Structures
3	Concrete Technology

4	Fluid Mechanics
5	Fluid Mechanics
6	Fluid Mechanics
7	Design of Prestressed Concrete Structures
8	Advanced Surveying
9	Building materials and construction
10	Ground Water Hydraulics
11	Applied Hydraulics
12	Water Resource Management
13	Water Supply and Treatment Engineering (17CV64)
14	Water Supply and Treatment Engineering (18CV46)

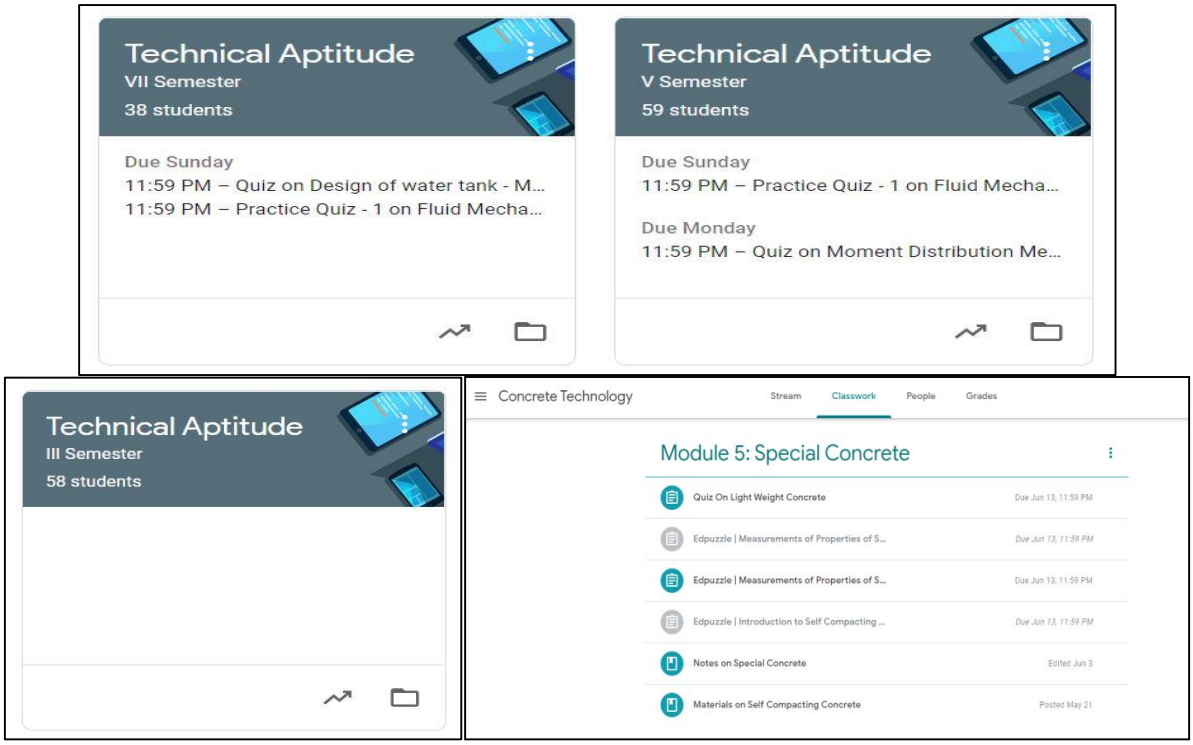

Figure 1: Sample Screenshots

Name of the Department: Electronics and Communication Engineering

Number of subjects where GATE questions are included: 2

Table 3: Subjects where GATE Questions are included (ECE)

SI. No.	**Name of the Subject (Where GATE questions included)**
1	18EC43-Control Systems
2	18EC45-Signals & Systems

Name of the Department: Computer Science and Engineering

Number of subjects where GATE questions are included: 9

Table 4: Subjects where GATE Questions are included (CSE)

SI. No.	Name of the Subject (Where GATE questions included)
1.	C Programming for Problem Solving
2.	Data Structures
3.	Analog and Digital Electronics
4.	Software Engineering
5.	Design and Analysis of Algorithms
6.	Database Management Systems
7.	Automata Theory and Computability
8.	Computer Graphics and Visualization
9.	Natural Language Processing

Name of the Department: Mechanical Engineering

Number of subjects where GATE questions are included: 20

Table 5: Subjects where GATE Questions are included (ME)

SI. No.	Name of the Subject (Where GATE questions included)
1.	Basic Thermodynamics
2.	Applied Thermodynamics
3.	Automobile Engineering
4.	Mechanics of Materials
5.	Mechanical Measurement and Metrology
6.	Material Science
7.	Metal Cutting and forming
8.	Metal Casting and Welding
9.	Non-Traditional Machining
10.	Kinematics of Machine
11.	Dynamics of Machine

12.	Computer Integrated Manufacturing
13.	Operation Research
14.	Management and Economics
15.	Control Engineering
16.	Heat Transfer
17.	Fluid Mechanics
18.	Turbo Machines
19.	Design of Machine Elements-I
20.	Design of Machine Elements-II

Name of the Department: Electrical and Electronics Engineering

Number of subjects where GATE questions are included: 6

Table 6: Subjects where GATE Questions are included (EEE)

SI. No.	**Name of the Subject (Where GATE questions included)**
1.	Microcontroller (17EE52)
2.	Transmission and Distribution (18EE43)
3.	Op-amp & Linear Integrated Circuits (18EE46)
4.	Power System Analysis (17EE62)
5.	Electric Circuit Analysis (18EE32)
6.	Electromagnetic Field Theory (18EE45)

