

**V. V. SANGHA'S
RAO BAHADUR Y MAHABALESHWARAPPA ENGINEERING
COLLEGE, BALLARI**

**SELF ASSESSMENT REPORT (SAR)
UNDERGRADUATE ENGINEERING PROGRAM (TIER II)
FIRST TIME ACCREDITATION**

**SUBMITTED
TO
NATIONAL BOARD OF ACCREDITATION
(NBA)**

**SUBMITTED
BY
DEPARTMENT OF MECHANICAL ENGINEERING
RAO BAHADUR Y MAHABALESHWARAPPA
ENGINEERING COLLEGE
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PART – A

PART A: INSTITUTIONAL INFORMATION

1. Name and Address of the Institution : Rao Bahadur Y. Mahabaleswarappa
Engineering College
(Formerly Vijaynagar Engineering
College), Cantonment, Ballari -
583104.

2. Name and Address of the University : Visvesvaraya Technological University,
Jnana Sangama, Belagavi - 590018.

3. Year of Establishment of Institution : 1980

4. Type of Institution

University

Deemed University Government

Aided

Autonomous

Affiliated

5. Ownership status

Central Government

State Government

Government Aided

Self Financing

Trust

Society

Section 25 Company

Any Other (Please Specify)

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6. Other Academic Institutions of the Trust/Society/Company etc., if any:

Sl. No.	Name of the Institution(s)	Year of Establishment	Programs of Study	Location
1	Veerasaiva College	1945	Non-Technical	Veerasaiva College Campus, Airport Road, Cantonment, Ballari
2	Smt. Allum Sumangamma Memorial Women's College	1969	Non-Technical	Sri Togari Veerappanavara Datti Avarana, Allum Sumangamma Road, Gandhinagar, Ballari
3	Vijayanagar College	1964	Non-Technical	Hosapete, Ballari District, Karnataka
4	Kottureswara College	1967	Non-Technical	Koturu, Ballari District, Karnataka
5	Gangavathi Bhagyamma Rural College	1970	Non-Technical	Huvinahadagali, Ballari District, Karnataka
6	Ambli Dodda Bharamappa First Grade College	1972	Non-Technical	Harapanahalli, Ballari District, Karnataka
<u>PROFESSIONAL COLLEGES</u>				
7	Rao Bahadur Y. Mahabaleswarappa Engineering College	1980	Technical	Veerasaiva College Campus, Airport Road, Cantonment, Ballari
8	Proudhadevaraya Institute of Technology	1997	Technical	Sha Bhavarlal Babulal Nahar Campus, T.B. Dam, Hosapete
9	Hanagal Kumareswara Polytechnic	1997	Technical	Veerasaiva College Campus, Airport Road, Cantonment, Ballari
10	Allum Karibasappa Institute of Management (MBA)	1998	Non-Technical	Veerasaiva College Campus, Airport Road, Cantonment, Ballari
11	Vunki Sanna Rudrappa Law College	1975	Non-Technical	Kappagal Road, Y. Nagesh Shastry Nagar, Ballari
12	Togari	1985	Non-Technical	Kappagal Road, Y. Nagesh

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	Veeramallappa Memorial College of Pharmacy			Shastry Nagar, Ballari.
13	Kottura Swamy College of Education	1963	Non-Technical	Ballari, Karnataka
14	Sha Babulal Bhavarlal Nahar College of Education	2004	Non-Technical	Sha Bhavarlal Babulal Nahar Campus, T.B. Dam, Hosapete
15	Kottur swamy P.G. studies in education	1993	Non-Technical	Kappagal Road, Y. Nagesh Shastry Nagar, Ballari
<u>PU /HIGH SCHOOL</u>				
16	Setra Gurushanthappa Pre-University College	1942	Non-Technical	Kappagal Road, Y. Nagesh Shastry Nagar, Ballari
17	Kittur Rani Chennamma Girl's High School	1993	Non-Technical	Kappagal Road, Y. Nagesh Shastry Nagar, Ballari
18	Haraginadoni Basavanagowda Pre-University College	1963	Non-Technical	Kuditini, Ballari (T) & (Dt)
19	Vijayanagar Comp. Pre-University College	1963	Non- Technical	T. B. P. Munirabad, Koppal (Dt)
20	Kinnalu Poramambe Grurusiddappa High School	1968	Non- Technical	Hagaribommanahalli (T) Tambrahalli Ballari (Dt)
21	Akki Basamma Thotappa	1997	Non-Technical	Hagaribommanahalli (T) Tambrahalli Ballari (Dt)
22	Sha Seshaji Hastimal Jain	1999	Non-Technical	Harapanahalli, Davanagere (Dt)
23	V.V.Sangha High School	2006	Non- Technical	Harapanahalli, Davanagere (Dt)
24	Vivekananda public School	1993	Non-Technical	Devalapura, ballari Road, Siruguppa, Ballari (Dt)
25	Deshanuru Sadashivareddy High School	1999	Non- Technical	Deshanuru (P), Siruguppa (T) Ballari (Dt)
26	V. V. Sangha's Independent P U College, Hospet	2014	Non- Technical	College Road, Hospet

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27	V. V. Sangha Independent P. U. College	2010	Non- Technical	Veerasaiva College Campus, Airport Road, Cantonment, Ballari
<u>PRIMARY</u>				
28	Heerada Sugamma Higher Primary School	1924	Non- Technical	H. S. M. H. P. School Opp. K.S.R.T.C. Bus Stand, Ballari.
29	Silver Jubilee memorial Higher Primary School	1954	Non-Technical	Jumma Masidi Street, Ballari.
30	Vunki Marisiddamma Primary School	1993	Non-Technical	1st Main, Basaveshwara Nagar, Ballari
31	Gandharva Sangeeta Vidyalaya	2006	Non- Technical	Kappagal Road, Y. Nagesh Shastry Nagar, Ballari
<u>PRE PRIMARY</u>				
32	V. V. Sangha's Kindergarten School, ballari	2014	Non-Technical	Veerasaiva College Campus, Airport Road, Cantonment, Ballari
33	V. V. Sangha's Kindergarten School, Hagaribommanahalli	2014	Non-Technical	Hagaribommanahalli (P) Ballari (Dt)
34	Vijayanagara Kindergarten School, Munirabad	2014	Non-Technical	Vijayanagar College Campus, TBP, Munirabad, Koppal (Dt)

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7. Details of all the programs being offered by the institution under consideration:

Sl. No.	Program Name	Year of Start	Intake	Increase in intake, if any	Year of increase	AICTE Approval	Accreditation Status*
01	Civil Engineering	1980	40	50 40 60 120	1994 2002 2009 2011	F. 2-15/B-III/RC-MB/93/26885 dated 31/03/1994 F.No. 770-53-251(E)RC/94 dated 05/06/2002 F. No. 770-53-251(E)RC/94 dated 26/06/2009 F. No. SW/1-405698242/2011/EOA dated 01/09/2011	15/02/05 to 14/02/08 &19/07/08 to 18/07/11
02	Mechanical Engineering	1980	40	90 120	1994 2009	F. 2-15/B-III/RC-MB/93/26885 dated 31/03/1994 F. No. 770-53-251(E)RC/94 dated 26/06/2009	15/02/05 to 14/02/08 &19/07/08 to 18/07/11
03	Electrical & Electronics Engineering	1983	40	60 120	2005 2013	F. No. 770-53-251(E)RC/94 dated 19/09/2005 F.No. SW/1-1337581065/2013/EOA dated 19/03/13	15/02/05 to 14/02/08 &19/07/08 to 18/07/11
04	Electronics & Communication Engineering	1983	40	80 90 120	1994 1998 2005	F. 2-15/B-III/RC-MB/93/26885 dated 31/03/1994 F. No. 770-53-251(E)RC/98 dated 30/07/1998 F. No. 770-53-251(E)RC/94 dated 19/09/2005	15/02/05 to 14/02/08 &19/07/08 to 18/07/11
05	Industrial & Production Engineering	1986	30	50 40	1994 2002	F. 2-15/B-III/RC-MB/93/26885 dated 31/03/1994 F.No. 770-53-251(E)RC/94 dated 05/06/2002	15/02/05 to 14/02/08 &19/07/08 to 18/07/11
06	Computer Science & Engineering	1987	30	60 90 120 180	1994 2000 2005 2018	F. 2-15/B-III/RC-MB/93/26885 dated 31/03/1994 F. No. 770-53-251(E)RC/94 dated 25/10/2000 F. No. 770-53-251(E)RC/94 dated 19/09/2005 F. No. South-west/1-3516119678/2018	30/06/2020 to 30/06/2023 F.No 25-101-2010 NBA
07	CSE (Artificial Intelligence & Machine Engineering)	2021	60	60	2021	F. No. South-west/1-9322850902/2021	Not Applied
08	Information Science & Engineering	2000	40	60	2001	F. No. 770-53-251(E)RC/94 dated 15/06/2001	Not Applied
10	Master of Business Administration	2006	60	--	--	F. No. 770-53-250(E)RC/94 dated 29/08/2006	Not Applied
11	M. Tech. in Computer Science & Engineering	2011	18	--	--	F. No. SW/1-405698242/2011EOA dated 01/09/11	Not Applied
12	M. Tech. in Mechanical Engineering (Production Management)	2012	18	--	---	F. No. SW/1-698260301/2012EOA dated 10/05/12	Not Applied
12	M. Tech. in Mechanical Engineering (Thermal Power Engineering)	2012	18	--	--	F. No. SW/1-698260301/2012EOA dated 10/05/12	Not Applied
13	M. Tech. in Civil Engineering (Structural Engineering)	2013	18	--	--	F. No. SW/1-1337581065/2013EOA dated 19/03/13	Not Applied
14	M. Tech. in Electronics & Communication Engineering (Digital Communication & Networking)	2013	18	--	--	F. No. SW/1-1337581065/2013EOA dated 19/03/13	Not Applied

8. Programs to be considered for Accreditation vide this application:

Sl. No.	Program Name
1.	Civil Engineering
2.	Mechanical Engineering
3	Electronics and Communication Engineering

9. Total number of employees in the institution:

A: Regular* Employees (Faculty and Staff):

Items		CAY 2020-21		CAYm1 2019-20		CAYm2 2018-19	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	113	124	114	122	139	145
	F	42	49	42	44	34	39
Faculty in Maths, Science & Humanities	M	12	12	12	12	11	11
	F	6	6	6	6	7	7
Non-teaching staff	M	76	83	75	77	145	149
	F	4	4	4	4	4	5

B: Contractual Staff Employees (Faculty and Staff): (Not covered in Table A):

Items		CAY 2020-2021		CAYm1 2019-2020		CAYm2 2018-2019	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	2	2	2	2	1	1
	F	0	0	0	0	0	0
Faculty in Maths, Science & Humanities	M	0	0	0	0	0	0
	F	0	0	0	0	0	0
Non-teaching staff	M	22	12	16	16	8	8
	F	15	6	5	5	7	7

10. Total number of Engineering Students: UG

Item	CAY 2020-2021	CAYm1 2019-2020	CAYm2 2018-2019
Total No. of Boys	1476	1401	1385
Total No. of Girls	905	924	926

Total No. of Students	2381	2325	2311
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11. Vision of the Institution

“To build Professionally Excellent, Knowledgeable, Globally Competitive, Socially Responsible Engineers and Entrepreneurs”

12. Mission of the Institution:

M1	To Impart Quality Education in Engineering and Management.
M2	To Establish a Continuous Industry Institute Interaction, Participation, Collaboration to Contribute Skilled Engineers.
M3	To Build Human Values, Social Values, Entrepreneur Skills and Professional Ethics Among the Technocrats
M4	To Focus on Innovation and Development of Technologies by Engaging in Cutting Edge Research Areas.

13. Contact Information of the Head of the Institution and NBA coordinator, if designated:

I. Name : **Dr.T. Hanumantha Reddy**
Designation : **Principal**
Mobile No. : **9448043949, 9448844232**
Email ID : **principalrymec@gmail.com**

II. NBA coordinator, if designated:

Name : **Dr. S. G. Anuradha**
Designation : **Professor**
Mobile No. : **9449975860**
Email ID : **anuradhasuresh13@rymec.in**

PART B

CRITERION 1

CRITERION 1	VISION,MISSION AND PROGRAMEDUCATIONAL OBJECTIVES	60
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1.1	State the Vision and Mission of the Department and Institute	05
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Vision of the Institution

“To produce professionally excellent, knowledgeable, globally competitive and socially responsible Engineers and Entrepreneurs”.

Mission of the Institution

M1	To provide quality education in Engineering and Management.
M2	To establish a continuous industry - institute interaction, participation and collaboration to contribute skilled Engineers.
M3	To develop human values, social values, entrepreneurship skills and professional ethics among the technocrats.
M4	To focus on innovation and development of technologies by engaging in cutting edge research areas.

Vision of the Department

“To Produce Professionally Excellent, Knowledgeable, Globally Competitive, Socially Responsible Mechanical Engineers and Entrepreneurs”.

Mission of the Department

MD1	To provide quality education in mechanical Engineering and Management.
MD2	To establish a continuous industry institute interaction, participation and collaboration to contribute skilled Mechanical Engineers.
MD3	To impart human, socio-ethical values and entrepreneurship skills among Mechanical Engineers.
MD4	To Promote Research and Development (R & D) and Innovative Technologies in the Emerging Areas of Mechanical Engineering.

1.2	State the Program Educational Objectives (PEO's)	05
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PEO1	Graduates of Mechanical Engineering shall Develop Strong Academic Foundation for Successful Professional Career.
PEO2	Graduates of Mechanical Engineering Acquires skills to excel in the area of Mechanical Engineering both in Industries and Academics.
PEO3	Graduates of Mechanical Engineering Possess awareness towards Higher Education, R & D and Socio-Ethical values.

1.3	Indicate where the Vision, Mission and PEOs are Published and Disseminated among Stakeholders	10
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The Vision, Mission and PEO's are published at:

- ❖ Department website <http://www.rymec.in/me.aspx>
- ❖ Institute website www.rymec.in
- ❖ On the cover pages of IA Books, Lab Journals and Assignment Books.
- ❖ Department Newsletter.
- ❖ Department HOD Chamber & Staff rooms.
- ❖ Department Laboratories.
- ❖ Department Notice Boards.
- ❖ Department Class rooms.
- ❖ Department seminar hall.
- ❖ Display Boards.

The Vision, Mission and PEO's are disseminated at:

- Workshops.
- Seminars.
- Parents meeting.
- Alumni Association meeting and Alumni meets.
- Faculty Development Programme (FDP)
- Placement & Training programme for the students.

1.4	State the process for defining the Vision and Mission of the Department, and PEOs of the program	25
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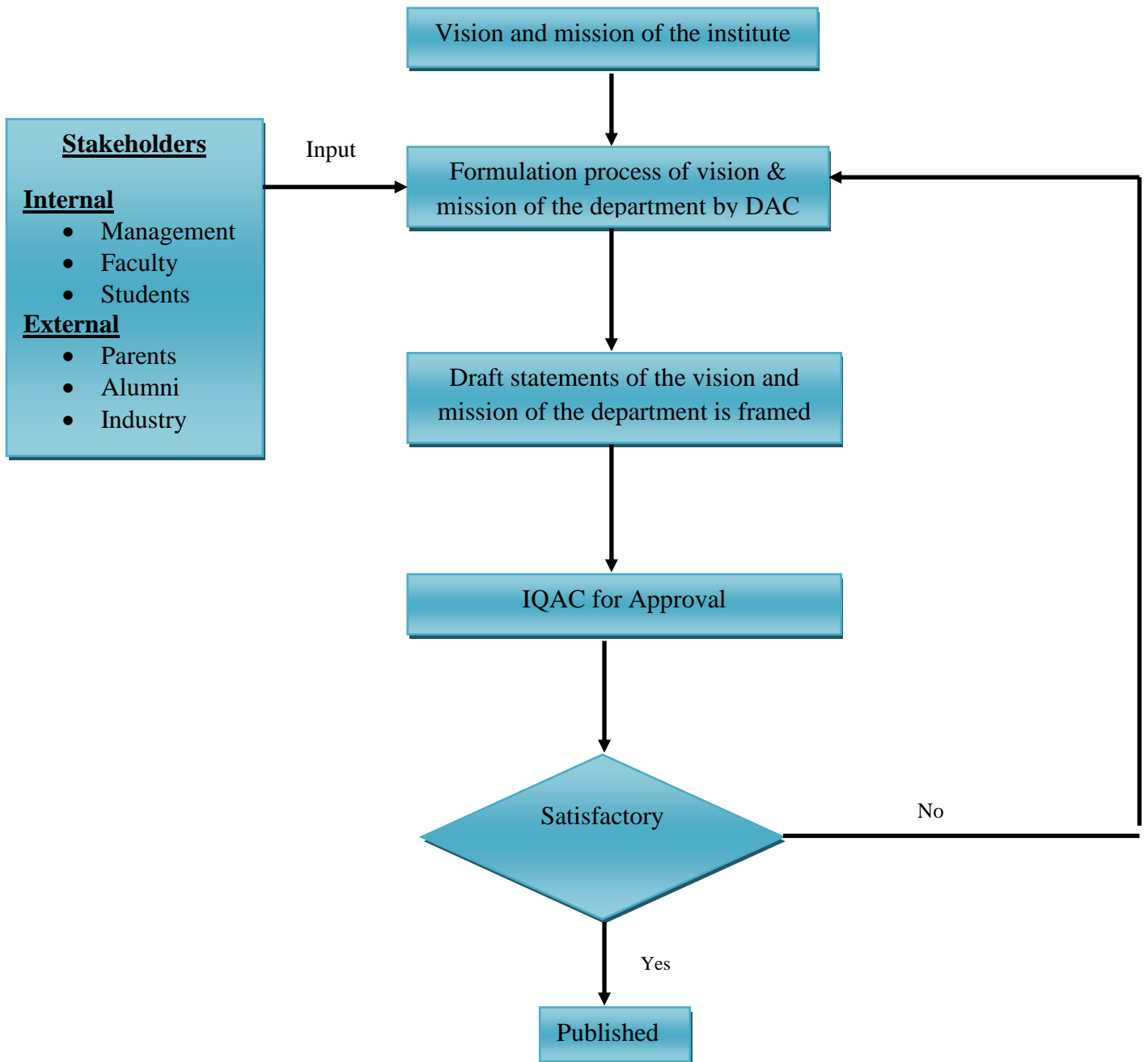


Fig. 1.1: Process for Defining the Vision and Mission of the Department

Step 1	Vision and Mission of the institute are taken as basis.
Step 2	With involvement of stakeholders, DAC defines the vision & mission statements which are in line with vision and mission of the institute.
Step 3	Draft copy of the vision & mission is framed and forwarded to IQAC for approval.
Step 4	If approved Vision & mission of the department is published and disseminated. Else, DAC is redirected to reformulate.

The process was adopted for articulating Department Vision & mission statements are stated as follows:

Vision:

1. Where we would like to go? Or what would we like the program to become?
2. In what directions would we like the program to move?
3. What program outcomes would we like to see in a specific time frame?

Mission:

1. Where we are? - Clearly stating the purpose of the program.
2. What the program is?
3. What it does?
4. For whom it does?
5. How the program will contribute to the education and careers of students passing out?
6. How the teaching and research efforts of the program will enhance student learning?

State the process for defining the PEOs of the Programme.

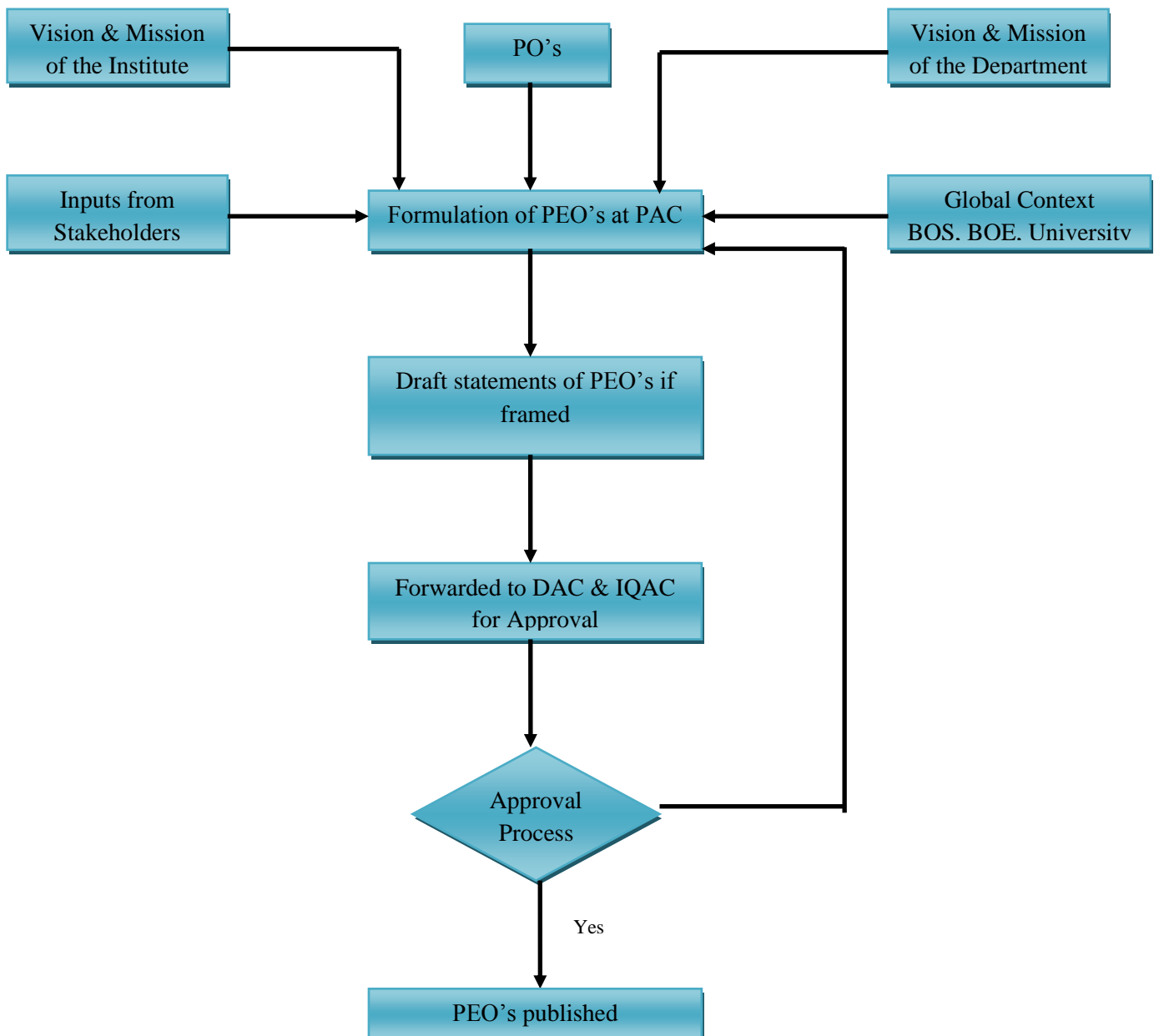


Fig. 1.2: Stake holder's involvement /relevance in the Process for defining the PEO's of the Department.

- Step 1.** Vision and mission of the institute and department is taken as basis.
- Step 2.** Inputs from various stakeholders BOS, BOE, university is considered for formulation of PEO's at PAC.
- Step 3.** Draft statements of PEO's is framed and forwarded to DAC & IQAC for Approval.
- Step 4.** If approved PEO's are published and disseminated. Else PAC is redirected to formulate.

1.5	Establish consistency of PEOs with Mission of the Department	15
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Table 1.1: Justifications of Mapping PEO's Vs Dept. Mission's

PEO1	MD1	The department focus on graduates centric learning environment and enhancing technical knowledge through strong academic quality education, self-learning through seminars and projects, hands on experience through lab-based learning this facilitate the graduate to have a successful career. Hence PEO1 strongly mapped to MD2
	MD2	Creating a conducive environment where in students are exposed to industry institute interaction through industrial visit and internship invited talks, techno cultural fest through Mech-Tantrika which makes them confident and allow them to lead organizations. Hence PEO1 is moderately mapped to MD2
	MD3	Graduates are exposed to invited talks, workshops, seminars on social responsibilities and ethical values through entrepreneurship development cell for successfully professional career. Hence PEO1 is moderately mapped to MD3
	MD4	Exposing graduates for paper presentation, publications in various conferences and exposure to latest tools and technologies. Hence PEO1 is moderately mapped to MD4
PEO2	MD1	Graduates centric learning exposed to through tools and technologies, self-learning through seminar and project, internships this will make students to excel both in industries and academics. Hence PEO2 is strongly mapped to MD1
	MD2	Exposing graduates to self-learning skills through invited talks by industry persons, hands on experience through workshops, internships, industrial visits which make the students to excel both in industries and academics. Hence PEO2 is strongly mapped to MD2
	MD3	Creating a conducive environment for graduates organize techno-cultural events through department student forum, makes them confident and allow them to leading organizations become effective team leader with socio-professional ethics. Hence PEO2 mapped slight to MD3
	MD4	Department focus on graduates to involved in R&D to excel through latest tools and technologies, in emerging fields of mechanical engineering. Imbibing interest in taking up research activities in the thrust areas of mechanical engineering, with the support of department R&D centre will make the graduates to competent both in industry and academics. Hence PEO2 is moderately mapped to MD4
PEO3	MD1	The curriculum imbibes quality education for overall development of graduates, strengthens their technical skills by providing awareness programs on higher education, research, socio-ethical values by resource persons through seminars, invited talks. Hence PEO3 substantially maps with MD1

	MD2	Creating a conducive environment for student centric learning, exposing students to emerging trends of mechanical engineering through continuous industry institute interaction such as industrial visit, internships. This eventually motivates graduates to pursue job-oriented courses research activities. Hence PEO3 moderately mapped with MD2
	MD3	Department focus on graduates to involve in seminars, workshops, presentations, professional traits like communication skills, ethical values, entrepreneur skill and social environmental awareness thus impart human & socio ethical values, leadership quality. Hence PEO3 moderately mapped with MD3
	MD4	Graduates are exposed to involve in research activity, industry institute interaction, seminars, workshops, invited talks by various resource person, department hold VTU recognized R&D centre, exercising research activities to carry out their projects, innovative ideas. Hence PEO3 moderately mapped with MD4

Table 1.2: PEO v/s Dept. Mission mapping matrix

Programme Educational Objectives	Mission of the Department			
	MD 1	MD 2	MD 3	MD 4
PEO 1	3	2	2	2
PEO 2	3	3	1	2
PEO 3	3	2	2	2

Note:

Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

It there is no correlation, put “-”

CRITERION 2

CRITERION 2	PROGRAM CURRICULUM AND TEACHING – LEARNING PROCESSES	120
2.1	Program Curriculum	20
2.1.1	State the process used to identify extent of compliance of University curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I. Also mention the identified curriculum gaps, if any	10

Rao Bahadur Y Mahabaleswarappa Engineering College affiliated to Visvesvaraya Technological University (VTU), Belagavi, Karnataka, follows the curriculum prescribed by the university. The curriculum of each course is designed and reviewed by the Board of Studies committee of VTU University. VTU curriculum contains, Core, Humanities & Social science, Basic science and elective courses. The Table 2.1 and 2.2 gives a curriculum structure of curriculum followed by the VTU.

If some components, to attain CO's/ PO's, are not included in the curriculum provided by the affiliated university then the Institution makes additional efforts to impart such knowledge by covering aspects through "CONTENTS BEYOND SYLLABUS". We add content beyond syllabus by proper "GAP analysis" process.

2.1: Program structure of VTU as followed:

Table 2.1: Program Curriculum structure for 2015 & 2017 choice based credit schemes

2015 & 2017 Scheme										
Semester	BSC	ESC	HSMC	PCC	PEC	OEC	Project / Mini Project	Seminar	Internship	Total
I Sem	2	3	1	2						8
II Sem	2	3	1	2						8
III Sem	1		1	7						9
IV Sem	1		1	7						9
V Sem				6	1	1				8
VI Sem				6	1	1				8
VII Sem				5	2		1			8
VIII Sem				2	1		1	1	1	6
Total	6	6	4	37	5	2	2	1	1	64

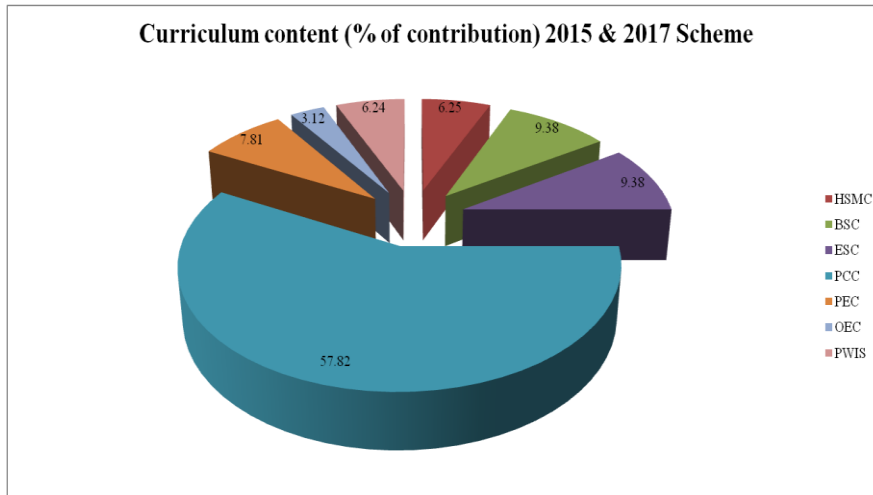


Fig. 2.1: Curriculum content (% of contribution) 2015 & 2017 Schemes.

Table 2.2: Program Curriculum Structure for 2018 Choice based credit Schemes

2018 Scheme										
Semester	BSC	ESC	HSMC	PCC	PEC	OEC	Project / Mini Project	Seminar	Internship	Total
I Sem	2	3	1	2						8
II Sem	2	3	1	2						8
III Sem	1		1	7						9
IV Sem	1		1	7						9
V Sem			1	8						9
VI Sem				5	1	1	1			8
VII Sem				4	2	1	1			8
VIII Sem				1	1		1	1	1	5
Total	6	6	5	36	4	2	3	1	1	64

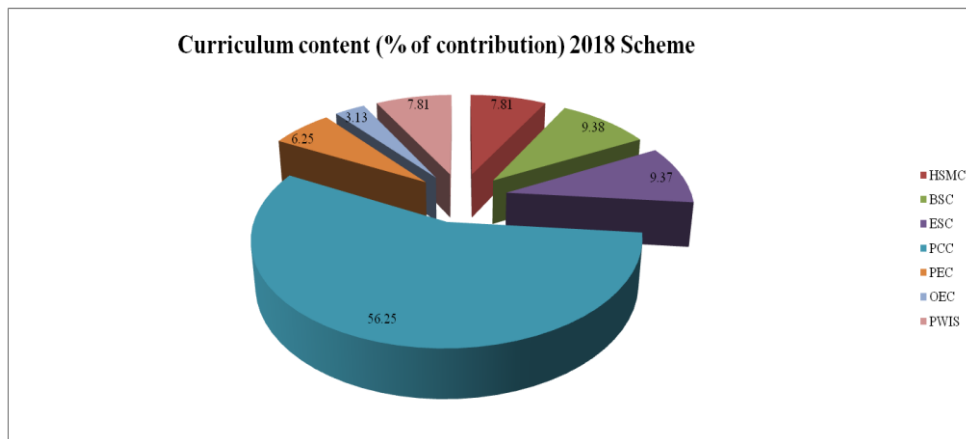


Fig. 2.2: Curriculum content (% of contribution) 2018 Scheme.

Table 2.3: Abbreviations.

BSC	Basic Science Courses
ESC	Engineering Science Courses
HSMC	Humanities & Social Sciences Including Management Courses
PCC	Professional Core Courses
PEC	Professional Elective Courses
OEC	Open Elective Courses

Table 2.4: Definition of Credit for 2015, 2017 & 2018 Scheme.

1Hr. Lecture (L) per week	1 Credit
1Hr. Tutorial (T) per week	1 Credit
1 Hr. Practical (P) per week	2 Credit

Table 2.5: Contribution of Curriculum for 2015, 2017 and 2018 Schemes

Course Component	Curriculum content (% of contribution) 2015 & 2017 Schemes	Curriculum content (% of contribution) 2018 Scheme
Humanities & Social Science	4/64 = 06.25%	5/64 = 07.81%
Basic Science courses	06/64 = 09.38%	06/64 = 09.38%
Engineering science courses including workshop, Drawing, Basics of Electrical, Mechanical & computer etc.,	06/64 = 09.38%	06/64 = 09.37%
Professional core courses	37/64 = 57.82%	36/64 = 56.25%
Professional elective courses relevant to chosen specialization or branch	05/64 = 07.81%	04/64 = 06.25%
Open Elective courses from other technical or emerging subjects	02/64 = 03.12%	02/64 = 03.13%
Project work, Seminar and Internship in Industry	04/64 = 06.24%	05/64 = 07.81%

Table 2.6: Theory and Practical contribution for choice-based credit scheme.

Balance of Theory and Practical	
Component	Contribution
Theory	80
Practical	20

Table 2.7: Balance of Theory & Practical Contribution for Curriculum.

Component	Hours / Subject/Semester	Hours/ Week/ Semester	Percentage Contribution (%)	
Theory for 4 Hours	06	24	$(24/30)*100$	80%
Practical for 3 Hours	02	06	$(6/30)*100$	20%
Total	30 Hours/Week/ Semester		100%	

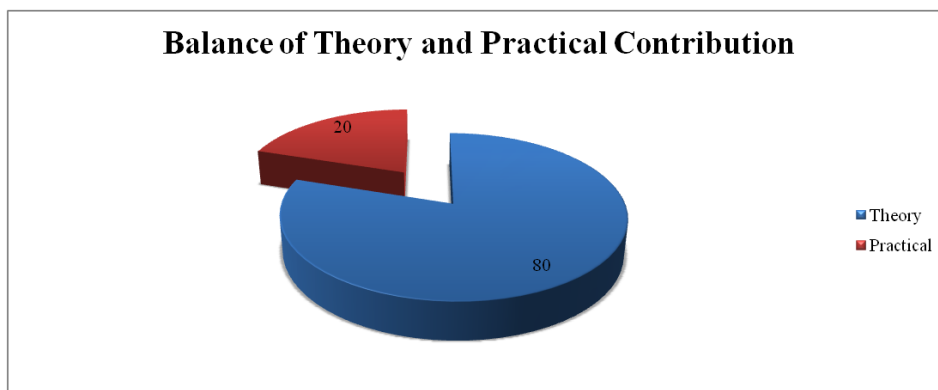


Fig. 2.3: Balance of theory & Practical Contribution for Curriculum.

Table 2.8: Program Specific Outcomes (PSOs)

PSO's	Statement
PSO1	Graduates possess the knowledge to Design, Analyze and Develop Mechanical system.
PSO2	Graduates are capable of developing research skills in self sustainable energy sources and Composite materials.

A. Process used to identify the Compliance of University Curriculum for Attainment of PO and PSO

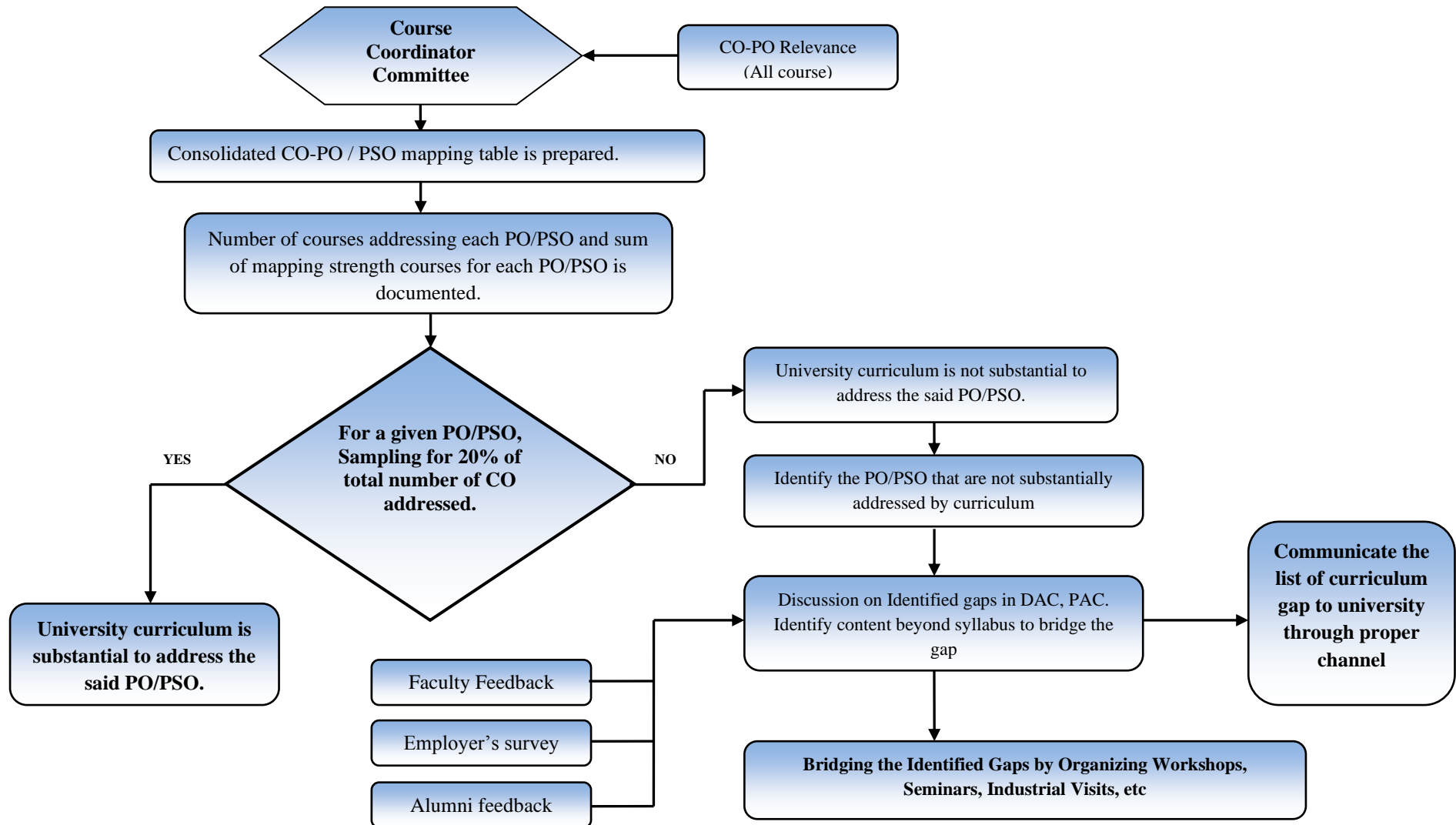


Fig. 2.4: Process followed for Gap Analysis.

B. List of curricular gaps for the attainment of defined PO's and PSO's

Correlation between the CO-PO mappings for the Academic year 2018-21 (2017 Scheme)

Consolidated of all CO PO mapping addressed to the 2017 scheme is mapped to total 259 Course Outcome's. Total 259 Course Outcome's (CO's) are collected from all staff members based on the curriculum and mapping is done. The percentage compliance with PO's is shown in table below.

The percentage contributions from each PO is calculated as below

$$\% \text{ Contribution from each PO} = \frac{\text{Ratio of Number of CO contributions to each PO to}}{\text{Total number of CO from each curriculum.}}$$

Example: % contribution of PO1 = $(247/259) = 95.37\%$

Table 2.9: Compliance of Courses with POs and PSOs for the Academic Year 2018-21 (2017 Scheme).

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
No of CO contributions to each PO	247	224	151	115	82	50	50	203	40	34	15	215	140	141
Total No of COs for Curriculum	259	259	259	259	259	259	259	259	259	259	259	259	259	259
% of Curriculum	95.37	86.49	58.30	44.40	31.66	19.31	19.31	78.38	15.44	13.13	5.79	83.01	54.05	54.44
Articulation Average Value	2.79	2.52	2.32	2.21	2.43	2.00	1.98	2.10	2.50	2.53	2.13	2.17	2.21	2.03

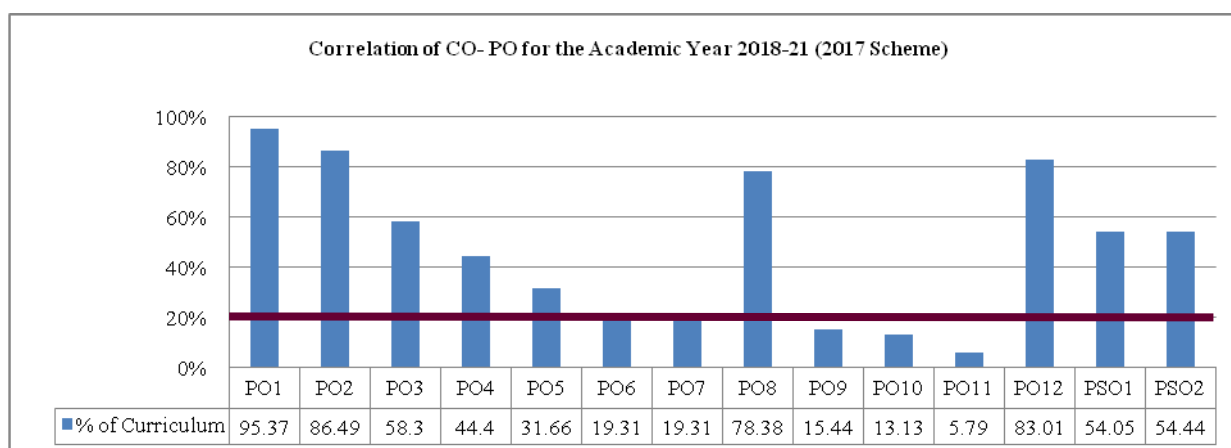


Fig. 2.5: Correlation of CO- PO for the Academic Year 2018-21 (2017 Scheme).

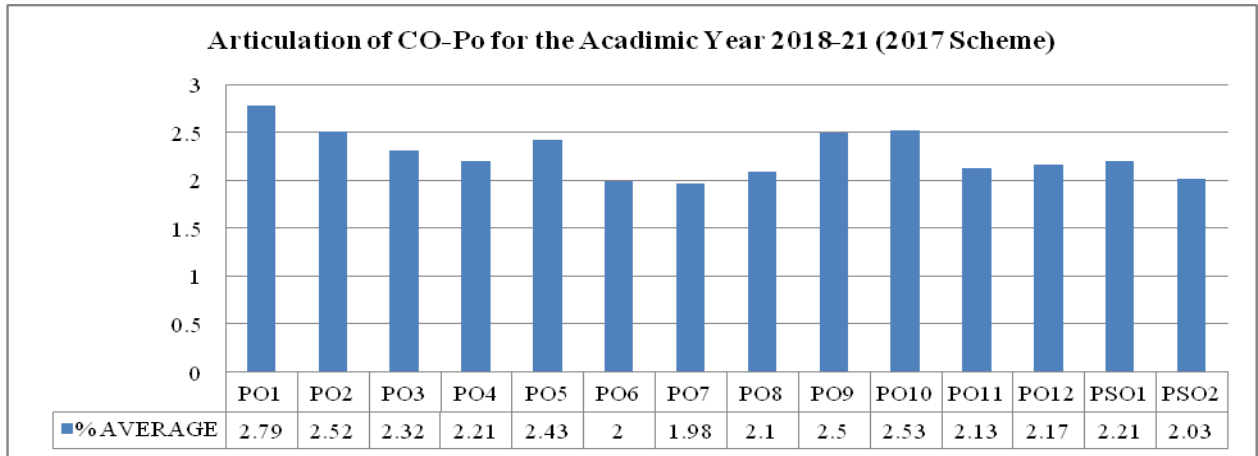


Fig. 2.6: Articulation of CO- PO for the Academic Year 2018-21 (2017 Scheme).