3.2 Action item 2 (Revision of Attainment Targets (if required))

Table 7: Revision of attainment targets in various departments

SI. No.	**Name of the Department**	**Old Target**	**Revised Target**	**Rationale for the revision**	**Approved through DAB (Yes/No)**
1.	Civil	2	2	NIL	Yes
2.	Electronics and Communication	2	3	The target attainment level has been achieved for past two years	Yes
3.	Computer	2	2	NA	Yes

	Science				
4.	Mechanical	NA			
5.	Electrical and Electronics	2	2.25	Since all PO's set target was attained the stakeholders suggested for a raise in target level	Yes DAB 2019
6.	MBA	NIL			
7.	MCA	NIL			

3.3 Action item 3 (Reinforcement of language and literary Skills)

SI. No.	**Name of the Initiative/ Program/ Workshop/ Seminar**	**Target Audience (Students)**	**Date and Place**	**Resource Person/ Institute**	**No of Participants**
1	Aptitude Training	5th Sem (BE)	1st to 3rd Aug 2019	JV Global Services LLP	568
2		3rd, 1st Sem (BE & MCA)	5th - 7th Aug 2019		545
3		7th, 5th Sem (BE, MCA)	13th to 18th Aug 2019		592
4		4th Sem (BE)	5th to 7th Feb 2020		466
5		6th Sem (BE)	10th to 14th Feb 2020		545
6		2nd, 4th Sem (MBA & MCA)	10th & 11th Mar 2020		111

3.4 Action item 4 (Attracting more core companies for the placement)

Table 8: Details of students placed in core companies

SI. No.	Name the Core Company	Target Group/ Department	Date and Place of visit	No. Students Participated	No. of Students Selected	Names of the Selected Students	USN
1	IAC International Automotive Components, Baner	Mechanical	05th Jun 2019	This was visited to trying build rapport with the company for recruitment and internship purpose	None	None	None
2	Forbes Marshall	Mechanical	06th Jun 2019				
3	SEW Euro–Drive	Mechanical	06th Jun 2019				
4	John Deere	Mechanical	06th Jun 2019				
5	Dassault Systems	Mechanical	06th Jun 2019				
6	Super Castings (Bombay) Pvt. Ltd	Mechanical	08th June 2019				
7	HR Conclave @ NHRD, Bangalore on 6th December 2019.	CS, EC, EE, ME, CV, MBA, MCA	6th Dec 2019	This was to connect with HRs			

8	Manipal Group	EE & ME	17th Dec 2019	28	2	Yashvitha Suvarna, Sampath Kumar M	4SO16EC086, 4SO16ME092
9	Prakash Retail	MBA	17th Dec 2019	Visit to company	No Interview process	None	None
10	Karmic Design	EC & EE	17th Dec 2019	Visit to company			
11	Pnuematica Technologies	Mechanical	19th Dec 2019	Visit to company			
12	Berry Plastics	Mechanical	19th Dec 2019	Visit to company			
13	Rittal India	Mechanical	19th Dec 2019	Visit to company			
14	ITC Infotech	CS, EC, EE	19th Dec 2020	251		Anurag D Shetty, Chandrakanth L, Glen Ignatius Lobo, Gowda Karthik Balgopal, Ivor Dsouza, Jeevan, Keerti, Krishnakantha Upadhyaya, Kushi Salian,	4SO16CS017, 4S016CS029, 4SO16CS035, 4SO16CS036, 4SO16CS040, 4SO16CS043, 4SO16CS049, 4SO16CS050, 4SO16CS052,

						Anjetha Joseph Mathew, Ankitha M , Binitha Ann John, Garry Leroy Pinto, Jeevitha Lora Rodrigues, Keerthana Bhandarkar , Melannie Fernandes, Nagaraj Achar, S Anantha Kamath, Santan Edwin Fernandes, Movin Romel Dsouza, Akshay S Bhat, K Dhanush Nayak, Sukumara, Naveen S Pai, Nigel Dcosta,	4SO16EC008, 4SO16EC009, 4SO16EC017, 4SO16EC024, 4SO16EC030, 4SO16EC060, 4SO16EC043, 4SO16EC039, 4SO16EC034, 4SO16EC065, 4SO16EC088, 4SO16EE003, 4SO16EE014, 4SO16ME104, 4SO16CS070, 4SO16CS072, 4SO16CS111,

						Sthuthi Sadananda, Ivor Dsouza	4SO16CS040
15	Capgemini	CS, EC, EE	20th Dec 2020	85	6	A Nishmitha, Cheryl Lina Mathias, Elrica Neha Costa, Sameeksha D Kulal, Deeksha, Reshma	4SO16CS002, 4SO16CS030, 4SO16CS033, 4SO16EC062, 4SO16EC020, 4SO16EC056
16	VMWare	CS, EC	20th Dec 2020	119	8	Aishwarya Shetty, Alrida Monteiro, Karan Gupta, Melannie Fernandes, Garry Leroy Pinto, Shefali Johnas, Vaishnavi D.S, Sameeksha D Kulal, Anurag D	4SO16CS008, 4SO16EC004, 4SO16EC033, 4SO16EC039, 4SO16EC024, 4SO16CS103, 4SO16CS115, 4SO16EC062, 4SO16CS017,