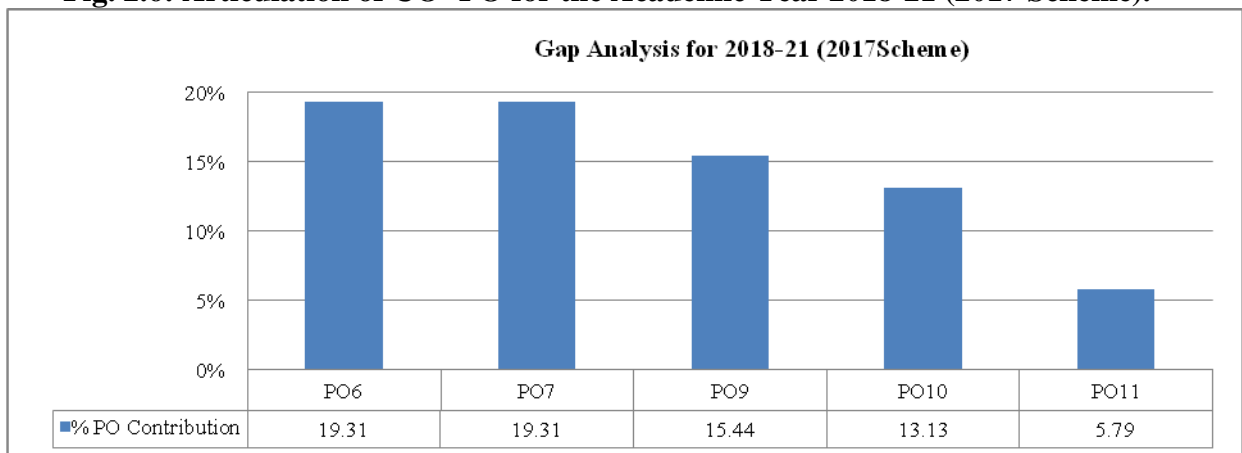


Fig. 2.7: Identified Gap's in Program Outcomes for 2018-21 (2017 Scheme).

Program Assessment Committee (PAC) has identified 20% of 259 number of Course Outcome (CO) contribution to each PO to total number of Course Outcome(CO's) from each curriculum (20% of 259=52 Co's). From the above analysis we have identified Curriculum gap of 2018-21 for 2017 Scheme and the same is represented in figure 2.7.

Correlation between the CO-PO mappings for the Academic year 2017-20 (2015 Scheme)

Consolidated of all CO PO mapping addressed to the 2015 scheme is mapped to total 259 Course Outcome's. Total 259 Course Outcome's (CO's) are collected from all staff members based on the curriculum and mapping is done. The percentage compliance with PO's is shown in table below.

The percentage contributions from each PO is calculated as below

$$\% \text{ Contribution from each PO} = \frac{\text{Ratio of Number of CO contributions to each PO to}}{\text{Total number of CO from each curriculum.}}$$

Example: % contribution of PO1 = $(248/259) = 95.75\%$

Table 2.10: Compliance of Courses with POs and PSOs for the Academic Year 2017-20 (2015 Scheme).

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
No of CO contributions to each PO	248	221	145	105	82	71	55	230	50	43	20	234	137	145
Total No of COs for Curriculum	259	259	259	259	259	259	259	259	259	259	259	259	259	259
% of Curriculum	95.75	85.33	55.98	40.54	31.66	27.41	21.24	88.80	19.31	16.60	7.72	90.35	52.90	55.98
Articulation Average Value	2.73	2.44	2.32	2.21	2.35	1.97	1.87	2.11	2.56	2.60	2.30	2.17	2.14	2.03

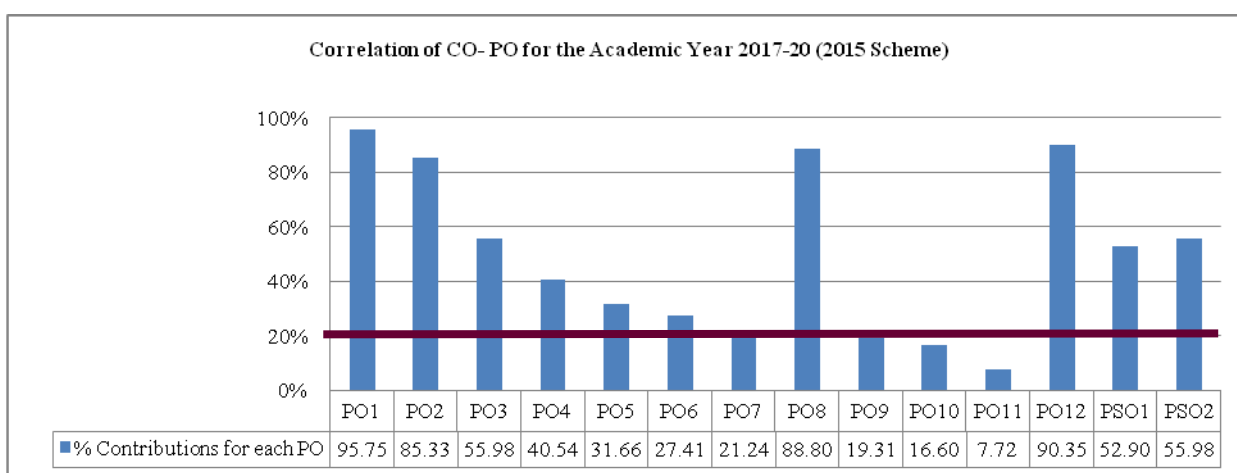


Fig. 2.8: Correlation of CO- PO for the Academic Year 2017-20.

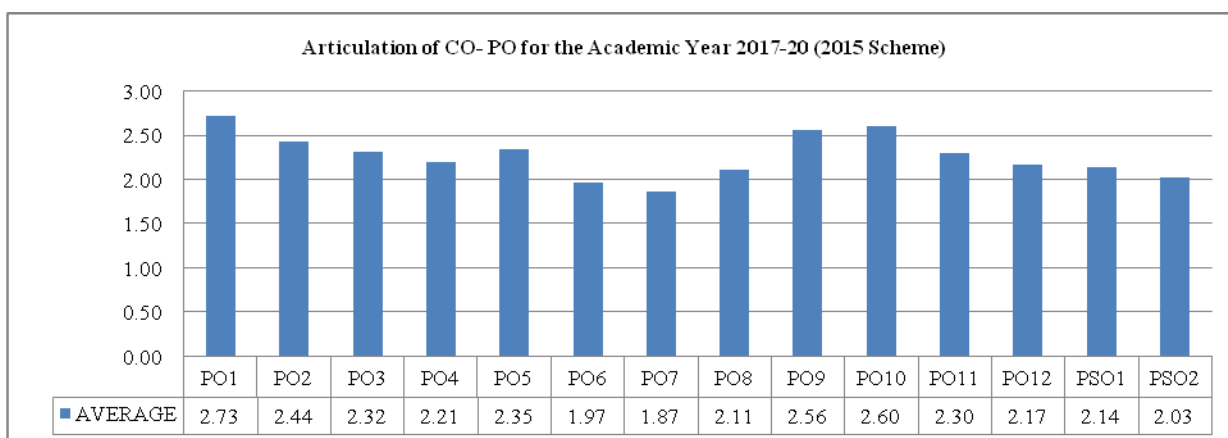


Fig. 2.9: Articulation of CO- PO for the Academic Year 2017-20.

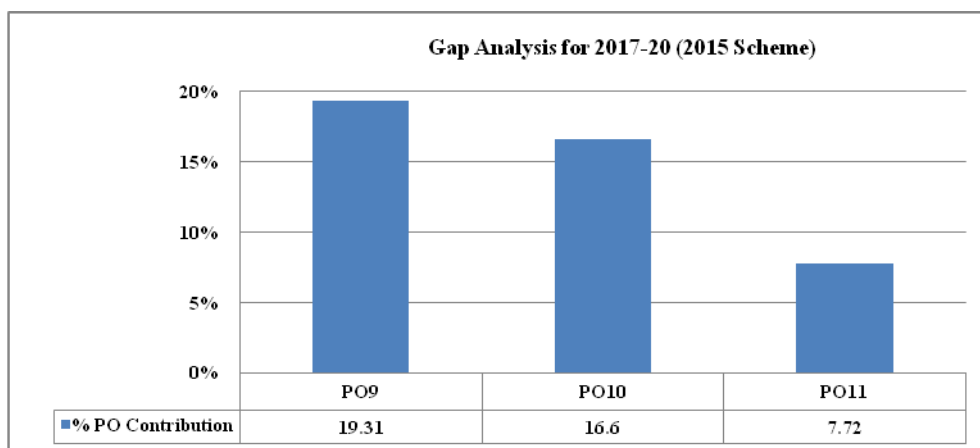


Fig. 2.10: Identified Gap's in Program Outcomes for 2017-20 (2015 Scheme).

Program Assessment Committee (PAC) has identified 20% of 259 number of Course Outcome (CO) contribution to each PO to total number of Course Outcome(CO's) from each curriculum (20% of 259=52 Co's). From the above analysis we have identified Curriculum gap of 2017-20 for 2015 Scheme and the same is represented in figure 2.10.

Correlation between the CO-PO mappings for the Academic year 2016-19 (2015 Scheme)

Consolidated of all CO PO mapping addressed to the 2015 scheme is mapped to total 249 course Outcome's. Total 249 Course Outcome's (CO's) are collected from all staff members based on the curriculum and mapping is done. The percentage compliance with PO's is shown in table below.

The percentage contributions from each PO is calculated as below

$$\% \text{ Contribution from each PO} = \frac{\text{Ratio of Number of CO contributions to each PO to}}{\text{Total number of CO from each curriculum.}}$$

Example: % contribution of PO1 = $(238/249) = 95.58\%$

Table 2.11: Compliance of Courses with POs and PSOs for the Academic Year 2016-19 (2015 Scheme).

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
No of CO contributions to each PO	238	213	148	103	76	63	46	220	50	43	20	219	137	145
Total No of COs for Curriculum	249	249	249	249	249	249	249	249	249	249	249	249	249	249
% of Curriculum	95.58	85.54	59.44	41.37	30.52	25.30	18.47	88.35	20.08	17.27	8.03	87.95	55.02	58.23
Articulation Average Value	2.77	2.47	2.32	2.21	2.30	2.03	1.91	2.11	2.56	2.60	2.30	2.17	2.14	2.03

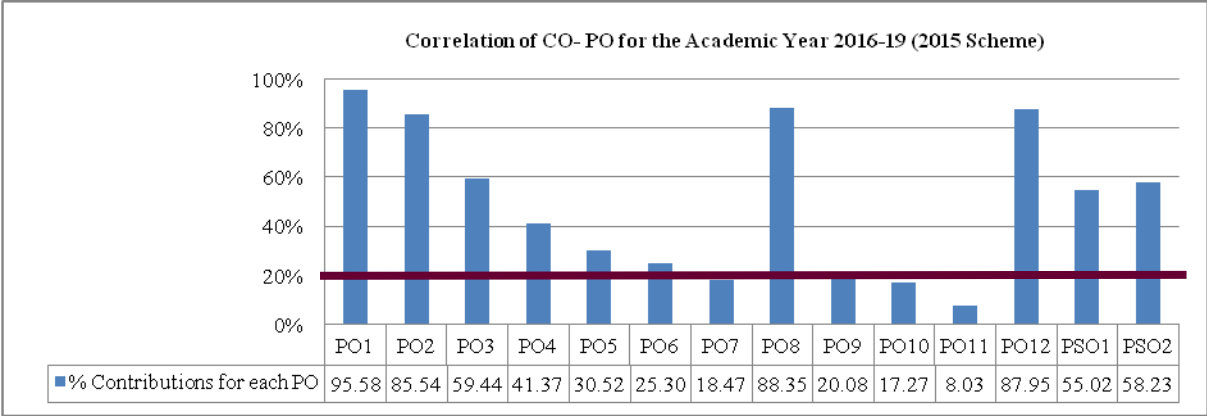


Fig. 2.11: Correlation of CO- PO for the Academic Year 2016-19.

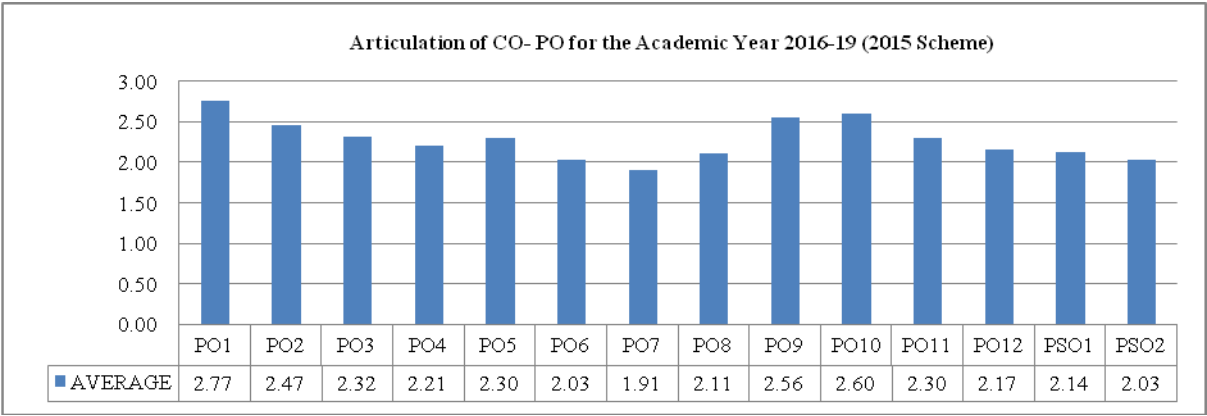


Fig. 2.12: Articulation of CO- PO for the Academic Year 2016-19.

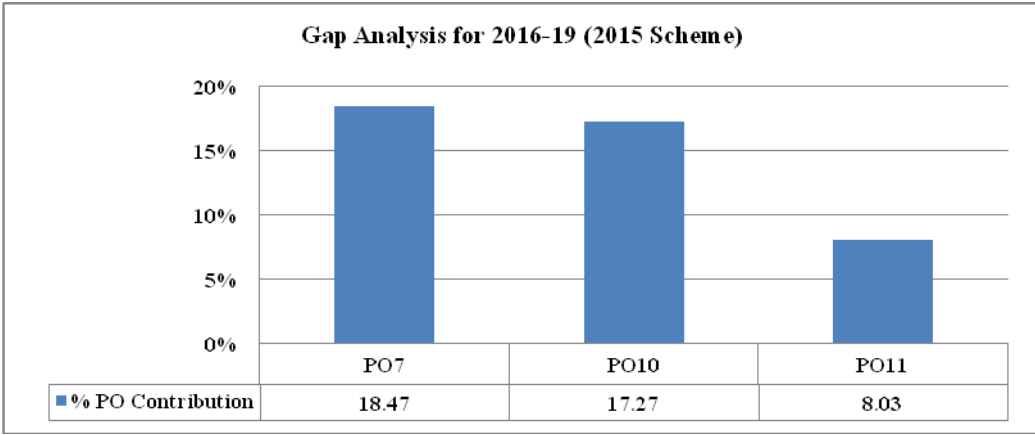


Fig. 2.13: Identified Gap's in Program Outcomes for 2016-19 (2015 Scheme).

Program Assessment Committee (PAC) has identified 20% of 249 number of Course Outcome (CO) contribution to each PO to total number of Course Outcome (CO's) from each curriculum (20% of 249=50 Co's). From the above analysis we have identified Curriculum gap of 2016-19 for 2015 Scheme and the same is represented in Fig. 2.13.

The following is the List of PO's and PSO's which are identified as gaps.

Table 2.12: PO's and PSO's which are identified as gaps for 2015 and 2017 schemes

Sl. No	Description
PO6	The Engineer and Society
PO7	Environment and Sustainability
PO9	Individual and team work
PO10	Communication
PO11	Project management and Finance

2.1.2	State the delivery details of the content beyond the syllabus for the attainment of PO's and PSO's	10
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A. Steps taken to get identified gaps included in the curriculum.

The Table 2.13 shows the details of communication to university/ Board of studies in Mechanical Engineering, VTU, Belagavi related to the curriculum gaps that exist in the syllabus prescribed by the University.

Table 2.13: Details of communication to university about the Curriculum Gap

Date	Addressed Person	Issue addressed
23/10/2020	The Chairman, BOS, ME Board, VTU Belagavi	Non-compliance of POs with the prescribed curriculum for ME board
23/11/2019	The Chairman, BOS, ME Board, VTU Belagavi	Non-compliance of POs with the prescribed curriculum for ME board
05/06/2018	The Chairman, BOS, ME Board, VTU Belagavi	Non-compliance of POs with the prescribed curriculum for ME board

B. Delivery details of the content beyond the syllabus for the attainment of PO's and PSO's

The gaps identified from 2.1.1 has been fulfilled by organizing Webinars, Seminars, Workshops, inviting experts to give technical talks and interacting with students, industrial visits, etc.,

2020-21

Table 2.14: Content beyond the syllabus for the attainment of PO's and PSO's for 2020-21.

Sl. No.	Gap	Action taken	Date-Month-Year	Resource Person with designation	% of students	Relevance to POs, PSOs
1	Communication	Pre-placement Training for V Semester students	23/01/2020 to 01/02/2020	Placement Dept., RYMEC	100%	PO10, PO12
2	Environment and stability	New Age Automotive Industry by Tata Technologies	29/05/2020	Richard Cole, TTL, Pune	100%	PO7, PO8
3	Life long Learning	“Significance of Small Steps in the Journey of Success”	26/11/2020	Ranga Rao Desai	100%	PO11 & PO12
4	Modern tool usage	“Application of CFD in Heat Transfer”	05/12/2020	Basavaraj Kusummanavar Assistant Professor Dept of ME, RYMEC	100%	PO1, PO2, PO3, PO4, PO5, PO12, PSO1
5	Environment and sustainability, Engineering & Society	Hybrid Vehicles	25/05/2021	Sajan Edakkadan Assistant Manager Toyota Learning & Development India Toyota Kirloskar Motor Pvt. Ltd.	100%	PO6, PO7, PO12, PSO2
6	Environment and sustainability, Engineering & Society	“Oxygen Challenge Program by planting the Trees”	17/06/2021	NSS Team	50%	PO6, PO7, PO9
7	Life-long Learning	“The Role of Mechanical Engineers in a Product Development”	21/06/2021	Dr. Madeva Nagaral HAL Bangalore	100%	P10, P11, PO12, PSO1
8	Life-long Learning	Life Skills	31/07/2021	ISTE Student Chapter	100%	PO8, PO9, PO12
9	Environment and Sustainability, project management	My Professional journey	01/08/2021	Mr. Nazeer Bhagwan Mr. Rajesh Nagari Mr. Neelakant swamy	65%	PO5, PO11, PSO2
10	Engineering & Society	Awareness programme on COVID-19 in Haraginadone village	10/08/2021	NSS Team	50%	PO6
11	Engineering & Society	Grama Sabha Meeting conducted in Haraginadone village to identify the major issues in the village	10/08/2021	Lead Team	50%	PO6, PO9
12	Engineering & Society	Village and House hold survey conducted in Haraginadone to identify the problems in the village	10/08/2021	Lead Team	50%	PO6, PO9

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13	Ethics	Value education	24/08/2021	Mr. Sanjay Chopra UHV Facilitator	70%	PO6, PO8, PO10, PO12.
14	Environment and Sustainability, project management	Industry Adaption and Readiness	21/08/2021	B Venkat Narayan Head of project division and procurement jayaswal Neco Industries Ltd, Raipur	70%	PO5, PO11, PSO2
15	Modern Tool Usage	Use of POM – QM software for windows for Operation Research	9/05/2021	Dr Veerabadrappa Algur. Associate Professor Dept of ME, RYMEC	80%	PO1, PO2, PO3,PO4, PO5, PO12, PSO1
16	Life-long Learning	Guidance on Job opportunities in IT Industry	25/09/2021	ISTE Student Chapter	100%	PO10, PO11, PO12

2019-20

Table 2.15: Content beyond the syllabus for the attainment of PO's and PSO's for 2019-20.

Sl. No.	Gap	Action taken	Date-Month-Year	Resource Person with designation	% of students	Relevance to POs, PSOs
1	Ethics and communication	Motivational Session	22/02/2018	Yendamoori Veerandranath	100%	PO8, PO10
2	Communication	Pre-placement campus Training Program for VI Semester Students	02/02/2019	ETHNUS	100%	PO10, PO12
3	Engineering & Society	Created awareness to public on Digitalization	20/05/2019	LEAD Team	50%	PO6,PO8, PO9,PO10 ,PO12
4	Engineering & Society	Adopted a backward mining affected Janekunte Village, Near Ballari	20/05/2019	LEAD Team	50%	PO6,PO8, PO9,PO10 ,PO12
5	Communication	International Student Exchange Program on Young Ambassador Program on Design Thinking Workshop	01/08/2019	Ballari Titans 218 and QTPI Robotics	80%	PO10, PO12
6	Engineer and society	Donation to North Karnataka Floods	14/08/2019	LEAD Team	80%	PO6
7	Engineering knowledge and modern tools	Two days Students workshop on “Emerging Trends in Industrial Mechanical Software’s and its applications”	17/09/2019 to 18/09/2019	Er. Pradeep Kumar Kallur, Director, Medini Er. Mohan Prabhu, Technical Head, AEC	100%	PO1, PO5, PSO1
8	Lifelong learning	GATE Exam Orientation Program for VII Semester Students	23/09/2019	Mr. Prathap Choudray Alumni of RYMEC	100%	PO12
9	Environment and sustainability	Three Day Industrial Visit	24/10/2019 to 26/10/2019	Varahi Hydro Electric Power, Hosangadi, Sharavathy Generating Station, Jog Falls, Karnataka	50%	PO1, PO6, PO7, PO8, PO9, PO10, PO12

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10	Engineering & Society	Voluntary Blood donation camp in Association with HDFC bank and Swami Vivekananda Blood bank	21/11/2019	NSS Unit	70%	PO6,PO7, PO9
11	Communication and Lifelong learning	Career Orientation Program on Industry Expectations From Young Engineers	22/11/2019	Dr. Binoy Mathew Director, Centralized Placement Cell (CPC) VTU, Bangalore	100%	PO10, PO12
12	Modern tool usage	Webinar on “Industrial Application of CAD/CAE/CAM”	28/03/2020	CADMAXX solutions, Bengaluru	100%	PO5, PO12, PSO1
13	Life-long learning	Webinar on “Bridge the gap between class atmosphere and work atmosphere and carrier guidance & employability skills”	20/04/2020 and 26/04/2020	Mr. Vijayananda Patil Retired Air force officer. Mr. Naveen, Inmovidu Industrial training Partnerfor E-cell, IIT Guwahati	100%	PO12
14	Communicating and lifelong learning	Webinar for the students on “ Building Successful Career Through Portals of RYMEC”	29/05/2020	Prof. Madhav Murthy, BMSCE, Bengaluru	100%	PO10 & PO12
15	Engineering knowledge and modern tool usage	Webinar on “Industry Demands, coding and no coding options, job requirements, career guidance and certifications”	05/06/2020	Prof. Sathyaprema, Web and cloud projects, worked at IBM	100%	PO1, PO5,
16	Modern tool usage	Electrical Wire Harness Design Using CATIA V5	29/06/2020	V Bernad Raja, Consulting Learning Expert, CADMAXX Solution, Bangalore	100%	PO5, PSO1
17	Composite Materials	Bio-Materials& Technology: Recent Trends & Applications in Medical Field	15/07/2020	Dr. Hanumanthraju H G, Associate Professor, Dept. of ME, UVCE, B’lore	100%	PO1, PSO2
18	Environment sustainability	Developments in Reducing Environmental Pollution: Bio-Fuels& Thermo acoustic Refrigeration	29/07/2020 to 31/07/2020	Dr. B G Prashantha Prof. Dept of ME, JSSATE, B’lore Dr Hiregoudaru Yerrannagoudaru, Prof., RYMEC, Ballari Dr. Manjunatha Kondekal, Associate Professor, RYMEC, Ballari.	100%	PO6, PO7, PSO2
19	Project management	Lateral Thinking Approaches For Problem Solving	06/08/2020	Prof. Rashmi Shetty, R V Institute of Management, B’lore	100%	PO10, PO11
20	Additive manufacturing	Recent Trends in Robotics	20/08/2020	Mr. R Jishnu, Senior Engineer, Embedded developer, Pantech solutions Pvt. Ltd.	100%	PO5, PSO1

2018-19

Table 2.16: Content beyond the syllabus for the attainment of PO's and PSO's for 2018-19.

Sl. No.	Gap	Action taken	Date-Month-Year	Resource Person with designation	% of students	Relevance to POs, PSOs
1	Design / development of Solutions	Three Day Workshop on Engine Technology	26/10/2016	Madhusudhan PS, Co-Founder & MD, M/S Rectangle Automotive Technologies LLP, Davangere	100%	PO1, PO 2, PO3, PO4, & PO12 PSO1
2	Environment and sustainability	Seminar on 'Indhan Samrakshan ki Zimmedari, Jan Gan ki Bhagidari'	13/02/2017	Indian Oil Corporation	100%	PO7
3	Ethics	One day invited talk on "Reengineering- The Life Style"	01/04/2017	Sri. Swamy Chidrupananda Saraswati	100%	PO8, PO12
4	Startup Entrepreneurship & Capital funds	One day work shop on Startup Entrepreneurship & Capital funds	10/03/2018	Sri. Manish Kumar, VP, KAMC-B'lore.	100%	PO1, PO6, PO8, PO9, PO11 & PO 12 PSO1
5	Modern Tool Usage	One day awareness program on Technical Publication	24/03/2018	M/S AAPTA in association with Vision Software Solutions	100%	PO1, PO5, PO8 & PO10
6	Environment and sustainability	Industrial Visit	09/05/2018	M/S. Mcallus, Manufacturers of Orthopedic Implants & Instruments and M/S. HalleysBlue Steels Pvt Ltd, Mundargi Industrial Area, Ballari	75%	PO1, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO12
7	Engineering Knowledge	C-Programming Training	30/07/2018 To 01/08/2018	In-House Faculties	100%	PO1, PO3, PSO1
8	Environment and sustainability	Blood Donation at VIMS, Ballari	26/09/2018	LEAD Team	50%	PO6, PO7, PO9
9	Engineering and society	Awareness Program on Automation Technology	26/09/2018	Vastro Technology, B' Lore	100%	PO1, PO6, PSO1
10	Modern Tool Usage	Awareness Program on CAD, CAM & CAE	29/09/2018	Mr. Ashwin Kumar, Senior Trainee CAD MAX B' Lore. Mr. Sanjeev Kumar, Mono Tech, Chennai	100%	PO1, PO2, PO5, & PO12 & PSO1
11	Environment and sustainability	Swatch Bharath at Cantonment Railway Station	02/10/2018	LEAD Team	50%	PO6, PO7, PO9
12	Knowledge about Marine Engineering	One Day workshop on Marine Engineering	03/10/2018	Mr. Shivasharannaiah Swamy, Asst. Prof. REVA university B'lore	100%	PO1, PO 2, PO3, PO4 & PO12 PSO1
13	Design of Solutions	Two Days work Shop on Geometric Dimensions & Tolerances	05/10/2018 to 06/10/2018	Madhusudhan PS, Co-Founder & MD, M/S Rectangle Automotive Technologies LLP, Davangere	100%	PO1, PO 2, PO3, PO4, & PO12 PSO1
14	Environment and sustainability	Industrial Visit	29/10/2018	Industrial Visit to BTPS	100%	PO1, PO6, PO7, PO8, PO9, PO10, PO12

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15	Environment and sustainability	Industrial Visit	10/11/2018	Industrial Visit to JSW	40%	PO1, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO12
16	Individual and team work	Techno-cultural fest “Mech-Tantrika”	13-15/11/2018	Department student forum	100%	PO8, PO9, PO10, PO11, PO12
17	Lifelong learning	Carrier Guidance on Higher Studies in abroad	02/02/2019	Mr. C Vijay Mahantesh, Software Engineer, Wipro, Bangalore	100%	PO10, PO12
18	Lifelong learning	Higher Studies Awareness Program	11/02/2019	N B Pruthviraj	100%	PO10, PO12
19	Modern Tool Usage	Three days workshop on Overview in Aerospace Domain	05/03/2019	1. Dr. K Bhadrinarayana, Scientist, Dy Project Director Structure division of ISRO Satellite Center. 2. Mr. Movin Furtado, Senior System Engineer COE AD, B’Lore	100%	PO1, PO 2, PO3, PO4, PO5 & PO12 PSO1& PSO2
20	Engineering & Society	Two days workshop for students “Industrial Safety measures & Regulations”	26/04/2019	Mr. Suresh Kumar Safety Engineer, JSW Steel Ltd.	100%	PO1, PO2, PO6, PO7, PO8, & PO12 & PSO1

C. Mapping of content beyond syllabus with Pos & PSOs

The mapping of content beyond syllabus with Pos and PSOs is shown in last column of table 2.14, 2.15 and 2.16.

2.2	Teaching-Learning Processes	100
2.2.1	Describe processes followed to improve quality of Teaching and learning	25

A. Adherence to Academic calendar (Institute and Department calendar)

R Y M Engineering College is affiliated to VTU Belagavi. The Institution prepares academic calendar in line with the university academic calendar. From the Institution academic calendar, department calendar is defined which is specific to the programme and is termed as “Calendar of Events”. It consists of the activities planned for the semester which includes various schedules for Continuous Internal evaluation, Parents meeting, Workshops, faculty development program, Industrial visits, laboratory and semester end examination etc.

Course Delivery:

The course delivery is meticulously planned, delivered, monitored by the dept. through the subject handling faculty/instructor, PAC and the programme co-ordinator. The subject

handling faculty prepares the course file which includes course outcomes, lesson-plan, course materials, Assignments and previous question papers well in advance before the commencement of the semester. The course outcomes and lesson plan written by the course handling faculty are verified by the domain coordinators under Course Coordinator committee meetings and submitted to PAC. The course plan and adherence to plan is continuously monitored by the HOD. Teaching Learning Process is shown in the figure 2.14.

B. Use of various instructional methods and pedagogical initiatives

The subject handling faculty/instructors use the following instructional methods:

1. Chalk and Black board
2. Power point presentation
3. Demonstration of concepts using Animated videos/Models
4. Seminars by students and Group assignments & Discussions
5. Peer learning
6. Mini/Major projects
7. NPTEL Videos
8. Industrial/Internship visits
9. Great learning application
10. Online Learning Platforms

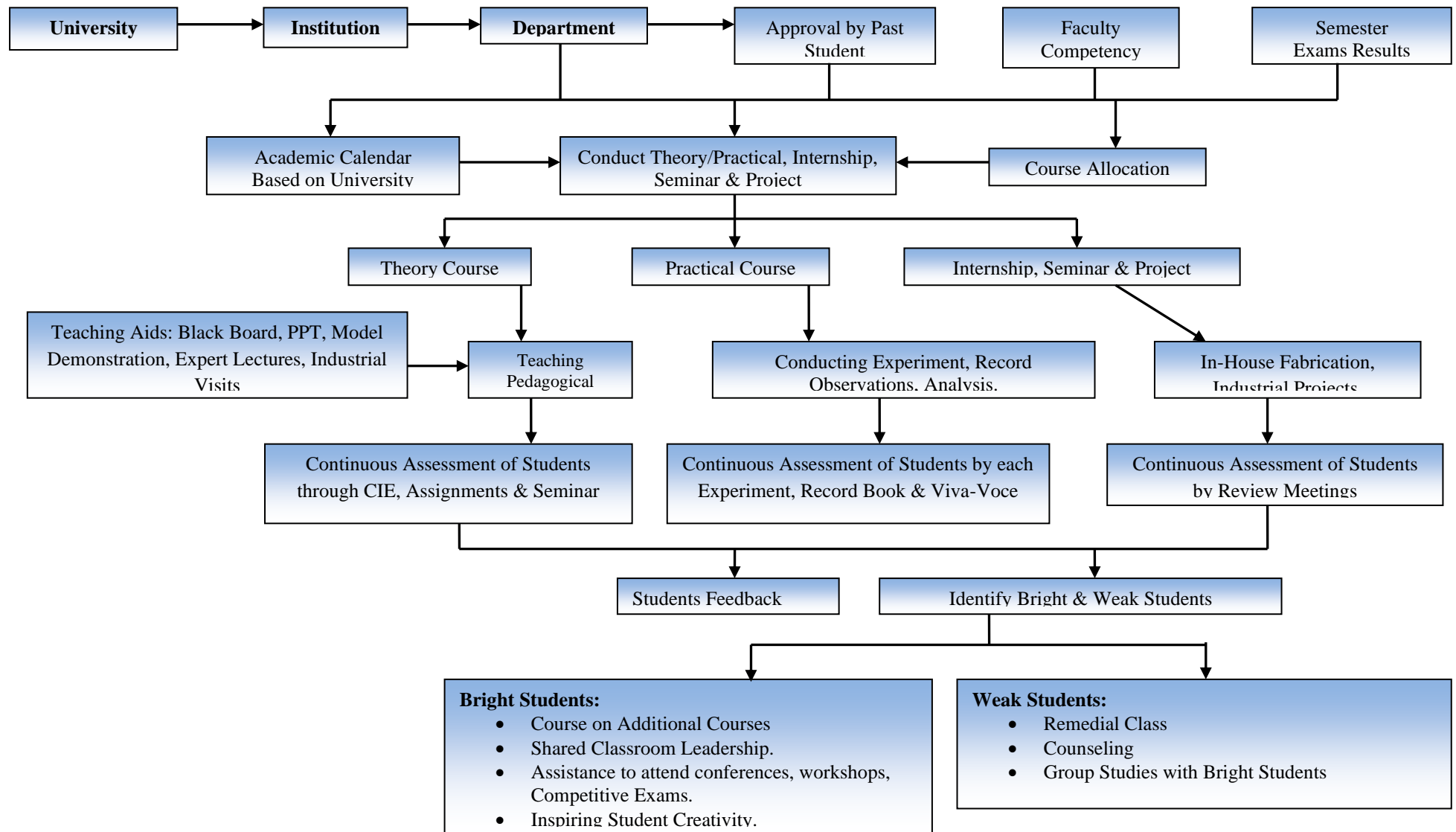


Fig. 2.14: Process followed to improve quality of teaching and learning

The faculty use chalk & board and audio-visual aids in teaching. Students are also encouraged for active interaction during the lecture hour by getting the doubts clarified on the spot. Faculty using models charts for interactive teaching. Faculty adheres to the rubrics framed for the project work and proposes final year Project works and briefs about the objective of the projects to the final year students. Students are also encouraged to carry out external projects from industry and R&D labs. Department allots the projects to all final year students as per their area of interest at the start of the semester. The seminars and projects introduced in the curriculum have made the students to refer to the relevant literature in specific research areas. Guest lectures are delivered to pre-final and final year students by industry experts / Scientists from R&D labs, Professors from reputed Institute/University. Learning materials of NPTEL are made available for use as e-learning facility. Industrial tours are organized as per the curriculum. Pre-Final and Final year students are encouraged to take up Internship program in Industries. Students are encouraged to participate in Inter and Intra college technical competitions.

C. Methodologies to support weak students and encourage bright students

Methodologies to identify and support weak students

The weak students were identified from the several parameters such as classroom discussions, performance in Continuous Internal evaluation (CIE) and University result analysis.

1. Based on the analysis of the above parameters remedial classes are arranged in various courses to strengthen the concepts, knowledge and skills in concerned course.
2. Tutorial classes are provided to improve the problem-solving skills through interaction among the student and faculty members.
3. Mentors help students to develop their academic pursuits by boosting their confidence and removing psychological barriers among them

Methodologies to Encouraging bright students

The bright students are identified from their participation in classroom discussion, performance in the assessment tests and participation in classroom seminars, questioning ability and University result analysis.

1. The bright students are encouraged to participate in symposia, workshops and seminars to gain knowledge on the latest developments.

2. The students are encouraged to take up industry-based projects in the advanced topics under the guidance of the faculty members
3. Bright students are encouraged to lead the student's association team which organizes various activities viz. paper presentation, poster presentation, lecture series etc.
4. Best Academic Performance Awards are given to top 3 students, based on their performance in University Examination in the preceding year.
5. Campus Recruitment Training (CRT) classes are organized by the college so as to enable them to obtain placement through campus interviews

D. Quality of classroom teaching

Each classroom is spacious and equipped with black board and audio-visual aids to create a better ambience for effective teaching learning environment. Each lecture is scheduled for one hour. During the lecture, faculties take efforts to keep students engaged by reviewing and asking questions on previous lecture and interactively deliver the lecture planned for the day. At the end of the lecture, students are encouraged to summarize, ask doubts from the content taught. Faculty members are taking advantage of sources like National Programme on Technology Enhanced Learning (NPTEL), internet sources for effective teaching.

E. Conduct of Laboratory experiments

1. Curriculum designed in such a way that sufficient emphasis is laid on hands on experience required for comprehensive understanding of the subjects.
2. Orientation programs are conducted for teaching & non-teaching staff on conduct of experiments recording observations, analysis of data and evaluation procedures.
3. Department is fully equipped as per the curriculum with respect to the laboratories, software and models.
4. Printed laboratory manuals are provided to each student, which covers all the details about the experiments. The observations, necessary calculations and discussions are recorded in printed manuals.
5. Concerned faculty regularly evaluates the lab records.
6. All the faculty handling laboratory work is encouraged to introduce new experiments which are beyond curriculum and are oriented towards R & D.
7. The internal Assessment of students in the laboratory is evaluated based on his/her

performance of the experiment in the regular class, lab report and internal Viva. The external examination in the concerned lab is conducted by two examiners viz., internal examiner from the college and external examiner appointed by the University.

8. Students are encouraged to do development / fabrication-oriented projects, and to carry out the same mainly within the facilities of the College.
9. Department has provided Project Lab and Research Centre to bridge the gap between the curriculum and the requirements as per the present technical scenario.

F. Continuous Assessment in the laboratory

Continuous assessment system is also implemented for assessment of laboratory work. The assessment is done on the basis of submission of laboratory records, understanding of the experiment through oral viva voce questions and participation in performing the experiment. Neatness of the laboratory record book is also given weightage in the assessment.

G. Student feedback of teaching learning process and actions taken

Faculty Feedback Performance for every course is assessed from students with various parameters as defined by the Institution. The following are the parameters of feedback for considering faculty performance in teaching learning process

1. Creating interest in the subject
2. Regularity in handling the classes
3. Presentation of the subjects
4. Audibility/Clarity of the speech
5. Interaction with students
6. Clarity student's doubts
7. Fairness in evaluation of IA and Assignment books
8. Ability to design quiz/tests/Assignments/Examinations and projects to evaluate students understanding of the course
9. Interact and encourages students to ask questions/participation
10. Fulfillments of course objectives and outcomes

Action taken process

1. Lecture classes are monitored by senior Professors and the Head of the Department. They give constructive comments to improve the quality of teaching and the teaching-learning process.

2. Counseling by the HOD for those faculty members who have secured low scores and negative comments, if any, in the feedback. Thus, motivates them to improve their skills and abilities.
3. If required training / orientation programmes are conducted by professional experts to master the skills of the faculty members in the nuances of teaching, thus improving the efficiency of teaching-learning process.

2.2.2	Quality of internal semester Question papers, Assignments and Evaluation	20
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Internal Assessment marks set as per VTU regulations is 25 for theory and lab subjects, 50 for seminar while it is 100 for project for 2010 scheme, 20 for theory and lab subjects, 50 for seminar while it is 100 for project for 2015 scheme & 40 for theory and lab subjects, 50 for seminar while it is 100 for project for 2017 & 2018 schemes. The internal assessment marks for theory is on three tests conducted as per the calendar of events. Program Coordinator along with test coordinators is responsible for the conduction of the test. The time table for the same will be announced 3-5 days prior to the commencement of the test. The department has a Scrutinizing Committee, comprising of HOD and two senior faculty members to check the quality of the question paper, Revised Blooms Taxonomy levels and COs compliance.

A. Process for internal semester question paper setting and evaluation and effective process implementation

Internal semester question paper setting

1. The course handling faculty sets the question paper for the internal assessment.
2. The question papers for internal assessments are set using Revised Bloom's taxonomy (RBT) levels and are mapped to the Course Outcomes to assess the students at various RBT levels.

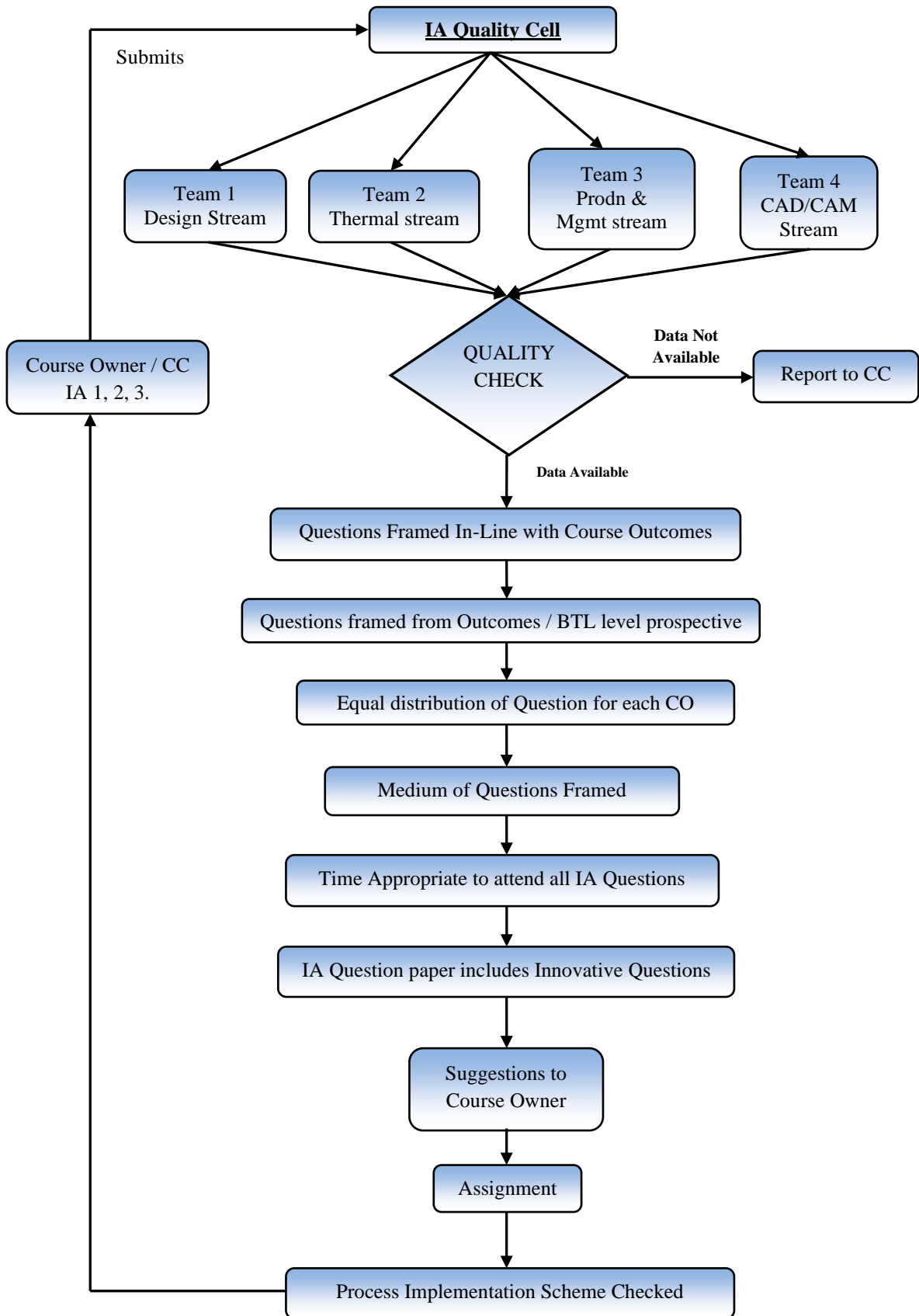


Fig. 2.15: Process of Quality of internal semester question paper setting and its Evaluation.