						Shetty, Anwitha A, Cheryl Lina Mathias	4SO16CS019, 4SO16CS030

3.5 Action item 5 (Encouraging students' participation in 'Tech Summit' and 'Hackathons')

Participation in Tech Events/Presentations

SI No.	Name the Event/ Program	Date and Place	No. students Participated	Achievements if any
1	Startup Quest Biz Pitch Contest	9 Feb 2020 at World Konkani Centre	1	First Prize with a cash amount of Rs 10,000
2	"MANTHAN-2020": Business Plan Presentation	2-4 Feb 2020 at FKCCI, Bengaluru	6	Top 10 finish
3	Bengaluru Tech Summit	18-20 Nov 2020 at Bengaluru	1 faculty member	

Figure 2: Inauguration of Bengaluru Tech Summit

Figure 3: First Prize at Startup Quest Biz Pitch Contest

Figure 4: Inaugural of FKCCI Manthan

Participation in Hackathon's

SI. No.	Name the Event/ Program	Date and Place	No. students Participated	Achievements if any
1	Internal Institute Level Hackathon conducted as a part of Smart India Hackathon 2020	7 Feb 2020 at SJEC	55	-
2	IEEEXtreme 14.0	24 Oct 2020, conducted virtually	12	-
3	IEEEXtreme 13.0	19 Oct 2020, conducted virtually	24	-

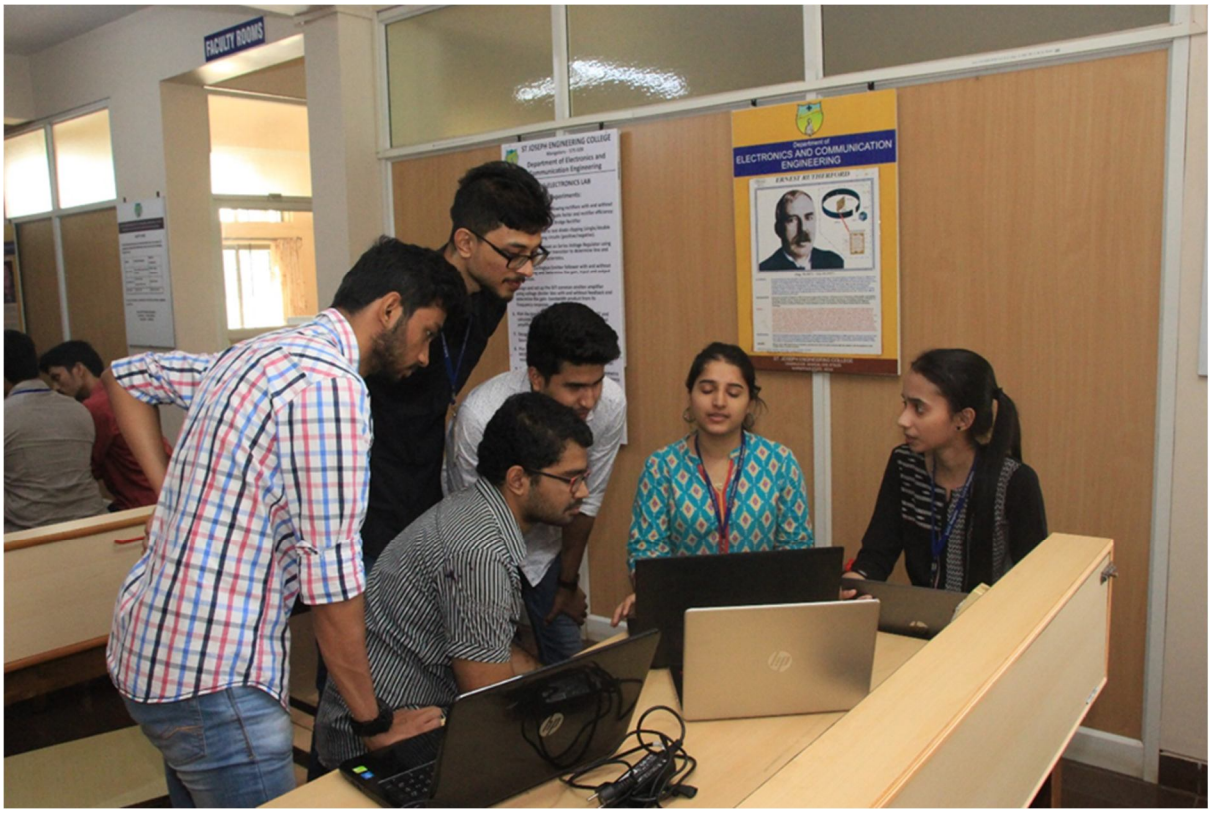

Figure 5: Students taking part in Internal Institute Level Hackathon conducted as a part of Smart India Hackathon 2020

Figure 6: Felicitation Ceremony of the Internal Institute Level Hackathon conducted as a part of Smart India Hackathon 2020

3.6 Action item 6 (Incorporation of technology related courses for MBA students)

Table 9: Details of Incorporation of technology related courses for MBA students

SI. No.	Name the Course	Duration of Course (from-to)	No. Students Participated
1.	IT for Business	6-3-2019 to 6-3-2020	59

3.7 Action item 7 (Encouraging students in open source projects)

Name of the Department: Computer Science and Engineering

Table 10: Details of Open source Projects (CSE)