Process for conduction and evaluation of Internal Assessment

1. The time table for the Internal Assessment Test will be announced in the notice board 3-5 days prior to the commencement of the test by IA coordinators.
2. Department provides blue books for writing the three internal assessment tests and shall be maintained by the Department for at least five years after the announcement of results and available for verification by university.
3. The students write the test in their allotted seats as per their Class Roll Numbers in a test hall, under the invigilation of a faculty member.
4. The scheme of valuation for the question paper is prepared by the course handling faculty ensuring appropriate distribution of marks for fair valuation.
5. The faculty values the blue books adhering to the scheme of valuation.
6. The faculties after every internal assessment test they explain the solution of the questions in the class which will enable them to perform well in the final examination.
7. For any genuine reasons, if a student was unable to perform well in the given three internal assessment tests, improvement test is provided.
8. Students are allowed to check the correction and sign on the bluebooks. After one week of each IA test, progress reports which consist of test marks and attendance status are sent to parents through SMS.

B. Process to ensure questions from outcomes/learning levels perspective

1. The course handling faculty ensures that the internal assessment questions are framed based on various RBT levels and are mapped to the CO's.
2. The course handling faculty decides the number of questions and marks allotted for each question.
3. The course coordinator submits the question paper to the scrutinizing committee and the committee checks the quality and RBT level and CO compliance and suggests any changes, if required.

C. Evidence of CO's coverage in class tests

Individual student's blue book is evaluated and question answered by student is mapped with CO's and PO's. Sample is shown in CO -PO attainment

D. Quality of assignment and its relevance to CO's

1. Assignment issue and submission dates are announced by the respective course handling faculty.
2. Assignment questions are prepared using Bloom's Taxonomy process and mapped with CO's. So that students will be able to understand course outcomes of particular course.
3. Assignments are designed in such a way to promote self learning from various sources.
4. Assignments are evaluated and feedback is given to the students to improve their learning and appreciate their efforts.

2.2.3	Quality of Student projects		25
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The students pursue their project work and submit a dissertation for fulfillment of the course requirements. The project work is executed under the guidance of a faculty member. The student utilizes the technical knowledge learnt during the course work, also utilizes the various software tools in the implementation and execution of the project, and the student is evaluated for the successful performance of the work by a committee constituted for this purpose. The project work involves collection of literature, design/ analysis, collection of experimental data, consolidation of results, preparation of report, presentation of the work carried out at different phases in front of the duly constituted committees. These activities fulfill almost all the programme outcomes. A committee is constituted for identifying the best projects each year. At the end of the project, students are encouraged to publish paper in Journals and conferences and apply for patent.

Project Group:

1. Students are allowed to form project batch consisting of minimum two or maximum of four members as per VTU Regulations.
2. If the students are not able to form the project batch, then the project coordinator will help them to form the project batch.

A. Identification of projects and allocation methodology to Faculty Members

1. The project coordinator instructs the students to identify the project titles and submit the synopsis adhering to the timelines decided by the HOD.

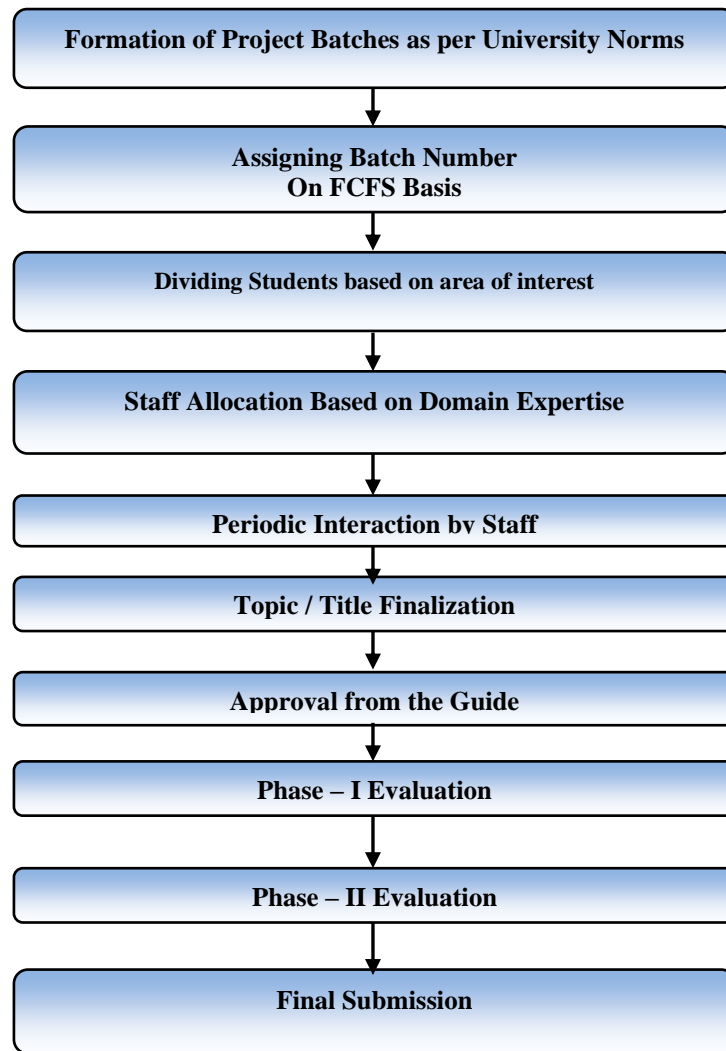


Fig. 2.16: Students project allocation and review process

2. Some of the areas identified by the project coordinator are:
 - Production&Manufacturing
 - Design&CAD/CAM
 - Renewable Energy
 - Composites
 - IC Engines
3. Based on the students chosen area, faculty competency and relevant area of interest is allotted as a guide.
4. Students can choose or come out with problem identification for the execution of the project; else the faculty member will give a problem for execution of the project work.
5. If the students are doing project at industry, they need to consult with internal guide as

well as external guide from the industry towards implementation of project.

B. Types and relevance of the projects and their contribution towards attainment of POs and PSOs

1. The Guide classifies the project into application, product, research and review and maps the POs and PSOs considering the factors such as environment, safety, ethics, cost and standards.
2. Each project is evaluated with internal marks and is graded relevance to project quality and contribution towards attainment of PO's.

C. Process for monitoring and evaluation

1. The project guide will give suggestions towards the improvements of the synopsis.
2. Based on inputs (suggestions from guide), students have to start their project work.
3. All the students must report to their internal guides on weekly basis regarding the progress of their project work.
4. Students should give power point presentations to the Project Review Committee as per the schedule. The committee gives suggestions at the end of the presentation to improve the quality of the work and evaluates the projects based on the project rubrics.
5. Project assessment is evaluated in two phases by a committee consisting of HOD, internal guide, project coordinator, senior faculty of the department. After the reviews, instructions are given to prepare the Project Journal as per the guidelines prescribed by the VTU.

Rubrics for project evaluation

Table 2.17: Rubrics for Project Evaluation

Sl. No.	Particulars	Max. Marks	Exceptionally Well Executed [M>90%]	Good with room for improvement [70%<M<90%]	Meets minimum requirement [M<70%]	Course Outcome Mapping	BTL Mapping
1	Relevance of the subject in the present context	10	The topic is highly relevant in the present day context and innovative	The topic is moderately relevant and new	The selected topic is satisfactory	CO1, CO5	L2, L6
2	Literature Survey	10	Literature survey is extensive and all related information is available	Literature survey is quite satisfactory	Literature survey is Sufficient	CO2	L3

3	Problem formulation	10	Problem is well defined based on the literature survey and topic covering all the aspects	Problem formulation is satisfactory	Problem formulation needs to cover the objectives	CO3	L6
4	Experimental observation /theoretical modelling	10	Data collection/design/fabrication work obtains correct solution to model developed for the project	Data collection/design/fabrication work obtains proper solution to model developed for the project	Sufficient and partially collection of data needs improvement in preparing model	CO5	L6
5	Results – presentation and discussion	10	Team members were very well balanced and had clear articulation and work presentation was excellent	Coordinated team members and presentation was good	Presentation needs improvement	CO4, CO5	L3
6	Conclusion and scope of future work	10	Proper conclusions are drawn with validation and scope for future work is also well articulated	Conclusion drawn are satisfactory and future scope listing is satisfactory	Minimum conclusion articulation and future scope listing needs to be revised	CO5	L4, L3
7	Overall presentation of the thesis/ Oral presentation	40	Information in project report is in logical sequence with diagrams, tables, results and discussion. The report is complete and in proper format, oral presentation was excellent.	Information in project report is in logical sequence with diagrams, tables, results and discussion. The report is partially complete and in proper format, oral presentation was satisfactory	Information in project report is in logical sequence with diagrams, tables, results and discussion. The report is complete but in not proper format, oral presentation was not up to the mark.	CO4, CO5	L3, L4, L6

D. Process to assess individual and team performance

1. Project progress seminars are conducted once in every month by the team with respective guide and domain experts.
2. The project seminar should be given by all the project team members according to the division of project.
3. Each student in the project team is assessed to their skill set to deliver the seminar, explain the concept and way to make project assess team to understand their work.

- Each individual and team performance is purely based on this project seminar presentation and the viva voce and progress work they show to their guide.

E. Quality of Completed Projects/Working Prototypes

- Final project demo for the working prototype and the report are evaluated by respective guide with domain experts.
- The projects are evaluated and are awarded the internal assessment marks for maximum of 100 and are graded according to the project contribution towards attainment of PO's and PSO's.

Best Project Evaluation Scheme:

Quality of the project is measured in terms of type (application/ Product development/ research/ review), and the focused areas being literature survey, problem definition, fabrication or software code, environment safety and society, ethical responsibility, project presentation, cost and project management, research publications & Innovation/ IPR. The quality of the Project is assessed through Project quality assessment sheet. A sample copy of Project Quality Assessment sheet is provided below. Based on the scores thus obtained, best student projects are selected.

Table 2.18: Best Project details for the Academic year 2020-21.

Sl. No	Name of the Student	USN	Project Title	Name of the Guide
1	M Chaitanya	3VC17ME033	Mechanical Walker Using New Mechanism	Dr. S G Desai
	Earesh Varma C	3VC17ME010		
	Kiran Math	3VC17ME031		
	Hanumesh	3VC17ME022		
2	Anil Kittur	3VC17ME003	Solar Operated Remote controlled Pesticide sprayer	Dr. S K Modi
	Doddabasava B	3VC17ME008		
	Jaffer Sadiq M Abdul	3VC17ME023		
	Kaisar Ahmed D	3VC17ME028		
3	Ajaya Reddy N	3VC17ME001	Electric power generation using Railway Track	Prof. B Basava Prakash
	C Eshwar	3VC17ME006		
	Deepak Patil S R	3VC17ME007		
	Sumith S Korlahalli	3VC17ME004		

Table 2.19: Best Project details for the Academic year 2019-20.

Sl. No	Name of the Student	USN	Project Title	Name of the Guide
1	M Srihari	3VC17ME420	Automatic Controls of Automobile For Luxurious Parallel Hybrid Car	Dr. Nagaraj Kori/Deepak C
	Manjesh V R	3VC17ME421		
	Md Irfan	3VC17ME426		
	Deepak S	3VC17ME405		
2	Rahul David B	3VC16ME068	Design And Fabrication of 2 Legged Walking Machine	Dr. S G Desai
	Sai Kumar K	3VC17ME419		
	Shivarudra M	3VC17ME437		
	B Vishnu Vamshi	3VC17ME449		
3	H M Prajwal Kumar	3VC16ME031	Design And Fabrication of 3 In 1 Air Conditioner	Dr. S K Modi
	Mohammed Irfan	3VC16ME053		
	Shrinidhi Joshi	3VC16ME099		
	Thippesha V	3VC16ME112		
4	Karthik C M	3VC16ME039	Combinational Rover	Prof. Lakshman Naik T K
	Satish Reddy K	3VC16ME090		
	Vishalkumar	3VC16ME120		
	Sai Venkatesha M	3VC16ME085		

Table 2.20: Best Project details for the Academic year 2018-19

Sl. No	Name of the Student	USN	Project Title	Name of the Guide
01	Mounesh G S	3VC15ME057	Design and fabrication of Mechanical walker using new mechanism	Prof. S G Desai
	Sunanda N	3VC15ME109		
	Malli B	3VC16ME406		
	Chaithra K	3VC16ME407		
02	Venkatesh P	3VC15ME117	Design and fabrication of Coconut oil extraction machine	Prof. H M Naveen
	Manoj Kumar	3VC15ME048		
	Vilas Kumar	3VC15ME119		
	Earanagouda	3VC15ME019		
03	Subham	3VC15ME104	Design and fabrication of multi person cycle	Dr. Kori Nagaraj
	Sreekanth N T	3VC15ME102		
	Sharnagawada S V	3VC15ME093		
	Shivaraj	3VC15ME097		
	Ashish A G	3VC15ME008		
04	Vishwanatha Reddy . P	3VC16ME447	Design and fabrication of Robotic oil Skimmer using	Prof. Lakshman Naik
	Ningraj Dodamani	3VC15ME064		

	Rajesh . W	3VC15ME081	Bluetooth powered by solar energy	
	Mahamed Hyder . P H	3VC15ME043		

F. Evidences of papers published /Awards received by projects etc.

Table 2.21: Students Achievements (Paper Publications / Project Computation)

Sl. No.	Name of the Student	Event Details	Details	Year
01	Sharukantha P, Vyasapura Jetha Naik Rahul Beddadi Sreekanth Naik	Paper Publication	Kinematic Synthesis of Four Link 4R Mechanism using Freudenstein Equation in International Research Journal of Engineering and Technology (IRJET), Vol. 08, Issue 07, July 2021, pp: 2280 to 2282, e-ISSN: 2395-0056.	2021
02	M Sai Venkatesha	Paper Publication	Combinational Rover–A Multipurpose & A Economical Robotical Vehicle In International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 07 Issue: 09, Sep 2020 www.irjet.net	2020
03	Nafeesa Begum Karthik K Ashwini Kurubara Shekar B	3 rd State Level Project Exhibition 2k19 RYMEC Ballari	Smart trash	2019
03	Nafeesa Begum Karthik K Ashwini Kurubara Shekar B	Innovision 2019 PDIT Hosapete	Smart trash	2019
04	Ranganath Desai	Innovision 2019 PDIT Hosapete	Gesture Control Pick and Place Robot	2019
05	Ranganath Desai	4 th National Level Project Competition “IEEE Project Expo - 2019”	Gesture Control Pick and Place Robot	2019
06	Ranganath Desai	Mysore	STORM Workshop	2019

2.2.4	Initiatives related to Industry Interaction	15
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A. Industry supported laboratories

Initiatives taken in curriculum towards Industry Institute Interaction

RYMEC- Mechanical Engineering Department has incepted a state of the art, Centre of Excellence by signing a MoU with TATA Technologies Ltd., Pune on 10th June 2019 in association with Science & Technology Park under National Skill Development Programme, initiated through MHRD, Government of India, with nomenclature “Centre for Invention, Innovation, Incubation & Training”. These competency centres will expose our students to

advanced technology adapted in the industry, provides hands-on experience, enhances employability skills and makes them Industry ready.

The Mechanical Engineering department has signed MOU's with various industries. These industries offer to our students to take up Internships, industrial visit, invited talks and final year projects. Workshops are conducted to our students in association with industry.

Table 2.22: Industry Supported Labs.

Sl. No	Company Name	Labs	Outcome
01	Centre For Invention, Innovation Incubation & Training” Tata Technologies Ltd, Pune	Technology Research and Development Centre	Establishing Centre for Invention, Innovation, Incubation & Training at Mechanical Engineering Dept. These competency centres will expose our students to advanced technology adapted in the industry, provides hands-on experience, enhances employability skills and makes them Industry ready.
02		Advanced Manufacturing Centre	

Table 2.23: List of MoU's

Sl. No	MoU's Name	Type Organization	Date
1	TATA Technologies Ltd., Pune	Training Centre	10/06/2019
2	Halley's Blue Steels Pvt. Ltd., Ballari.	Construction Company	18/04/2016
3	MCALLUS, Ballari.	Manufacturing Organization	10/08/2016
4	CADMAXX Solutions Pvt. Ltd., B'lore.	Coaching Centre	19/11/2015
5	CADD Centre, Ballari.	Education Training Centre	12/07/2014
6	M/S Shirdi Sai Steels Pvt. Ltd., Ballari.	Manufacturing Organization	20/02/2016
7	PRIMETECH HVAC & Refrigeration	Service corporation	10/01/2018
8	MEDINI, Bangalore.	Design Technology & Training Centre	30/05/2019
9	Manya Education Pvt. Ltd., Bangalore.	Study Abroad Consultant	30/05/2019

B. Industry involvement in the program design and partial delivery of any regular courses for students.

Two days Workshop on industrial safety was conducted by Mr. Suresh Kumar Safety Engineer, JSW Steel Ltd. Torangallu, Ballari.

C. Impact analysis of industry institute interaction and actions taken.

The following activities were carried out with MOU's made with various industries and it's outcomes are tabulated in the table 2.24.

Table 2.24: Impact Analysis: MoU'S

Sl. No	Activity	Dates	MOU Partner	Impact Analysis (OUTCOMES)
1	Three Days Workshop on Innovation & Design Thinking	27/ 01/2021 28/01/2021 29/01/2021	TATA Technologies, Pune.	Acquired new insights on brain storming techniques Improved the thinking ability to provide new and feasible solutions in fixing the design issues. Helped to implement in student projects to develop novel products.
2	Three Days Workshop on Product Design and Development	01/02/2021, 02/02/2021, 05/02/2021	TATA Technologies, Pune.	Exposed to design principles, practiced real time in industries to manufacture commercially viable products to the customer satisfaction.
3	Two Days Workshop and Training on Industrial Robot Yaskawa	21/02/2021 & 22/02/2021	TATA Technologies Ltd., Pune	Acquired knowledge on industrial robot programming using teach pendant for welding application and simulation.
4	CNC Training for Staff	20/03/2021	TATA Technologies Ltd., Pune	Acquired the skills on CNC programming and machine operations to manufacture real time products.
5	Internships for final year students	26/03/2021 TO 30/04/2021	TATA Technologies Ltd., Pune	Integrates theory knowledge with practical application and professional skill development in bridging the gap between academia and industry. Exposure to real time operations and advanced technology adopted in the industry.
6	Pathway To Higher Education in Abroad Through GRE, TOEFL, Etc	23/07/2021	Manya Education Pvt. Ltd., Bangalore	Students have clearly understood the importance of higher education in abroad university
7	Product Design Using Fusion 360	28/02/2020	MEDINI	Highlights and advantages of fusion 360 software in various industrial applications.
8	Internships for final year students	09/01/2020	TATA Technologies Ltd., Pune	Integrates theory knowledge with practical application and professional skill development in bridging the gap between academia and industry. Exposure to real time operations and advanced technology adopted in the industry.

DEPARTMENT OF MECHANICAL ENGINEERING

9	Webinar on “Industrial Application of CAD/CAE/CAM”	28/03/2020	CADMAXX solutions, Bengaluru	Students are made aware of CAD/CAE/CAM software in present day industrial applications.
10	Production of Face shield mask using 3D Printing technology	15/04/2020	TATA Technologies Ltd., Pune (Technology Research and Development Centre)	The face shield mask helped medical practitioner in combating covid-19.
11	Internship Training	10/01/2019 To 09/02/2019	Mcallus	Students are exposed to industry scenario It helped to understand the working environment of the industry
12	Internship Training	21/01/2019 To 21/02/2019	Halleys Blue	It helped students to gain technical knowledge on Structural design, analysis and fabrication of pre engineered building It helped to understand the working environment of the industry
13	Technical Training to Staff and Supporting staff on CNC Machine and Industrial Robot.	14/11/2019 To 16/11/2019	TATA Technologies Ltd., Pune (Technology Research and Development Centre & Advanced Manufacturing Centre)	Acquired knowledge on industrial robot programming using teach pendant for welding application and simulation. Acquired the skills on CNC programming and machine operations to manufacture real time products.
14	Industrial Visit of VI Semester students	09/05/2018	Mcallus	Students are exposed to industry scenario It helped to understand the working environment of the industry
15	Two Days workshop on CAD	23/05/2018 & 24/05/2018	CADMAXX Solutions Pvt. Ltd., Bangalore	Students got familiar with CATIA V5 CAD tool.
16	Design Aptitude Test for IV And VI Semester Students	6/03/2017	CADMAXX Solutions Pvt. Ltd., Bangalore	Improved logical skills to crack any competitive tests.
17	One day student seminar on CAD/CAM/CAE (UG-NX)	17/03/2017	CADMAXX Solutions Pvt. Ltd., Bangalore	Students got familiar with UG-NX CAD tool.
18	Industrial Visit for V Semester students	14/10/2017	Halleys Blue	It helped students to gain technical knowledge on Structural design, analysis and fabrication of pre engineered building
19	One Day Industrial Visit for Final Year Students	19/10/2016	M/S. Mcallus, Manufacturers of Orthopedic Implants & Instruments & M/S. HalleysBlue Steels Pvt Ltd, Mundargi Industrial Area, Ballari	It helped students to gain technical knowledge on Structural design, analysis and fabrication of pre engineered building It helped to understand the working environment of the industry
20	Awareness Programme on CAD/CAM/CAE/PLM	28/03/2014	CADMAXX Solutions Pvt. Ltd., Bangalore	Students are made aware of CAD/CAE/CAM/PLM softwares.

2.2.5	Initiatives related to industry internship/ summer training (Mention the initiatives, implementation details and impact analysis etc.)	15
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A. Industrial training/tours for students

Industrial visit is considered as one of the tactical methods of teaching. The main reason behind this industrial visit was to let students know things practically through interaction, working methods and employment practices. Moreover, it gives exposure from academic point of view. Main aim of industrial visit is to provide an exposure to students about practical working environment. They also provide students a good opportunity to gain full awareness about industrial practices.

Table 2.25: Industrial Visit details

Sl. No	Date of visit	Organization visited	No. of students visited	Relevance of PO's
01	19 th Aug 2016	EMD Loco shed & Carriage workshop, Southern Western railways, Hubballi	80	PO1, PO5, PO6, PO7, PO8, PO9, PO10, PO12
02	19 th Aug 2016	M/S. Mcallus, Manufacturers of Orthopedic Implants & Instruments and M/S. HalleysBlue Steels Pvt Ltd, Mundargi Industrial Area, Ballari	80	PO1, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO12
03	9 th May 2018	M/S. Mcallus, Manufacturers of Orthopedic Implants & Instruments and M/S. HalleysBlue Steels Pvt Ltd, Mundargi Industrial Area, Ballari	78	PO1, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO12
04	29 th Oct 2018	Industrial Visit to BTPS	129	PO1, PO6, PO7, PO8, PO9, PO10, PO12
05	10 th Nov 2018	Industrial Visit to JSW	40	PO1, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO12
06	24 to 26 October 2019	Three Day Industrial Visit to Varahi Power Plant	46	PO1, PO6, PO7, PO8, PO9, PO10, PO12

B. Industrial /internship /summer training of more than two weeks and post training Assessment

The students are encouraged to take internship program during their semester break. Faculty members give their guidelines, suggestions and scope and contact details of an internship. They also help the students by interacting with the industrial

experts, provide the students recommendation letters and other necessary supports. The alumni coordinator constantly interacts with alumni those who are working in the industries and request them to provide necessary guidelines and supports for their junior's internship upto 2018-19 academic year. From 2019-20 onwards the internship were carried out in the department (Technology Research And Development Centre and Advanced Manufacturing Centre) in association with Tata Technologies Ltd, Pune.

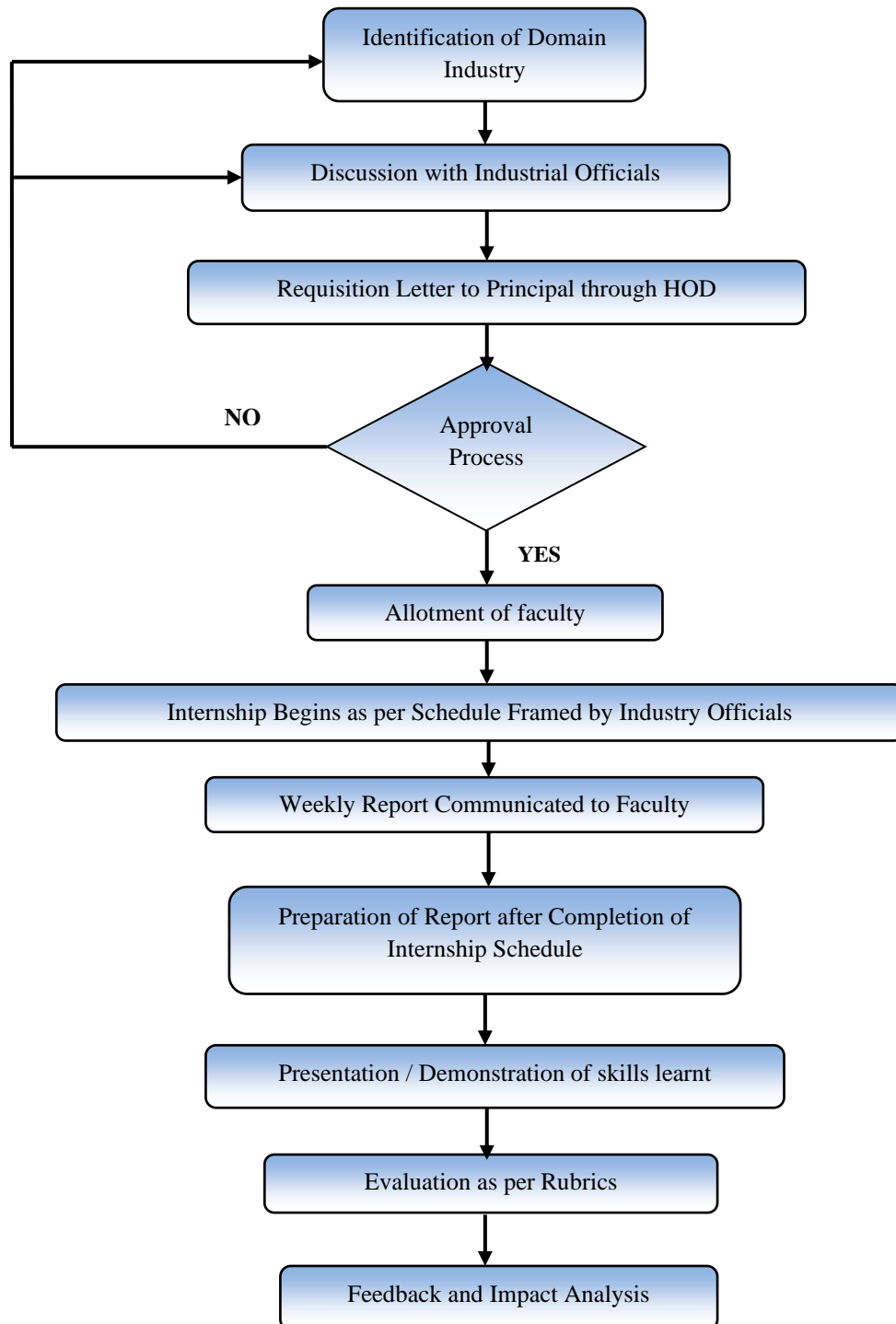


Fig. 2.17: Process followed for Internship training.

Table 2.26: Internship Training details for the year 2020-21

Sl. No	Organization	Name of the Student	USN	Date of Start of Training	Duration of Training
1	TTL, RYMEC	Abhishek Sinha	3VC16ME007	26/03/2021	1 Month
2	TTL, RYMEC	Ajay Reddy N	3VC17ME001	26/03/2021	1 Month
3	TTL, RYMEC	Akasha Gouda H	3VC17ME002	26/03/2021	1 Month
4	TTL, RYMEC	Anil Kittur	3VC17ME003	26/03/2021	1 Month
5	TTL, RYMEC	Bharathisha A B	3VC17ME004	26/03/2021	1 Month
6	TTL, RYMEC	Bharghav R	3VC17ME005	26/03/2021	1 Month
7	TTL, RYMEC	C Eshwar	3VC17ME006	26/03/2021	1 Month
8	TTL, RYMEC	Deepak Patil S R	3VC17ME007	26/03/2021	1 Month
9	TTL, RYMEC	Dodda Basava B	3VC17ME008	26/03/2021	1 Month
10	TTL, RYMEC	Durjaya K B	3VC17ME009	26/03/2021	1 Month
11	TTL, RYMEC	Earesh Varma C	3VC17ME010	26/03/2021	1 Month
12	TTL, RYMEC	Eranagouda K M	3VC17ME012	26/03/2021	1 Month
13	TTL, RYMEC	G Ranjith	3VC17ME014	26/03/2021	1 Month
14	TTL, RYMEC	G S Sree Harsha	3VC17ME016	26/03/2021	1 Month
15	TTL, RYMEC	Ganesh Gowda M	3VC17ME018	26/03/2021	1 Month
16	TTL, RYMEC	Ganesh J	3VC17ME019	26/03/2021	1 Month
17	TTL, RYMEC	Gurusiddana Gouda B	3VC17ME020	26/03/2021	1 Month
18	TTL, RYMEC	Hampanna	3VC17ME021	26/03/2021	1 Month
19	TTL, RYMEC	Hanumesh	3VC17ME022	26/03/2021	1 Month
20	TTL, RYMEC	J M Abdul Khader Basha	3VC17ME023	26/03/2021	1 Month
21	TTL, RYMEC	Jagadeesh	3VC17ME024	26/03/2021	1 Month
22	TTL, RYMEC	Jeffrey Sujan Kumar K	3VC17ME025	26/03/2021	1 Month
23	TTL, RYMEC	K M Parikshith	3VC17ME027	26/03/2021	1 Month
24	TTL, RYMEC	Kaisarahmed D	3VC17ME028	26/03/2021	1 Month
25	TTL, RYMEC	Karthik Kumar D	3VC17ME029	26/03/2021	1 Month
26	TTL, RYMEC	Karthik R B	3VC17ME030	26/03/2021	1 Month
27	TTL, RYMEC	Kiran Math	3VC17ME031	26/03/2021	1 Month
28	TTL, RYMEC	Lokesha Naik	3VC17ME032	26/03/2021	1 Month
29	TTL, RYMEC	M Chaitanya	3VC17ME033	26/03/2021	1 Month
30	TTL, RYMEC	Mohammed Azam J	3VC17ME041	26/03/2021	1 Month
31	TTL, RYMEC	Mohan E	3VC17ME043	26/03/2021	1 Month
32	TTL, RYMEC	Naveen Suragouni	3VC17ME046	26/03/2021	1 Month
33	TTL, RYMEC	Pavan Kumar B	3VC17ME049	26/03/2021	1 Month
34	TTL, RYMEC	Pavithra R	3VC17ME054	26/03/2021	1 Month

DEPARTMENT OF MECHANICAL ENGINEERING

35	TTL, RYMEC	Vinay Kumar S	3VC17ME081	26/03/2021	1 Month
36	TTL, RYMEC	S Mushtaq Ahmed	3VC17ME425	26/03/2021	1 Month
37	TTL, RYMEC	Anand K R	3VC18ME401	26/03/2021	1 Month
38	TTL, RYMEC	Anil Kumar V	3VC18ME402	26/03/2021	1 Month
39	TTL, RYMEC	H M Uday Kumar	3VC18ME411	26/03/2021	1 Month
40	TTL, RYMEC	Imran Abdul W B	3VC18ME413	26/03/2021	1 Month
41	TTL, RYMEC	K Vinay Kumar	3VC18ME415	26/03/2021	1 Month
42	TTL, RYMEC	Kiran Kumar D	3VC18ME418	26/03/2021	1 Month
43	TTL, RYMEC	Kumar K	3VC18ME420	26/03/2021	1 Month
44	TTL, RYMEC	Madhusudhan B	3VC18ME423	26/03/2021	1 Month
45	TTL, RYMEC	Mahantesh H M	3VC18ME424	26/03/2021	1 Month
46	TTL, RYMEC	Manikanta K	3VC18ME425	26/03/2021	1 Month
47	TTL, RYMEC	Mulla Altaf Hussain	3VC18ME431	26/03/2021	1 Month
48	TTL, RYMEC	Nisar Ahamed K M	3VC18ME433	26/03/2021	1 Month
49	TTL, RYMEC	G Pavan Kalyan	3VC18ME434	26/03/2021	1 Month
50	TTL, RYMEC	Pavithra K	3VC18ME435	26/03/2021	1 Month
51	TTL, RYMEC	Sagar Mp	3VC18ME441	26/03/2021	1 Month
52	TTL, RYMEC	Sampath Kumar Y M	3VC18ME443	26/03/2021	1 Month
53	TTL, RYMEC	Santosh G	3VC18ME444	26/03/2021	1 Month
54	TTL, RYMEC	K Shiva Kumar	3VC18ME446	26/03/2021	1 Month
55	TTL, RYMEC	Shiva Shankar Adur	3VC18ME449	26/03/2021	1 Month
56	TTL, RYMEC	Thippeswamy B	3VC18ME454	26/03/2021	1 Month
57	TTL, RYMEC	Thippeswamy R	3VC18ME455	26/03/2021	1 Month
58	TTL, RYMEC	V Siddhi Vinayaka	3VC18ME457	26/03/2021	1 Month
59	TTL, RYMEC	Vinod Kumar B	3VC18ME459	26/03/2021	1 Month
60	TTL, RYMEC	Vishwanath H	3VC18ME460	26/03/2021	1 Month
61	TTL, RYMEC	Vishwanath Gowda K	3VC18ME461	26/03/2021	1 Month
62	TTL, RYMEC	Vyshnavi	3VC18ME462	26/03/2021	1 Month
63	TTL, RYMEC	Yeshwanth D	3VC18ME464	26/03/2021	1 Month
64	TTL, RYMEC	Kiran Kumar Rm	3VC16ME416	26/03/2021	1 Month
65	TTL, RYMEC	Ashok	3VC14ME014	26/03/2021	1 Month
66	TTL, RYMEC	Nasir Ahmed	3VC15ME061	26/03/2021	1 Month
67	TTL, RYMEC	Shreyas K Kirasur	3VC15ME098	26/03/2021	1 Month
68	TTL, RYMEC	A M Shashank	3VC16ME001	26/03/2021	1 Month
69	TTL, RYMEC	Bhavanari Bhargav	3VC16ME020	26/03/2021	1 Month
70	TTL, RYMEC	Manjunath Gouda	3VC16ME045	26/03/2021	1 Month
71	TTL, RYMEC	Monohara G	3VC16ME047	26/03/2021	1 Month

DEPARTMENT OF MECHANICAL ENGINEERING

72	TTL, RYMEC	S Afzaal Hussain	3VC16ME079	26/03/2021	1 Month
73	TTL, RYMEC	Shivaraj M P	3VC16ME095	26/03/2021	1 Month
74	TTL, RYMEC	Rahul R	3VC16ME123	26/03/2021	1 Month
75	TTL, RYMEC	B Akhil Chowdary	3VC16ME124	26/03/2021	1 Month
76	TTL, RYMEC	J Vamshi	3VC16ME126	26/03/2021	1 Month
77	TTL, RYMEC	M K Gururaja	3VC17ME034	26/03/2021	1 Month
78	TTL, RYMEC	Manilkumar M	3VC17ME036	26/03/2021	1 Month
79	TTL, RYMEC	Md Ajmal S	3VC17ME038	26/03/2021	1 Month
80	TTL, RYMEC	Mohammed Tanveer	3VC17ME042	26/03/2021	1 Month
81	TTL, RYMEC	M Shamshuddin	3VC17ME044	26/03/2021	1 Month
82	TTL, RYMEC	Nagaraj B M	3VC17ME045	26/03/2021	1 Month
83	TTL, RYMEC	Pavan Kumar M	3VC17ME050	26/03/2021	1 Month
84	TTL, RYMEC	P Mahammad Shareef	3VC17ME051	26/03/2021	1 Month
85	TTL, RYMEC	Prajwal Abbigeri	3VC17ME052	26/03/2021	1 Month
86	TTL, RYMEC	Praveen Kumar	3VC17ME053	26/03/2021	1 Month
87	TTL, RYMEC	Rahul Beddadi	3VC17ME056	26/03/2021	1 Month
88	TTL, RYMEC	Ravishankara D	3VC17ME057	26/03/2021	1 Month
89	TTL, RYMEC	S Shivakumara	3VC17ME059	26/03/2021	1 Month
90	TTL, RYMEC	Sachin Yalaburgi	3VC17ME060	26/03/2021	1 Month
91	TTL, RYMEC	Saishashank G P	3VC17ME062	26/03/2021	1 Month
92	TTL, RYMEC	Sameer Basha	3VC17ME063	26/03/2021	1 Month
93	TTL, RYMEC	Sharanabasava Swamy H M	3VC17ME070	26/03/2021	1 Month
94	TTL, RYMEC	Somashekhar R H	3VC17ME071	26/03/2021	1 Month
95	TTL, RYMEC	Sreekanthanaik	3VC17ME072	26/03/2021	1 Month
96	TTL, RYMEC	Sumit S Korlahalli	3VC17ME074	26/03/2021	1 Month
97	TTL, RYMEC	Surya Babu G	3VC17ME075	26/03/2021	1 Month
98	TTL, RYMEC	Tarun Kumar P	3VC17ME076	26/03/2021	1 Month
99	TTL, RYMEC	V D S S Udayakumar	3VC17ME077	26/03/2021	1 Month
100	TTL, RYMEC	Vijay Patil	3VC17ME079	26/03/2021	1 Month
101	TTL, RYMEC	Vikas Gouda G	3VC17ME080	26/03/2021	1 Month
102	TTL, RYMEC	Vinayaka V M	3VC17ME082	26/03/2021	1 Month
103	TTL, RYMEC	Vivek R	3VC17ME083	26/03/2021	1 Month
104	TTL, RYMEC	VyasapurJethanaik	3VC17ME084	26/03/2021	1 Month
105	TTL, RYMEC	Yashwanth Raj B	3VC17ME087	26/03/2021	1 Month
106	TTL, RYMEC	Ajay Kumar H	3VC18ME400	26/03/2021	1 Month
107	TTL, RYMEC	Azhar B	3VC18ME403	26/03/2021	1 Month
108	TTL, RYMEC	Balaji D	3VC18ME404	26/03/2021	1 Month

DEPARTMENT OF MECHANICAL ENGINEERING

109	TTL, RYMEC	C R Govardhan	3VC18ME407	26/03/2021	1 Month
110	TTL, RYMEC	Devaraj	3VC18ME409	26/03/2021	1 Month
111	TTL, RYMEC	Harish K	3VC18ME412	26/03/2021	1 Month
112	TTL, RYMEC	S Karthik Kumar	3VC18ME416	26/03/2021	1 Month
113	TTL, RYMEC	Karthik V D	3VC18ME417	26/03/2021	1 Month
114	TTL, RYMEC	Kotresh K	3VC18ME419	26/03/2021	1 Month
115	TTL, RYMEC	Lokesh P H	3VC18ME422	26/03/2021	1 Month
116	TTL, RYMEC	Md Arshad	3VC18ME428	26/03/2021	1 Month
117	TTL, RYMEC	Raja T	3VC18ME438	26/03/2021	1 Month
118	TTL, RYMEC	Ramzan Sab	3VC18ME439	26/03/2021	1 Month
119	TTL, RYMEC	S P Vishal	3VC18ME440	26/03/2021	1 Month
120	TTL, RYMEC	Sharukantha P	3VC18ME445	26/03/2021	1 Month
121	TTL, RYMEC	Shivaraj M	3VC18ME448	26/03/2021	1 Month
122	TTL, RYMEC	Shujahath Ali S	3VC18ME450	26/03/2021	1 Month
123	TTL, RYMEC	Somanaik K	3VC18ME452	26/03/2021	1 Month
124	TTL, RYMEC	Suresh G M	3VC18ME453	26/03/2021	1 Month
125	TTL, RYMEC	U Naveen	3VC18ME456	26/03/2021	1 Month
126	TTL, RYMEC	Y S Md Hasheempeer	3VC18ME463	26/03/2021	1 Month
127	TTL, RYMEC	K Shivaprasad	3VC15ME028	26/03/2021	1 Month
128	TTL, RYMEC	Praveen K	3VC15ME077	26/03/2021	1 Month
129	TTL, RYMEC	Sagar K	3VC15ME086	26/03/2021	1 Month
130	TTL, RYMEC	Yerriswamy K	3VC15ME125	26/03/2021	1 Month
131	TTL, RYMEC	Basavaraj Devaraddi	3VC16ME018	26/03/2021	1 Month
132	TTL, RYMEC	Mohammed Irfan	3VC16ME052	26/03/2021	1 Month
133	TTL, RYMEC	Ravi B H	3VC16ME075	26/03/2021	1 Month
134	TTL, RYMEC	Shasidhar B V	3VC16ME093	26/03/2021	1 Month
135	TTL, RYMEC	Sumanth Kumar G	3VC16ME107	26/03/2021	1 Month
136	TTL, RYMEC	Amaresh M	3VC17ME400	26/03/2021	1 Month
137	TTL, RYMEC	Gnanesh	3VC17ME408	26/03/2021	1 Month
138	TTL, RYMEC	Hemanthagouda K M	3VC17ME413	26/03/2021	1 Month
139	TTL, RYMEC	Srisaila Mallikarjun	3VC17ME414	26/03/2021	1 Month
140	TTL, RYMEC	Karthik Chandrakar M	3VC17ME416	26/03/2021	1 Month
141	TTL, RYMEC	Khaleel Basha	3VC17ME418	26/03/2021	1 Month
142	TTL, RYMEC	Rajashekhara V	3VC17ME431	26/03/2021	1 Month
143	TTL, RYMEC	Yogesh M	3VC17ME453	26/03/2021	1 Month
144	TTL, RYMEC	M Sushma	3VC17ME454	26/03/2021	1 Month
145	TTL, RYMEC	Amir Souhail	3VC16ME401	26/03/2021	1 Month

DEPARTMENT OF MECHANICAL ENGINEERING

146	TTL, RYMEC	Vishal S Navale	3VC15ME122	26/03/2021	1 Month
147	TTL, RYMEC	Srinivasreddy	3VC16ME103	26/03/2021	1 Month
148	TTL, RYMEC	N B Vishwa Prasad	3VC16ME431	26/03/2021	1 Month
149	TTL, RYMEC	Shreekanth K M	3VC16ME096	26/03/2021	1 Month

Table 2.27: Internship Training details for the year 2019-20

Sl. No	Organization	Name of The Student	USN	Date of Start of Training	Duration of Training
1	TTL, RYMEC	Durga Prasad T U	3VC15ME018	09/01/2020	1 Month
2	TTL, RYMEC	Hareesha S	3VC15ME025	09/01/2020	1 Month
3	TTL, RYMEC	M Dinesh Kumar Reddy	3VC15ME049	09/01/2020	1 Month
4	TTL, RYMEC	Md.Idris	3VC15ME053	09/01/2020	1 Month
5	TTL, RYMEC	Suguresh P	3VC15ME106	09/01/2020	1 Month
6	TTL, RYMEC	Sukith M	3VC15ME107	09/01/2020	1 Month
7	TTL, RYMEC	Obyanaik L K	3VC15ME427	09/01/2020	1 Month
8	TTL, RYMEC	Abhishek	3VC16ME004	09/01/2020	1 Month
9	TTL, RYMEC	Ankith P B	3VC16ME013	09/01/2020	1 Month
10	TTL, RYMEC	Avinash Naidu G	3VC16ME014	09/01/2020	1 Month
11	TTL, RYMEC	Chandra Kiran H	3VC16ME022	09/01/2020	1 Month
12	TTL, RYMEC	Deepak M V S	3VC16ME025	09/01/2020	1 Month
13	TTL, RYMEC	Durga Venkata Prasad M	3VC16ME026	09/01/2020	1 Month
14	TTL, RYMEC	E A Chandrasahsa	3VC16ME027	09/01/2020	1 Month
15	TTL, RYMEC	Eranna Prakash Handi	3VC16ME029	09/01/2020	1 Month
16	TTL, RYMEC	H M Prajwal Kumar	3VC16ME031	09/01/2020	1 Month
17	TTL, RYMEC	J R Suraj	3VC16ME034	09/01/2020	1 Month
18	TTL, RYMEC	Jayanth R	3VC16ME035	09/01/2020	1 Month
19	TTL, RYMEC	K Bharath	3VC16ME036	09/01/2020	1 Month
20	TTL, RYMEC	Karthik C M	3VC16ME039	09/01/2020	1 Month
21	TTL, RYMEC	Kotresh M	3VC16ME042	09/01/2020	1 Month
22	TTL, RYMEC	Matam Dinesh Babu	3VC16ME048	09/01/2020	1 Month
23	TTL, RYMEC	Mohammed Irfan	3VC16ME053	09/01/2020	1 Month
24	TTL, RYMEC	Pavan Kumar Gurumal N	3VC16ME061	09/01/2020	1 Month
25	TTL, RYMEC	Pushkar Raj D	3VC16ME066	09/01/2020	1 Month
26	TTL, RYMEC	Rahul David B	3VC16ME068	09/01/2020	1 Month
27	TTL, RYMEC	Rajesh B	3VC16ME069	09/01/2020	1 Month
28	TTL, RYMEC	Rajesh K	3VC16ME070	09/01/2020	1 Month
29	TTL, RYMEC	Ranga Sai M	3VC16ME074	09/01/2020	1 Month

DEPARTMENT OF MECHANICAL ENGINEERING

30	TTL, RYMEC	Riyaz Gurikar	3VC16ME077	09/01/2020	1 Month
31	TTL, RYMEC	Rubesh Babu Naidu B	3VC16ME078	09/01/2020	1 Month
32	TTL, RYMEC	S S Nitin	3VC16ME082	09/01/2020	1 Month
33	TTL, RYMEC	Sandeep	3VC16ME087	09/01/2020	1 Month
34	TTL, RYMEC	Santosh	3VC16ME088	09/01/2020	1 Month
35	TTL, RYMEC	Satish Reddy K	3VC16ME090	09/01/2020	1 Month
36	TTL, RYMEC	Satisha Kulkarni	3VC16ME091	09/01/2020	1 Month
37	TTL, RYMEC	Shakeel Ahmed	3VC16ME092	09/01/2020	1 Month
38	TTL, RYMEC	Shridhar J	3VC16ME098	09/01/2020	1 Month
39	TTL, RYMEC	Shrinidhi Joshi	3VC16ME099	09/01/2020	1 Month
40	TTL, RYMEC	Sunil S	3VC16ME108	09/01/2020	1 Month
41	TTL, RYMEC	Vinayak	3VC16ME118	09/01/2020	1 Month
42	TTL, RYMEC	Vishalkumar	3VC16ME120	09/01/2020	1 Month
43	TTL, RYMEC	Srinivas Rao J U	3VC16ME121	09/01/2020	1 Month
44	TTL, RYMEC	Krishna Murthy G	3VC16ME418	09/01/2020	1 Month
45	TTL, RYMEC	L Kishore	3VC16ME421	09/01/2020	1 Month
46	TTL, RYMEC	Md Irfan J N	3VC16ME428	09/01/2020	1 Month
47	TTL, RYMEC	Ananda V	3VC17ME401	09/01/2020	1 Month
48	TTL, RYMEC	Devaraj	3VC17ME406	09/01/2020	1 Month
49	TTL, RYMEC	Joshua Haniel S	3VC17ME415	09/01/2020	1 Month
50	TTL, RYMEC	Kuswanth Sai Kumar K	3VC17ME419	09/01/2020	1 Month
51	TTL, RYMEC	Maruthi Prasad J	3VC17ME423	09/01/2020	1 Month
52	TTL, RYMEC	Pavan Kumar B	3VC17ME428	09/01/2020	1 Month
53	TTL, RYMEC	Pradeep G	3VC17ME429	09/01/2020	1 Month
54	TTL, RYMEC	Rajasekhar A K	3VC17ME430	09/01/2020	1 Month
55	TTL, RYMEC	Santhosh H	3VC17ME433	09/01/2020	1 Month
56	TTL, RYMEC	Shivarudra M	3VC17ME437	09/01/2020	1 Month
57	TTL, RYMEC	U M Nandaveer	3VC17ME442	09/01/2020	1 Month
58	TTL, RYMEC	K R Umesh	3VC17ME443	09/01/2020	1 Month
59	TTL, RYMEC	Veerasha K	3VC17ME446	09/01/2020	1 Month
60	TTL, RYMEC	Venugopal S N	3VC17ME447	09/01/2020	1 Month
61	TTL, RYMEC	Vijay Kumar K	3VC17ME448	09/01/2020	1 Month
62	TTL, RYMEC	B Vishnu Vamshi	3VC17ME449	09/01/2020	1 Month
63	TTL, RYMEC	Faisal	3VC14ME023	09/01/2020	1 Month
64	TTL, RYMEC	Angadi Shridhar	3VC15ME007	09/01/2020	1 Month
65	TTL, RYMEC	P Bheemraj	3VC15ME011	09/01/2020	1 Month
66	TTL, RYMEC	Chakrish B	3VC15ME012	09/01/2020	1 Month

DEPARTMENT OF MECHANICAL ENGINEERING

67	TTL, RYMEC	Dasharath S	3VC15ME015	09/01/2020	1 Month
68	TTL, RYMEC	Gagan M	3VC15ME021	09/01/2020	1 Month
69	TTL, RYMEC	Nandish D	3VC15ME059	09/01/2020	1 Month
70	TTL, RYMEC	N Meher Baba	3VC15ME067	09/01/2020	1 Month
71	TTL, RYMEC	Panduranga V	3VC15ME068	09/01/2020	1 Month
72	TTL, RYMEC	P Shiddalinga Laxman	3VC15ME073	09/01/2020	1 Month
73	TTL, RYMEC	Premkumar G T	3VC15ME078	09/01/2020	1 Month
74	TTL, RYMEC	Shashanka B M	3VC15ME095	09/01/2020	1 Month
75	TTL, RYMEC	Sohail K	3VC15ME100	09/01/2020	1 Month
76	TTL, RYMEC	U O Karthik	3VC15ME113	09/01/2020	1 Month
77	TTL, RYMEC	Abhishek Parappa M	3VC16ME006	09/01/2020	1 Month
78	TTL, RYMEC	A Mallikarjuna Reddy	3VC16ME009	09/01/2020	1 Month
79	TTL, RYMEC	Anand M	3VC16ME011	09/01/2020	1 Month
80	TTL, RYMEC	Anil Kumar	3VC16ME012	09/01/2020	1 Month
81	TTL, RYMEC	B Mahidhar Reddy	3VC16ME015	09/01/2020	1 Month
82	TTL, RYMEC	B Vijay Kumar	3VC16ME016	09/01/2020	1 Month
83	TTL, RYMEC	K Sreenivasulu	3VC16ME037	09/01/2020	1 Month
84	TTL, RYMEC	Karthik M	3VC16ME040	09/01/2020	1 Month
85	TTL, RYMEC	M Sai Chaithanya	3VC16ME044	09/01/2020	1 Month
86	TTL, RYMEC	Manjunatha P	3VC16ME046	09/01/2020	1 Month
87	TTL, RYMEC	Nafeesa Begum	3VC16ME055	09/01/2020	1 Month
88	TTL, RYMEC	Nagarajgoud Patil	3VC16ME057	09/01/2020	1 Month
89	TTL, RYMEC	Pramod S H	3VC16ME062	09/01/2020	1 Month
90	TTL, RYMEC	Prashanthagowda	3VC16ME063	09/01/2020	1 Month
91	TTL, RYMEC	Praveen M	3VC16ME064	09/01/2020	1 Month
92	TTL, RYMEC	Ramesh Babu G R	3VC16ME073	09/01/2020	1 Month
93	TTL, RYMEC	S Basavaraja	3VC16ME080	09/01/2020	1 Month
94	TTL, RYMEC	Sai Theja S L	3VC16ME084	09/01/2020	1 Month
95	TTL, RYMEC	Sai Venkatesha M	3VC16ME085	09/01/2020	1 Month
96	TTL, RYMEC	Shreesha	3VC16ME097	09/01/2020	1 Month
97	TTL, RYMEC	Sriranganath Desai	3VC16ME104	09/01/2020	1 Month
98	TTL, RYMEC	Sugureshwara S	3VC16ME105	09/01/2020	1 Month
99	TTL, RYMEC	Sunil T	3VC16ME109	09/01/2020	1 Month
100	TTL, RYMEC	T K Shankarnarayana	3VC16ME111	09/01/2020	1 Month
101	TTL, RYMEC	Thippesha V	3VC16ME112	09/01/2020	1 Month
102	TTL, RYMEC	Tirumala Joshi	3VC16ME113	09/01/2020	1 Month
103	TTL, RYMEC	Vijaya Kumar N	3VC16ME117	09/01/2020	1 Month

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104	TTL, RYMEC	Vinayaka P	3VC16ME119	09/01/2020	1 Month
105	TTL, RYMEC	Shiva Kumar B	3VC16ME122	09/01/2020	1 Month
106	TTL, RYMEC	Doddanagowda G	3VC16ME409	09/01/2020	1 Month
107	TTL, RYMEC	Md Rafiq K	3VC16ME417	09/01/2020	1 Month
108	TTL, RYMEC	Ashwini Kurabara	3VC17ME402	09/01/2020	1 Month
109	TTL, RYMEC	Br Sharanabasava	3VC17ME403	09/01/2020	1 Month
110	TTL, RYMEC	S Deepak	3VC17ME405	09/01/2020	1 Month
111	TTL, RYMEC	C Dhanalakshmi	3VC17ME407	09/01/2020	1 Month
112	TTL, RYMEC	Govinda G	3VC17ME411	09/01/2020	1 Month
113	TTL, RYMEC	Karthik K	3VC17ME417	09/01/2020	1 Month
114	TTL, RYMEC	M Srihari	3VC17ME420	09/01/2020	1 Month
115	TTL, RYMEC	Manjesh V R	3VC17ME421	09/01/2020	1 Month
116	TTL, RYMEC	Manjunatha Betageri	3VC17ME422	09/01/2020	1 Month
117	TTL, RYMEC	Maruthi Reddy K	3VC17ME424	09/01/2020	1 Month
118	TTL, RYMEC	Md Irfan	3VC17ME426	09/01/2020	1 Month
119	TTL, RYMEC	N Sai Durga	3VC17ME432	09/01/2020	1 Month
120	TTL, RYMEC	Shekhar B	3VC17ME435	09/01/2020	1 Month
121	TTL, RYMEC	Shiva Kumar H	3VC17ME436	09/01/2020	1 Month
122	TTL, RYMEC	Shrikanth	3VC17ME438	09/01/2020	1 Month
123	TTL, RYMEC	S Prakash	3VC17ME439	09/01/2020	1 Month
124	TTL, RYMEC	Srividya S	3VC17ME440	09/01/2020	1 Month
125	TTL, RYMEC	Umesha B	3VC17ME444	09/01/2020	1 Month
126	TTL, RYMEC	Yerriswamy G M	3VC17ME452	09/01/2020	1 Month

Table 2.28: Internship Training details for the year 2018-19.

SL No.	Organization	Name of the Student	USN	Date of Start of Training	Duration of The Training
1	JSW Steels Limited	Vishnu T M	3VC12ME120	21/01/2019	1 Month
2	SLD Steels PVT Limited	N Girish Aravind	3VC14ME029	21/01/2019	1 Month
3	MITL Bellary	Manjunath V B	3VC14ME050	09/01/2019	1 Month
4	JSW Steels Limited	A P Bharath	3VC15ME001	21/01/2019	1 Month
5	MGSSK Bhalki	Akshatakumar H	3VC15ME004	07/01/2019	1 Month
6	JSW Steels Limited	Akshay Kumar N	3VC15ME005	21/01/2019	1 Month
7	MGSSK Bhalki	Ashish A G	3VC15ME008	07/01/2019	1 Month
8	SCR Guntakal	B Pramod Kumar	3VC15ME009	01/02/2019	1 Month
9	SCR Guntakal	Bheemesh D	3VC15ME010	01/02/2019	1 Month
10	SCR Guntakal	Doddana Gouda G	3VC15ME016	07/01/2019	1 Month

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11	SCR Guntakal	Earana Gouda	3VC15ME019	07/01/2019	1 Month
12	SCR Guntakal	Ediga Ranjith	3VC15ME020	01/02/2019	1 Month
13	SCR Guntakal	Gandam Rajavikram	3VC15ME022	07/01/2019	1 Month
14	Techno Fly Bangalore	Gulamnabi	3VC15ME023	08/01/2019	1 Month
15	Halleys Blue Bellary	Hasansab	3VC15ME026	21/01/2019	1 Month
16	Hindustan Shipyard Visakhapatnam	K K Saiprasad	3VC15ME027	10/01/2019	1 Month
17	Hindustan Shipyard Visakhapatnam	Kalyankumar Yadav	3VC15ME030	10/01/2019	1 Month
18	Techno Fly Bangalore	Karanam Naveenkumar	3VC15ME031	08/01/2019	1 Month
19	Hindustan Shipyard Visakhapatnam	Kasa Sujith Kumar	3VC15ME032	10/01/2019	1 Month
20	Techno Fly Bangalore	Kiran Kumar .K	3VC15ME033	08/01/2019	1 Month
21	Techno Fly Bangalore	Kirankumar Angadi	3VC15ME034	08/01/2019	1 Month
22	JSW Steels Limited	Kishor Kumar B	3VC15ME035	21/01/2019	1 Month
23	Hindustan Shipyard Visakhapatnam	Kolur Kotresha	3VC15ME036	10/01/2019	1 Month
24	JSW Cement	Lokesh Reddy P	3VC15ME039	14/01/2019	1 Month
25	SCR Guntakal	M Mahesh	3VC15ME041	01/02/2019	1 Month
26	Hindustan Shipyard Visakhapatnam	M Venkata Sai Praveen	3VC15ME042	10/01/2019	1 Month
27	BHUWALKA Pipes PVT LTD	Mahesh Kumar E	3VC15ME045	14/01/2019	1 Month
28	SCR Guntakal	Mallikarjuna	3VC15ME046	01/02/2019	1 Month
29	Halleys Blue Bellary	Manjunath Poojari	3VC15ME047	21/01/2019	1 Month
30	SCR Guntakal	Manojkumar Alaburusogi	3VC15ME048	01/02/2019	1 Month
31	SLD Steels PVT Limited	Maruthi	3VC15ME050	21/01/2019	1 Month
32	Halleys Blue Bellary	Md Ejazhussain B	3VC15ME052	21/01/2019	1 Month
33	BhuwalkaPipes PVT LTD	Md Suhail	3VC15ME054	14/01/2019	1 Month
34	MITL Bellary	Mounesh	3VC15ME057	09/01/2019	1 Month
35	SCR Guntakal	Naresh G	3VC15ME060	07/01/2019	1 Month
36	SCR Guntakal	Nikhil Kumar A	3VC15ME062	07/01/2019	1 Month
37	JSW Steels Limited	Ningraj Dodamani	3VC15ME064	21/09/2019	1 Month
38	SCR Guntakal	Niranjana H	3VC15ME065	07/01/2019	1 Month
39	TECH F Bangalore	Pavan K	3VC15ME069	07/01/2019	1 Month
40	Hindustan Ship Yard Visakhapatnam	Pawan Kumar B	3VC15ME070	10/01/2019	1 Month
41	JSW Steels Limited	Prashant Kumar H	3VC15ME075	07/01/2019	1 Month

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42	JSW Steels Limited	Purushotham Reddy N	3VC15ME079	07/01/2019	1 Month
43	Hindustan Ship Yard Visakhapatnam	Raghuraja Reddy A	3VC15ME080	10/01/2019	1 Month
44	SLD Steels PVT Limited	Rajasha W	3VC15ME081	21/01/2019	1 Month
45	JSW Steels Limited	S Shafi Ahamed	3VC15ME084	07/01/2019	1 Month
46	SCR Guntakal	Sai Kumar B G	3VC15ME088	07/01/2019	1 Month
47	TECH F Bangalore	Sai Manish Gurram	3VC15ME089	07/01/2019	1 Month
48	MITL Bellary	Santhosha Kr	3VC15ME091	09/01/2019	1 Month
49	MGSSK Bhalki	Shambulinga S M	3VC15ME092	07/01/2019	1 Month
50	MGSSK Bhalki	Sharanana Gowda S V	3VC15ME093	07/01/2019	1 Month
51	MGSSK Bhalki	Sharane Gouda	3VC15ME094	07/01/2019	1 Month
52	MGSSK Bhalki	Shivaraj Amaresh Koppad	3VC15ME097	07/01/2019	1 Month
53	MGSSK Bhalki	Sreekanth N T	3VC15ME102	07/01/2019	1 Month
54	MGSSK Bhalki	Subham	3VC15ME104	07/01/2019	1 Month
55	Hindustan Ship Yard Visakhapatnam	Suman H M	3VC15ME108	10/01/2019	1 Month
56	MITL Bellary	Sunanda	3VC15ME109	09/01/2019	1 Month
57	MC Bellary	Syed Mahaboob Pasha	3VC15ME111	10/01/2019	1 Month
58	MITL Bellary	Vamshi Krishna	3VC15ME115	09/01/2019	1 Month
59	MITL Bellary	Veerasha	3VC15ME116	09/01/2019	1 Month
60	SCR Guntakal	Venkatesh P	3VC15ME117	07/01/2019	1 Month
61	JSW Steels Limited	Vikas Kumar Das	3VC15ME118	21/01/2019	1 Month
62	SCR Guntakal	Vilas Kumar R	3VC15ME119	07/01/2019	1 Month
63	JSW Steels Limited	Virupaksha Gouda K	3VC15ME121	07/01/2019	1 Month
64	Hindustan Ship Yard Visakhapatnam	Yashwanth	3VC15ME124	10/01/2019	1 Month
65	JSW Steels Limited	Venkat Nikhil A	3VC15ME127	21/01/2019	1 Month
66	SANSERI Engineering LTD Bangalore	Akshy Kumar	3VC16ME402	21/01/2019	1 Month
67	SCR Guntakal	Anjineyalu	3VC16ME403	01/02/2019	1 Month
68	SCR Guntakal	Bhaskar L	3VC16ME405	07/01/2019	1 Month
69	MITL Bellary	Bureddy Malli	3VC16ME406	09/01/2019	1 Month
70	MITL Bellary	Chaithra	3VC16ME407	09/01/2019	1 Month
71	JSW Cement	Eresh Kumar	3VC16ME412	14/01/2019	1 Month
72	MC Bellary	H.M.Karthik	3VC16ME415	10/01/2019	1 Month

73	MC Bellary	Kumar A	3VC16ME420	10/01/2019	1 Month
74	JSW Cement	Madival Mahadeva	3VC16ME422	14/01/2019	1 Month
75	JSW Steels Limited	Manikanta	3VC16ME424	15/01/2019	1 Month
76	TBK India PVT LTD Pune	Manjunath Hiremath	3VC16ME425	11/01/2019	1 Month
77	JSW Steels Limited	Manjunath.K	3VC16ME426	18/01/2019	1 Month
78	JSS Structure	Mohan Kumar	3VC16ME430	16/01/2019	1 Month
79	SLD Steels PVT Limited	Naveen A	3VC16ME432	21/01/2019	1 Month
80	JSS Structure	Rajesh.J	3VC16ME433	16/01/2019	1 Month
81	MC Bellary	Ravindranath P Patil	3VC16ME434	10/01/2019	1 Month
82	JSS Structure	Zameer Ahmed	3VC16ME436	16/01/2019	1 Month
83	JSW Cement	Sanjeevappa	3VC16ME437	14/01/2019	1 Month
84	MITL Bellary	Sharanabasava C	3VC16ME439	09/01/2019	1 Month
85	SLD Steels PVT Limited	Shivaprasad B V	3VC16ME440	21/01/2019	1 Month
86	MITL Bellary	Shivaraj E	3VC16ME441	09/01/2019	1 Month
87	JSW Steels Limited	S.Mallikarjuna	3VC16ME444	21/01/2019	1 Month
88	Halleys Blue Bellary	Syed Alam	3VC16ME445	21/01/2019	1 Month
89	JSS Structure	C. Varun Kumar	3VC16ME446	16/01/2019	1 Month
90	JSW Cement	P. Vishwanath Reddy	3VC16ME447	14/01/2019	1 Month
91	JSW Steels Limited	Yogesh.D	3VC16ME448	18/01/2019	1 Month

Table 2.29: Rubrics for Internship Evaluation

Sl. No.	Particulars	Marks	PO Mapping
1	Programming skills	10	1,2,3,4,5
2	Hands on Skills	10	1,2,3,4,5
3	Presentation and interaction on developed components	5	7,8,9,10,11,12
4	Internship Report	25	10

Initiation:

1. Students and department together identify domain industry and discuss with Industry officials for the Internship
2. The requisition letter by the students to Principal through Internship coordinator and Head to undergo internship for the stipulated period.
3. The Internship coordinator allocates a faculty to guide for each student.

Implementation:

1. The faculty and the mentor for the internship in the industry will communicate the progress of the internship training periodically.
2. After completion of the internship training, a detailed report is submitted to the department.

Evaluation:

1. Student will present a power point presentation about the internship training in front of a panel of professors along with the guide.
2. Based on the performance the evaluation process is carried out by a panel of professors along with the guide and marks are awarded as per the rubrics shown in table below.

C. Impact Analysis of Industrial training/internship:

1. Internship/Industrial visit provides a pathway to students for their first industrial experience.
2. Internship will open up the gateway to their professional career.
3. Students are exposed to real time practical experience of the subjects studied in the classrooms and realized the practical importance of the subjects.
4. Students are inspired to work on co-op projects so that team work ability and work place ethics are enriched.
5. Professional and technical skills of the students are enhanced due to real time industrial exposure.
6. Students were exposed to the industrial induction training.

D. Student Feedback on Initiative:

The student feedback on program /industrial visit is collected. Feedback is considered for further improvement.

CRITERION 3

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CRITERION 3	COURSE OUTCOMES AND PROGRAM OUT COMES	120
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3.1	Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs)	20
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3.1.1	Course Outcomes (COs)	05
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Course Name: Elements of Mechanical Engineering

Course Year: 2017-18

Course Outcomes:

At the end of the course completion student will be able to:

C104.1	Demonstrate knowledge of various Energy sources and Boilers
C104.2	Demonstrate knowledge of Prime movers such as turbines and IC engines,
C104.3	Demonstrate knowledge of metal removal using Lathe, drilling and Milling machines and of Robotics & Automation.
C104.4	Demonstrate knowledge of various composites, engineering materials and joining processes
C104.5	Demonstrate knowledge of Refrigeration and air-conditioning systems.

Course Name: Workshop Practice

Course Year: 2017-18

Course Outcomes:

At the end of the course completion student will be able to:

C106.1	Understand the Basics of Workshop Practices.
C106.2	Demonstrate and Produce Different types of Fitting models.
C106.3	Gain knowledge of development of sheet metal models with an Understanding of their applications.
C106.4	Perform Soldering and Welding of different Sheet Metal and Welded Joints.

Course Name: Computer Aided Engineering Drawing

Course Year: 2017-18

Course Outcomes:

At the end of the course completion student will be able to:

C112.1	Acquire the knowledge of fundamentals in engineering drawing and demonstrate the usage of CAD software to Create engineering drawings.
C112.2	Understand the concepts of orthographic projections identify the different

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	quadrants and sketch the principles views of points, lines and Planes.
C112.3	Recognize, visualize and sketch Orthographic projections of solids.
C112.4	Sketch the isometric projection of solids, and converting orthographic to isometric projections. Draw the development of sectional lateral surface.

Course Name: Material Science

Course Year: 2018-19

Course Outcomes:

At the end of the course completion student will be able to:

C202.1	Describe the mechanical properties of metals, their alloys and various modes of failure.
C202.2	Understand the microstructures of ferrous and non-ferrous materials to mechanical properties
C202.3	Explain the processes of heat treatment of various alloys.
C202.4	Understand the properties and potentialities of various materials available and material selection procedures
C202.5	Explain about the composite materials and their processing as well as applications.

Course Name: Machine Tool & Operations

Course Year: 2018-19

Course Outcomes:

	At the end of the course completion student will be able to:
C213.1	Discuss the operations of various machine tools machines
C213.2	Describe various machining processes, parameters & relative quantities
C213.3	Explain different cutting tool materials, Geometry & surface finish
C213.4	Apply mechanics of machining process to machine tool operations
C213.5	Analyze tool wear mechanisms and equations to enhance tool life and minimize machining cost.

Course Name: Turbo Machines

Course Year: 2019-20

Course Outcomes:

	At the end of the course completion student will be able to:
C303.1	Understand the basic quantities related to power absorbing and generating machines.

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C303.2	Comprehend thermodynamic relations applied to turbo machines.
C303.3	Analyse the performance of steam turbines.
C303.4	Evaluate the work interactions and characteristics of hydraulic turbines.
C303.5	Interpret the working of pumps and compressors.

Course Name: Finite Element Analysis

Course Year: 2019-20

Course Outcomes:

	At the end of the course completion student will be able to:
C309.1	Understand the concepts behind formulation methods in FEM.
C309.2	Identify the application and characteristics of FEA elements such as bars, beams, plane and iso-parametric elements.
C309.3	Develop element characteristic equation and generate global equation.
C309.4	Apply suitable boundary conditions to a global equation for static and dynamic problems.
C309.5	Evaluate displacements, stress and strains for different mechanical elements.

Course Name: Fluid Power Systems

Course Year: 2020-21

Course Outcomes:

	At the end of the course completion student will be able to:
C402.1	Identify and analyse the functional requirements of a fluid power transmission system for a given application.
C402.2	Visualize how a hydraulic/pneumatic circuit will work to accomplish the function.
C402.3	Design an appropriate hydraulic or pneumatic circuit or combination circuit like electrohydraulics, electro-pneumatics for a given application.
C402.4	Select and size the different components of the circuit.
C402.5	Develop a comprehensive circuit diagram by integrating the components selected for the given application.

Course Name: Additive Manufacturing

Course Year: 2020-21

Course Outcomes:

	At the end of the course completion student will be able to:
C410.1	To discuss various Additive manufacturing process and its applications.

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C410.2	To illustrate various motors, Actuators used in the system and design of hydraulic & pneumatic circuits.
C410.3	To analyze basic concepts, its importance and applications of polymers and powder metallurgy in additive manufacturing.
C410.4	To Analyze nanomaterials with various characterization techniques and its applications.
C410.5	To develop NC, CNC machine programming automated industrial applications.

Course Name: Elements of Mechanical Engineering

Course Year: 2016-17

Course Outcomes:

At the end of the course completion student will be able to:

C122.1	Identify types of energy sources, utilization of energy, conversion methods, steam & its properties and steam boilers
C122.2	Explain the working principle of Prime movers such as turbines and IC engines
C122.3	Explain the Metal removal process using Lathe, drilling, Milling, Robotics and Automation.
C122.4	Comprehend fundamentals of application and usage of various engineering materials, joining processes
C122.5	Understand the concepts of Refrigeration and air-conditioning systems

Course Name: Workshop Practice

Course Year: 2016-17

Course Outcomes:

At the end of the course completion student will be able to:

C106.1	Understand the Basics of Workshop Practices.
C106.2	Demonstrate and Produce Different types of Fitting models.
C106.3	Gain knowledge of development of sheet metal models with an Understanding of their applications.
C106.4	Perform Soldering and Welding of different Sheet Metal and Welded Joints.

Course Name: Computer Aided Engineering Drawing

Course Year: 2016-17

Course Outcomes:

At the end of the course completion student will be able to:

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C112.1	Acquire the knowledge of fundamentals in engineering drawing and demonstrate the usage of CAD software to Create engineering drawings.
C112.2	Understand the concepts of orthographic projections identify the different quadrants and sketch the principles views of points, lines and Planes.
C112.3	Recognize, visualize and sketch Orthographic projections of solids.
C112.4	Sketch the isometric projection of solids, and converting orthographic to isometric projections. Draw the development of sectional lateral surface.

Course Name: Material Science

Course Year: 2017-18

Course Outcomes:

At the end of the course completion student will be able to:

C202.1	Describe the mechanical properties of metals, their alloys and various modes of failure.
C202.2	Understand the microstructures of ferrous and non-ferrous materials to mechanical properties
C202.3	Explain the processes of heat treatment of various alloys.
C202.4	Understand the properties and potentialities of various materials available and material selection procedures
C202.5	Know about the composite materials and their processing as well as applications.

Course Name: Machine Tool & Operations

Course Year: 2017-18

Course Outcomes:

	At the end of the course completion student will be able to:
C213.1	Discuss the operations of various machine tools machines
C213.2	Describe various machining processes, parameters & relative quantities
C213.3	Explain different cutting tool materials, Geometry & surface finish
C213.4	Apply mechanics of machining process to machine tool operations
C213.5	Analyze tool wear mechanisms and equations to enhance tool life and minimize machining cost.

Course Name: Turbo Machines

Course Year: 2018-19

Course Outcomes:

	At the end of the course completion student will be able to:
C303.1	Understand the basic quantities related to power absorbing and generating machines.
C303.2	Comprehend thermodynamic relations applied to turbo machines.
C303.3	Analyse the performance of steam turbines.
C303.4	Evaluate the work interactions and characteristics of hydraulic turbines.
C303.5	Interpret the working of pumps and compressors.

Course Name: Finite Element Analysis

Course Year: 2018-19

Course Outcomes:

	At the end of the course completion student will be able to:
C309.1	Understand the concepts behind formulation methods in FEM.
C309.2	Identify the application and characteristics of FEA elements such as bars, beams, plane, and iso-parametric elements.
C309.3	Develop element characteristic equation and generate global equation.
C309.4	Apply suitable boundary conditions to a global equation for static and dynamic problems.
C309.5	Evaluate displacements, stress and strains for different mechanical elements.

Course Name: Fluid Power Systems

Course Year: 2019-20

Course Outcomes:

	At the end of the course completion student will be able to:
C402.1	Identify and analyse the functional requirements of a fluid power transmission system for a given application.
C402.2	Visualize how a hydraulic/pneumatic circuit will work to accomplish the function.
C402.3	Design an appropriate hydraulic or pneumatic circuit or combination circuit like electro hydraulics, electro-pneumatics for a given application.
C402.4	Select and size the different components of the circuit.
C402.5	Develop a comprehensive circuit diagram by integrating the components selected for the given application.

Course Name: Additive Manufacturing

Course Year: 2019-20

Course Outcomes:

	At the end of the course completion student will be able to:
C410.1	Discuss various Additive manufacturing process and its applications.
C410.2	Illustrate various motors, Actuators used in the system and design of hydraulic & pneumatic circuits.
C410.3	Analyze basic concepts, its importance and applications of polymers and powder metallurgy in additive manufacturing.
C410.4	Analyze nanomaterials with various characterization techniques and its applications.
C410.5	Develop NC, CNC machine programming automated industrial applications.

3.1.2	CO - PO Matrices of courses selected in 3.1.1 (Six matrices to be mentioned: one per semester from 3rd to 8th semester)	05
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Course Name: Elements of Mechanical Engineering

Course Year: 2017-18

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C104.1	3	2	2									3
C104.2	3	2										3
C104.3	3	2	2	1			1					3
C104.4	3	2			2							3
C104.5	3	2			2							3
Average	3	2	2	1	2		1					3

Course Name: Workshop Practice

Course Year: 2017-18

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C106.1	2	2						2				2
C106.2	3	2						2				2
C106.3	2	2	2					2				2
C106.4	3	2						2				2
Average	2.5	2	2					2				2

Course Name: Computer Aided Engineering Drawing

Course Year: 2017-18

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C112.1	3	2			3							

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C112.2	2	3			3							
C112.3	3	2			3							
C112.4	3	2			3							
Average	2.75	2.25			3							

Course Name: Material Science

Course Year: 2018-19

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C202.1	3	2	1	1				2				2
C202.2	3	3	1	1				2				2
C202.3	3	2	2	2		1	1	2				2
C202.4	3	3	2	2		1	1	2				2
C202.5	3	2	2	2		1	1	2				2
Average	3	2.4	1.4	1.4		1	1	2				2

Course Name: Machine Tool & Operations

Course Year: 2018-19

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C213.1	3	2						2				3
C213.2	3	2						2				3
C213.3	3	2						2				3
C213.4	3	2						2				3
C213.5	3	2						2				3
Average	3	2						2				3

Course Name: Turbo Machines

Course Year: 2019-20

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C303.1	3	3		2								2
C303.2	3	3		2								2
C303.3	3	3	3	2								2
C303.4	3	3	3	2								2
C303.5	3	3	3	2								2
Average	3	3	3	2								2

Course Name: Finite Element Analysis

Course Year: 2019-20

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C309.1	2	3	3	2				2				

DEPARTMENT OF MECHANICAL ENGINEERING

C309.2	2	3	3	3				2				1
C309.3	3	3	3	3				2				2
C309.4	3	3	3	3				2				2
C309.5	3	3	3	3				2				2
Average	2.6	3	3	2.8				2				1.75

Course Name: Fluid Power Systems

Course Year: 2020-21

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C402.1	3	2	2	2	3			2		2		2
C402.2	3	2	2	3	3			2		2		2
C402.3	3	2	2	3	3			2		2		2
C402.4	3	2			3			2		2		2
C402.5	2	2	2		3			2		2		2
Average	2.8	2	2	2.67	3			2		2		2

Course Name: Additive Manufacturing

Course Year: 2020-21

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C410.1	2			1	3		2	2				2
C410.2	2		2	1	2			2				2
C410.3	2	1	2	1	2			2				2
C410.4	3	2	2	2	3			2				2
C410.5	3	2	2	2	3			2				2
Average	2.4	1.67	2	1.4	2.6		2	2				2

Course Name: Elements of Mechanical Engineering

Course Year: 2016-17

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C122.1	3	2	2									3
C122.2	3	2										3
C122.3	3	2	2	1			1					3
C122.4	3	2			2							3
C122.5	3	2			2							3
Average	3	2	2	1	2		1					3

Course Name: Workshop Practice

Course Year: 2016-17

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C106.1	2	2						2				2

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C106.2	3	2						2				2
C106.3	2	2	2					2				2
C106.4	3	2						2				2
Average	2.5	2	2					2				2

Course Name: Computer Aided Engineering Drawing

Course Year: 2016-17

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C112.1	3	2			3							
C112.2	2	3			3							
C112.3	3	2			3							
C112.4	3	2			3							
Average	2.75	2.25			3							

Course Name: Material Science

Course Year: 2017-18

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C202.1	3	2	1	1				2				2
C202.2	3	3	1	1				2				2
C202.3	3	2	2	2		1	1	2				2
C202.4	3	3	2	2		1	1	2				2
C202.5	3	2	2	2		1	1	2				2
Average	3	2.4	1.6	1.6		1	1	2				2

Course Name: Machine Tool & Operations

Course Year: 2017-18

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C213.1	3	2						2				3
C213.2	3	2						2				3
C213.3	3	2						2				3
C213.4	3	2						2				3
C213.5	3	2						2				3
Average	3	2						2				3

Course Name: Turbo Machines

Course Year: 2018-19

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C303.1	3	3		2								2
C303.2	3	3		2								2
C303.3	3	3	3	2								2

DEPARTMENT OF MECHANICAL ENGINEERING

C303.4	3	3	3	2								2
C303.5	3	3	3	2								2
Average	3	3	3	2								2

Course Name: Finite Element Analysis

Course Year: 2018-19

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C309.1	2	3	3	2				2				
C309.2	2	3	3	3				2				1
C309.3	3	3	3	3				2				2
C309.4	3	3	3	3				2				2
C309.5	3	3	3	3				2				2
Average	2.6	3	3	2.8				2				1.75

Course Name: Fluid Power Systems

Course Year: 2019-20

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C402.1	2	2		2	2			2				2
C402.2	2	2	2	2	2			2				2
C402.3	3	2	3	2	2			2				2
C402.4	2	2		2	2			2				2
C402.5	2	2	2	2	2			2				2
Average	2.2	2	2.33	2	2			2				2

Course Name: Additive Manufacturing

Course Year: 2019-20

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C410.1	2			1	3		2	2				2
C410.2	2		2	1	2			2				2
C410.3	2	1	2	1	2			2				2
C410.4	3	2	2	2	3			2				2
C410.5	3	2	2	2	3			2				2
Average	2.4	1.67	2	1.4	2.6		2	2				2

DEPARTMENT OF MECHANICAL ENGINEERING

CO - PSO matrices of courses (six matrices to be mentioned: one per semester from 3rd to 8th semester)

Course Name: Elements of Mechanical Engineering

Course Year: 2017-18

Course	PSO1	PSO2
C104.1		1
C104.2		1
C104.3		1
C104.4		2
C104.5		1
Average		1.2

Course Name: Material Science

Course Year: 2018-19

Course	PSO1	PSO2
C202.1	1	3
C202.2	1	3
C202.3	1	3
C202.4	1	3
C202.5	1	3
Average	1	3

Course Name: Machine Tool & Operations

Course Year: 2018-19

Course	PSO1	PSO2
C213.1		2
C213.2		2
C213.3		2
C213.4		2
C213.5		2
Average		2

Course Name: Turbo Machines

Course Year: 2019-20

Course	PSO1	PSO2
C303.1		
C303.2		
C303.3		2
C303.4		2

DEPARTMENT OF MECHANICAL ENGINEERING

C303.5		2
Average		2

Course Name: Finite Element Analysis

Course Year: 2019-20

Course	PSO1	PSO2
C309.1	3	2
C309.2	2	3
C309.3	2	2
C309.4	1	2
C309.5	3	3
Average	2.2	2.4

Course Name: Fluid Power Systems

Course Year: 2020-21

Course	PSO1	PSO2
C402.1	2	
C402.2	2	
C402.3	3	
C402.4	3	
C402.5	2	
Average	2.4	

Course Name: Additive Manufacturing

Course Year: 2020-21

Course	PSO1	PSO2
C410.1		
C410.2	1	
C410.3	2	
C410.4	2	
C410.5	2	
Average	1.75	

Course Name: Elements of Mechanical Engineering

Course Year: 2016-17

Course	PSO1	PSO2
C122.1		1
C122.2		1

DEPARTMENT OF MECHANICAL ENGINEERING

C122.3		1
C122.4		2
C122.5		1
Average		1.2

Course Name: Material Science

Course Year: 2017-18

Course	PSO1	PSO2
C202.1	1	3
C202.2	1	3
C202.3	1	3
C202.4	1	3
C202.5	1	3
Average	1	3

Course Name: Machine Tool & Operations

Course Year: 2017-18

Course	PSO1	PSO2
C213.1		2
C213.2		2
C213.3		2
C213.4		2
C213.5		2
Average		2

Course Name: Turbo Machines

Course Year: 2018-19

Course	PSO1	PSO2
C303.1		
C303.2		
C303.3		2
C303.4		2
C303.5		2
Average		2

DEPARTMENT OF MECHANICAL ENGINEERING

Course Name: Finite Element Analysis

Course Year: 2018-19

Course	PSO1	PSO2
C309.1	3	2
C309.2	2	3
C309.3	2	2
C309.4	1	2
C309.5	3	3
Average	2.2	2.4

Course Name: Fluid Power Systems

Course Year: 2019-20

Course	PSO1	PSO2
C402.1	2	
C402.2	2	
C402.3	3	
C402.4	2	
C402.5	2	
Average	2.2	

Course Name: Additive Manufacturing

Course Year: 2019-20

Course	PSO1	PSO2
C410.1		
C410.2	1	
C410.3	2	
C410.4	2	
C410.5	2	
Average	1.75	

3.1.3

Program Level Course - PO matrix of all courses including first year courses

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Academic Year 2017 - 21

2017 – SCHEME

COURSE CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C104/C122	3	2	2	1	2		1					3