SI. No.	Name the Project	Duration (From-To)	No. Students Participated	Names of Students Participated	USN
1.	Newspeaker: an app for the visually impaired	August 2019-May 2020	4	Anisha D'Souza	4SO16CS016
				Apsara	4SO16CS020
				Madhushree	4SO16CS054

				Mahima Murthy	4SO16CS055
2.	Conversion of handwritten mathematical expressions into latex	August 2019-May 2020	4	A.Navya	4SO16CS001
				Ashwini K	4SO16CS023
				Elrica Neha Costa	4SO16CS033
				Lyvia Greema Pereira	4SO16CS053
3.	Handwritten mathematical expression recognition system	August 2019-May 2020	4	Aishwarya Shetty	4SO16CS008
				Alston Galvin Lobo	4SO16CS014
				Glen Ignatius Lobo	4SO16CS035
				Kushi Salian	4SO16CS052
4.	Towards building phrase sentiment lexicon	August 2019-May 2020	4	A Nishmitha	4SO16CS002
				Gowda Karthik Balgopal	4SO16CS036
				Kausalya K Naik	4SO16CS048
				Mranali Gourish Gaonkar	4SO16CS067
5.	Fakeout: fake phone review monitoring	August 2019-May 2020	4	Archana K L	4SO16CS021
				H G Deeksha	4SO16CS038
				Joysil Saldanha	4SO16CS047
				Keerti	4SO16CS049
6.	Email marketing campaign using amazon ses	August 2019-May 2020	4	Aldrin Sean Pereira	4SO16CS011
				Alisha Saldanha	4SO16CS012
				Jaahnvi Hehar	4SO16CS041
				Merrill Fernandes	4SO16CS063
7.	Farm management system	August 2019-May 2020	4	Royston Fernandes	4SO15CS039
				Colin Fernandes	4SO15CS027
				Reshal DSouza	4SO15CS088
				Shrinivas Kini	4SO16CS419
8.	Plant disease detection and preventive measures - plant reviewer	August 2019-May 2020	4	Anurag D Shetty	4SO16CS017
				Krishnakantha Upadhyaya	4SO16CS050
				Nasil Saniah	4SO16CS069
				Naveen S Pai	4SO16CS070

9.	Software-defined cloud storage	August 2019-May 2020	4	Anwitha A	4SO16CS019
				Mary Tincy M J	4SO16CS059
				Melitta Sneha Lewis	4SO16CS061
				Merin Sara Abraham	4SO16CS062
10.	Stock management, profit and loss prediction	August 2019-May 2020	4	Adnaan	4SO16CS007
				Manoja Krishna Damale	4SO16CS057
				Maxim Vishal Monteiro	4SO16CS060
				Mohammed Hakeeb Javid	4SO16CS064
11.	VISCON: visual conversation-a speech to hand-sign conversion system	August 2019-May 2020	4	Guru Saurabh B	4SO16CS037
				Halit Maria D'Souza	4SO16CS039
				Joel Miranda	4SO16CS045
				Jovita Adline Cutinha	4SO16CS046
12.	PIXORT: an application for photo album clustering	August 2019-May 2020	4	Cheryl Lina Mathias	4SO16CS030
				Crystal Fay D'Souza	4SO16CS031
				Job Alexander	4SO16CS044
				Mariah Sneha Hudson	4SO16CS058
13.	Youtube data scraping	August 2019-May 2020	4	Aston DSouza	4SO16CS024
				Athul Pai	4SO16CS025
				Deepesh Bhat	4SO16CS032
				Jeevan	4SO16CS043
14.	Abnormality detection in musculoskeletal radiographs using ann	August 2019-May 2020	4	Aakif Rasool	4SO16CS003
				Adarsh S M	4SO16CS005
				Ivor D'Souza	4SO16CS040
				Jalaj Tripathi	4SO16CS042

15.	Pothole detection system	August 2019-May 2020	3	Akshatha A	4SO16CS010
				C Nausheen Nazeer	4SO16CS026
				Gladys Anil	4SO16CS034
16.	Automated attendance system	August 2019-May 2020	4	Abhishek Joe	4SO16CS004
				Chandrakanth L	4SO16CS029
				Manish Dhruva M	4SO16CS056
				Mohammed Sahil	4SO16CS065
17.	Warehouse Monitoring by Cloud Computing Server using IOT	August 2019-May 2020	4	Sugandh Kumar	4SO16CS112
				Niharika S Rao	4SO16CS073
				Prathap Kumar P	4SO16CS083
				Nishal G V	4SO16CS076
18.	Sign Language Detection System	August 2019-May 2020	4	Roswin Hadrian Fernandes	4SO16CS119
				Shameek M	4SO16CS119
				Tejas. N. Suvarna	4SO16CS119
				Winston Dsouza	4SO16CS119
19.	voice assistant	August 2019-May 2020	3	Satyam	4SO16CS100
				Shashank Reddy	4SO16CS102
				Rajani R	4SO16CS088
20.	Task scheduling in cloud computing	August 2019-May 2020	4	Chaithra SR	4SO17CS403
				Chaithra Shetty BS	4SO17CS404
				Deeshma Shetty BS	4SO17CS405
				Reddy Ashok	4SO15CS086
21.	Raasta-GeoInterest App	August 2019-May 2020	4	Nigel D'Costa	4SO16CS115
				Royston Antony Noronha	4SO16CS115
				Sthuthi Sadananda	4SO16CS115
				Vaishnavi D. S	4SO16CS115
22.	Multi-Factor authentication for cloud storage	August 2019-May 2020	3	Nikitha Florence Borges	4SO16CS074
				Riona Steffi Nazareth	4SO16CS092