DEPARTMENT OF MECHANICAL ENGINEERING

C113/C131	2.75	2.75			3							
C106/C124	2.5	2	2					2				2
C201	3	3										
C202	3	2.4	1.4	1.4		1	1	2				2
C203	3	3	2	2				2				2
C204	3	3	2.8	2.6				2				2
C205	3	2						2				3
C206	2.8	2.6	2.5		2.2			2	2.2	3		3
C207	3	2		2				2				2
C208	3	2						2				2
C209	3	3										
C210	3	3	3	2.5	2			2				2
C211	3	3	1			1.8		2				1.8
C212	3	3	1.25	1	1			2				1.5
C213	3	2						2				3
C214	3	2	2	2				2				2
C215	3	3	2	2.4	2.2			2				2
C216	3					2		2	2			3
C301	2	2	2.25					2.2			2	2
C302	2.8	3	3	2.6				2				1.2
C303	3	3	3	2								2
C304	3	2.6	2.8					2				2.4
C3054	3	2	2		2			2				2
C3062	3	2.5				2.6	2.6	2				2
C3063	1.2	1			3			2				2
C307	3	3	2	1.4								2
C308	3	3				2	2		2	2		2
C309	2.6	3	3	2.8				2				1.75
C310	1.6	1.6	1.2	1.2	3			2				2
C311	3	3	2	2				2				2
C312	3	3	3	2	2.2			2	2			2
C3133	3	2			2			2				3
C3135	3	3	1.25	1	1			2				1.5
C3142	3	2	2			3	2.4	2			2	2
C3144						2		3	3	3		2
C315	3	2					1					1

DEPARTMENT OF MECHANICAL ENGINEERING

C316	2	2	2	2.4	2.2							
C401	3	2				1	1	2				2.2
C402	2.8	2	2	2.667	3			2		2		2
C403	3	2.8	2.8	2.5	2	2	2	2				2
C4042	3	2.75	2.5	2.5	3			2.333				3
C4051	3		3					2				
C4053	1.8	1.75	1.2		2.667			2				2
C406	2.8333	2.6667	2.333	2.833	2							2
C407	2.6667	2.1667	2.2	2.667	3			2		2		2
C408	3	3	2.75	3	3	2	2.2	3	3	3	2.25	3
C409	3	3	3	2.76				2			2	
C410	2.4	1.6667	2	1.4	2.6		2	2				2
C4115	2.4	2.8	3	2	3	2.333	2.5	2				2.4
C412	3	3	3	3	3	2	2	2	2	2	2	2
C413	3	3	2.75	3	3	2	2.2	3	3	3	2.25	3
C414	3	3					3	3	3	3		3

COURSE CODE	PSO1	PSO2
C104/C122		1.2
C113/C131		
C106/C124		
C201		
C202	1	3
C203		2
C204	2	2.2
C205		1
C206	2.4	
C207		3
C208	2	2
C209		
C210	3	2
C211		1.25
C212		1.5
C213		2
C214	2	2
C215	2.6	1.8

DEPARTMENT OF MECHANICAL ENGINEERING

C216		1.6
C301		
C302	2.4	2
C303		2
C304	3	2
C3054	1	2
C3062		1
C3063		
C307		
C308		
C309	2.2	2.4
C310	1	
C311		2
C312	2	2
C3133		2
C3135		1.5
C3142	1.6	1.6
C3144		
C315	1.167	1.333
C316	2	
C401		
C402	2.4	
C403	2.8	2
C4042	3	
C4051		
C4053	1.6	
C406	2	2
C407	2.5	
C408	3	3
C409	3	
C410	1.75	
C4115		
C412	3	3
C413	3	3
C414	3	3

DEPARTMENT OF MECHANICAL ENGINEERING

Academic Year 2016 - 20 2015 – SCHEME												
COURSE CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C104/C122	3	2	2	1	2		1					3
C113/C131	2.75	2.25			3							
C106/C124	2.5	2	2					2				2
C201	3.00	3.00	1.25	1.00	1.00			2.00				1.50
C202	3.00	2.40	1.60	1.60		1.00	1.00	2.00				2.00
C203	3.00	3.00	2.00	2.00				2.00				2.00
C204	3.00	3.00	2.80	2.60				2.00				2.00
C205	3.00	2.00						2.00				3.00
C206	2.80	2.60	2.50		2.20			2.00	2.20	3.00		3.00
C207	3.00	2.00		2.00				2.00				2.00
C208	3.00	2.00						2.00				2.00
C209	2.50	2.25										
C210	3.00	3.00	3.00	2.50	2.00			2.00				2.00
C211	2.60	2.80	2.00			1.80	3.00					2.20
C212	3.00	3.00	1.25	1.00	1.00			2.00				1.50
C213	3	2						2				3
C214	3.00	2.00	2.00	2.00				2.00				2.00
C215	3.00	3.00	2.00	2.40	2.20			2.00				1.00
C216	3.00					2.00		2.00	2.00			3.00
C301	2.00	2.00	2.25					2.20			2.00	2.00
C302	2.80	3.00	3.00	2.60				2.00				1.20
C303	3	3	3	2	2.2			2	2			2
C304	3.00	2.60	2.80					2.00				2.40
C3053						2.60		2.60	3.00	2.80	2.60	2.80
C3054	3.00	2.00	2.00		2.00			2.00				2.00
C3062	3.00	2.50				2.60	2.60	2.00				2.00
C3063	1.20	1.00			3.00			2.00				2.00
C307	3.00	3.00	2.00	1.40								2.00
C308	3.00	3.00				2.00	2.00		2.00	2.00		2.00
C309	2.60	3.00	3.00	2.80				2.00				1.75
C310	1.60	1.60	1.20	1.20	3.00			2.00				2.00
C311	3.00	3.00	2.00	2.00				2.00				2.00
C312	3.00	3.00	3.00	2.00	2.20			2.00	2.00			2.00

DEPARTMENT OF MECHANICAL ENGINEERING

C3133	3.00	2.00			2.00			2.00				3.00
C3135	3.00					1.00	1.00	2.00				2.20
C3142	3.00	2.00	2.00			3.00	2.40	2.00			2.00	2.00
C3144						2.00		3.00	3.00	3.00		2.00
C315	3.00	2.00					1.00					1.00
C316	1.40	2.00	2.00	2.40	2.20							
C401	3.00	1.67				1.00	1.00	2.00				2.00
C402	2.20	2.00	2.33	2.00	2.00			2.00				2.00
C403	3.00	2.80	2.80	2.50	2.00	2.00	2.00	2.00				2.00
C4042	2.60	2.60	2.50	2.67		2.00		2.00				2.00
C4051	3.00		3.00					2.00				
C4053	1.80	1.75	1.20		2.67			2.00				2.00
C406	2.83	2.67	2.33	2.83	2.00							2.00
C407	2.67	2.17	2.20	2.67	3.00			2.00		2.00		2.00
C408	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C409	3.00	3.00	3.00	2.00	2.00	2.00		2.00	1.00		2.50	2.00
C410	2.40	1.67	2.00	1.40	2.60		2.00	2.00				2.00
C4112	2.00	2.00	2.20					2.00				2.00
C4115	2.40	2.80	3.00	2.00	3.00	2.33	2.50	2.00				2.40
C412	3.00	3.00	2.00		2.00	2.25	2.33	2.50	3.00	3.00	2.00	3.00
C413	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C414	3.00	3.00					3.00	3.00	3.00	3.00		3.00

COURSE CODE	PSO1	PSO2
C104/C122		1.2
C113/C131		
C106/C124		
C201		1.50
C202	1.00	3.00
C203		2.00
C204	2.00	2.20
C205		1.00
C206	2.40	
C207		3.00
C208	2.00	2.00
C209		

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C210	3.00	2.00
C211		1.25
C212		1.50
C213		2.00
C214	2.00	2.00
C215	2.60	1.80
C216		1.60
C301		
C302	2.40	2.00
C303		
C304	3.00	2.00
C3053		
C3054	1.00	2.00
C3062		1.00
C3063		
C307		
C308		
C309	2.20	2.40
C310	1.00	
C311		2.00
C312	2.00	2.00
C3133		2.00
C3135		
C3142	1.60	1.60
C3144		
C315	1.17	1.33
C316	2.20	2.20
C401		
C402	2.20	
C403	2.80	2.00
C4042	2.25	
C4051		
C4053	1.60	
C406	2.00	2.00
C407	2.50	
C408	3.00	3.00

DEPARTMENT OF MECHANICAL ENGINEERING

C409	2.00	2.00
C410	1.75	
C4112		
C4115		
C412	2.00	
C413	3.00	3.00
C414		

Academic Year 2015 - 19												
2015 – SCHEME												
COURSE CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C104/C122	2	2				2	2					2
C113/C131	2.7	2.33			2.7							
C106/C124	2.33	2	2									
C201	2.25	2.25										
C202	3.00	2.40	1.60	1.60		1.00	1.00	2.00				2.00
C203	3.00	3.00	2.00	2.00				2.00				2.00
C204	3.00	3.00	2.80	2.60				2.00				2.00
C205	3.00	2.00						2.00				3.00
C206	2.80	2.60	2.50		2.20			2.00	2.20	3.00		3.00
C207	3.00	2.00		2.00				2.00				2.00
C208	3.00	2.00						2.00				2.00
C209	2.25	2.25										
C210	3.00	3.00	3.00	2.50	2.00			2.00				2.00
C211	3.00	3.00	1.00			1.80		2.00				1.80
C212	3.00	3.00	1.25	1.00	1.00			2.00				1.50
C213	3.00	2.00						2.00				3.00
C214	3.00	2.00	2.00	2.00				2.00				2.00
C215	3.00	3.00	2.00	2.40	2.20							1.00
C216	3.00					2.00		2.00	2.00			3.00
C301	2.00	2.00	2.25					2.20			2.00	2.00
C302	2.80	3.00	3.00	2.60				2.00				1.20
C303	3.00	3.00	3.00	2.00				2.00				2.00
C304	3.00	2.60	2.80					2.00				2.40
C3053						2.60		2.60	3.00	2.80	2.60	2.80
C3054	3.00	2.00	2.00		2.00			2.00				2.00
C3062	3.00	2.00				2.40	2.60	2.00				2.00

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C307	3.00	2.00							2.00	2.00		2.00
C308	3.00	3.00				2.00	2.00		2.00	2.00		2.00
C309	2.60	3.00	3.00	2.80				2.00				1.75
C310	1.60	1.60	1.20	1.20	3.00			2.00				2.00
C311	3.00	3.00	2.00	1.40				2.00				2.00
C312	3.00	3.00	3.00	2.00	2.20			2.00	2.00			2.00
C3133	3.00	2.00			2.00			2.00				3.00
C3142	3.00	2.00	2.00			3.00	2.40	2.00			2.00	2.00
C3144						2.00		3.00	3.00	3.00		2.00
C315	3.00	2.00					1.00	2.00				1.00
C316	1.00	2.00	2.00	2.40	2.20			2.00				
C401	3.00	2.00				1.00	1.00	2.00				2.20
C402	2.20	2.00	2.33	2.00	2.00			2.00				2.00
C403	3.00	2.80	2.80	2.50	2.00	2.00	2.00	2.00				2.00
C4042	2.60	2.60	2.50	2.70		2.00		2.00				2.00
C4045	3.00	3.00	3.00	3.00				2.00				
C4051	3.00		3.00					2.00				
C4053	1.80	1.75	1.20		2.67			2.00				2.00
C406	2.83	2.67	2.33	2.83	2.00							2.00
C407	2.67	2.17	2.20	2.67	3.00			2.00		2.00		2.00
C408	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C409	3.00	3.00	3.00	2.00	2.00	2.00		2.00	1.00		2.50	2.00
C410	2.40	1.67	2.00	1.40	2.60		2.00	2.00				2.00
C4112	2.00	2.00	2.20					2.00				2.00
C412	3.00	3.00	2.00		2.00	2.25	2.33	2.50	3.00	3.00	2.00	3.00
C413	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C414	3.00	3.00					3.00	3.00	3.00	3.00		3.00

COURSE CODE	PSO1	PSO2
C104/C122		
C113/C131		
C106/C124		
C201		
C202	1.00	3.00
C203		2.00
C204	2.00	2.20
C205		1.00
C206	2.40	

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C207		3.00
C208	2.00	2.00
C209		
C210	3.00	2.00
C211		1.25
C212		1.50
C213		2.00
C214	2.00	2.00
C215	2.60	1.80
C216		1.60
C301		
C302	2.40	2.00
C303		2.00
C304	3.00	2.00
C3053		
C3054	1.00	2.00
C3062		1.00
C307		
C308		
C309	2.20	2.40
C310	1.00	
C311		2.00
C312	2.00	2.00
C3133		2.00
C3142	1.60	1.60
C3144		
C315	1.17	1.33
C316	2.60	2.20
C401		
C402	2.20	
C403	2.80	2.00
C4042	2.25	
C4045		
C4051		
C4053	1.60	
C406	2.00	2.00
C407	2.50	
C408	3.00	3.00

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C409	2.00	2.00
C410	1.75	
C4112		
C412	2.00	
C413	3.00	3.00
C414	3.00	3.00

3.2	ATTAINMENT OF COURSE OUTCOMES	50
3.2.1	Describe the assessment processes used to gather the data upon which evaluation of course outcome is based.	10

In the Outcome Based Education (OBE), assessment is done through more than one process, carried out by the institution that identifies, collects, and prepares data to evaluate the achievement of course outcomes (COs).

Assessment tools are categorized into two methods to assess the course outcomes:

1. Direct method
2. Indirect method

Direct method displays the student's knowledge and skill for their performance in continuous internal assessment tests, semester examinations, seminars, and classroom and laboratory assignments etc. These methods provide a sampling of what students know and/or can do and provide strong evidence of student's learning.

Indirect methods are Surveys Course exit survey, Self-Assessment Report and Tutorials which reflect on student's learning. The different stake holders give opinions or thoughts to assess about the graduate's knowledge or skills.

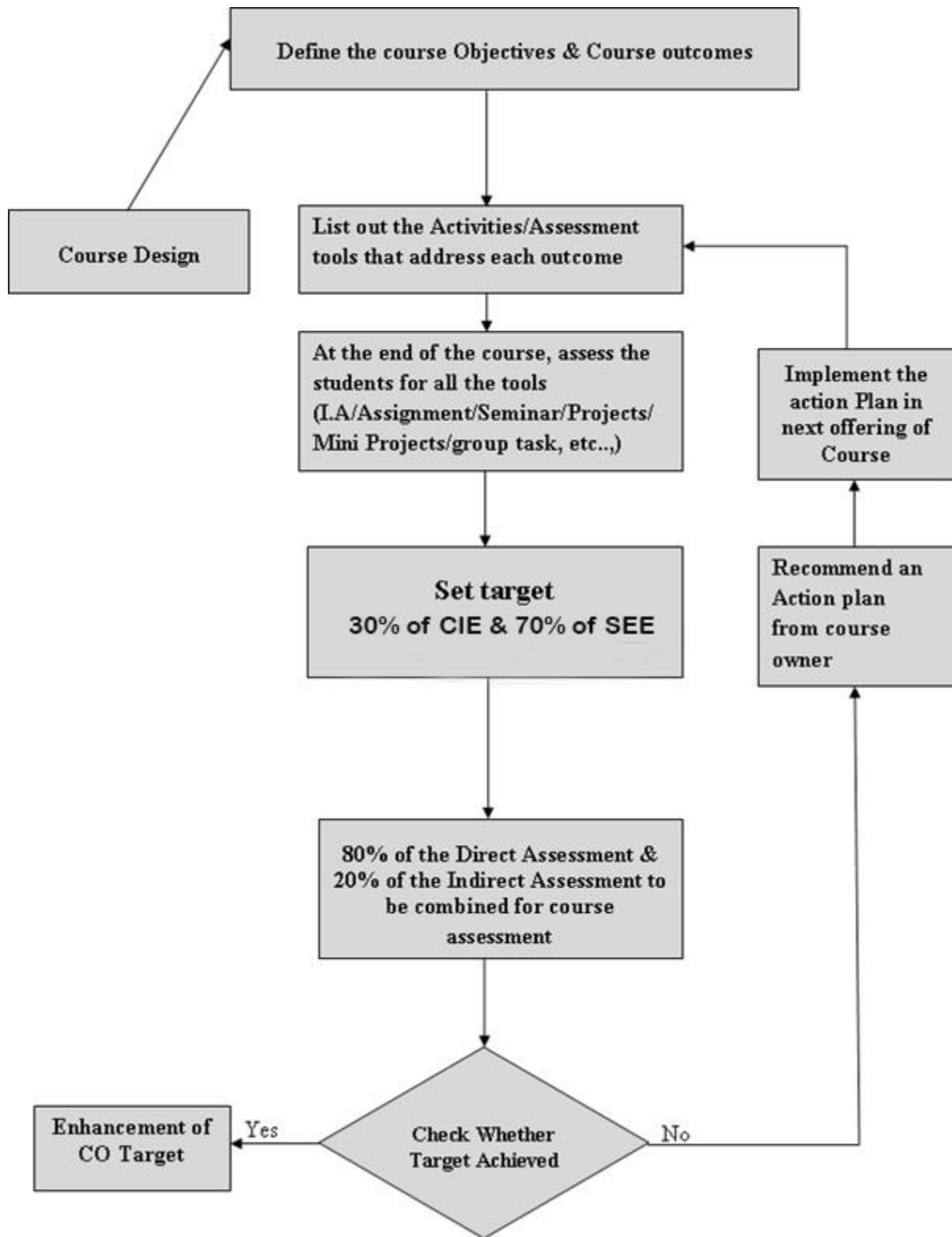


Fig. 3.1: Course Outcome Assessment Process

Table 3.1: Direct & Indirect Assessment Methods

Direct Assessment Methods		
Sl. No.	Direct Assessment Method	Description
1.	Continuous Internal Evaluation test (CIE)	It is a metric to continuously assess the attainment of course outcomes, student's learning domains and thus improve the teaching –learning process. For the 2010 and 2015 Scheme, the Internal Assessment marks (CIE) in a theory paper shall be based on best two out of three tests, For 2017 and 2018 Scheme, the Internal Assessment marks (CIE) in a theory paper shall be based on average of three tests generally conducted at the end of 6 th , 10 th and 14 th weeks of each semester. An additional test may be conducted for the lateral entry students before the end of the semester.
2.	Assignment	Assignment is a metric used primarily to assess student's knowledge/skills/attitude with their capabilities.
3.	Lab Assessment Test	Lab Assessment is a metric to mainly assess student's practical knowledge with their designing capabilities .In the case of a Practical, the IA marks shall be based on the laboratory journals/reports, conduction of experiments and one practical test.
4.	Semester End Examination (SEE)	Semester end examinations (Theory or Practical) are the metric to assess whether all the course outcomes are attained or not w.r.t course outcomes are framed by the instructor. Semester End Examination is more focused on attainment of course outcomes and uses a descriptive exam. Practical semester examination focuses on conduction of experiments and vice-voice.
5.	Practical Semester Examination	
6.	Project Phase – I Evaluation	The IA Marks in case of project work in final year is based on the evaluation at the end of 7 th semester by a committee consisting of the Head of the Department, Coordinator and two senior faculty members of the department, one of whom shall be the Project / Seminar guide.
7.	Seminar	The IA marks in the case of Projects, Internship and Seminars in the final year shall be based on the evaluation at the end of 8 th semester by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the project / seminar guide.
8.	Project Work	
9.	Internship / Professional Practice	
10.	Project Viva Voce	Viva-voce examination of Project work is conducted batch-wise at the end of 8 th Semester.
11.	Internship Viva Voce	Viva-voce examination of Internship is conducted batch-wise at the end of 8 th Semester.

Indirect Assessment Methods		
Sl. No.	Indirect Assessment Method	Description
1.	Course Exit Survey	Collect information from the students to assess the learning outcomes of the course at the end of the semester.
2.	Self Assessment Report	Collect information from the students for self assessing themselves about the course after completion of course.
3.	Tutorials	Collect information regarding the benefit of tutorial classes engaged in solving different problems and content beyond syllabus.

Table 3.2: Course Outcome Assessment methodology, tools and frequency of use for direct and indirect method is described in the table below:

Sl. No.	Assessment Method	Assessment frequency	Assessment Tool	In charge	Reviewer
1	Internal Assessment Test	At the end of 6 th , 10 th and 14 th weeks of each semester.	Student's performance in internal assessment booklets.	Course owner	CC PC/HOD
2	Assignment	Before / After Conduction of CIE Test	Student's performance in Assignment assessment booklets.	Course owner	CC
3	Lab Assessment Test	At the end of the semester	Student's performance in conducting experiments and journal writing.	Course owner	PAC PC/HOD
4	Semester End Examination	At the end of the semester	Student's performance in university exams.	University Evaluators	
5	Practical Semester Examination	At the end of the semester	Student's performance in conducting experiments during university exams.	University Evaluators	
6	Project Phase – I Evaluation	During Semester 7 th	Rubrics	Project Guide / Project Coordinator	PAC PC/HOD
7	Seminar	During the 8 th semester	Rubrics	Seminar Guide/Seminar Coordinator	PAC PC/HOD
8	Project Work	During the 8 th semester	Rubrics	Project Guide/ Project	PAC PC/HOD

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				Coordinator	
9	Internship	During the 8 th Semester	Rubrics	Internship Guide / Internship coordinator	PAC PC/HOD
10	Project Work Viva-voce	At the end of the 8 th semester	Student's performance in university exams	University Evaluators	
11	Internship Viva-Voce	At the end of the 8 th semester	Student's performance in university exams	University Evaluators	
12	Course Exit Survey	Semester end	Student survey	Course Owner	CC PAC PC
13	Self Assessment Report	Semester end	Student survey	Course Owner	CC PAC PC
14	Tutorial	Semester end	Student survey	Course Owner	CC PAC PC

Note: As per VTU letter with Ref: No. VTU/PS/2020-2/1386 dated 24/07/2020, due to COVID – 19 pandemic, for the UG Students of current intermediate 6th Semester (Academic year 2017 – 2021), final results has been announced by considering sum of 50% marks on basis of CIE and remaining 50% on basis of Performance in previous semester only.

3.2.2	Record the attainment of Course Outcomes of all courses with respect to set attainment levels	40
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Measuring CO attainment through Internal assessments:

Attainment Level V/s Target

Attainment Level 1: 60% students scoring more than 60% marks out of maximum marks.

Attainment Level 2: 70% students scoring more than 60% marks out of maximum marks.

Attainment Level 3: 80% students scoring more than 60% marks out of maximum marks.

Measuring CO attainment through Semester End Examination:

Attainment Level V/s Target

Attainment Level 1: 60% students scoring more than 45% marks out of maximum marks.

Attainment Level 2: 70% students scoring more than 45% marks out of maximum marks.

Attainment Level 3: 80% students scoring more than 45% marks out of maximum marks.

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CO Attainment has been calculated by assuming 70% weightage to University Examination and 30% weightage to Internal Assessment.

Final CO Attainment has been calculated by assuming 80% weightage to Direct Attainment and 20% weightage to Indirect Attainment (Using Survey's).

Academic Year 2017 - 21								
2017 – SCHEME								
Course	Course index no.	CO1	CO2	CO3	CO4	CO5	CO6	Average
Elements of Mechanical Engineering	C104/C122	66.03	66.44	60.11	70.17	63.68		65.29
Computer Aided Engineering Drawing	C113/C131	83.85	83.24	82.96	82.98			83.26
Workshop Practice	C106/C124	63.77	72.26	64.12	70.97			67.78
Engineering Mathematics – III (17MAT31)	C201	49.61	51.83	53.315	53.835	52.32		52.18
Materials Science (17ME32)	C202	48.425	50.7	45.505	48.24	46.43		47.86
Basic Thermodynamics (17ME33)	C203	43.095	41.66	43.155	43.855	44.175		43.19
Mechanics of Materials (17ME34)	C204	46.6	50.565	48.01	45.765	46.415		47.47
Metal Casting and Welding (17ME35A)	C205	59.43	60.145	57.18	59.385	58.015		58.83
Computer Aided Machine Drawing (17ME36A)	C206	65.105	65.04	69.45	65.175	74.38		67.83
Materials Testing Lab (17MEL37A)	C207	75.335	75.83	75.98	75.85	75.61		75.72
Foundry and Forging Lab (17MEL38A)	C208	67.79	68.1	68.49	68.05	68.02		68.09
Engineering Mathematics – IV (17MAT41)	C209	62.35	64.665	64.41	65.85	65.585		64.57
Kinematics of Machinery (17ME42)	C210	57.625	53.625	54.325	57.29	61.025		56.78
Applied Thermodynamics (17ME43)	C211	30.3	31.265	39.535	35.205	28.77		33.02
Fluid mechanics (17ME44)	C212	31.135	34.91	37.845	37.68	34.985		35.31
Machine Tools and Operations (17ME45B)	C213	68.325	68.625	70.57	69.565	70.345		69.49
Mechanical Measurements and Metrology (17ME46B)	C214	51.96	54.065	55.675	55.135	53.635		54.09
Mechanical Measurements and Metrology Lab (17MEL47B)	C215	76.13	73.06	73.235	72.735	68.945		72.82
Machine Shop (17MEL48B)	C216	76.52	77.16	77.51	67.83	67.61		73.33
Management and Engineering Economics (17ME51)	C301	54.705	61.865	51.78	57.345	54.31		56
Dynamics of Machinery (17ME52)	C302	68.585	67.95	73.635	66.92	69.86		69.39
Turbo Machines (17ME53)	C303	59.77	59.515	59.6	59.595	59.54		59.6
Design of Machine Elements - I (17ME54)	C304	53.865	55.9	59.47	58.555	61.135		57.79

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Non Traditional Machining (17ME554)(Professional Elective-I)	C3054	65.04	64.23	64.89	64.26	65.21		64.73
Energy and Environment (17ME562)(Open Elective-I)	C3062	72.39	68.055	63.505	73.755	73.905		70.32
Automation & Robotics (17ME563) (Open - Elective - I)	C3063	45.71	50.55	45.73	45.7	45.45		46.63
Fluid Mechanics & Machinery Lab (17MEL57)	C307	77.875	71.765	72.13	71.745	78.005		74.3
Energy Lab (17MEL58)	C308	71.61	71.995	74.005	72.14	71.745		72.3
Finite Element Analysis (17ME61)	C309	74.55	74.125	78.59	74.61	85.42		77.46
Computer integrated Manufacturing (17ME62)	C310	50.015	54.62	54.915	53.26	50.91		52.74
Heat Transfer (17ME63)	C311	70.435	70.505	71.05	71.28	71.18		70.89
Design of Machine Elements -II (17ME64)	C312	71.7	72.4	72.44	70.235	76.365		72.63
(Professional Elective-II) Metal Forming(17ME653)	C3133	73.75	75.77	73.9	75.88	71.94		74.25
Automotive Engineering(17ME655) (Professional Elective-II)	C3135	60.22	66.09	71.835	71.415	65.26		66.96
(Open Elective-II) Industrial Safety (17ME662)	C3142	63.86	63.32	63.735	63.11	63.93		63.59
(Open Elective-II) Total Quality Management(17ME664)	C3144	84.93	84.435	81.7	84.725	84.52		84.06
Heat Transfer Lab (17MEL67)	C315	49.82	50.08	55.09	50.11	57.17	51.9	52.36
Modeling and Analysis Lab(FEA) (17MEL68)	C316	76.16	71.02	66.08	65.59	65.59		68.89
Energy Engineering (17ME71)	C401	58.055	58.095	63.905	58.145	58.41		59.32
Fluid Power Systems (17ME72)	C402	60.99	59.955	70.715	60.905	59.66		62.45
Control Engineering (17ME73)	C403	67.44	73.565	74.215	80.685	75.265		74.23
(Professional Elective - III) Tribology (17ME742)	C4042	85.145	77.17	90.925	91.61	85.59		86.09
(Professional Elective-IV) Automotive Electronics(17ME751)	C4051	88.27	88.04	88.11	88.03	88.3		88.15
(Professional Elective-IV) Mechatronics (17ME753)	C4053	47.77	58.35	63.4	57.22	53.57		56.06
Design Lab (17MEL76)	C406	69.39	77.845	78.28	77.89	77.89	78.565	76.64
CIM Lab (17MEL77)	C407	70.445	74.3	78.315	77.39	67.405	79.63	74.58
Project Phase – I (17MEP78)	C408	88.34	91.64	91.83	96.74	91.86		92.08
Operation Research(17ME81)	C409	73.82	77.895	75.105	77.78	74.155		75.75
Additive Manufacturing(17ME82)	C410	65.46	55.87	56.94	73.39	73.085		64.95
Product Life Cycle Management (17ME835)	C4115	60.3	79.725	81.705	62.9	76.965		72.32
Internship(17ME84)	C412	79.41	83.73	88.19	85.36	80.81		83.5

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Project Phase – II (17ME85)	C413	88.71	92.04	92.13	97.18	92.14		92.44
Seminar (17MES86)	C414	97.88	98.36	99.22	94.15			97.4

**Academic Year 2016 - 20
2015 – SCHEME**

Course	Course index no.	CO1	CO2	CO3	CO4	CO5	CO6	Average
Elements of Mechanical Engineering	C104/C122	69.794	65.843	55.024	71.576	65.7333		65.59
Computer Aided Engineering Drawing	C113/C131	85.51	85.53	85.59	85.544			85.54
Workshop Practice	C106/C124	63.905	70.4775	62.3888	71.22			67
Engineering Mathematics – III (15MAT31)	C201	75.955	49.39	50.42	50.06			56.46
Materials Science (15ME32)	C202	54.81	59.76	56.83	59.27	56.25		57.38
Basic Thermodynamics (15ME33)	C203	55.555	54.675	57.56	56.735	53.71		55.65
Mechanics of Materials (15ME34)	C204	45.56	51.525	48.18	46.42	47.015		47.74
Metal Casting and Welding (15ME35A)	C205	62.745	63.6	62.63	62.905	63.225		63.02
Computer Aided Machine Drawing (15ME36A)	C206	65.035	66.05	74.25	65.55	83.39		70.86
Materials Testing Lab (15MEL37A)	C207	75.295	76.01	76.33	75.895	75.605		75.83
Foundry and Forging Lab (15MEL38A)	C208	70.09	70.125	70.82	70.66	70.505		70.44
Engineering Mathematics – IV (15MAT41)	C209	69.35	54.875	54.69	83.48			65.6
Kinematics of Machinery (15ME42)	C210	66.575	62.17	65.785	63.615	65.91		64.81
Applied Thermodynamics (15ME43)	C211	29.965	31.675	41.25	37.77	31.015		34.34
Fluid mechanics (15ME44)	C212	35.845	38.875	43.675	41.215	39.495		39.82
Machine Tools and Operations (15ME45B)	C213	72.79	71.91	72.61	72.735	73.735		72.76
Mechanical Measurements and Metrology (15ME46B)	C214	59.52	60.715	61.175	60.735	60.245		60.48
Mechanical Measurements and Metrology Lab (15MEL47B)	C215	75.43	71.425	70.565	71.33	68.08		71.37
Machine Shop (15MEL48B)	C216	81.36	81.69	82.17	71.91	71.79		77.78
Management and Engineering Economics (15ME51)	C301	62.51	70.17	62.105	66.645	61.61		64.61
Dynamics of Machinery (15ME52)	C302	57.565	54.75	62.555	57.155	56.915		57.79
Turbo Machines (15ME53)	C303	47.61	50.13	49.53	52.095	50.945		50.06
Design of Machine Elements - I (15ME54)	C304	46.85	48.06	53.24	50.335	50.04		49.71
Human Resource Management (15ME553) (Professional Elective-I)	C3053	84.3	88.15	88.05	78.37	89.01		85.58

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Non Traditional Machining (15ME554)(Professional Elective-I)	C3054	63.99	63.07	62.73	62.785	63.27		63.17
Energy and Environment (15ME562)(Open Elective-I)	C3062	72.43	66.955	64.205	74.37	74.84		70.56
Automation & Robotics (15ME563) (Open - Elective - I)	C3063	58.08	64.92	57.57	58.36	58.14		59.41
Fluid Mechanics & Machinery Lab (15MEL57)	C307	78.02	71.94	72.06	71.85	78.18		74.41
Energy Lab (15MEL58)	C308	74.82	74.91	77.065	75.215	74.585		75.32
Finite Element Analysis (15ME61)	C309	66.995	65.18	70.525	66.03	76.435		69.03
Computer integrated Manufacturing (15ME62)	C310	49.46	51.92	52.105	51.885	49.155		50.91
Heat Transfer (15ME63)	C311	60.175	57.835	58.505	58.995	60.765		59.26
Design of Machine Elements -II (15ME64)	C312	36.35	37.81	35.63	34.7	38.83		36.66
(Professional Elective-II) Metal Forming(15ME653)	C3133	74.05	73.68	73.985	74.68	72.555		73.79
Automobile Engineering (Professional Elective-II)	C3135	54	54.58	53.91	53.595	59.74		55.17
(Open Elective-II) Industrial Safety (15ME662)	C3142	69.82	68.44	62.34	71.875	65.02		67.5
(Open Elective-II) Total Quality Management(15ME664)	C3144	76.07	77.6	75.11	75.74	78.18		76.54
Heat Transfer Lab (15MEL67)	C315	51.95	52.11	57.32	52.3	59.4	54.335	54.57
Modeling and Analysis Lab(FEA) (15MEL68)	C316	73.375	69.085	60.26	64.53	64.325		66.32
Energy Engineering (15ME71)	C401	55.815	55.485	51.18	54.775			54.31
Fluid Power Systems (15ME72)	C402	54.765	54.925	64.8	55.395	54.53		56.88
Control Engineering (15ME73)	C403	65.18	71.41	71.495	75.325	69.245		70.53
(Professional Elective - III) Tribology (15ME742)	C4042	69.415	77.62	69.715	66.995	66.335		70.02
(Professional Elective-IV) Automotive Electronics(15ME751)	C4051	83.95	84.88	85.89	84.51	85.43		84.93
(Professional Elective-IV) Mechatronics (15ME753)	C4053	45.12	55.81	61.08	57.8	55.53		55.07
Design Lab (15MEL76)	C406	68.8	76.77	77.315	76.98	76.45	76.82	75.52
CIM Lab (15MEL77)	C407	72.155	75.93	79.775	78.955	68.995	81.41	76.2
Project Phase – I (15MEP78)	C408	87.1	90.77	91.58	95.96	91.16		91.31
Operation Research(15ME81)	C409	65.28	68.1	72.145	67.775	67.68		68.2
Additive Manufacturing(15ME82)	C410	63.035	53.175	55.19	68.75	70.845		62.2
Experimental Stress analysis (15ME832)	C4112	69.32	62.01	62.065	62.45	62.015		63.57
Product Life Cycle Management ()	C4115	60.84	82.38	82.805	66.005	78.91		74.19

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Internship(15ME84)	C412	81.61	81.75	88.01	93.82			86.3
Project Phase – II (15ME85)	C413	87.21	90.71	91.58	95.93	91.11		91.31
Seminar (15MES86)	C414	97.98	98.33	99.21	98.49			98.5

**Academic Year 2015 - 19
2015 – SCHEME**

Course	Course index no.	CO1	CO2	CO3	CO4	CO5	CO6	Average
Elements of Mechanical Engineering	C104/C122	78.04	79.096	80.019	79.332			79.12
Computer Aided Engineering Drawing	C113/C131	71.4507	82.0362	82.0112	82.0362			79.38
Workshop Practice	C106/C124	92.252	92.188	98.218				94.22
Engineering Mathematics – III (17MAT31)	C201	75.965	49.52	49.82	51.32			56.66
Materials Science (17ME32)	C202	56.75	59.15	56.90	59.34	57.73		57.97
Basic Thermodynamics (17ME33)	C203	47.30	47.96	49.22	48.65	39.97		46.62
Mechanics of Materials (17ME34)	C204	39.35	43.06	43.20	39.35	39.88		40.97
Metal Casting and Welding (17ME35A)	C205	56.00	55.59	55.63	56.76	56.16		56.02
Computer Aided Machine Drawing (17ME36 A)	C206	75.93	75.93	85.31	75.46	95.67		81.66
Materials Testing Lab (17MEL37A)	C207	74.98	74.98	74.48	74.98	74.98		74.88
Foundry and Forging Lab (17MEL38A)	C208	69.19	69.19	69.19	69.19	69.19		69.19
Engineering Mathematics – IV (17MAT41)	C209	58.44	43.395	43.40	66.98			53.05
Kinematics of Machinery (17ME42)	C210	79.62	80.77	83.42	77.20	81.09		80.42
Applied Thermodynamics (17ME43)	C211	43.99	39.50	48.24	38.91	39.05		41.94
Fluid mechanics (17ME44)	C212	48.05	53.59	60.49	58.39	54.29		54.96
Machine Tools and Operations (17ME45B)	C213	71.71	69.48	68.92	69.59	69.28		69.80
Mechanical Measurements and Metrology (17ME46B)	C214	58.77	59.72	60.17	61.14	59.64		59.89
Mechanical Measurements and Metrology Lab (17MEL47B)	C215	77.90	73.15	73.25	73.18	69.27		73.35
Machine Shop (17MEL48B)	C216	76.89	76.91	76.89	67.66	67.66		73.20
Management and Engineering Economics (15ME51)	C301	58.21	64.19	59.04	63.59	58.88		60.78
Dynamics of Machinery (15ME52)	C302	61.31	58.98	67.83	59.41	60.70		61.64
Turbo Machines (15ME53)	C303	36.07	35.00	36.21	36.62	34.89		35.76
Design of Machine Elements - I (15ME54)	C304	37.02	36.50	42.18	38.98	39.43		38.82
Human Resource Management (15ME553) (Professional Elective-I)	C3053	84.77	90.59	90.58	79.82	90.20		87.19

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Non Traditional Machining (15ME554)(Professional Elective-I)	C3054	64.65	64.46	64.54	64.11	64.17		64.38
Energy and Environment (15ME562)(Open Elective-I)	C3062	62.165	62.76	54.76	69.90	70.29		63.97
Fluid Mechanics & Machinery Lab (15MEL57)	C307	70.84	71.40	73.58	71.59	71.30		71.74
Energy Lab (15MEL58)	C308	73.82	73.82	75.36	73.82	73.82		74.13
Finite Element Analysis (15ME61)	C309	54.97	55.29	57.26	53.65	58.65		55.96
Computer integrated Manufacturing (15ME62)	C310	48.36	51.26	49.41	51.30	49.13		49.89
Heat Transfer (15ME63)	C311	53.41	51.14	49.94	51.16	55.72		52.27
Design of Machine Elements -II (15ME64)	C312	47.65	49.31	48.28	48.50	51.32		49.01
(Professional Elective-II) Metal Forming(15ME653)	C3133	73.73	73.97	72.48	74.84	72.93		73.59
(Open Elective-II) Industrial Safety (15ME662)	C3142	70.05	70.66	64.28	74.75	67.15		69.38
(Open Elective-II) Total Quality Management(15ME664)	C3144	86.67	86.67	83.33	86.67	86.67		86.00
Heat Transfer Lab (15MEL67)	C315	55.25	55.40	59.79	55.32	61.73	56.90	57.40
Modeling and Analysis Lab(FEA) (15MEL68)	C316	76.18	73.20	66.30	64.41	64.32		68.88
Energy Engineering (15ME71)	C401	51.52	51.46	57.77	52.12	52.30		53.03
Fluid Power Systems (15ME72)	C402	59.66	59.67	72.45	61.25	60.66		62.74
Control Engineering (15ME73)	C403	70.27	76.90	76.54	84.13	77.83		77.13
(Professional Elective - III) Tribology (15ME742)	C4042	74.54	85.71	75.43	71.13	70.50		75.46
(Professional Elective - III)Smart Materials & MEMS (15ME745)	C4045	85.47	85.47	88.14	85.41	89.74		86.84
(Professional Elective-IV) Automotive Electronics(15ME751)	C4051	77.07	76.65	76.70	77.07	77.07		76.91
(Professional Elective-IV) Mechatronics (15ME753)	C4053	46.80	58.73	64.36	58.83	58.57		57.46
Design Lab (15MEL76)	C406	70.74	78.48	78.09	78.56	78.27	78.11	77.04
CIM Lab (15MEL77)	C407	74.07	77.78	81.48	80.95	70.83	83.33	78.07
Project Phase – I (15MEP78)	C408	88.89	92.31	92.31	97.44	92.59		92.71
Operation Research(15ME81)	C409	62.06	65.90	68.50	67.16	66.13		65.95
Additive Manufacuturing (15ME82)	C410	65.32	55.24	56.08	70.61	74.66		64.38
Experimental Stress analysis (15ME832)	C4112	68.69	62.76	62.57	62.9	62.75		63.93
Internship(15ME84)	C412	80.42	80.42	85.78	91.90			84.63
Project Phase – II (15ME85)	C413	88.89	92.31	92.31	97.44	92.59		92.71
Seminar (15MES86)	C414	100	100	100	100			100.00

3.3	ATTAINMENT OF PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES	50
3.3.1	Describe assessment tools and processes used for assessing the attainment of each of the POs and PSOs	10

PO Assessment Tools

Assessment tools are categorized into Direct and Indirect methods to assess the program educational objectives, program outcomes and course outcomes.

- ✓ Direct method displays the student's knowledge and skill for their performance in the continuous assessment tests, end-semester examinations, presentations, and classroom assignments etc. these methods provide a sampling of what students know and/or can do and provide strong evidence of student's learning.
- ✓ Indirect method such as survey and interview ask the stakeholders to reflect on student's learning. The different stake holders give opinions or thoughts to assess about the graduate's knowledge or skills.

Use of Rubrics for Evaluation and Assessment of POs

- ✓ The Course/Program outcomes are difficult to measure, such as assessing critical thinking, creativity, analytical skills, and problem solving etc. Hence the department has adopted Criterion Referenced Rubrics to assess the POs and COs wherever applicable. The Rubric criteria are developed by department faculty with consultation of students and distributed before an assignment, project or test.
- ✓ Rubrics are used for both formative and summative assessment of students. Rubric is used for assessing outcomes so that the faculty is able to assess student progress and maintain the record of the same for each student.
- ✓ The rubrics are shared with students before being evaluated so that they are aware of the performance criteria and their weightage.

Describe the assessment process that periodically documents and demonstrates the degree to which the Programme Outcomes are attained. Also include information on:

- a) Listing and description of the assessment processes used to gather the data upon which the evaluation of each the Program outcome is based. Examples of data collection process may include, but are not limited to, specific exam questions,

student portfolios, internally developed assessment exams, project presentations, national-norm exams, oral exams, focus groups, industrial advisory committee.

b) The frequency with which these assessment processes are carried out.

Table 3.3: PO Direct Assessment Methods

PO Direct Assessment Methods		
Sl. No.	Direct Assessment Method	Description
1.	Continuous Internal Evaluation test (CIE)	It is a metric to continuously assess the attainment of course outcomes, student's learning domains and thus improve the teaching –learning process. For the 2010 and 2015 Scheme, the Internal Assessment marks (CIE) in a theory paper shall be based on best two out of three tests, For 2017 and 2018 Scheme, the Internal Assessment marks (CIE) in a theory paper shall be based on average of three tests generally conducted at the end of 6 th , 10 th and 14 th weeks of each semester. An additional test may be conducted for the lateral entry students before the end of the semester.
2.	Assignment	Assignment is a metric used primarily to assess student's knowledge/skills/attitude with their capabilities.
3.	Lab Assessment Test	Lab Assessment is a metric to mainly assess student's practical knowledge with their designing capabilities .In the case of a Practical, the IA marks shall be based on the laboratory journals/reports, conduction of experiments and one practical test.
4.	Semester End Examination	Semester theory examinations are the metric to assess whether all the course outcomes are attained w.r.t course objectives framed by the instructor. Semester Examination is more focused on attainment of course outcomes and uses a descriptive exam. Practical semester examination focuses on conduction of experiments and vice-voice.
5.	Practical Semester End Examination	
6.	Project Phase – I Evaluation	The IA Marks in the case of project work in the final year is based on the evaluation at the end of 7 th Semester by a committee consisting of the Head of the Department, Coordinators and two Senior Faculty.
7.	Seminar	The IA marks in the case of mini projects, projects and seminars in the final year shall be based on the evaluation at the end of 8th semester by a

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8.	Project Work	committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the project / seminar guide.
9.	Project Work Viva-voce	Viva-voce examination of Project work is conducted batch-wise at the end of 8 th Semester.
10	Internship / Professional Practice Viva Voce	Viva-voce examination of Internship work is conducted batch-wise at the end of 8 th Semester.

Table 3.4: PO Indirect Assessment Methods

PO Indirect Assessment Methods		
Sl. No.	Indirect Assessment Method	Description
1.	Alumni: Survey Questionnaire	Collect vivid information about program satisfaction and college from the graduate.
2.	Program Exit Survey	Collect the feedback about the program at the time of graduation.
3.	Alumni: PEO Survey Questionnaire	Collect vivid information about the program after 2 years of graduation.
4.	Course Exit Survey	Collect information from the students to assess the learning outcomes of the course at the end of the semester.
5.	Parent: Survey Questionnaire	Collect vivid information about program satisfaction and college from parents/guardians.
6.	Employer's Feedback	Collect vivid of information about the graduate skills, capabilities and opportunities.
7.	Student Feedback (About OBE)	Collect vivid of information about outcome Based education in teaching and learning process.
8.	Feedback on Facilities	Collect vivid of information about facilities within the college from students.

Program Outcome Assessment methodology, Tools and Frequency of use for Direct and Indirect method is described in the table below:

Table 3.5: PO Assessment Methodology, Tools and Frequency of use for Direct and Indirect method

Sl. No.	Assessment Method	Assessment frequency	Assessment Tool	In charge	Reviewer
1.	Continuous Internal Evaluation Test	At the end of 6 th , 10 th and 14 th weeks of each semester.	Student's performance in internal assessment booklets.	Course owner	CC PAC
2.	Assignment	Before / After conduction of CIE Test	Student's performance in Assignment assessment booklet	Course Owner	CC
3.	Lab Assessment Test	At the end of the semester	Student's performance in conducting experiments and journal writing.	Course owner	PAC PC/HOD
4.	Semester End Examination	At the end of the semester	Student's performance in university exams.	University Evaluators	
5.	Practical Semester Examination	At the end of the semester	Student's performance in conducting experiments during university exams.	University Evaluators	
6.	Project Phase – I Evaluation	During the 7 th Semester	Rubrics	Project Guide / Coordinator	PAC PC/HOD
7.	Seminar	During the 8 th semester	Rubrics	Seminar Guide/Seminar Coordinator	PAC PC/HOD
8.	Project	During the 8 th semester	Rubrics	Project Guide/ Project Coordinator	PAC PC/HOD
9.	Project Work Viva-voce	At the end of the 8 th semester	Student's performance in university exams	University Evaluators	

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10.	Internship / Professional Practice Viva Voce	At the end of the 8 th semester	Student's performance in university exams	University Evaluators	
11.	Course Exit Survey	Semester end	Student survey	Course Owner	CC PAC PC
12.	Self-Assessment Report	Semester end	Student survey	Course Owner	CC PAC PC
13.	Tutorial	Semester end	Student survey	Course Owner	CC PAC PC

Sl. No.	Assessment Method	Assessment frequency	Assessment Tool	In charge	Reviewer
1.	Program Exit Survey	Annually	Exit report from graduates	Alumni Association Committee (AAC)	IQAC
2.	Alumni: PEO Survey Questionnaire	Annually	Exit report after 2 years of graduation	Alumni Association Committee (AAC)	IQAC
3.	Parent: Survey Questionnaire	Twice in a year	Parents survey and focus discussions	Parent Coordinator	PAC PC IQAC
4.	Employer's Feedback	Annually	Performance report on employees	Alumni Association Committee (AAC)	AAC
5.	Student Feedback (About OBE)	Twice in a year	Student survey	PC	IQAC
6.	Feedback on Facilities	Twice in a year	Student survey	IAC	IQAC

Table 3.6: Process of Assessing Program Outcomes

Step 1:	The program coordinator analyzes each outcome into elements (different abilities specified in the outcome) and a set of attributes are defined for each element. (actions that explicitly specify mastery of the abilities specified). In addition generate well designed surveys to assess the outcome.
Step 2:	For each outcome define performance indicators (Assessment criteria) and their targets.
Step 3:	Identify / Select courses that address the outcome (each course contributes to at least one of the outcomes). Hence, each outcome is assessed in several courses to ensure that students acquire an appropriate level in terms of knowledge / skills of an outcome
Step 4:	The course owner collects the qualitative and quantitative data and uses for continual process of outcome assessment.
Step 5:	The Program Assessment Committee analyze the collected data. If the assessed data meets the performance target which are specified in step 2 , the outcome is attained , otherwise consider step 6
Step 6:	The Department Advisory Board recommends content delivery methods / course outcomes / curriculum improvements as needed.

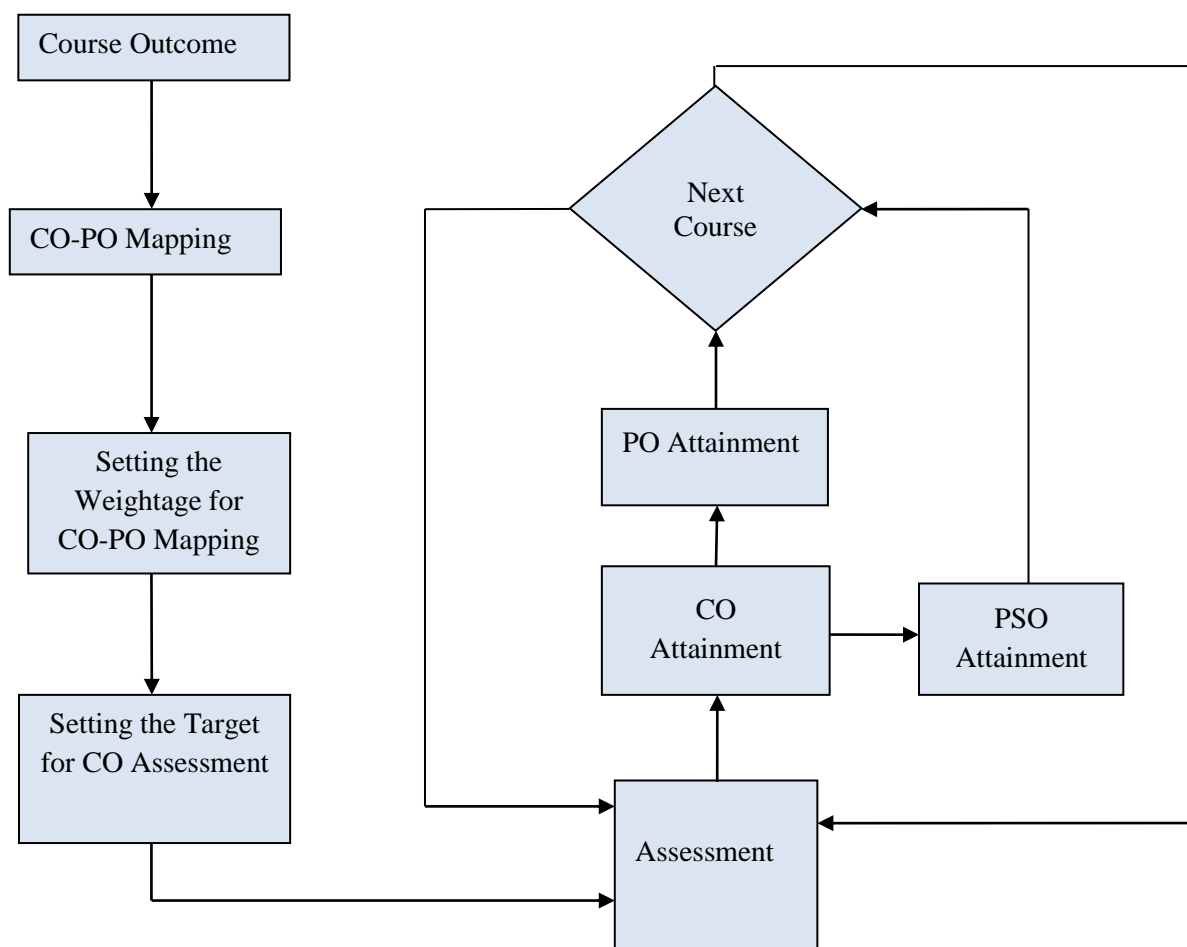


Fig. 3.2: Process of Program Outcome Assessment

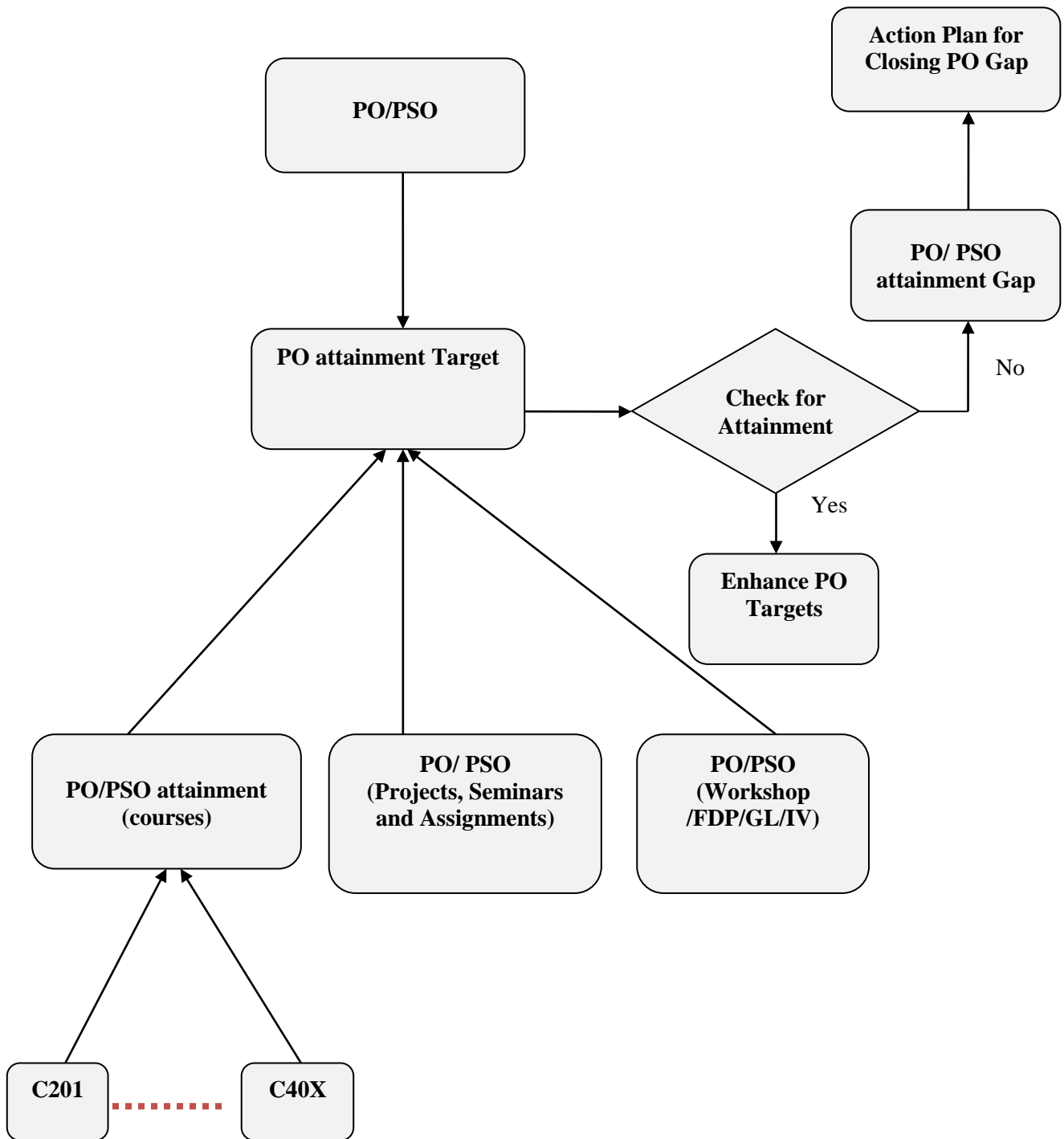


Fig. 3.3: Outlines of steps before PO / PSO Attainment

PO / PSO ATTAINMENT

Program outcomes (PO) framed by the NBA for the academic year 2018-19, 2019-20 and 2020-21.

Program outcomes (PO)

Academic year 2020- 21

PO Number	Programme Outcomes
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these

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	to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PSO1	Graduates are able to Design, Analyze and Develop Mechanical Systems.
PSO2	Graduates are Capable of Developing Research Skills in Self Sustainable Energy sources and Composite Materials.

3.3.2	Provide the results of evaluation of each PO & PSO's	40
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PO ATTAINMENT

Academic Year 2017 - 21 2017 – SCHEME												
Course index no.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C104/C122	2.49	1.60	1.65	0.83	1.64		0.81					2.36
C113/C131	2.52	2.07			2.75							
C106/C124	2.40	1.87	1.82					1.81				1.86
C201	1.28	1.28										
C202	2.06	1.64	1.20	1.20		0.69	0.69	1.37				1.37
C203	1.32	1.32	0.89	0.90				0.88				0.88
C204	1.45	1.45	1.36	1.26				0.97				0.97
C205	2.29	1.53						1.53				2.29
C206	2.45	2.28	2.18		1.93			1.75	1.97	2.62		2.63
C207	2.95	1.97		1.97				1.97				1.97
C208	2.85	1.90						1.90				1.90
C209	1.75	1.75										
C210	1.82	1.82	1.82	1.43	1.20			1.21				1.21
C211	1.01	1.05	0.56			0.65	1.18	0.67				0.73
C212	1.33	1.33	0.55	0.44	0.45			0.89				0.67
C213	2.58	1.72						1.72				2.58
C214	2.19	1.46	1.46	1.46				1.46				1.46
C215	2.88	2.88	1.92	2.31	2.11			1.92				1.44
C216	2.78					1.85		1.85	1.85			2.78
C301	1.53	1.51	1.71					1.69			1.51	1.53
C302	2.27	2.44	2.44	2.19				1.68				1.48
C303	1.96	1.96	1.96	1.31								1.31
C304	1.84	1.59	1.72					1.22				1.46
C3054	2.99	2.00	2.00		2.00			2.00				2.00
C3062	2.85	2.38				2.47	2.47	1.90				1.90
C3063	0.86	0.71			2.14			1.43				1.43
C307	2.98	2.98	1.99	1.39								1.99
C308	2.86	2.86				1.90	1.90		1.90	1.90		1.90
C309	2.43	2.80	2.80	2.62				1.87				1.64
C310	1.48	1.48	1.11	1.12	2.78			1.85				1.85
C311	2.83	2.83	1.89	1.89				1.89				1.89

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C312	2.83	2.83	2.83	1.89	2.08			1.89	1.89			1.89
C3133	2.78	1.85			1.83			1.85				2.78
C3135	3.00	3.00	1.25	1.00	1.00			2.00				1.50
C3142	2.93	1.95	1.95		1.95			1.95				1.95
C3144						2.00		3.00	3.00	3.00		2.00
C315	2.83	1.89					0.94					0.94
C316	2.00	2.00	2.00	2.40	2.20							
C401	2.87	1.90				0.96	0.96	1.91				2.10
C402	2.00	1.82	2.10	1.82	1.82			1.82				1.82
C403	2.83	2.64	2.64	2.36	1.89	1.89	1.89	1.89				1.89
C4042	2.75	2.52	2.28	2.28	2.76			2.14				2.74
C4051	2.98		2.98					1.99				
C4053	1.72	1.66	1.15		2.62			1.92				1.92
C406	2.83	2.67	2.33	2.83	2.00							2.00
C407	2.57	2.09	2.12	2.57	2.89			1.93		1.93		1.93
C408	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C409	2.42	2.42	2.42	2.23				1.61			1.61	
C410	2.37	1.64	1.97	1.38	2.56		1.97	1.97				1.97
C4115	2.20	2.56	2.75	1.83	2.75	2.13	2.29	1.83				2.20
C412	3.00	3.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
C413	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C414	2.96	2.96					3.00	2.96	2.95	2.96		2.96

PO Attainment Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO Attainment	2.41	2.12	1.99	1.88	2.17	1.72	1.76	1.84	2.37	2.53	1.94	1.90
Direct Attainment	2.37	2.08	1.95	1.86	2.17	1.71	1.75	1.82	2.40	2.55	1.92	1.87
Indirect Attainment	2.56	2.28	2.12	1.98	2.14	1.73	1.80	1.94	2.28	2.43	2.00	2.01

PSO ATTAINMENT

Course index no.	PSO1	PSO2
C104/C122		0.97
C113/C131		
C106/C124		

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C201		
C202	0.685	2.056
C203		0.894
C204	0.971	1.065
C205		0.764
C206	2.1	
C207		2.953
C208	1.898	1.898
C209		
C210	1.822	1.215
C211		0.455
C212		0.672
C213		1.718
C214	1.463	1.463
C215	2.497	1.728
C216		1.481
C301		
C302	2.021	1.685
C303		1.307
C304	1.836	1.224
C3054	0.998	1.995
C3062		0.951
C3063		
C307		
C308		
C309	2.05	2.242
C310	0.927	
C311		1.888
C312	1.888	1.888
C3133		1.852
C3135		1.5
C3142	0.977	1.953
C3144		
C315	1.101	1.259
C316	2	
C401		
C402	1.998	
C403	2.643	1.888

C4042	2.751	
C4051		
C4053	1.526	
C406	2	2
C407	2.411	
C408	3	3
C409	2.42	
C410	1.725	
C4115		
C412	3	3
C413	2.998	2.998
C414	2.96	2.96

PSO Attainment Level

Course	PSO1	PSO2
CO Attainment	1.9672	1.7479
Direct Attainment	1.952	1.716
Indirect Attainment	2.027	1.874

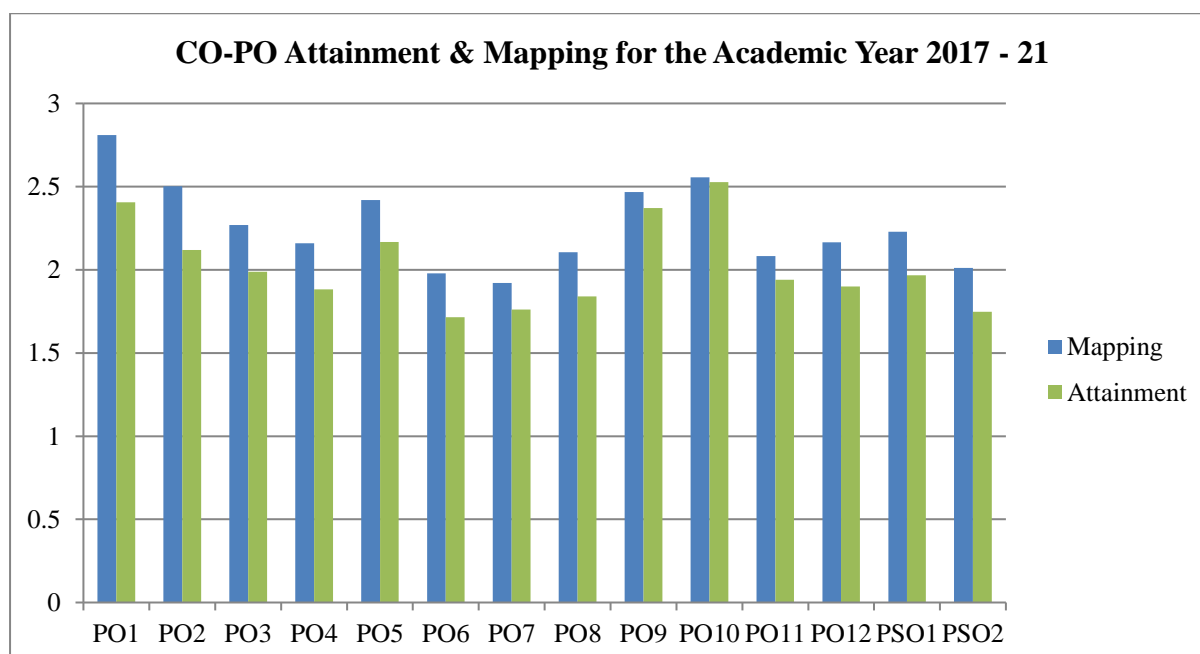


Fig. 3.4: CO-PO Attainment & Mapping for the Academic Year 2017 - 21

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Academic Year 2016 - 20 2015 – SCHEME												
Course index no.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C104/C122	2.41	1.65	1.59	0.78	1.52		0.84					2.35
C113/C131	2.66	2.10			2.82							
C106/C124	2.36	1.85	1.86					1.79				1.86
C201	1.63	1.63										
C202	2.60	2.08	1.39	1.39		0.87	0.87	1.73				1.73
C203	1.71	1.71	1.13	1.16				1.14				1.14
C204	1.40	1.40	1.31	1.21				0.93				0.93
C205	2.46	1.64						1.64				2.46
C206	2.34	2.18	2.09		1.84			1.67	1.88	2.51		2.51
C207	2.96	1.97		1.97				1.97				1.97
C208	2.93	1.95						1.95				1.95
C209	1.99	1.79										
C210	1.98	1.98	1.98	1.65	1.32			1.32				1.32
C211	0.97	0.97	0.33			0.58		0.65				0.58
C212	1.28	1.28	0.53	0.41	0.43			0.85				0.65
C213	2.70	1.80						1.80				2.70
C214	2.43	1.62	1.62	1.62				1.62				1.62
C215	2.94	2.94	1.96	2.35	2.15			1.96				0.98
C216	2.98					1.99		1.99	1.99			2.98
C301	1.83	1.82	2.05					2.01			1.82	1.83
C302	1.68	1.80	1.80	1.55				1.20				0.90
C303	1.51	1.51	1.55	1.00								1.00
C304	1.28	1.11	1.20					0.85				1.02
C3053						2.56		2.55	2.95	2.75	2.55	2.75
C3054	2.92	1.95	1.95		1.95			1.95				1.95
C3062	2.79	2.28				2.42	2.42	1.86				1.86
C3063	1.17	0.97			2.92			1.95				1.95
C307	2.87	2.87	1.91	1.34								1.91
C308	3.00	3.00				2.00	2.00		2.00	2.00		2.00
C309	1.92	2.22	2.22	2.07				1.48				1.30
C310	1.43	1.43	1.07	1.07	2.68			1.79				1.79
C311	1.97	1.97	1.31	1.13				1.31				1.31
C312	0.94	0.94	0.94	0.63	0.69			0.63	0.63			0.63
C3133	2.60	1.73			1.76			1.73				2.60
C3135	2.46					0.82	0.82	1.64				1.81

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C3142	2.83	1.88	1.88			2.83	2.26	1.88			1.88	1.88
C3144						1.83		2.75	2.75	2.75		1.83
C315	2.95	1.97					0.98					0.98
C316	1.34	1.91	1.91	2.29	2.10							
C401	2.76	1.53				0.92	0.92	1.84				1.84
C402	1.57	1.43	1.66	1.43	1.43			1.43				1.43
C403	2.45	2.29	2.29	2.04	1.64	1.66	1.66	1.64				1.64
C4042	2.27	2.27	2.18	2.32		1.75		1.75				1.75
C4051	2.79		2.79					1.86				
C4053	1.67	1.64	1.11		2.45			1.86				1.86
C406	2.78	2.62	2.29	2.78	1.97							1.97
C407	2.65	2.15	2.18	2.65	2.98			1.99		1.99		1.99
C408	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C409	2.57	2.57	2.57	1.71	1.71	1.71		1.71	0.87		2.15	1.71
C410	2.30	1.59	1.92	1.34	2.50		1.94	1.92				1.92
C4112	1.77	1.77	1.95					1.77				1.77
C4115	2.24	2.62	2.80	1.87	2.78	2.17	2.34	1.87				2.24
C412	2.99	2.99	2.00		2.00	2.25	2.33	2.50	3.00	2.99	2.00	2.99
C413	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C414	3.00	3.00					3.00	3.00	3.00	3.00		3.00

PO Attainment Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO Attainment	2.29	2.00	1.85	1.73	2.07	1.79	1.77	1.79	2.26	2.60	2.13	1.84
Direct Attainment	2.27	1.97	1.81	1.70	2.07	1.79	1.79	1.77	2.28	2.67	2.13	1.82
Indirect Attainment	2.41	2.15	2.03	1.88	2.05	1.78	1.71	1.86	2.19	2.31	2.15	1.90

PSO ATTAINMENT

Course index no.	PSO1	PSO2
C104/C122		0.97
C113/C131		
C106/C124		
C201		
C202	0.87	2.60

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C203		1.15
C204	0.93	1.03
C205		0.82
C206	2.01	
C207		2.96
C208	1.95	1.95
C209		
C210	1.98	1.32
C211		0.40
C212		0.62
C213		1.80
C214	1.62	1.62
C215	2.55	1.76
C216		1.59
C301		
C302	1.44	1.20
C303		1.03
C304	1.28	0.85
C3053		
C3054	0.97	1.95
C3062		0.93
C3063		
C307		
C308		
C309	1.63	1.77
C310	0.89	
C311		1.31
C312	0.63	0.63
C3133		1.73
C3135		
C3142	1.51	1.51
C3144		
C315	1.15	1.31
C316	2.10	2.10
C401		
C402	1.57	
C403	2.29	1.64
C4042	1.96	

C4051		
C4053	1.49	
C406	1.97	1.97
C407	2.48	
C408	3.00	3.00
C409	1.71	1.72
C410	1.68	
C4112		
C4115		
C412	2.00	
C413	3.00	3.00
C414	3.00	3.00

PSO Attainment Level

Course	PSO1	PSO2
CO Attainment	1.80	1.63
Direct Attainment	1.77	1.60
Indirect Attainment	1.90	1.74

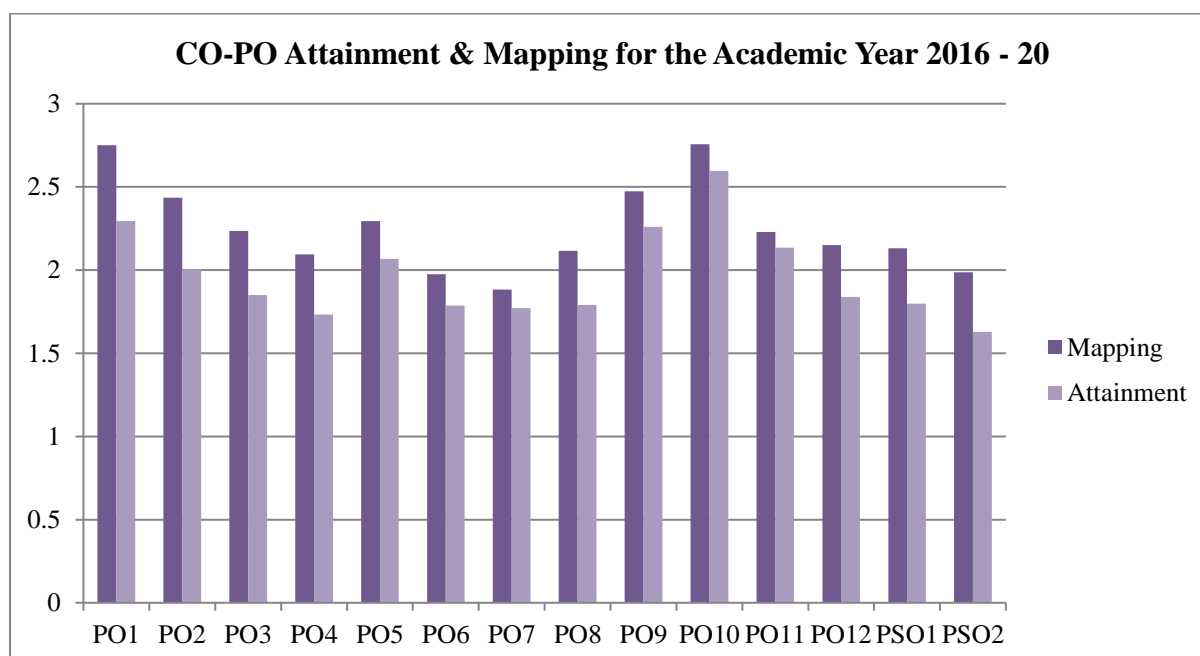


Fig. 3.5: CO-PO Attainment & Mapping for the Academic Year 2016 - 20

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Academic Year 2015 - 19												
2015 – SCHEME												
Course index no.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C104/C122	1.98	1.61				1.88	1.66					1.97
C113/C131	2.62	2.25			2.67							
C106/C124	2.27	1.88	1.87									
C201	1.70	1.70										
C202	2.70	2.15	1.44	1.44		0.90	0.90	1.80				1.80
C203	1.83	1.83	1.22	1.26				1.22				1.22
C204	1.50	1.50	1.41	1.30				1.00				1.00
C205	2.29	1.53						1.53				2.29
C206	2.78	2.59	2.49		2.19			1.99	2.24	2.98		2.98
C207	2.75	1.83		1.83				1.83				
C208	2.84	1.90						1.90				1.90
C209	1.52	1.52										
C210	2.88	2.88	2.88	2.46	1.93			1.92				1.92
C211	1.83	1.83	0.60			1.09		1.22				1.09
C212	2.42	2.42	1.01	0.80	0.81			1.62				1.22
C213	2.62	1.75						1.75				2.62
C214	2.54	1.69	1.69	1.69				1.43				1.43
C215	2.99	2.99	2.00	2.39	2.20							1.00
C216	2.53					1.69		0.85	1.69			2.53
C301	1.75	1.77	1.97					1.92			1.77	1.75
C302	2.13	2.28	2.28	1.98				1.52				1.14
C303	1.33	1.33	1.33	0.89				0.89				0.89
C304	1.37	1.19	1.28					0.92				1.10
C3053						2.49		2.49	2.87	2.68	2.49	2.68
C3054	2.94	1.96	1.96		1.96			1.96				1.96
C3062	2.67	1.75				2.13	2.31	1.78				1.78
C307	2.99	1.99							1.99	1.99		1.99
C308	2.91	2.91				1.94	1.94		1.94	1.94		1.94
C309	1.77	2.04	2.04	1.90				1.36				1.19
C310	1.41	1.40	1.06	1.06	2.64			1.76				1.76
C311	2.14	2.14	1.43	1.00				1.43				1.43
C312	1.60	1.60	1.60	1.07	1.17			1.07	1.07			1.07
C3133	2.78	1.85			1.88			1.85				2.78
C3142	2.87	1.91	1.91			2.87	2.30	1.91			1.92	1.91
C3144						2.00		3.00	3.00	3.00		2.00

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C315	2.99	1.99					1.00	1.99				1.00
C316	1.49	1.99	1.99	2.39	2.19			1.99				
C401	2.58	1.70				0.86	0.86	1.72				1.89
C402	2.10	1.91	2.22	1.91	1.91			1.91				1.91
C403	2.88	2.68	2.68	2.40	1.92	1.91	1.92	1.92				1.92
C4042	2.56	2.56	2.49	2.64		1.95		1.97				1.97
C4045	2.88	2.88	2.88	2.88				1.92				
C4051	2.60		2.60					1.73				
C4053	1.72	1.68	1.14		2.54			1.91				1.91
C406	2.81	2.64	2.31	2.81	1.98							1.98
C407	2.67	2.17	2.20	2.67	3.00			2.00		2.00		2.00
C408	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C409	2.58	2.58	2.58	1.72	1.72	1.72		1.72	0.85		2.15	1.72
C410	2.31	1.60	1.92	1.35	2.51		1.97	1.94				1.94
C4112	1.88	1.88	2.07					1.88				1.88
C412	2.90	2.90	1.93		1.93	2.17	2.25	2.41	2.90	2.90	1.93	2.90
C413	3.00	3.00	2.75	3.00	3.00	2.00	2.20	3.00	3.00	3.00	2.25	3.00
C414	3.00	3.00					3.00	3.00	3.00	3.00		3.00

PO Attainment Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO Attainment	2.39	2.10	1.97	1.93	2.13	1.83	1.84	1.83	2.26	2.59	2.08	1.88
Direct Attainment	2.38	2.08	1.94	1.91	2.16	1.85	1.88	1.82	2.30	2.65	2.11	1.87
Indirect Attainment	2.46	2.19	2.06	1.98	2.03	1.73	1.67	1.88	2.14	2.38	1.95	1.92

PSO ATTAINMENT

Course index no.	PSO1	PSO2
C104/C122		
C113/C131		
C106/C124		
C201		
C202	0.90	2.70
C203		1.24
C204	1.00	1.10

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C205		0.76
C206	2.39	
C207		2.75
C208	1.90	1.90
C209		
C210	2.88	1.92
C211		0.76
C212		1.22
C213		1.75
C214	1.69	1.69
C215	2.59	1.80
C216		1.35
C301		
C302	1.82	1.52
C303		0.89
C304	1.37	0.92
C3053		
C3054	0.98	1.96
C3062		0.89
C307		
C308	0.00	0.00
C309	1.50	1.63
C310	0.88	
C311		1.43
C312	1.07	1.07
C3133		1.85
C3142	1.53	1.53
C3144		
C315	1.16	1.33
C316	2.29	2.19
C401		
C402	2.10	
C403	2.68	1.92
C4042	2.22	
C4045		
C4051		
C4053	1.53	
C406	1.98	1.98

C407	2.50	
C408	3.00	3.00
C409	1.72	1.71
C410	1.68	
C4112		
C412	1.93	
C413	3.00	3.00
C414	3.00	3.00

PSO Attainment Level

Course	PSO1	PSO2
CO Attainment	1.85	1.68
Direct Attainment	1.84	1.65
Indirect Attainment	1.92	1.82

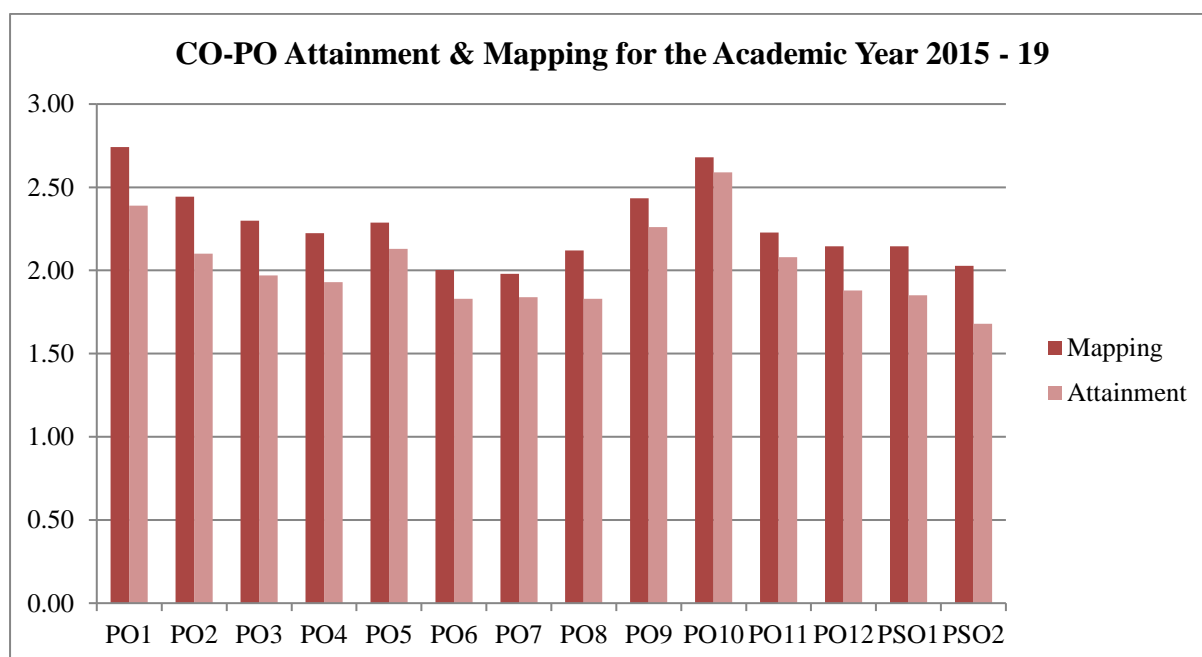


Fig. 3.6: CO-PO Attainment & Mapping for the Academic Year 2015 - 19

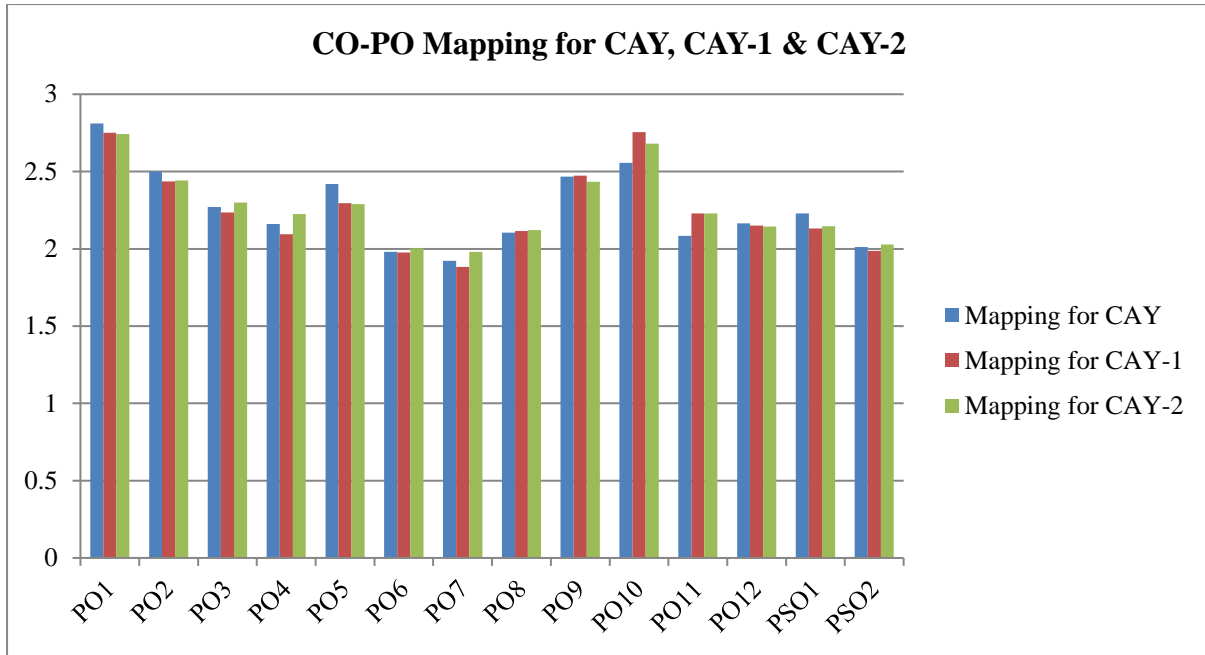


Fig. 3.7: CO-PO Mapping for CAY, CAY-1 & CAY-2

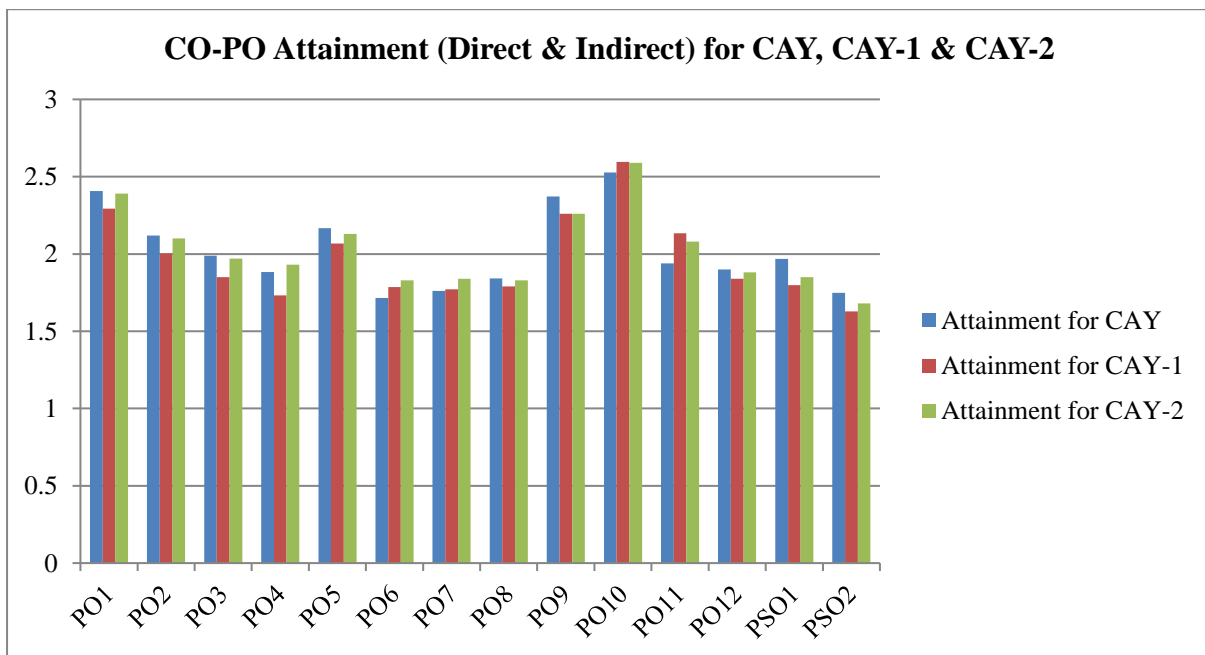


Fig. 3.8: CO-PO Attainment (Direct & Indirect) for CAY, CAY-1 & CAY-2

CRITERION 4

CRITERION 4	STUDENT'S PERFORMANCE	150
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Table 4.1: Students admitted in the Program

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2020-21 (CAY)	2019-20 (CAYm1)	2018-19 (CAYm2)	2017-18 (CAYm3)	2016-17 (CAYm4)	2015-16 (CAYm5)	2014-15 (CAYm6)
Sanctioned intake of the program (N)	120	120	120	120	120	120	120
Total number of students admitted in first year minus number of students migrated to other programs/institutions plus no. of students migrated to this program (N1)	18	44	65	74	98	110	112
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	NA	80	71	65	54	49	47
Separate division students, if applicable (N3)	-	-	-	-	-	-	-
Total number of students admitted in the Program (N1 + N2 + N3)	18	124	136	139	152	159	159

Table 4.2: Students Successfully Graduated In Minimum Period

Year of entry	Total No. of students admitted in the program (N1 + N2 + N3)	Number of students who have successfully graduated without backlogs in any semester/year of study (Without Backlog means no compartment or failures in any semester/year of study)			
		I Year	II Year	III Year	IV Year
2020-21 (CAY)	18+NA+0= 18	8	-	-	-
2019-20 (CAYm1)	44+80+0 = 124	17	43	-	-
2018-19 (CAYm2)	65+71+0 = 136	33	64	52	-
2017-18 (CAYm3)	74+65+0 = 139	35	32	27	27
2016-17 (LYG)	98+54+0=152	46	35	27	25
2015-16 (LYGm1)	110+49+0= 159	36	20	16	15
2014-15 (LYGm2)	112+47+0= 159	41	35	30	29