				Oliva Sharol Correa	4SO16CS079
23.	Virtual Mouse using Hand Gestures	August 2019-May 2020	4	Nithin Raj B C	4SO16CS078
				Shravan Baliga K	4SO16CS107
				Shreema Simran	4SO16CS108
				Vashitha G Salian	4SO16CS117
24.	AlieExpress	August 2019-May 2020	4	Mridula	4SO16CS068
				Neha S Shetty	4SO16CS071
				Shefali Johnas	4SO16CS103
				Aliptha Pejavar	4SO16CS121
25.	Eye in the sky	August 2019-May 2020	4	Princy Paul D'silva	4SO16CS085
				S B Shubha	4SO16CS096
				Rachel Pinto	4SO16CS087
				Sushan Suresh Sapaliga	4SO16CS113
26.	Lexicon based sentimental analysis for Kannada language	August 2019-May 2020	4	Pallavi	4SO16CS081
				Pooja C H	4SO16CS082
				Sajini V B	4SO16CS098
				Vinuta Shridhar Moger	4SO16CS118
27.	Tulu Lipi Reader	August 2019-May 2020	4	Prajnha P J	4SO17CS412
				Aishwarya	4SO17CS400
				Nishali Krithika	4SO17CS409
				Sandhyashree	4SO17CS415
28.	Vegetable Marketing	August 2019-May 2020	4	Nilay Ambalal Kaneria	4SO16CS075
				Sagar S J	4SO16CS097
				Shelden Samuel Pereira	4SO16CS105
				Shriyankar Awasthi	4SO15CS105
29.	Discouraging cyberbullying	August 2019-May 2020	4	Shreenidhi Shetty	4SO16CS106
				Reena Rodrigues	4SO16CS091
				Pooja H.	4SO16CS120

				Puneetha K R.	4SO16CS086
30.	Digital Marketing with Social Media	August 2019-May 2020	4	Akshay	4SO17CS401
				Mahesh R N	4SO17CS407
				Sumith A	4SO17CS416
				Varun K	4SO17CS417
31.	Cloud and IoT Based Emergency Response System	August 2019-May 2020	4	Akshata Ashok Tandel	4SO16CS009
				Goutham Raj	4SO17CS406
				Moidu Kunhi	4SO17CS408
				Nithesh	4SO17CS410
32.	Agricultural crop detection-based machine learning	August 2019-May 2020	4	Asha S	4SO16CS403
				Harshitha N	4SO16CS409
				Poornima S Banavalikar	4SO17CS411
				Rasika N Surangekar	4SO17CS413
33.	Air and noise pollution detection system	August 2019-May 2020	4	Vanessa Ruth Dsouza	4SO16CS116
				Samantha Mary Rodrigues	4SO16CS099
				Nishchit	4SO16CS077
				Preetham Pai D	4SO16CS084

Name of the Department: Master of Computer Application

Table 11: Details of Open source Projects (MCA)

SI. No.	**Name the Project**	**Duration (From-To)**	**No. Students Participated**	**Names of Students Participated**	**USN**
1.	Mini Operating System using GNU Assembler and C++	Feb 2020 to July 2020	01	Dhyanaja Alva	4SO19MCA63

3.8 Action item 8 (Add-on courses for students)

Name of the Department: ECE

Table 12: Details of Add-om courses (ECE)

SI. No.	Name the Course	Duration of Course (from-to)	Target Audience (SEM/Year)	No. students Participated	Approved through DAB (Yes/No)
1.	Tessolve Semiconductor Training	120hrs (Only One session completed due to pandemic)	III-year ECE Students	10	Yes

Name of the Department: Computer Science and Engineering

Table 13: Details of Add-om courses (CSE)

SI. No.	Name the Course	Duration of Course (from-to)	Target Audience (SEM/Year)	No. students Participated	Approved through DAB (Yes/No)
2.	CISCO Networking	Aug 2019-Sept 2020 (Batch 1)	III & IV year	32 (Completed)	Yes
		Sept 2020-June 2021 (Batch 2)	III year	31 (In Progress)	Yes
3.	IOT	August-October 2019	II Year	126	Yes
4.	Spoken Tutorial - IIT-Bombay • Java • Python • LaTeX	Aug- Dec 2019 January - June, 2020	II Year III year IV year	84 109 106	Yes
5.	OOP Lab	Feb – May, 2020	II Year	132	Yes
6.	Python Application Programming Lab	Feb – May, 2020	II Year	120	Yes

Figure 7: Introductory session – CISCO Certification 9th and 10th August 2019

Name of the Department: Master of Computer Application

Table 14: Details of Add-om courses (MCA)

SI. No.	Name the Course	Duration of Course (from-to)	Target Audience (SEM/Year)	No. students Participated	Approved through DAB (Yes/No)
1.	Spoken Tutorial on Java Programming	Sep 2019 to Jan 2020	III Semester	56	Yes
2.	Aptitude Training by JV Global	Sep 2019 to Jan 2020	III Semester	56	Yes
3.	Spoken Tutorial on Python Programming	Sep 2019 to Jan 2020	V Semester	51	Yes

Name of the Department: Business Administration

Table 15: Details of Add-om courses (MBA)