Table 4.3: Number of Students Successfully Graduated

Year of entry	Total No. of students admitted in the program (N1 + N2 + N3)	Number of students who have successfully Graduated in stipulated period of study [Total of with Backlog + without Backlog]			
		I Year	II Year	III Year	IV Year
2020-21 (CAY)	18+NA+0= 18	18	--	--	--
2019-20 (CAYm1)	44+80+0 = 124	41	120	--	-
2018-19 (CAYm2)	65+71+0 = 136	50	116	116	-
2017-18 (CAYm3)	74+65+0 = 139	72	111	111	111
2016-17 (LYG)	98+54+0=152	78	104	100	100
2015-16 (LYGm1)	110+49+0= 159	88	102	97	97
2014-15 (LYGm2)	112+47+0= 159	82	102	102	102

4.1	Enrolment Ratio	20
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Table 4.4: Students Enrolment Ratio

	N (From Table 4.1)	N1 (From Table 4.1)	Enrolment Ratio [(N1/N) *100]
2020-21 (CAY)	120	18	15
2019-20 (CAYm1)	120	44	37
2018-19 (CAYm2)	120	65	54
2017-18 (CAYm3)	120	74	62

4.2	Success Rate in the stipulated period of the program	40
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4.2.1	Success rate without backlogs in any semester/year of study
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Table 4.5: Students Success Rate

Item	Latest Year of Graduation, YG (2017-18)	Latest Year of Graduation minus1, YGm1 (2016-17)	Latest Year of Graduation minus 2, YGm2 (2015-16)
X Number of students admitted in the corresponding First Year + admitted in 2 nd year via lateral entry and separate division, if applicable	139	152	159
Y Number of students who have graduated without backlogs in the stipulated period	27	25	15
Success Index [SI = Y/X]	0.194	0.164	0.094
Average SI [(SI1+SI2+SI3)/3]	0.452		
Assessment = [25 × Average SI]	11.3		

4.2.2	Success rate in stipulated period
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Table 4.6: Students Success rate in Stipulated Period

Item	Latest Year of Graduation, LYG (2017-18)	Latest Year of Graduation minus1, LYGm1 (2016-17)	Latest Yearvvvzz of Graduation minus 2, LYGm2 (2015-16)
X Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division, if applicable	139	152	159
Y Number of students who have graduated in the stipulated period	111	100	97
Success Index [SI = Y/X]	0.798	0.657	0.610
Average SI [(SI1+SI2+SI3)/3]	0.688		
Assessment = [15 × Average SI]	10.32		

4.3	Academic Performance in Third Year	15
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Table 4.7: Academic performance in Third year

Academic Performance	CAYm1 (2017-18)	CAYm2 (2016-17)	CAYm3 (2015-16)
Mean of CGPA or Mean Percentage of all successful students (X)	6.9	6.4	6.3
Total no. of successful students (Y)	111	100	97
Total no. of students appeared in the examination(Z)	139	152	159
API = $[X * (Y/Z)]$	5.51	4.21	3.84
Average API = $(AP1 + AP2 + AP3)/3$	4.52		
Assessment = 1.5 *Average API	6.78		

4.4	Academic Performance in Second Year	15
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Table 4.8: Academic performance in Second year

Academic Performance	CAYm1 (2017-18)	CAYm2 (2016-17)	CAYm3 (2015-16)
Mean of CGPA or Mean Percentage of all successful students (X)	5.9	5.8	4.89
Total no. of successful students (Y)	111	100	97
Total no. of students appeared in the examination (Z)	139	152	159
API = $[X * (Y/Z)]$	4.71	3.81	2.98
Average API = $(AP1 + AP2 + AP3)/3$	3.83		
Assessment = 1.5 *Average API	5.75		

4.5	Placement, Higher Studies and Entrepreneurship	40
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Table 4.9: Placement, Higher studies, and Entrepreneurship

Item	LYG (2017-18)	LYG (2016-17)	LYGm1 (2015-16)	LYGm2 (2014-15)
Total No. of Final Year Students (N)	111	100	97	102
No. of students placed in companies or Government Sector (x)	34	49	34	48
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)	00	00	02	05
No. of students turned entrepreneur in engineering/technology (z)	00	00	00	00
$x + y + z =$	34	49	36	53
Placement Index: $(x + y + z)/N$	0.31	0.49	0.37	0.52
Average placement= $(P1 + P2 + P3+P4)/4$	0.42			
Assessment = 40 * Average Placement	16.80			

Table 4.10: Placement details during 2020-21

SL.NO	STUDENT NAME	USN	DISCIPLINE	YEAR OF PASSOUT	ON/OFF CAMPUS	NAME OF THE EMPLOYER
1	AAMIR SOUHAIL	3VC16ME401	MECH	2021	ON	BYJU'S
2	KIRAN KUMAR D	3VC18ME418	MECH	2021	ON	BYJU'S
3	MAHANTESH H M	3VC18ME424	MECH	2021	ON	BYJU'S
4	CHAITANYA MUDLAPUR	3VC17ME033	MECH	2021	OFF	HALLEYES BLUE
5	NASIR AHMED K	3VC15ME061	MECH	2021	ON	INMOVIDU
6	N B Vishwa Prasad	3VC16ME431	MECH	2021	ON	INMOVIDU
7	AKASHA GOUDA H	3VC17ME002	MECH	2021	ON	INMOVIDU
8	ANIL KITTUR	3VC17ME003	MECH	2021	ON	INMOVIDU
9	EARESH VARMA C	3VC17ME010	MECH	2021	ON	INMOVIDU
10	G S SREEHARSHA	3VC17ME016	MECH	2021	ON	INMOVIDU
11	HANUMESH	3VC17ME022	MECH	2021	ON	INMOVIDU
12	JEFFREY SUJAN KUMAR K	3VC17ME025	MECH	2021	ON	INMOVIDU
13	MANIL KUMAR M	3VC17ME036	MECH	2021	ON	INMOVIDU
14	PRAVEEN KUMAR	3VC17ME053	MECH	2021	ON	INMOVIDU
15	R PAVITHRA	3VC17ME054	MECH	2021	ON	INMOVIDU
16	SHARANABASAVA SWAMY H M	3VC17ME070	MECH	2021	ON	INMOVIDU
17	SOMASHEKHAR HOSMANI	3VC17ME071	MECH	2021	ON	INMOVIDU
18	SURYA BABU G	3VC17ME075	MECH	2021	ON	INMOVIDU

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19	MD MUSHTAQAHAMAD S	3VC17ME425	MECH	2021	ON	INMOVIDU
20	MOHAMMED ARSHAD	3VC18ME428	MECH	2021	ON	INMOVIDU
21	V.SIDDHI VINAYAKA	3VC18ME457	MECH	2021	ON	INMOVIDU
22	VYSHNAVI	3VC18ME462	MECH	2021	ON	INMOVIDU
23	KIRAN MATH	3VC17ME031	MECH	2021	ON	JSW
24	PARIKSHITH KM	3VC17ME027	MECH	2021	OFF	L & T INFOTECH
25	RANJITH YADAV	3VC17ME014	MECH	2021	ON	MAVERIC SYSTEMS
26	SAMPATH KUMAR	3VC18ME443	MECH	2021	ON	PVH SOFTWARE SOLUTION
27	AJAY REDDY	3VC17ME001	MECH	2021	OFF	TCS
28	YERRISWAMY K	3VC15ME125	MECH	2021	ON	VERZEO
29	MOHAMMED IRFAN	3VC16ME052	MECH	2021	ON	VERZEO
30	RAHUL R	3VC16ME123	MECH	2021	ON	VERZEO
31	SAMEER BASHA	3VC17ME063	MECH	2021	ON	VERZEO
32	KARTHIK KUMAR	3VC18ME416	MECH	2021	ON	VERZEO
33	KOTRESH K	3VC18ME419	MECH	2021	OFF	CAPGEMINI
34	AJAY REDDY N	3VC17ME001	MECH	2021	ON	TATA TECHNOLOGIES
35	G VIKAS GOUDA	3VC17ME080	MECH	2021	ON	TATA TECHNOLOGIES
36	SAI SHASHANKA GP	3VC17ME062	MECH	2021	ON	TATA TECHNOLOGIES
37	GANESH GOWDA	3VC17ME018	MECH	2021	ON	TATA TECHNOLOGIES
38	KISAR AHMED D	3VC17ME028	MECH	2021	ON	TATA TECHNOLOGIES
39	AKASH GOUDA	3VC17ME002	MECH	2021	OFF	URBAN COUNCIL INDIA

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40	V JEETHA NAIK	3VC17ME084	MECH	2021	OFF	ARCHANCE
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Table 4.11: Placement details during 2019-20

SL.NO	STUDENT NAME	USN	DISCIPLINE	YEAR OF PASSOUT	ON/OFF CAMPUS	NAME OF THE EMPLOYER
1	NANDAVEER	3VC17ME442	MECH	2019-20	ON	BOSCH
2	MATTAM DINESH BABU	3VC16ME048	MECH	2019-20	ON	BYJU'S
3	KHUSHWANTH SAI KUMAR.K	3VC17ME419	MECH	2019-20	ON	BYJU'S
4	ANGADI SRIDHAR	3VC15ME007	MECH	2019-20	ON	FREENKART
5	AMIR SOHAIL K	3VC15ME100	MECH	2019-20	ON	FREENKART
6	PRAJWAL KUMAR H M	3VC16ME031	MECH	2019-20	ON	FREENKART
7	SHAKEEL AHMED	3VC16ME092	MECH	2019-20	ON	FREENKART
8	SRI RANGANATHA DESAI	3VC16ME104	MECH	2019-20	ON	FREENKART
9	VISHAL KUMAR	3VC16ME120	MECH	2019-20	ON	FREENKART
10	SRINIVAS RAO	3VC16ME121	MECH	2019-20	ON	FREENKART
11	DEEPAK S	3VC17ME405	MECH	2019-20	ON	FREENKART
12	ABHISHEK PARAPPA	3VC16ME006	MECH	2019-20	OFF	HCL TECHNOLOGIES LTD
13	MANJUNATH P	3VC16ME046	MECH	2019-20	OFF	HCL TECHNOLOGIES LTD
14	Md IRFAN	3VC16ME053	MECH	2019-20	OFF	HCL TECHNOLOGIES LTD
15	T K SHANKAR NARAYAN	3VC16ME111	MECH	2019-20	OFF	HUDL
16	BHEEMRAJ	3VC15ME011	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD

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17	AVINASH NAIDU	3VC16ME014	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
18	JAYANTH R	3VC16ME035	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
19	SAI CHAITANYS	3VC16ME044	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
20	PAVAN KUMAR	3VC16ME061	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
21	RAMESH BABU GR	3VC16ME073	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
22	SANDEEP	3VC16ME087	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
23	SRIDHAR J	3VC16ME098	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
24	SUNIL S	3VC16ME108	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
25	THIPPESHA V	3VC16ME112	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
26	VINAYAK	3VC16ME118	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
27	JOSHUA HANIEL	3VC17ME415	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
28	MARUTHI REDDY	3VC17ME424	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD
29	UMESH K R	3VC17ME443	MECH	2019-20	ON	HYOSOENG ELECTRIC INDIA PVT LTD

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30	VINAYAKA POORNA	3VC16ME119	MECH	2019-20	ON	INFOSYS
31	RANGA SAI	3VC16ME074	MECH	2019-20	OFF	JPSSF (HUNDIA KIA)
32	B VIJAY KUMAR	3VC16ME016	MECH	2019-20	OFF	JSSL
33	NAFEESA BEGUM	3VC16ME055	MECH	2019-20	OFF	JSSL
34	RAJESH K	3VC16ME070	MECH	2019-20	OFF	JSSL
35	SANTOSH	3VC16ME088	MECH	2019-20	OFF	JSSL
36	B RUBESH NAIDU	3VC16ME078	MECH	2019-20	ON	NOBROKER.COM
37	RAHUL DAVID	3VC16ME068	MECH	2019-20	ON	SLK SOFTWARE SERVICES
38	SAI THEJA S L	3VC16ME084	MECH	2019-20	ON	SLK SOFTWARE SERVICES
39	T SUNIL	3VC16ME109	MECH	2019-20	ON	SLK SOFTWARE SERVICES
40	KARTHIK CM	3VC16ME039	MECH	2019-20	ON	SLK SOFTWARE SERVICES
41	RIYAZ GURIKAR	3VC16ME077	MECH	2019-20	ON	SLK SOFTWARE SERVICES
42	ANIL KUMAR	3VC16ME012	MECH	2019-20	OFF	SUNFRA TECHNOLOGIES
43	PRAMOD S H	3VC16ME062	MECH	2019-20	OFF	TCS
44	SRINIDHI JOSHI	3VC16ME099	MECH	2019-20	OFF	TCS
45	VIJAYA KUMAR N	3VC16ME117	MECH	2019-20	OFF	TCS
46	K BHARATH	3VC16ME036	MECH	2019-20	OFF	TCS
47	CHANDAHASA EA	3VC16ME27	MECH	2019-20	OFF	ZKTECO BIO METRIC PVT LTS

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48	MOHMED IRFAN	3VC17ME426	MECH	2019-20	ON	TATA TECHNOLOGIES
49	DURGA VENKATA PRASAD	3VC16ME026	MECH	2019-20	ON	TATA TECHNOLOGIES
50	G AVINASH NAIDU	3VC16ME014	MECH	2019-20	ON	TATA TECHNOLOGIES
51	HEMANTHA GOUDA KM	3VC17ME413	MECH	2019-20	OFF	MAN POWER GROUP SERVICES
52	MARUTHI PRASAD	3VC17ME423	MECH	2019-20	OFF	STRUCOL

Table 4.12: Placement details during 2018-19

SL. NO	STUDENT NAME	USN	DISCIPLINE	YEAR OF PASSOUT	ON/OFF CAMPUS	NAME OF THE EMPLOYER
1	SHARANA GOUDA S V	3VC15ME093	MECH	2019	ON	24[7]
2	SYED MEHABOOB	3VC15ME111	MECH	2019	ON	24[7]
3	VENKATESH P	3VC15ME117	MECH	2019	ON	INFOSYS
4	B PRAMOD KUMAR	3VC15ME009	MECH	2019	ON	JSW(CORE)
5	MALLIKARJUNA	3VC15ME046	MECH	2019	ON	JSW(CORE)
6	AKSHYA KUMAR	3VC15ME005	MECH	2019	ON	SHRI RAM
7	MANOJ KUMAR	3VC15ME052	MECH	2019	ON	SHRI RAM
8	SHARANA GOUDA	3VC15ME092	MECH	2019	ON	SHRI RAM
9	SRIKANT N T	3VC15ME102	MECH	2019	ON	SHRI RAM
10	SHUBHAM CHOUBEY	3VC15ME104	MECH	2019	ON	SHRI RAM
11	VAMSHI KRISHNA	3VC15ME115	MECH	2019	ON	SHRI RAM
12	VILAS KUMAR R	3VC15ME119	MECH	2019	ON	SHRI RAM

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13	MOUNESH G S	3VC15ME057	MECH	2019	ON	TATA MOTORS
14	MAHESH M	3VC15ME041	MECH	2019	ON	TCS
15	NINGARAJ DODMANI	3VC15ME064	MECH	2019	ON	UNIVERSAL EDUCATION
16	MOHAMMED SOHAIL	3VC15ME054	MECH	2019	ON	UNIVERSAL EDUCATION
17	K K SAI PRASAD	3VC15ME027	MECH	2019	ON	VISHAL INTERNATIONAL
18	SANTHOSHA K R	3VC15ME091	MECH	2019	ON	VISHAL INTERNATIONAL
19	M VANKATA SAI PRAVEEN	3VC15ME042	MECH	2019	OFF	PROFICIENT KILN
20	KALYAN KUMAR YADAV	3VC15ME030	MECH	2019	OFF	DESIGN TECH SYSTEMS
21	PREM SAGAR	3VC14ME015	MECH	2019	OFF	CAPGEMINI
22	A V GOUTAM RAO	3VC14ME002	MECH	2019	ON	TATA TECHNOLOGIES
23	CHAITHRA K	3VC16ME407	MECH	2019	ON	TATA TECHNOLOGIES
24	VEERESHA K	3VC15ME116	MECH	2019	ON	TATA TECHNOLOGIES
25	NIKHIL KUMAR A	3VC15ME062	MECH	2019	OFF	TEAM LEASE
26	D MOHAN KUMAR	3VC16ME430	MEHC	2019	OFF	JSW
27	RAJESH J	3VC16ME433	MECH	2019	OFF	HALLEYS BLUE
28	MANJUNATH K	3VC16ME426	MECH	2019	OFF	JSW
29	GULAMNABI	3VC15ME023	MECH	2019	OFF	VOGO AUTOMOTIVE
30	SREERAM MALLIKARJUNA	3VC16ME444	MECH	2019	OFF	JSW

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31	KOLUR KOTRESH	3VC15ME036	MECH	2019	OFF	WISTRAN
32	KIRAN KUMAR K	3VC15ME033	MECH	2019	OFF	BYJU'S
33	SHRIDEVI G	3VC16ME422	MECH	2019	OFF	WATER RESOURCE DEPT
34	HASAN SAB	3VC15ME026	MECH	2019	OFF	AAA INFRA PVT LTD
35	SHAMBULINGA	3VC15ME095	MECH	2019	OFF	TCS
36	YOGESH D	3VC16ME448	MECH	2019	OFF	JSW

Table 4.13: Placement details during 2017-18

SL. NO	STUDENT NAME	USN	DISCIPLINE	YEAR OF PASSOUT	ON/OFF CAMPUS	NAME OF THE EMPLOYER
1	B SHREYAS	3VC14ME017	MECH	2018	OFF	BHUVALKA PIPES
2	B R ABHISHEK	3VC14ME003	MECH	2018	ON	BMM ISPAT
3	DIWAKAR REDDY J	3VC14ME022	MECH	2018	ON	BMM ISPAT
4	RAMANJANEYA	3VC14ME082	MECH	2018	ON	BMM ISPAT
5	SANDEEP KUMAR H G	3VC14ME096	MECH	2018	ON	BMM ISPAT
6	VINOD KUMAR	3VC14ME122	MECH	2018	ON	BMM ISPAT
7	AKHIL KUMAR S	3VC14ME004	MECH	2018	ON	BOSCH
8	SIDDESHA	3VC14ME106	MECH	2018	OFF	HALLYSBLUE
9	K PAMPATHI	3VC14ME430	MECH	2018	OFF	HALLYSBLUE
10	SANTOSH KUMAR	3VC12ME089	MECH	2018	OFF	HALLYSBLUE
11	MANJUNATH G	3VC14ME049	MECH	2018	OFF	LINDE INDIA

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12	TEJA SAI P	3VC14ME113	MECH	2018	OFF	LINDEINDIA
13	KARTHIK REDDY N	3VC14ME041	MECH	2018	ON	PIN CLICK
14	MD MUSHTQ	3VC14ME056	MECH	2018	ON	PIN CLICK
15	NITHIN G	3VC14ME064	MECH	2018	ON	PIN CLICK
16	RCA VINAYAK	3VC14ME074	MECH	2018	ON	PIN CLICK
17	VASUDEVA	3VC14ME116	MECH	2018	ON	PIN CLICK
18	VIGNESH KANDRA	3VC14ME119	MECH	2018	ON	PIN CLICK
19	B SHREYAS	3VC14ME017	MECH	2018	ON	RIVIGO
20	KRISHNA MURTHY	3VC14ME042	MECH	2018	ON	RIVIGO
21	GURU TEJA	3VC15ME410	MECH	2018	ON	RIVIGO
22	PRAJWAL K M	3VC14ME038	MECH	2018	ON	SHRIRAM TRANSPORT FINANCE
23	RAJESH K	3VC14ME080	MECH	2018	ON	SHRIRAM TRANSPORT FINANCE
24	RAKESH NAYAKA DH	3VC14ME081	MECH	2018	ON	SHRIRAM TRANSPORT FINANCE
25	RAVI	3VC14ME086	MECH	2018	ON	SHRIRAM TRANSPORT FINANCE
26	SACHIN T	3VC14ME089	MECH	2018	ON	SHRIRAM TRANSPORT FINANCE
27	SHARANA BASAVA M	3VC14ME100	MECH	2018	ON	SHRIRAM TRANSPORT FINANCE
28	SHIVARUDRA K	3VC14ME104	MECH	2018	ON	SHRIRAM TRANSPORT FINANCE

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29	MONITH K SHAH	3VC14ME059	MECH	2018	ON	SLK SOFTWARE
30	JOSEPH KIRAN REDDY K	3VC14ME036	MECH	2018	ON	TCS
31	KARTHIK K	3VC14ME040	MECH	2018	ON	TCS
32	KUBENDRA T	3VC14ME043	MECH	2018	ON	TCS
33	DEEKSHIT KURNUTALA	3VC14ME044	MECH	2018	ON	TCS
34	VADIRAJ M	3VC14ME046	MECH	2018	ON	TCS
35	NITISH B	3VC14ME065	MECH	2018	ON	TCS
36	SAI KRISHNA L	3VC14ME091	MECH	2018	ON	TCS
37	SAMEER F	3VC14ME093	MECH	2018	ON	TCS
38	VACHAN AM	3VC14ME115	MECH	2018	ON	TCS
39	YERRISWAMY B	3VC14ME125	MECH	2018	ON	TCS
40	ARIF S	3VC15ME403	MECH	2018	ON	TCS
41	JUSTIN MATHEW	3VC13ME040	MECH	2018	ON	THASMAI AUTOMATION
42	HANDI THUFIQ	3VC14ME033	MECH	2018	ON	VEE TECHNOLOGIES
43	MD AMIR SOHAIL	3VC14ME053	MECH	2018	ON	VEE TECHNOLOGIES
44	MOHAMMED SUHAIL	3VC14ME058	MECH	2018	ON	VEE TECHNOLOGIES
45	PAVAN KUMAR N	3VC14ME439	MECH	2018	OFF	WIPRO
46	VEERABHADRAPPA	3VC13ME118	MECH	2018	ON	YANTRA DIGITAL SERVICES
47	RAKESH GY	3VC15ME434	MECH	2018	OFF	MCALLUS
48	G NITHIN KUMAR	3VC14ME025	MECH	2018	OFF	WIPRO
49	A RAGHAVENDRA	3VC14ME001	MECH	2018	OFF	AGILITY

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50	HARISH K	3VC15ME413	MECH	2018	OFF	CAPGEMINI
51	MD SARFARAX NAVAZ	3VC14ME057	MECH	2018	OFF	INTERNATIONAL ELECTRO MECHANICAL SERVICES

Table 4.14: Higher Education for The Year 2018-19

Sl. No.	Name	USN	College Name
1	Syed Meheboob Pasha	3VC15ME111	M.Tech - University Visveswaraya College of Engineering, Bangalore.
2	G Rajavikram	3VC15ME022	Bangalore Institute of Management Studies. Mysore Road. Bangalore

Table 4.15: Higher Education for The Year 2017-18

Sl. No.	Name	USN	College Name
1	Gireesh Agrahara K S	3VC14ME028	M.Tech - VTU University
2	Md. Mushtaq	3VC14ME056	M.Tech – PESIT, Bangalore
3	Vinay Kumar J	3VC14ME120	M.Tech - VIT Vellore
4	Abhishek B R	3VC14ME003	MBA – M S Ramaiah, Bangalore
5	Pramod S V	3VC14ME069	JSS University, Mysore

4.6	Professional Activities	20
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4.6.1	Professional societies/chapters and organizing engineering events
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Indian Society of Mechanical Engineers is a Technical Society in India updating vital information in field of Engineering and Technology. ISME is established in Madras in 1990 and is being sponsored and supported by various professional membership organizations, Societies, Institutions, Industries & amp; others. The ISME represents the many faces of Engineering rather than any one specialization and is appropriate for all Engineering Professionals throughout their working life. ISME student’s chapter was formed in the year February 2020. More than three hundred students were registered under this chapter.

Membership Benefits: ISME acts as a platform for making interaction with professionals through technical Symposium, Conference, Workshops and Seminars. ISME assists its members for getting placements in World class companies. ISME members receive quarterly E-Journal.

Table 4.16: Events carried out under ISME student chapter

Sl. No.	Name of the Event	Date	Resource Person with designation
1	Webinar for the students on “ Building Successful Career Through Portals of RYMEC”	29/05/2020	Prof. Madhav Murthy BMSCE, Bengaluru
2	Electrical Wire Harness Design Using CATIA V5	29/06/2020	V Bernad Raja, Consulting Learning Expert, CADMAXX Solution ,Bengaluru
3	Bio-Materials& Technology: Recent Trends & Applications in Medical Field	15/07/2020	Dr. Hanumanthraju H G, Associate Professor, Dept. of ME, UVCE, Bengaluru

4	Developments in Reducing Environmental Pollution: Bio-Fuels& Thermoacoustic Refrigeration	29/07/2020 to 31/07/2020	Dr. B G Prashantha, Prof. Dept of ME, JSSATE, Bengaluru Dr Hiregoudaru. Yerrannagoudaru, Prof., RYMEC, Ballari Dr. Manjunatha Kondekal, Assoc. Prof., RYMEC, Ballari
5	Lateral Thinking Approaches For Problem Solving	06/08/2020	Prof. Rashmi Shetty, R V Institute of Management, Bengaluru
6	Recent Trends in Robotics	20/08/2020	Mr. R Jishnu, Senior Engineer, Embedded developer, Pantech solutions Pvt. Ltd., Hyderabad

Membership Benefits: The **International Society for Technology in Education (ISTE)** is an international advocacy organization that seeks to "transform teaching and learning" through technology and adherence to the ISTE Standards.

The Indian Society for Technical Education is a national, professional, non-profit making Society registered under the Societies Registration Act of 1860.

The major objective of ISTE is to **formulate the general goals & responsibilities of technical education**. To adjust curriculum & educational processes to changing conditions. To develop effective teachers & educational administrators. To improve instructional methods & practices & administrative usages.

The major objective of the ISTE is to assist and contribute in the production and development of top quality professional engineers and technicians needed by the industries and other organizations. Being the only national organization of educators in the field of Engineering and Technology, ISTE effectively contributes in various missions of the Union Government. The Ministry of Human Resource Development, CTE / DST / MIT / State Governments are well associated with the ISTE for programs relating to technical education. The Headquarters of ISTE is located at New Delhi.

Major Benefits of becoming an ISTE Member

1. A Member of a National Professional Organization.
2. Join an academic fraternity of over 50,000 strong professionals.
3. Preference to attend short-term training programmes for academic excellence and to become eligible for career advancement opportunities.
4. Bi-monthly Newsletter.
5. Quarterly Indian Journal of Technical Education (at concessional rates).
6. Quarterly International Journal of Engineering Education by American Society of Engineering Education (ASEE), USA (at concessional rates).
7. Eligible to apply for various national level awards.
8. Publications for Self Development, Institution Development, etc. (at concessional rates)
9. Eligible to participate in Chapter Level, Section Level and National Level Conferences, Workshops and other activities of your academic interest, etc.

Table 4.17: Events carried out under ISTE student chapter

Sl. No.	Name of the Event	Date	Resource Person with designation
1	C-Programming Training	30/07/2018 To 01/08/2018	In-House Faculties
2	Awareness Program on Automation Technology	26/09/2018	Vastro Technology,B'Lore

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3	Awareness Program on CAD, CAM & CAE	29/09/2018	1. Mr. Ashwin Kumar, Senior Trainee CAD MAX B'lore. 2. Mr. Sanjeev Kumar, Mono Tech, Chennai
4	One Day workshop on Marine Engineering	03/10/2018	Mr. ShivasharannaiahSwamy, Asst. Prof. REVA university B'lore
5	Two Days work Shop on Geometric Dimensions & Tolerances	05/10/2018 to 06/10/2018	Madhusudhan PS, Co-Founder & MD, M/S Rectangle Automotive Technologies LLP, Davangere
6	Carrier Guidance on Higher Studies	02/02/2019	Mr. C Vijay Mahantesh, Software Engineer, Wipro Bangalore
7	Higher Studies Awareness Program	11/02/2019	N B Pruthviraj
8	Three days workshop on Overview in Aerospace Domain	05/03/2019	1. Dr. K Bhadrinarayana, Scientist, Dy Project Director Structure division of ISRO Satellite Center. 2. Mr. Movin Furtado, Senior System Engineer COE AD, B'lore
9	Two days workshop for students "Industrial Safety measures & Regulations	26/04/2019	Mr. Suresh Kumar Safety Engineer, JSW Steel Ltd.
10	Life Skills	31/07/2021	Dr. ManjunathKondekal. Associate Professor, Dept of ME, RYMEC
11	Use of POM – QM software for windows for Operation Research	9/05/2021	Dr VeerabadrappaAlgur. Associate Professor Dept of ME, RYMEC
12	Guidance on Job opportunities in IT Industry	25/09/2021	MrOmkareshwar

13	My Professional journey	01/08/2021	Mr. NazeerBhagwan Mr.RajeshNagari Mr. Neelakantswamy
14	Industry Adaption and Readiness	21/08/2021	B Venkat Narayan Head of project division and procurement jayaswalNeco Industries Ltd, Raipur

Table 4.18: Events carried out under ISTE & MECH TANTRIKA student chapter

Sl. No.	Name of the Event	Date	Resource Person with designation
1	Motivational Session	22/02/2018	Yendamoori Veerandranath
2	International Student Exchange Program on Young Ambassador Program on Design Thinking Workshop	01/08/2019	Ballari Titans 218 and QTPI Robotics
3	Two days Students workshop on “Emerging Trends in Industrial Mechanical Software’s and its applications”	17/09/2019 to 18/09/2019	1. Er. Pradeep Kumar Kallur, Director, Medini 2. Er. Mohan Prabhu, Technical Head, AEC
4	GATE Exam Orientation Program for VII Semester Students	23/09/2019	Mr. PrathapChoudray Alumni of RYMEC
5	Career Orientation Program on Industry Expectations From Young Engineers	22/11/2019	Dr. Binoy Mathew Director, Centralized Placement Cell (CPC) VTU, Bangalore

6	Webinar on “Industrial Application of CAD/CAE/CAM	28/03/2020	CADMAXX solutions, Bengaluru
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4.6.2	Publication of technical magazines, newsletters, etc.
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Table 4.19: Publication of Technical magazines, Newsletters (Departmental News Letter “YANTRIKA”)

SL. NO.	VOLUME	DATE	STATUS	VOLUME
1	VOLUME 1	FEB 2015-JULY 2015	PUBLISHED	VOLUME 1 ISSUE 1
2	VOLUME 2	AUG 2015-JAN 2016	PUBLISHED	VOLUME 2 ISSUE 1
3	VOLUME 3	FEB 2016-JULY 2016	PUBLISHED	VOLUME 2 ISSUE 2
4	VOLUME 4	AUG 2016-JAN 2017	PUBLISHED	VOLUME 3 ISSUE 1
5	VOLUME 5	FEB 2017-JULY 2017	PUBLISHED	VOLUME 3 ISSUE 2
6	VOLUME 6	AUG 2017-JAN 2018	PUBLISHED	VOLUME 4 ISSUE 1
7	VOLUME 7	FEB 2018- JULY 2018	PUBLISHED	VOLUME 4 ISSUE 2
8	VOLUME 8	AUG 2018-JAN 2019	PUBLISHED	VOLUME 5 ISSUE 1
9	VOLUME 9	FEB 2019- JULY 2019	PUBLISHED	VOLUME 5 ISSUE 2
10	VOLUME 10	AUG 2019-JAN 2020	PUBLISHED	VOLUME 6 ISSUE 1
11	VOLUME 11	FEB 2020- JULY 2020	PUBLISHED	VOLUME 6 ISSUE 2
12	VOLUME 12	AUG 2020-JAN 2021	PUBLISHED	VOLUME 7 ISSUE 1
13	VOLUME 13	FEB 2021-JULY 2021	PUBLISHED	VOLUME 7 ISSUE 2

Paper published by students:

1. Kinematic Synthesis of Four Link 4R Mechanism using Freudenstein Equation H. M. Naveen, Sharukantha P, VyasapuraJetha Naik, Rahul Beddadi and Sreekanth Naik, International Research Journal of Engineering and Technology (IRJET), Vol. 08, Issue 07, July 2021, pp : 2280 to 2282, e-ISSN: 2395-0056.
2. Introduction to Biogas& Applications, N.B.Prutviraj, International Journal of Advanced Research in Mechanical Engineering & Technology(IJARMET) Vol. 2,Issu 4 (Oct. –Dec,2016).
3. Investigation of Apricot oil Blended with Ethanol as Substitute Fuel in Turbocharged Diesel Engine, Nikita. J, International Journal of Engineering Research and Advanced Technology, Volume -2, Issue -1,(May 2016).

4.6.2

Participation in inter-institute events by students of the program of study.

Table 4.20: Participation in inter-institute events by students

Sl. No.	Name	Event Name	Venue	Date & Year
01	Akhil Kumar	National Level Student Technical Fest Advitya 2016	KLEIT, Hubballi	23 rd & 24 th September 2016
02	Abhishek B R	Internship / Automotive Styling Boot Camp	JSSATE, Bengaluru	14 th – 21 st January 2017
	B Shreyas			
	Akhil Kumar S			
	Sanatha Kumar C M			
	Vachan A M			
	Sachin T			
	Suraj Kashyap T R			

	Rajshekar M			
	Vinod Kumar N R			
	Nitish B			
03	Kasa Sujith Kumar	Lathe Craft	JNTU College of Engineering, Ananthapuramu, AP, India. A national Level Students Technical Symposium DYNAMECHS 2018	28 th March 2018
	Raja Vikram			
	Kasa Sujith Kumar	Industrial Automation & Robotics		
	G Doddana Gouda			
	Raja Vikram			
	Sunanda N			
	Manoj Kumar AS			
	Hasansab			
	H Akshat Kumar			
	G Shridevi	Tech Quiz		
	Manoj Kumar AS			
	B Malli			
	G Shridevi	Technion		
	H Akshat Kumar			
	K Chaitra			
	Akshay Kumar			
	Hasansab	Techwar		
	Manoj Kumar			
Manoj Kumar	Tecrity			

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	G Doddana Gouda			
04	Karthik K	International Design Competition 2018	CADD Centre Ballari	Sept-Nov 2018
05	Ranganath Desai	Terranaut-XI	KLETU- Hubballi	16 th March 2019
06	Nafeesa Begum	Smart trash	Innovision 2019 PDIT HOSAPETE	3 rd April 2019
	Karthik K			
	Ashwini Kurubara			
	Shekar B			
	Shivakumar B			
	Ranganath Desai	Gesture Control Pick And Place Robot		
07	Nafeesa Begum	Smart trash	3 rd State Level Prjoect Exhibition 2k19 Rymec Ballari	12 th -13 th April 2019
	Karthik K			
	Ashwini Kurubara			
	Shekar B			
	Shivakumar B			
	Ranganath Desai	Gesture Control Pick And Place Robot		
08	Ranganath Desai	4 th National Level Project Competition “IEEE Project Expo - 2019”	GSSSIETW- Myosre	29 th April 2019
09	Ranganath Desai	LEAD LEADership Program	Deshpande Foundation, India	15 th – 24 th July 2019
10	Shivakumar B	E-Step Start Up Boot- Camp	RYMEC Ballari	29 th Aug 2019
	Shekar B			
11	Raghuveera K	Engine assembly quiz	Advitiya- 2019 National Level Student Technical Fest, KLEIT Hubballi	20 th -21 st Sep 2019

12	Ranganath Desai	STORM Workshop	Mysore	21 st -22 nd Sep 2019
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Table 4.21: Participation in different sports events by the students in the year 2018 to 2021

Sl. No	Name of The Student	Semester	Sports Event Participated	Place at which event held
1	G Doddabasava	8	Kabaddi	RYMEC, Ballari
2	Ramesh Babu G R	2		
3	Chetankumar P D	6		
4	Girish Km	6	Kho-Kho	RYMEC, Ballari
5	Yeshwanth	4		
6	Sharnegowda	4		
7	Manjunath	4		
8	Mallikarjun	4		
9	Avinash	6	Chess	Chitradurga
10	Shivaraj	3		
11	Pavan Kumar	7		
12	Sai Krishna	7		
13	Shivaraj	5	Basket Ball	RYMEC, Ballari
14	Ranga Sai	3		
15	Wesly	3		
16	Kushwanth	3		
17	Devendra	7		
18	Arif	3		

19	Touqeer	7		
20	Amir Sohail	7		
21	Nagaraj	8	Cricket	RYMEC, Ballari
22	Basavaraj	6		

Table 4.22: Participation in Inter-Institute cultural events by the students

ANGADI INSTITUTE OF TECHNOLOGY AND MANAGEMENT, Belagavi - 2018-2019				
18TH VTU INTER COLLEGIATE YOUTH FESTIVAL “KALASURABHI” - 2018				
SI. No.	Name	Semester	Secured Prize	Event Name
1	Mahadev	VIII	-	Folk Dance/Tribal
2	Subham			Quiz
Bheemanna Khandre Institute of technology - Bhalki 2018-2019				
Janani youth festival- 2018				
SI. No.	Name	Semester	Secured Prize	Event Name
1	Shivaraj Koppad	VIII	-	Debate
Shri Dharmasthala Manjunath College of Engineering & Technology Dharwad 2019-20				
20th VTU Youtyh festival INSIGNIA 2019-20				
SI. No.	Name	Semester	Secured Prize	Event Name
1	Pruthivi	V	-	Classical Instrumental Solo
2	Manjunath	III	-	Quiz
3	Sumit S Korlahalli	V	-	Installation

CRITERION 5

CRITERION 5	FACULTY INFORMATION AND CONTRIBUTIONS	200
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Table 5.1: Faculty Information

Name	PAN No.	University Degree	Date of Receiving Degree	Area of Specialization	Research Paper Publications	Ph.D Guidance	Ph.D. granted during the Assessment Year	Current Designation	Date (Designated as Prof./Assoc. Prof.).	Initial Date of Joining	Association Type	At present working with the Institution(Yes/No)	In case of NO, Date of Leaving	IS HOD?
Dr. KORI NAGARAJ	AARPN2587N	ME/M. Tech and PhD	07/12/2013	FRACTURE MECHANICS	12	4	0	Professor	07/12/2013	01/09/1992	Regular	Yes		Yes
Dr. K VEERESH	ACXPK9025G	ME/M. Tech and PhD	02/12/2009	PRODUCTION MANAGEMENT	15	2	0	Professor	25/08/2005	15/07/1985	Regular	No	31-01-2021	No
Dr. HIREGOUDAR YERRANNA GOUDARU	AAMPY1501E	ME/M. Tech and PhD	27/08/2011	THERMAL POWER ENGINEERING	80	8	2	Professor	11/08/2011	01/09/1992	Regular	Yes		No
Dr. C THOTAPPA	AARTT7980P	ME/M. Tech and PhD	03/02/2012	SUPPLY CHAIN MANAGEMENT	31	5	0	Professor	08/04/2013	08/04/2013	Regular	Yes		No
Dr. G JAGANNATH REDDY	ADVPR6208B	ME/M. Tech and PhD	09/05/2015	MATERIAL SCIENCE	13	0	0	Professor	15/06/2015	15/02/1992	Regular	Yes		No
Dr. SHIV KUMAR MODI	ABQPM2327P	ME/M. Tech and PhD	28/12/2016	THERMAL POWER ENGINEERING	8	0	0	Professor	01/11/2016	01/09/1992	Regular	Yes		No
Dr. S P JAGADISH	CGNPS8394E	ME/M. Tech and PhD	18/07/2018	COMPOSITE MATERIALS	20	0	0	Associate Professor	01/12/2018	01/09/2010	Regular	Yes		No
Dr. K MANJUNATH	AVQPM8670B	ME/M. Tech and PhD	21/09/2017	THERMAL POWER ENGINEERING	40	0	0	Associate Professor	01/12/2018	02/08/2010	Regular	Yes		No
Dr. VEERABHADRAPPA ALGUR	AHKPV2991G	ME/M. Tech and PhD	18/07/2018	TOOL ENGINEERING	40	0	0	Associate Professor	01/02/2019	03/08/2019	Regular	Yes		No
M R INDHUDAR	AACPI3902R	M.E/M.Tech	02/12/1991	THERMAL POWER ENGINEERING	6	0	0	Assistant Professor		12/02/1990	Regular	Yes		No
Dr. SHIVAMANAPPA G DESAI	AXQPD3634E	M.E/M.Tech	03/03/1997	MACHINE DESIGN	2	0	0	Assistant Professor		14/12/1998	Regular	Yes		No
A M SHIVAPRAKASH SWAMY	ALJPS3733J	M.E/M.Tech	24/01/1996	PRODUCTION MANAGEMENT	1	0	0	Assistant Professor		01/09/1994	Regular	Yes		No

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Name	PAN No.	University Degree	Date of Receiving Degree	Area of Specialization	Research Paper Publications	Ph.D Guidance	Ph.D. granted during the Assessment Year	Current Designation	Date (Designated as Prof./Assoc. Prof.).	Initial Date of Joining	Association Type	At present working with the Institution(Yes/No)	In case of NO, Date of Leaving	IS HOD?
DHANDIN RAMESH	ACBPR9560M	M.E/M.Tech	05/11/1996	PRODUCTION MANAGEMENT	2	0	0	Assistant Professor		10/11/1997	Regular	Yes		No
Dr. M BALAJI	ALXPB1671J	M.E/M.Tech	23/02/2004	PRODUCTION MANAGEMENT	4	0	0	Assistant Professor		05/10/2001	Regular	Yes		No
Dr. KOTRESH SARDAR	ASJPS9463N	M.E/M.Tech	27/03/2004	PRODUCTION ENGINEERING AND SYSTEM TECHNOLOGY	8	0	0	Assistant Professor		01/09/2004	Regular	Yes		No
A SWAMYNATH	BJWPS3751C	M.E/M.Tech	17/02/2005	THERMAL POWER ENGINEERING	0	0	0	Assistant Professor		26/08/2005	Regular	No	05-08-2020	No
Dr. CHANDRA GOWDA M	AIKPC9836A	ME/M. Tech and PhD	01/09/2018	ALTERNATIVE FUELS - THERMAL	10	0	0	Assistant Professor		20/01/2009	Regular	No	04/09/2019	No
P K PAVAN KUMAR	AQJPP0455T	M.E/M.Tech	12/03/2008	THERMAL PWER ENGINEERING	5	0	0	Assistant Professor		02/08/2010	Regular	Yes		No
K SURESH KUMAR	DNLPS6044F	M.E/M.Tech	20/01/2010	CAD/CAM	10	0	0	Assistant Professor		24/02/2011	Regular	Yes		No
Y MALLIKARJUNA	AEDPY4592C	M.E/M.Tech	31/12/2008	MACHINE DESIGN	2	0	0	Assistant Professor		25/07/2011	Regular	Yes		No
Dr. K G PRAKASH	BBDPK2477E	M.E/M.Tech	27/07/2013	PRODUCTION ENGINEERING AND SYSTEM TECHNOLOGY	7	0	0	Assistant Professor		10/02/2012	Regular	Yes		No
V BALARAJ	AHMPV2005M	M.E/M.Tech	27/07/2013	MACHINE DESIGN	3	0	0	Assistant Professor		10/02/2012	Regular	Yes		No
B G CHANDRU	ATDPC4206A	M.E/M.Tech	22/08/2012	MANUFACTURING SCIENCE	3	0	0	Assistant Professor		01/10/2012	Regular	Yes		No
DEEPAK C	AGIPD2370A	M.E/M.Tech	07/01/2010	PRODUCTION TECHNOLOGY	3	0	0	Assistant Professor		22/10/2013	Regular	Yes		No
LAKSHMAN NAIK T K	AWHPT6231D	M.E/M.Tech	27/07/2013	MACHINE DESIGN	6	0	0	Assistant Professor		20/07/2012	Regular	Yes		No

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Name	PAN No.	University Degree	Date of Receiving Degree	Area of Specialization	Research Paper Publications	Ph.D Guidance	Ph.D. granted during the Assessment Year	Current Designation	Date (Designated as Prof./Assoc. Prof.).	Initial Date of Joining	Association Type	At present working with the Institution(Yes/No)	In case of NO, Date of Leaving	IS HOD?
R H M SOMNATH SWAMY	BXYP8277B	M.E/M.Tech	09/04/2012	ENGINEERING ANALYSIS AND DESIGN	7	0	0	Assistant Professor		17/12/2012	Regular	Yes		No
SWAMY N	DPOPS2269F	M.E/M.Tech	05/04/2013	COMPUTER INTEGRATED MANUFACTURING	2	0	0	Assistant Professor		01/08/2013	Regular	Yes		No
MAHESH G	AQAPM1473B	M.E/M.Tech	05/04/2013	THERMAL POWER ENGINEERING	3	0	0	Assistant Professor		05/08/2013	Regular	Yes		No
Dr. G MANJUNATH SWAMY	BIJPG1283R	M.E/M.Tech	03/12/2012	MACHINE DESIGN	3	0	0	Assistant Professor		01/08/2013	Regular	Yes		No
ACHUTANANDA K B	AIWPA1969Q	M.E/M.Tech	09/04/2012	TOOL ENGINEERING AND DESIGN	1	0	0	Assistant Professor		12/09/2013	Regular	Yes		No
H M NAVEEN	AGJPH2699M	M.E/M.Tech	02/09/2013	MACHINE DESIGN	0	0	0	Assistant Professor		04/08/2014	Regular	Yes		No
B BASAVAPRAKASH	AMRPP5949G	M.E/M.Tech	06/11/2014	THERMAL POWER ENGINEERING	2	0	0	Assistant Professor		02/08/2014	Regular	Yes		No
MANJUNATH K B	ABSPK7736N	M.E/M.Tech	22/11/2014	PRODUCT DESIGN AND MANUFACTURING	0	0	0	Assistant Professor		26/09/2014	Regular	Yes		No
K C MAHENDRA	AWDPM7984Q	M.E/M.Tech	22/11/2014	PRODUCTION ENGINEERING AND SYSTEM TECHNOLOGY	5	0	0	Assistant Professor		08/08/2014	Regular	Yes		No
VIRUPAKSHA GOUDA H	ACVPH1304D	M.E/M.Tech	22/11/2014	PRODUCTION MANAGEMENT	11	0	0	Assistant Professor		23/02/2015	Regular	Yes		No
VADDIN CHETAN	AOLPV8561L	M.E/M.Tech	30/09/2013	COMPUTATIONAL ANALYSIS IN MECHANICAL SCIENCE	7	0	0	Assistant Professor		01/08/2014	Regular	Yes		No
KUSAMMANAR BASAVARAJ	BCUPK3133R	M.Tech	02/11/2020	Thermal Power Engineering	6				02-11-2020		Regular	Yes		No

5.1	Student-Faculty Ratio (SFR)	20
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UG:

No. of UG Programs in the Department – 01

Table 5.2: Student details in UG program

Year of Study	CAY		CAYm1		CAYm2	
	2020-21		2019-20		(2018-19)	
	Sanction Intake	Actual admitted through lateral entry students	Sanction Intake	Actual admitted through lateral entry students	Sanction Intake	Actual admitted through lateral entry students
2nd Year	120	80	120	71	120	65
3rd Year	120	66	120	49	120	35
4th Year	120	48	120	35	120	29
Sub-Total	360	194	360	155	360	129
Total	554		515		489	

PG:

No. of PG Programs in the Department - 02

Table 5.3: Student admitted details in PG program

Production Management			
Year of Study	CAY (2020-21)	CAY m1 (2019-20)	CAY m2 (2018-19)
	Sanction Intake	Sanction Intake	Sanction Intake
1st Year	18	18	18
2nd Year	18	18	18
Total	36	36	36
Thermal Power Engineering			
Year of Study	CAY (2020-21)	CAY m1(2019-20)	CAY m2 (2018-19)
	Sanction Intake	Sanction Intake	Sanction Intake
1st Year	18	18	18
2nd Year	18	18	18
Total	36	36	36
Grand Total	72	72	72

No. of UG Programs in the Department: 1

No. of PG Programs in the Department: 2

Table 5.4: Student Faculty Ratio

Description	CAY (2020-21)	CAY m1 (2019-20)	CAY m2 (2018-19)
Total No. of Students in the Department(S)	626	587	561
No. of Faculty in the Department(F)	35	35	35
Student Faculty Ratio(SFR)	17.88	16.77	16.03
Student Faculty Ratio			SFR: 16.89

Note: 75% should be Regular/full time faculty and the remaining shall be Contractual Faculty/Adjust faculty/Resource persons from industry as per AICTE norms and standards. The contractual faculty will be considered for assessment only if a faculty is drawing a salary as prescribed by the concerned State Government for the contractual faculty in the respective cadre.