SI. No.	Name the Course	Duration of Course (from-to)	Target Audience (SEM/Year)	No. students Participated	Approved through DAB (Yes/No)
1.	IT for Business	6-3-2019 to 6-3-2020	I, II, III & IV	59	Yes

Name of the Department: Electrical and Electronics Engineering

Table 16: Details of Add-om courses (MBA)

SI. No.	Name the Course	Duration of Course (from-to)	Target Audience (SEM/Year)	No. students Participated	Approved through DAB (Yes/No)
1.	Battery Management	February 2020 to April 2020	6th Semester EEE Students	42	Yes DAB 2020

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 17: 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	1.72	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	2.05	High	
PO3	Design/ Development	2	2.34	High	Open ended experiments or real-life

	of Solution				based problems need to be given.
PO4	Conduct Investigations	2	3	High	
PO5	Use Modern Tools	2	2.46	High	Use of Virtual Lab, Simulation, Modelling and Analysis tools like CATIA, ANSYS, CFD etc. need to be continued.
PO6	Engineer and Society	2	2.60	High	Encourage students to develop more projects related to industry and solve contemporary issues in society related to environment and sustainability.
PO7	Environment and Sustainability	2	2.51	High	
PO8	Professional Ethics	2	2.79	High	Use of rubrics to assess late submission and study of case studies related to the effect of wrong ethical practices.
PO9	Individual and Teamwork	2	2.57	High	Encourage students to do mini projects, seminars, assignments in a group.
PO10	Communicate Effectively	2	2.69	High	Assess group activities using technical reports and presentations to improve communications both technical and personal.
PO11	Project Management and Finance	2	2.58	High	Use of time management and cost estimation tools in

					project work need to be continued.
PO12	Lifelong Learning	2	2.26	High	TLP practices like Flip classroom and promoting self-learning using NPTEL video lectures will help in achieving this PO.
PSO1	Qualify in competitive Exam	2	2.36	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	2.24	Moderately	Encourage reading journal paper and promote research-based projects.

Table 18: 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	2.17	High	Use of problem-based learning (PBL) in solving real life-based problems need to be given.
PO2	Solve Problems	2	2.09	High	
PO3	Design/ Development of Solution	2	2.65	High	
PO4	Conduct Investigations	2	3	High	
PO5	Use Modern Tools	2	2.87	High	Simulation or virtual lab tools for first year subjects need to be identified and

					practiced.
PO6	Engineer and Society	2	2.28	High	Conduct seminar or report writing activities on topics like on impact on society and sustainability issues related to subject.
PO7	Environment and Sustainability	2	2.28	High	
PO8	Professional Ethics	2	2.31	High	Rubrics to assess late submission and study of case studies related to the effect of wrong ethical practices to be implemented.
PO9	Individual and Teamwork	2	2.18	High	Encourage students to do mini projects, seminars, assignments in a group and communicate it using presentation and report writing.
PO10	Communicate Effectively	2	1.69	Moderately	
PO11	Project Management and Finance	2	3	High	Project done under Tinkering lab can be assessed to verify attainment of this PO.
PO12	Lifelong Learning	2	2.10	High	TLP practices like Flip classroom and promoting self-learning using NPTEL video lectures will help in achieving this PO.

4.2 BE in Electrical and Electronics Engineering

Table 19: 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	2.25	2.66	High	Create Simulation Models / working models
PO2	Solve Problems	2.25	2.48	High	

PO3	Design/ Development of Solution	2.25	2.58	High	Form Student groups to work on creative and innovative projects
PO4	Conduct Investigations	2.25	2.64	High	
PO5	Use Modern Tools	2.25	2.31	Moderate	Industry relevant short-term training Programme
PO6	Engineer and Society	2.25	2.63	High	Ideation and problem solving on societal needs with sustainability
PO7	Environment and Sustainability	2.25	2.59	High	
PO8	Professional Ethics	2.25	2.83	High	Conducting workshops and seminars on team building, soft skill and professional etiquettes.
PO9	Individual and Teamwork	2.25	2.93	High	
PO10	Communicate Effectively	2.25	2.47	High	
PO11	Project Management and Finance	2.25	2.38	Moderate	Organizing seminars on innovation and incubation
PO12	Lifelong Learning	2.25	2.63	High	Promote student's participation in Competitive exams, MOOCs etc
PSO1	Hardware and Software tools	2.25	2.15	Moderate	Industry relevant short-term training Programme
PSO2	Entrepreneurship and Financial Management	2.25	2.48	High	Organizing seminars on innovation and incubation

Table 20: Attainment Gap Analysis BE-Electrical and Electronics Engineering (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2.25	2.94	High	Create Simulation Models / working models
PO2	Solve Problems	2.25	2.78	High	
PO3	Design/ Development of Solution	2.25	2.44	High	Form Student groups to work on creative and innovative projects
PO4	Conduct Investigations	2.25	3.00	High	
PO5	Use Modern Tools	2.25	1.67	Low	Industry relevant short-term training Programme
PO6	Engineer and Society	2.25	3.00	High	Ideation and problem solving on societal needs with sustainability
PO7	Environment and Sustainability	2.25	2.67	High	
PO8	Professional Ethics	2.25	3.00	High	Conducting workshops and seminars on team building, soft skill and professional etiquettes.
PO9	Individual and Teamwork	2.25	2.89	High	
PO10	Communicate Effectively	2.25	3.00	High	
PO11	Project Management and Finance	2.25	1.43	Low	Organizing seminars on innovation and incubation
PO12	Lifelong Learning	2.25	2.87	High	Promote student's participation in Competitive exams, MOOCs etc

4.3 BE in Electronics and Communication Engineering

Table 21: Attainment Gap Analysis of BE-Electronics and Communication Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.53	High	Proposed to increase the target attainment level to 3
PO2	Solve Problems	2	2.23	Moderate	
PO3	Design/ Development of Solution	2	2.36	Moderate	
PO4	Conduct Investigations	2	2.84	High	
PO5	Use Modern Tools	2	2.71	High	
PO6	Engineer and Society	2	2.63	High	
PO7	Environment and Sustainability	2	2.71	High	
PO8	Professional Ethics	2	2.94	High	
PO9	Individual and Teamwork	2	2.88	High	
PO10	Communicate Effectively	2	2.81	High	
PO11	Project Management and Finance	2	3.00	High	
PO12	Lifelong Learning	2	2.56	High	
PSO1	Competitive Exam	2	2.09	Moderate	
PSO2	Industry Interaction	2	2.96	High	

Table 22: Attainment Gap Analysis BE-Electronics and Communication Engineering (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.85	High	Proposed to increase the target attainment level to 3
PO2	Solve Problems	2	2.91	High	
PO3	Design/ Development of Solution	2	3.00	High	
PO4	Conduct Investigations	2	2.89	High	
PO5	Use Modern Tools	2	2.74	High	
PO6	Engineer and Society	2	2.52	High	
PO7	Environment and Sustainability	2	3.00	High	
PO8	Professional Ethics	2	2.52	High	
PO9	Individual and Teamwork	2	2.97	High	
PO10	Communicate Effectively	2	3.00	High	
PO11	Project Management and Finance	2	3.00	High	
PO12	Lifelong Learning	2	3.00	High	

4.4 BE in Civil Engineering

Table 23: Attainment Gap Analysis of BE-Civil Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.19	High	Conducting Quiz, One Minute Paper Assignment on Civil Engineering Application problems
PO2	Solve Problems	2	2.30	High	
PO3	Design/ Development of Solution	2	2.27	High	Assignment on Complex Engineering Problems
PO4	Conduct Investigations	2	2.79	High	Conduct experiments beyond the syllabus in Laboratories and Carrying out experiments using Virtual lab
PO5	Use Modern Tools	2	2.66	High	Use of Software's to teach difficult subjects. Spoken tutorial organised by IIT Bombay related to Q-CAD. Conduct workshops, hands on sessions on modern tools
PO6	Engineer and Society	2	2.32	High	Encouraging students to give awareness program about environmental impact and also to develop projects to solve issues in society related to Environment and Sustainability
PO7	Environment and Sustainability	2	2.66	High	
PO8	Professional Ethics	2	2.07	High	Technical Talks on Professional ethics and Law for Civil Engineers. Use of Rubrics to assess late submission of Assignments. Use of Turnitin to check

					plagiarism in seminars and Project reports
PO9	Individual and Teamwork	2	2.60	High	Involvement of students by conducting the activities through SHILPA.
PO10	Communicate Effectively	2	2.42	High	Use of Collaborative learning and Group activity to promote Teamwork. Encourage students to present seminars to improve communication
PO11	Project Management and Finance	2	2.28	High	Technical Talks on project management and finance
PO12	Lifelong Learning	2	2.57	High	Arranging talks in various domains of Civil Engineering. Motivating the students to Present papers in Conferences / Journals. Motivating the students to take up certification courses to enhance self-learning.
PSO1	Real time Field Challenges	2	2.52	High	Industrial visits to Construction Sites
PSO2	Competitive exams	2	2.23	High	Conduct technical aptitude training on competitive exams

Table 24: Attainment Gap Analysis BE-Civil Engineering (First Year)

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.35	High	Conducting Quiz, One Minute Paper Assignment on

PO2	Solve Problems	2	2.60	High	Real Life based Engineering Application problems
PO3	Design/ Development of Solution	2	2.14	High	
PO4	Conduct Investigations	2	3.00	High	Conduct experiments beyond the syllabus in Laboratories.
PO5	Use Modern Tools	2	2.27	High	Simulation or virtual lab tools for first year subjects need to be identified and practiced.
PO6	Engineer and Society	2	2.94	High	Conduct seminar or report writing activities on topics like on impact on society and sustainability issues related to subject.
PO7	Environment and Sustainability	2	3.00	High	
PO8	Professional Ethics	2	2.94	High	Rubrics to assess late submission and study of case studies related to the effect of wrong ethical practices to be implemented.
PO9	Individual and Teamwork	2	2.98	High	Encourage students to participate in the Intercollegiate competitions.
PO10	Communicate Effectively	2	2.97	High	Encourage students to do seminars, assignments in a group and communicate it using presentation and report writing
PO11	Project Management and Finance	2	2.17	High	Project done under Tinkering lab can be assessed to verify attainment of this PO.
PO12	Lifelong Learning	2	2.38	High	TLP practices like Flip classroom and promoting

					self-learning using NPTEL video lectures will help in achieving this PO.

4.5 BE in Computer Science and Engineering

Table 25: Attainment Gap Analysis of BE-Computer Science and Engineering

PO/PSO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	2.29	High	Conduct quiz, seminars, and discussions on basic concepts.
PO2	Solve Problems	2	2.44	High	Perform beyond the syllabus experiments in the lab.
PO3	Design/ Development of Solution	2	2.42	High	Mini projects for a subject/ group of subjects
PO4	Conduct Investigations	2	2.70	High	Activity to identify real life practical problems and propose a solution.
PO5	Use Modern Tools	2	2.22	High	Conduct workshops, hands on sessions on modern tools and technologies.
PO6	Engineer and Society	2	2.25	High	Activity to identify real life practical problems and propose a solution.
PO7	Environment and Sustainability	2	2.32	High	Encourage students to develop projects to solve contemporary issues in the society.
PO8	Professional Ethics	2	2.68	High	Incorporate Assessment Rubrics to measure originality of the work.

PO9	Individual and Teamwork	2	2.37	High	Encourage students to do mini projects, seminars, assignments in a group.
PO10	Communicate Effectively	2	2.28	High	Encourage students to participate in the Intercollegiate competitions, publishing technical articles.
PO11	Project Management and Finance	2	2.37	High	Train the students to manage an engineering activity within time and budget constraint.
PO12	Lifelong Learning	2	2.16	High	Arrange talks in various domains and encourage the students to take up MOOCs
PSO1	Entrepreneurship and Freelancing	2	2.12	High	Conduct talks by Entrepreneurs.
PSO2	Competitive Exams and Higher Studies	2	2.16	High	Maintain a technical questionnaire database to train students for placement and competitive exams.

Table 26: Attainment Gap Analysis BE- Computer Science Engineering (First Year)

PO/PSO No.	**Keywords**	**Target Level**	**Attainment Level**	**Observations**	**Actions to be taken**
PO1	Apply Knowledge	2	2.95	High	Conduct quiz, seminars on basic concepts
PO2	Solve Problems	2	2.95	High	Perform beyond the syllabus experiments in the lab.
PO3	Design/ Development of Solution	2	2.28	High	

PO4	Conduct Investigations	2	3.00	High	Conduct virtual labs, Tinkering and Exploration Lab activities
PO5	Use Modern Tools	2	2.34	High	
PO6	Engineer and Society	2	0.30	Low	Conduct Technical talks and Mini project exhibition related to societal problems.
PO7	Environment and Sustainability	2	3.00	High	
PO8	Professional Ethics	2	0.30	Low	Induction classes, V-ACT classes
PO9	Individual and Teamwork	2	2.92	High	Encourage students to do seminars, assignments in a group
PO10	Communicate Effectively	2	2.95	High	Conduct spoken tutorials and V-ACT classes.
PO11	Project Management and Finance	2	1.33	Moderate	Induction classes, V-ACT classes
PO12	Lifelong Learning	2	2.97	High	Arrange talks in various domains

4.6 Master of Business Administration

Table 27: Attainment Gap Analysis of Master of Business Administration

PO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Apply Knowledge	2	1.88	Moderate	Practical cases in all the courses
PO2	Analytical & critical thinking	2	1.90	Moderate	• Exposure to financial apps to induce self-learning • Sessions on Aptitude • Certification courses

PO3	Value based Leadership ability	2	1.86	Moderate	• Industry connect and Socially relevant student activities • Industry visits and interaction with the core business managers
PO4	Analyze global, & ethical aspects of business	2	2.00	High	• Live projects • Guest lectures on contemporary topics, start-ups, entrepreneurship, technology enabled business • Long cases analysis • Alumni interactions
PO5	Team environment	2	1.94	Moderate	• Public speaking sessions
PO6	Soft skills	2	1.84	Moderate	• Rendition 2019 • Add-on-course soft skills, personality development & Aptitude (Part of V-act Programme)

4.7 Master of Computer Application

Table 28: Attainment Gap Analysis of Master of Computer Applications

PO No.	Keywords	Target Level	Attainment Level	Observations	Actions to be taken
PO1	Computational Knowledge	2	2.45	High	Encourage students to work on open source platforms like GitHub.

PO2	Problem Analysis	2	2.01	High	Activity can be given to analyse real world problem
PO3	Design/Development of Solutions	2	2.42	High	Impetus to be given for design during micro project and its refinement
PO4	Conduct Investigations of Complex Problems	2	1.38	Moderate	Expose students to webinars that covers complete solution for a given problem
PO5	Modern Tools Usage	2	2.65	High	Specific tools can be mentioned while giving assignments or micro project
PO6	Professional Ethics	2	0.92	Low	Industrial visits/ Talks on Ethical issues /Activities including case study analysis can be arranged.
PO7	Life-Long Learning	2	1.35	Moderate	Online courses are to be made compulsory and progress to be assessed at regular intervals
PO8	Project Management and Finance	2	1.12	Moderate	Promote multi-disciplinary projects with special focus on cost estimation.
PO9	Communication Efficacy	2	1.10	Moderate	Rigorous seminars and project presentations.
PO10	Societal and Environmental Concern	2	2.05	High	Outreach programs can be arranged and motivate students to find solutions for the existing environmental/societal problems
PO11	Individual and teamwork	2	1.91	Moderate	Seminar/project/assignments/participation in technical events
PO1	Innovation and	2	1.24	Moderate	Encourage students to take part in

2	Entrepreneurship				IDEATION events/build innovative Projects there by inculcating strong Design Thinking approach.
PO13	Research Environment	2	1.05	Moderate	Encourage students to take up research-oriented projects and publish/ present papers