5.1.1: Provide the information about the regular and contractual faculty as per the format mentioned below:

Table 5.5: Regular and contractual faculty information

	Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY (2020-21)	35	0
CAY m1 (2019-20)	35	0
CAY m2 (2018-19)	35	0

Average SFR for three assessment years: 17.05

5.2	Faculty Cadre Proportion	25
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Table 5.6: Details of Faculty Cadre Proportion

	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY (2020-21)	3.00	6.00	6.00	3.00	18.00	26.00
CAY m1 (2019-20)	3.00	6.00	6.00	3.00	18.00	26.00

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CAY m2 (2018-19)	3.00	6.00	6.00	0.00	18.00	29.00
Average	3.00	6.00	6.00	2.00	18.00	27.00

Cadre Ratio Marks [(AF1 / RF1) + [(AF2 / RF2) * 0.6] + [(AF3 / RF3) * 0.4]] * 12.5: 35

5.3	Faculty Qualification	25
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Table 5.7: Details of Faculty Qualification

A.Y	X	Y	F	$FQ = 2.5 \times [(10X + 4Y) / F]$
CAY (2020-21)	11	24	32.5	15.84
CAY m1 (2019-20)	9	26	29.00	16.72
CAY m2 (2018-19)	8	26	28.00	16.43
Average				16.33

5.4	Faculty Retention	25
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Table 5.8: Details of Faculty Retention

Description	CAY m2 (2018-19)	CAY m1 (2019-20)	CAY (2020-21)
No of Faculty Retained	34	33	32
Total No of Faculty	35	35	35
% of Faculty Retained	97.14	94.2	91.42

Average: 94.25

5.5	Innovations by the Faculty in Teaching and Learning	20
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Teaching and learning innovative practices are introduced to raise the curiosity of a student in wide domain to encourage the students to question the obvious and to increase the interaction in the class. Rapid advancement in technology is one of the major issues that affect the teaching/learning process. The facilitators find it difficult to keep pace with the techno-savvy learners. Further there is rapid change taking place in technology which aggravates the problem. Keeping the audience captivated throughout the lecture is another challenge. The facilitator is required to use a variety of tools to keep the learner engaged in the learning process since access to a variety of tools all the time may not be possible. Today knowledge

is just a click away to the learner; a challenge faced by facilitators is to keep pace with the latest news and happenings. The teaching/learning process is given immense importance in the institute. The institute trains their facilitators continuously to help them enhance their teaching abilities. The evidence of success is visible, qualitatively as well as quantitatively. The qualitative factor improves etiquettes and desire to understand. Also, it changes the overall perspective towards life. The quantitative factor improves academic performance and motivates participation in co-curricular activities. Students who have graduated are performing extremely well in the corporate world. Some students have put their learning into application by starting their own businesses.

Following are the best and innovative practices undertaken by the faculty members for improving teaching and learning experience.

Power Point Presentations

Objectives: To enhance the overall comprehension of students and allow teachers to present their lessons in a more dynamic way

Outcomes: It provides the ability to equip presentations with different types of media - including images, sounds, animations, and much more. This enhances the students abilities to retain what is being taught, especially to those who are visual learners. Teachers can focus on the class and interact with the students instead of writing on a board.

Student Seminars

Objectives: To enhance the overall comprehension of students and allow students to present their lessons in a more dynamic way

Outcomes: This best practice enhances the Listening ability. Working in a team Leadership quality of students builds up. Team building of students grows as they work in a Team. Communication skill builds up by Oral Communication in seminars. Student takes responsibility while working in a team. Sharing of Knowledge uplifts while preparing. Students learn Time Management skill. Students learn to deal with conflicting opinions. For delivering seminars students Prepare, Produce and use visual aids for presentation.

Industrial Visits

Objectives: To provide students an insight regarding internal working of companies and industries.

Outcomes: Industrial visit is considered as one of the tactical methods of teaching. The main reason behind this is to help student to know things practically through interaction, working methods and employment practices. It also provides a good opportunity for students to gain awareness about industrial practices. Through industrial visit students get awareness about new technologies.

Online NPTEL / IITBX Courses

Objectives: It's a learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalized learning environments.

Outcomes: Moodle is used for blended learning, distance education and other e-learning projects in institute. With customized management features, it is used to create private websites with online courses for educators and trainers to achieve learning goals.

NPTEL Videos

Objectives: To enhance the quality of engineering education, on tip compatibility & resources for beyond curriculum.

Outcomes: online course contents and interactions between faculty members in science and engineering using the best academics practices About 70 courses offered by faculty in various departments and to students at all technical levels are given here. Setting up internal resources for implementing virtual online certification programmes in science and engineering.

Mind Map technique

Objectives: It enhances the preparation and presentation of overall concept in attractive way using eye magnetic symbols, line, colours etc and organize the notes and lecture conveniently.

Outcomes:

1. Provides convenient learning and memorizing
2. Provide time management skills to prepare notes/understand concepts
3. Provide a very effective tool revise the concept and enhance the memory IQ.

5.6	Faculty as participants in Faculty development / training activities / STTPs	15
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Table 5.9: Details of Faculty participated in Faculty development / training activities / STTPs

Name of the faculty	Max 5 per Faculty		
	2020-21 (CAY)	2019-20 (CAYm1)	2018-19 (CAYm2)
Dr. Kori Nagaraj	5.00		
Dr. K Veeresh			
Dr. Hiregoudar Yerranna Goudaru			5.00
Dr. C Thotappa		5.00	5.00
Dr. G Jagannath Reddy			
Dr. Shiv Kumar Modi		3.00	5.00
Dr. S P Jagadish			
Dr. V Algur	5.00	5.00	
Dr. K Manjunath	5.00	5.00	5.00
M R Indhudar			
Dr. Shivamanappa G Desai			
A M Shivaprakash Swamy	5.00	5.00	
Dhandin Ramesh		5.00	5.00
Dr. M Balaji			
Dr. Kotresh Sardar	5.00	5.00	5.00
A Swamynath			
Dr. Chandra Gowda M			
P K Pavan Kumar			
K Suresh Kumar			
Y Mallikarjuna	5.00	5.00	5.00
Dr. K G Prakash	5.00		
V Balaraj	5.00		3.00
B G Chandru		5.00	
Deepak C			
Lakshman Naik T K	5.00	5.00	5.00
R H M Somanath Swamy	5.00	5.00	
Swamy N	5.00	5.00	5.00

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Name of the faculty	Max 5 per Faculty		
	2020-21 (CAY)	2019-20 (CAYm1)	2018-19 (CAYm2)
Mahesh G	5.00		5.00
Dr. G Manjunath Swamy	3.00		5.00
Achutananda K B	5.00		5.00
H M Naveen			
B Basavaprakash			
Manjunath K B			
K C Mahendra		5.00	
Virupaksha Gouda H	5.00	5.00	
Vaddin Chetan	5.00	5.00	5.00
Kusammanar Basavaraj	5.00		
Sum	83.00	73.00	68.00
RF = Number of Faculty required to comply with 20:1 Student Faculty Ratio as per 5.1	28.8	25.5	24.45
Assessment [$3*(Sum / 0.5RF)$]	17.29	17.17	16.68

Average assessment over 3 years: 17.05

5.7	Research and Development	30
5.7.1	Academic Research	10

Academic research includes research paper publications, Ph.D. guidance, and faculty receiving Ph.D. during the assessment period.

- Number of quality publications in refereed/ SCI Journals, citations, Books/ Book Chapters etc. (6)
- Ph.D. guided / Ph.D. awarded during the assessment period while working in the institute (4)

All relevant details shall be mentioned.

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A. Number of quality publications in refereed/ SCI Journals, citations, Books/ Book Chapters etc.

Table 5.10: List of Publication details in refereed/ SCI Journals

Staff Name	2021-22	2020-21	2019-20	2018-19	2017-18	Total
Dr. Kori Nagaraj		3				03
Dr. Hiregoudar Yerrannagoudaru		2	1	5	4	12
Dr. Shiv Kumar Modi		1		1	1	3
M. R. Indudhar	1		2		1	4
Dr. C Thotappa	1		1		1	3
Dr. Manjunatha K		2	1	5	4	12
Dr S P Jagadish		1		1		2
Dr. Veerabhadrappe Alpur	2	1				3
Dr. Shivamanappa G Desai			1			1
Dr.M Balaji			2			2
Dr. K G Prakash		1			1	2
Dr. GManjunatha Swamy			1	1		2
Dr. Kotresh Sardar				1		1
V Balaraj		2				2
B G Chandru		2				2
Dr. R H M Somanath Swamy	1	2				3
Mahesh G		2				2
Vaddin Chetan		1		1	1	3
Virupaksha Gouda H		2	1	1		4
K C Mahendra	1		1			2
Vittal Rao Chavan				1	1	2
Total	6	22	11	16	14	69

Table 5.11: Details of Books Published

Sl. No.	Name of the Faculty	Title	Publisher
1	Dr. Hiregoudar Yerrannagoudaru	Investigation of Bio-Fuels	LAMBERT

Rao Bahadur Y Mahabaleswarappa Engineering College, Cantonment, Ballari - 583104.

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		and Low Cetane Fuels In CI Engine.	Academic Publishing
2	Dr. Hiregoudar Yerrannagoudaru	Investigation of Vegetable oils in semi-Adiabatic Diesel Engine.	LAMBERT Academic Publishing
3	Dr. Hiregoudar Yerrannagoudaru	Alcohols as Fuel in Diesel Engines and Reduction of Emissions.	LAMBERT Academic Publishing

B. Ph. D. Guided/ Ph. D. Awarded during the assessment period while working in the institute

Table 5.12: List of faculties awarded Ph.D

Sl, No.	Faculty Name	University	Year of Awarded	Guide	Research topic
1	Shiv Kumar Modi	JNTU, Ananthapur	2016	Dr. B Durgaprasad	Characterisation of thermo physical properties of fruit by dehydration and using heat transfer analysis
2	K Manjunath	VTU, Belagavi	2017	Dr. Hiregoudaru Yerranna Goudaru	Investigation of biofuel and alcohols in diesel engine
3	S P Jagadish	VTU, Belagavi	2018	Dr. K R Dinesh	Investigation of biocomposite materials used as an implant material
4	Chandra Gowda M	VTU, Belagavi	2018	Dr. Hiregoudaru Yerranna Goudaru	Investigation of low cetane fuels in CI Engine with catalytic combustion using semi adiabatic bimetallic piston
5	Sardar Kotresh	REVA University, Bengaluru	2020	Dr. Rajashekar Patil	Collaborative design, analysis and manufacturing of dental implant using digitalized e&m manufacturing.
6	Shivamanappa G	VTU,	2021	Dr. Anandkumar.	“Design and

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	Desai	Belagavi		R. Annigeri.	analysis of a new crank driven walking leg mechanism”.
7	M Balaji	VTU, Belagavi	2021	Dr. Hiregoudaru Yerranna Goudaru	Experimental investigations on hybrid composites of aluminium using extrusion process
8	G Manjunatha Swamy	VTU, Belagavi	2021	Dr. G R Bharat Sai Kumar, SIT, Tumkur	Design, Fabrication and performance testing of directional control valve to control multiple actuators
9	K G Prakash	VTU, Belagavi	2021	Dr.H. K. Rangavittal, Professor, Department of Mechanical Engineering, BMS Engineering College. Bangalore	Experimental investigation on mechanical properties of hemp & glass fibers reinforced epoxy hybrid composites with cenospheres filler material for engineering applications
10	R H M Somanath Swamy	VTU, Belagavi	2021	Dr. Hiregoudaru Yerranna Goudaru	Experimental Investigation to Achieve HCCI & Augmentation of Diesel Swirl Injection Using a Novel Rotating Diesel Swirl Diffuser.

Table 5.13: Details of Ph.D Guiding/Guided

Sl. No.	Name of the Guide	No. of Research scholars pursuing	No. of Research scholars guided	Total
01	Dr. Hiregoudar Yerranna Goudar	06	03	09
02	Dr. K Veeresh	02	01	03
03	Dr. A Thimmana Gouda	03	03	06
04	Dr. Chitriki Thotappa	04	--	04

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05	Dr. Nagaraj Kori	04	--	04
Total		19	07	26

Table 5.14: Details of Ph.D Guiding

Name of the Guide	Name of Research Scholar	Research Center	University	Year of Registration
Dr. K Veeresh	K Suresh Kumar	RYMEC	VTU	2012
	Vithal Rao Chavan	RYMEC	VTU	2013
Dr. Hiregoudaru Yerranna Goudaru	G Mahesh	RYMEC	VTU	2014
	R H M Somanath Swamy	RYMEC	VTU	2014
	P K Pavan kumar	RYMEC	JNTU Hyd	2012
	S P Desai	RYMEC	VTU	2016
	S Veeresh	RYMEC	VTU	2017
	B S Pavan Kumar	RYMEC	VTU	2017
Dr. Kori Nagaraj	V Balaraj	RYMEC	VTU	2015
	Achutananda K B	RYMEC	VTU	2017
	Vaddin Chetan	RYMEC	VTU	2017
	Sharanappa Koni	RYMEC	VTU	2019
Dr. C Thotappa	G Ramesh	RYMEC	VTU	2016
	G K Shivaprasad	RYMEC	VTU	2017
	Gavisiddesh P	RYMEC	VTU	2019
	Dhandin Ramesh	RYMEC	VTU	2019
Dr. A Thimmana Gouda	B G Chandru	RYMEC	VTU	2017
	Swamy N	RYMEC	VTU	2017
	Virupaksha Gouda H	RYMEC	VTU	2017

Table 5.15: Faculty Pursuing Ph.D

Sl. No.	Name of the Faculty	University/ Research Centr	Year	Guide
1	A M Shivaprakash Swamy	VTU/BVB-Hubli	2008	Dr. Virupaksha Bagodi
2	M R Indudhar	JNTU / Ananthpur	2011	Dr. N R Banapurmat
3	P K Pavan kumar	JNTU/Hyderabad	2012	Dr. H Yerranna Goudar

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4	Suresh kumar K	VTU/RIMEC, Ballari	2012	Dr. K Veeresh
5	Dhandin Ramesh	VTU/RIMEC, Ballari	2018	Dr. C Thotappa
6	Laxman Naik T K	VTU/UBDT-Davanagere	2015	Dr. C S Venkatesh
7	Mahesh G	VTU/RIMEC, Ballari	2015	Dr. H Yerranna Goudar
9	V Balaraj	VTU/RIMEC, Ballari	2016	Dr. K Nagaraj
10	H M Naveen	BEC - Bagalakote-VTU	2016	Dr. Srinivas S Balli
11	B G Chandru	VTU/RIMEC, Ballari	2017	Dr. A Thimmana Goud
12	N Swamy	VTU/RIMEC, Ballari	2017	Dr. A Thimmana Goud
13	Virupaksha Gouda H	VTU/RIMEC, Ballari	2017	Dr. A Thimmana Goud
14	K C Mahendra	VTU/UBDT, Davanagere	2017	Dr. P G Sreenivasa
15	Vaddin Chethan	VTU/RIMEC, Ballari	2017	Dr. Nagaraj Kori
16	Achutananda K B	VTU/RIMEC, Ballari	2017	Dr. Nagaraj Kori

Table 5.16: Details of Patent applied

Sl. No.	Name of Faculty	Details	Indian/other	Details	Status
1	Dr. Hiregoudar Yerranna Goudaru	“A Novel Semi-Adiabatic Air Gap Copper / Silver Crown Piston For IC Engine Using Diesel And Alcohol Blended Fuels For Reducing Toxic Aldehyde, Carbon Monoxide And Hydrocarbon Emissions”.	Indian	Patent Registration No. 489/CHE/2013	Amended examination
2	Dr. Hiregoudar Yerranna Goudaru	“A Novel Rotating Air Swirl Diffuser Development for Augmentation of Air Swirl in 4-stroke CI Engine”.	Indian	Patent Registration No. 4096/CHE/2014	Amended examination
3	Dr. Hiregoudar Yerranna	“A Novel Rotating Liquid Fuel Swirl Diffuser	Indian	Patent Registration No.	Amended examination

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	Goudaru	Development for Diesel Swirl Injection in CI Engine”.		4097/CHE/2014	
4	Dr. Hiregoudar Yerranna Goudaru	“A Novel Semi-Adiabatic Air- Gap Hybrid Ceramic with Bimetallic Metal Matrices Crown Piston for CI engine as Unconventional Catalytic Converter for the reduction of Exhaust Emissions using Bio-Fuels (Low Cetane Fuels)”.	Indian	Patent Registration No. 4140/CHE/2014	Amended examination
5	Dr. Hiregoudar Yerranna Goudaru	“Design and Development of a Novel MFUCG (Multi-Fuel Usage Capability Gasifier) equipment to convert liquid Vegetable Oils, Alcohols (Ethanol and Methanol) and (Bio-Fuels) into gases to use as gasified fuels as alternative fuel in SI Engines”	Indian	Patent Application No. 6850/CHE/2015 Patent No. 371721	Granted
6	Shivamanappa G Desai	“Crank Driven Walking Leg Mechanism”	Indian	Patent Application Number: 201841004795 9.02.2018	Waiting for final exam
7	Dr. Hiregoudar Yerranna Goudaru	A Novel Metal of Hybrid Composites of Hot Extruded Aluminum for IC Engine Applications	Indian	Patent Registration No. 202041043341 Dt:06.10.2020	Filed
8	Dr. Hiregoudar Yerranna Goudaru	A Novel Swirl Diffuser Fuel Injector Development for IC Engine	Indian	Patent Application No. 202041046747 Dt: 27.10.2020	Filed

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9	Dr. Hiregoudar Yerranna Goudaru	A Novel Swirl booster manifold attachment device to enhance the intake air swirl, Engine performance	Indian	Patent Application No. 202141002339 Dt: 19.01.2021	Filed
10	Dr. Hiregoudar Yerranna Goudaru	A Novel single and double circular grooved inlet poppet valves to enhance the intake air swirl, Engi	Indian	Patent Application No. 202141002341 Dt: 19.01.2021	Filed
11	Dr.Hiregoudar Yerranna Goudaru	A Novel two, three and six radial grooved inlet poppet valves to enhance the intake air swirl, Engin	Indian	Patent Application No. 202141002344 Dt: 19.01.2021	Filed
12	Dr. Hiregoudar Yerranna Goudaru	A Novel Hemi-spherical grooved shape on inlet poppet valve seat surface and its impact on the intake	Indian	Patent Application No. 202141002347 Dt: 19.01.2021	Filed
13	Dr. Veerabhadrapa Algur	AI- Powered Intelligent financial management system for autonomous cost application	Indian	Patent Application No. 202141036930 Dt: 15.08.2021	Published

5.7.2	Sponsored Research	05
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Table 5.17: Funds received from various funding agencies

Project Title	Duration	Funding Agency	Amount
Combinational Rover	36 Months	NAIN	Rs:100000/-
Design and analysis of new crank driven walking leg mechanism	36 Months	VeerashaivaVi dhyavardhakaS angha, Ballari	Rs:450000/-
Collaborative Design, Analysis & Manufacturing of Dental Implant using E & M	36 Months	VeerashaivaVi dhyavardhakaS	Rs:450000/-

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Manufacturing concepts		annga, Ballari	
Development and optimization of Drilling parameters of GFRP composite	36 Months	VeerashaivaVi dhyavardhakaS annga, Ballari	Rs:500000/-

5.7.3	Development activities	10
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A. Product Development

Table 5.18: Details of product development for the year 2020-21

Sl.No.	Name of the Student	USN	Project Title	Name of the Guide
01	M Chaitanya	3VC17ME033	Mechanical Walker Using New Mechanism	Dr. Shivamanappa G Desai
	Earesh Varma C	3VC17ME010		
	Kiran Math	3VC17ME031		
	Hanumesh	3VC17ME022		
02	Anil Kittur	3VC17ME003	Solar Operated Remote controlled Pesticide sprayer	Dr. S K Modi
	Doddabasava B	3VC17ME008		
	Jaffer Sadiq M Abdul	3VC17ME023		
	Kaisar Ahmed D	3VC17ME028		
03	Ajaya Reddy N	3VC17ME001	Electric power generation using Railway Track	Prof. B Basava Prakash
	C Eshwar	3VC17ME006		
	Deepak Patil S R	3VC17ME007		
	Sumith S Korlahalli	3VC17ME004		

Table 5.19: Details of product development for the year 2019-20

Sl. No	Name of the Student	USN	Project Title	Name of the Guide
01	H M Prajwal Kumar	3VC16ME031	Three In One Air Conditioner	Dr. S K Modi
	Mohammed Irfan	3VC16ME053		
	Shrinidhi Joshi	3VC16ME099		
	Thippesha V	3VC16ME112		
02	M Srihari	3VC17ME420	Electric Hybrid Vehicle	Prof. Deepak C
	Manjesh V R	3VC17ME421		

	Md Irfan	3VC17ME426		
	Deepak S	3VC17ME405		

Table 5.20: Details of product development for the year 2018-19

Sl. No	Name of the Student	USN	Project Title	Name of the Guide
01	Mounesh G S	3VC15ME057	Design and fabrication of Mechanical walker using new mechanism	Prof. Shivamanappa G Desai
	Sunanda N	3VC15ME109		
	Malli B	3VC16ME406		
	Chaithra K	3VC16ME407		
02	Venkatesh P	3VC15ME117	Design and fabrication of Coconut oil extraction machine	Prof. H M Naveen
	Manoj Kumar	3VC15ME048		
	Vilas Kumar	3VC15ME119		
	Earanagouda	3VC15ME019		
03	Subham	3VC15ME104	Design and fabrication of multi person cycle	Dr. kori Nagaraj
	Sreekanth N T	3VC15ME102		
	Sharnagawada S V	3VC15ME093		
	Shivaraj	3VC15ME097		
	Ashish A G	3VC15ME008		
04	VishwanathaReddy . P	3VC16ME447	Design and fabrication of Robotic oil Skimmer using Bluetooth powered by solar energy	Prof. Lakshman Naik
	NingrajDodamani	3VC15ME064		
	Rajesh . W	3VC15ME081		
	MahamedHyder . P H	3VC15ME043		

B. Research Laboratories

Table 5.21: Details of research laboratories

Sl. No.	Center of Excellence	
01	Center of Excellence for Bio- Fuels Research	Mechanical Engineering Department
02	Technology Research and development center	In collaboration with Tata Technologies Ltd. Pune
03	Advanced Manufacturing center	

Center of Excellence for Bio- Fuels Research

Objectives:

- To provide the suitable technology to use the bio-fuels / vegetable oils in the existing I. C..Engines / modified engines.
- To provide the technology to use locally available bio-fuels in I C. Engines / modified engines.
- To encourage rural employment.
- To become self-sustainable energy development center.
- To promote awareness among the public to grow **Bio fuel plants** in non agricultural lands (Waste lands, mining lands and landfills).
- To provide the platform for research scholars to carryout projects in the center.

Table 5.22: List of Research projects carried out on Bio-Fuels in the center

Sl. No.	Name of the Funding Agency	Project Title	Year of Funding	Duration	Amount Sanctioned (Rs.)	Status
1.	KSCST* (DBFGK)	Investigation Of Rubber Seed oil as Alternative Fuels in Semi-Adiabatic Diesel Engine.	2013	6 Months	15,000/-	Completed
2.	KSCST* (DBFGK)	Experimental investigation of gasified Vegetable Oils As Alternative Fuels In SI Engine on Road Bike	2016	6 Months	10,000/-	Completed

* KSCST-DBFGK -Karnataka State Council for Science and Technology, Dept. of Bio-Fuels Govt. of Karnataka.

1. Five patents are filed on Bio-Fuels (in Amended stage)
2. Two Ph.Ds are produced from Bio-Fuels in the center
3. 20 projects are carried out on bio-fuels by PG students
4. 10 projects are carried out on bio-fuels by UG students
5. UG students from other Institutions have carried out projects on bio-fuels in the center

Technology Research and Development Center:

RYMEC- Mechanical Engineering Department has incepted a state of the art, Centre of Excellence by signing an **MoU** with TATA Technologies Ltd., Pune in association with Science & Technology Park under National Skill Development Programme, initiated through MHRD, Government of India, with nomenclature “**Centre for Invention, Innovation, Incubation & Training**”. These competency centres will expose our students to advanced technology adapted in the industry, provides hands-on experience, enhances employability skills and makes them Industry ready. These centres will help Mechanical, Electrical, Electronics and Management students in enhancing their core skills. These centres are geared with facilities which will make possible that our students can apply the theoretical knowledge gained in their academics and create conceptual projects and products that will solve many industrial and social problems.

The Competency centres established are:

- I. “**Technology Research & Development Centre**” having high-end Industrial workstations with Commercial licensed S/W tools.

This competency centre is equipped with the following facilities:

1. Workstation Configuration: Intel Xeon Processor, 32 GB RAM, 8GB Quadro Graphics with dual Bezel monitors.
Make: HP
2. List of Software's available:
 - a. Dassault System's suite package comprises of 40 modules for Industrial Design & Development, Research and Consultancy.
 - b. MSC Software Suite package comprises of 81 different modules of Adams, Easy5, Marc, Apex, Nastran and SCFlow for CAE & CFD analysis.
 - c. ISRO-FEAST comprises of 10 tools for Linear static, Free Vibration, Buckling, Transient, Frequency response, Random response, Base excitation, Thermal analysis and many more.
 - d. I-GET IT for E-Learning on advanced technologies in CAD, CAM, CAE and PLM
3. The center can deliver domain trainings on:
 - a. Product Design

- b. Product Modelling
- c. Analysis
- d. Product Life cycle and Data management.

Advanced Manufacturing center:

“Advanced Manufacturing Engineering Centre” Equipped with Advanced Digital manufacturing facilities.

This Competency centre is equipped with the following facilities:

1. Equipments:-
 - a. CNC Vertical Milling Machine- AMS 430
 - b. Industrial Robot for Arc Welding - YASKAWA MOTOMAN
 - c. 3D Printer for Additive Manufacturing - ULTIMAKER 3 EXTENDED
 - d. 3D Scanner for Reverse Engineering - EINSCAN SE
2. Support Software:-
 - a. CAPS Turn, CAPS Mill, seeNC Turn, seeNC Mill, nCyclo Turn, nCyclo Mill.
 - b. CURA.
 - c. EinScan-S series_v2.7.0.8
3. This centre can deliver hands on domain trainings on:
 - a. CNC Technology and Operations.
 - b. Digital Manufacturing.
 - c. Robotic Operations & Programming.
 - d. Reverse Engineering.
 - e. Re- Engineering.
 - f. Computer Integrated Manufacturing.

Table 5.23: Details of facility available for Research in Mechanical department R&D Center

Sl. No.	Name of the Equipment	Name of the Laboratory	Utilization
01	Micro Vickers hardness Test	R & D Lab	PG & Ph.D Projects
02	Imported Inverted Metallurgical Microscope with Real Time Based Live Image Analysis Software system		
03	Surface Roughness Test		

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04	Pin-on-disc testing machine	Material Testing Lab	UG, PG &Ph.D Projects
05	Electronic Balancing Machine		
06	Digital Impact testing machine		
07	Muffle Furnace		
08	Brinell cum Rockwell hardness testing machine		
09	Ultrasonic flaw detector		
10	Fatigue Testing Machine		
11	Torsion Testing Machine		
12	Emission test Rig	Energy Conversion Lab	UG, PG &Ph.D Projects
13	Feble bed heat exchanger		
14	Combustion IC engine		
15	Bomb Calorimeter		
16	Esterification		
17	Fuel Testing equipment		
18	Profile Projector	Metrology & Measurements Lab	UG, PG &Ph.D Projects
19	MAT-Lab-software	PG Lab	PG &Ph.D Projects
20	Ansys software.	Computer Lab 2	UG, PG &Ph.D Projects
21	CADM- Software		
22	Solid Edge		
23	CNC-3 Axis vertical milling machine		
24	Industrial Robot for welding	Advanced Manufacturing Center (Tata Technologies Limited)	UG, PG &Ph.D Projects
25	CNC Trainer		
26	3D Printer		
27	3D Scanner		

C. Instruction Materials

Table 5.24: List of Instructional Materials available in the department

Sl. No.	Instructional Materials
01	PPT, Educational Videos using Audio Video facilities (Projectors, Tabs, Computers)
02	Sectional models of IC engines
03	Boilers models
04	Models for Engineering Graphics

05	Mechanical Joints and coupling models
06	Window mounted air conditioner
07	Mechanisms
08	Laboratory Manuals, Standard specimens, Charts, etc.,

D. List of Working Models/charts/monograms

Table 5.25: Working Models

Sl. No	Working Models
1	Static and Dynamic Balancing of rotating masses.
2	Hydraulic trainer Kit.

Table 5.26: Charts available in the laboratory

Sl. No.	Name of the Laboratory	Charts
01	CAED Lab	<ul style="list-style-type: none">• Conventional Representations of Lines/Materials• Methods of Projections• Orthographic Projections• Developments of Surfaces of Solids
02	CAMD / CAMA / CIM Lab	<ul style="list-style-type: none">• Rivets and Riveted Joints• Bolts and Washers• Knuckle Joints• Types of Screws• Types of Nuts• Dimensioning 1• Dimensioning 2• Couplings 1• Couplings 2• Main thread forms
03	Heat Transfer Lab	<ul style="list-style-type: none">• Vapor Compression refrigeration cycle• Window air conditioner
04	Workshop	<ul style="list-style-type: none">• Safety Charts• Oxy Acetyline torch• Gas Flames• Electric Arc Welding• Weld Symbols 1• Weld Symbols 2

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05	Foundry & Forging Lab	<ul style="list-style-type: none"> • Foundry hand Tools 1 • Foundry hand Tools 2
06	Material Testing Lab	<ul style="list-style-type: none"> • Venire Caliper • Gear Tooth Venire Caliper
07	Mechanical Measurements & metrology Lab	<ul style="list-style-type: none"> • Engineering Fits • External Micrometer • Limit Gauges • Tool Makers Microscope
08	Machine shop	<ul style="list-style-type: none"> • Lathe Parts • Capstan Lathe • Turret Lathe • Screw Cutting In the Lathe • Parts of a Standard shaper • Milling Cutters 1 • Milling Cutters 2
09	Fluid Mechanics Lab	<ul style="list-style-type: none"> • Pelton Wheel • Francis Turbine • Kaplan Turbine • Centrifugal Pumps
10	Energy Conversion Lab	<ul style="list-style-type: none"> • 4 stroke cycle • Single Cylinder Engine • 4 Stroke Petrol Engine • Constant Mesh Gear Box • 4 Stroke Diesel Engine • Gear Pullers

5.7.4	Consultancy (from Industry)	5
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Table 5.27: Details of Third party inspection for the year 2020-21

Sl. No.	Project Title	Date Of Inspection	Funding Agency	Amount
1	Inspection of Dustbins for Solid & Liquid Waste Management for Various Grama Panchayats in Kudligi Taluk.	17.08.2020 & 21.08.2020	Zilla Panchayat, Ballari	56,510.00
2	Inspection of Green Ceramic Boards to Nali-Kali Centres of Various Schools of Ballari District.	10.09.2020	Zilla Panchayat, Ballari	5,900.00

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3	Inspection of motorized two wheeler with retro fitment of additional two wheel attachment vehicle for the use of severely affected orthopedically disabled persons.	11.09.2020	District Disabled Welfare Office (DDWO), Ballari	5,900.00
4	Inspection of 7 No of Hopper Tipper Dumper (TATA ACE GOLD) to various Grama Panchayats of Ballari District for Solid and Liquid Waste Management.	25.09.2020	Zilla Panchayat, Ballari	20,238.00
5	Inspection of Motorized Two Wheeler With Retro fitment of Additional Two Wheel Attachment for the Use of Severely Affected Orthopedically Disabled Persons.	01.10.2020	District Disabled Welfare Office (DDWO), Ballari	5,900.00
6	Inspection of Green Ceramic Boards to Nali-Kali Centres of Various Schools of Ballari District.	01.10.2020	Zilla Panchayat, Ballari	5,900.00
7	Inspection of Virgin Plastic Dustbins to Taluks of Ballari District Under Swachh Bharat Mission (Gramin).	05.10.2020	Zilla Panchayat, Ballari	5,900.00
8	Inspection of 20 No of Hopper Tipper Dumper (TATA ACE GOLD) to various Grama Panchayats of Ballari District for Solid and Liquid Waste Management.	24.11.2020	Zilla Panchayat, Ballari	57,820.00
9	Inspection of Executive Fixed Chair with Cushion to Taluk Panchayat Ballari Under Rashtreeya Grama Swaraj Abhiyan.	17.12.2020	Zilla Panchayat, Ballari	5900.00
10	Inspection of Ceramic Steel Magnetic Green Chalk Board and Magnetic, Dry Erase Porcelain Steel White Board to Various Govt High Schools of Ballari District.	30.12.2020	DDPI Office, Ballari	5900.00
11	Inspection of Shinrai – BX80 with 6 in 1 Backhoe Loader for Town Municipal Council, Kurugodu.	30.12.2020	TMC-Kurugodu	17,326.00
12	Inspection of Auto Tipper Mounted Fogging Machine for Town Municipal Council, Kurugodu.	13/01/2021 & 14/01/2021	TMC-Kurugodu	5,900.00
13	Inspection of Hopper Tipper Dumper (TATA ACE GOLD) for Solid waste management of Town Panchayat,	22/01/2021	TP Tekkalakote	11,107.00

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	Tekkalakote, Ballari District.			
14	Inspection of Virgin Plastic Dustbins (Samples) to 88+27 Grama Panchayats of Ballari District Under Swachh Bharat Mission (Gramin).	31.01.2021	ZP Ballari	5,900.00
15	Inspection of Jeep mounted desilting machine for drainage management for Ballari city.	08.02.2021	City Corporation Ballari	8572.00
16	Inspection Of Desk & Bench To Various Govt High Schools Of Ballari District and Ceramic Steel Magnetic Green Chalk Board And Magnetic, Dry Erase Porcelain Steel White Boards To Various Govt High Schools Of Ballari District.(Sample)	16.02.2021	DDPI Office, Ballari	5900.00
17	Inspection of Hopper Tipper dumper to TMC Kurugodu for SWM	17.02.2021	TMC Kurugodu	12390.00
18	Inspection of Plastic Bailing Machine for Solid Waste Management of Town Municipal Council, Kurekappa of Ballari District.	17.02.2021	TMC Kurekappa	5900.00
19	Inspection of Refuse Compactor to Town Municipal Council, Kurekappa of Ballari District For Solid Waste Management.	17.02.2021	TMC Kurekappa	16,231.00
20	Inspection of CASE 770 SS 2WD Hi spd 1 Cu M 30'' BH Std Backhoe Loader to Town Municipal Council, Kurekappa, of Ballari District for Solid Waste Management.	17.02.2021	TMC Kurekappa	12,518.00
21	Inspection of Tractor Trailer Mounted Suction Machine to Town Municipal Council, Kurekappa, of Ballari District for Solid Waste Management.	17.02.2021	TMC Kurekappa	5900.00
22	Inspection of Hopper Tipper Dumper (TATA ACE GOLD) to Town Panchayat, Tekkalakote of Ballari District for solid Waste Management.	01.04.2021	TP , Tekkalakote	11,701.00
23	Inspection of Plastic Bailing Machine to Town Panchayat, Takkalakote of Ballari District for SLW.	01.04.2021	TP , Tekkalakote	5,900.00
24	Inspection of Shredder Machine to	01.04.2021	TP ,	8,496.00

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	Town Panchayat, Tekkalakote of Ballari District for SWM.		Tekkalakote	
25	Inspection of Virgin Plastic Dustbins to 20 Grama Panchayats of Ballari District Under Swachh Bharat Mission (Gramin)-Sample.	03.04.2021	ZP Ballari	5900.00
26	Inspection of Wheeled Plastic Dust bin to City Corporation, Ballari for SWM (Sample).	09.04.2021	City Corporation, Ballari	5900.00
27	Inspection of Plastic Bailing Machines (3 Nos) to City Corporation, Ballari for SWM.	09.04.2021	City Corporation, Ballari	5900.00
28	Inspection of Hopper Tipper Dumper to City Corporation, Ballari for Solid Waste Management. (Sample).	12.04.2021	City Corporation, Ballari	5900.00
29	Inspection of Hopper Tipper Dumper to City Corporation, Ballari for Solid Waste Management (26 Vehicles including sample vehicle).	09.06.2021	City Corporation, Ballari	94,701.00
30	Inspection of Hydraulic Tractor Trailer to Town Municipal Council, Kurugodu of Ballari District for SWM.	25.06.2021	TMC, Kurugodu	10,278.00
31	Inspection of Water Tanker Mounted On Two Wheels Trailer With Engine for TMC, Kurugodu.	25.06.2021	TMC, Kurugodu	5,900.00
32	Inspection of Virgin Plastic Dustbins to 20 Grama Panchayaths of Ballari District under Swachh Bharath Mission (Gramin). Sample	24.06.2021	ZP, Ballari	5,900.00
33	Inspection of Dustbins to Various Taluks of Ballari District for SLWM Under Swachh Bharath Mission (Gramin)	16.06.2021 24.06.2021 & 25.06.2021	ZP, Ballari	28,363.00
34	Inspection of Dustbins to Various Taluks of Ballari District for SLWM Under Swachh Bharath Mission (Gramin)	16.06.2021 24.06.2021 & 25.06.2021	ZP, Ballari	88,373.00
35	Inspection of 375 No of Wheeled Plastic Dustbins to City Corporation, Ballari for SWM.	16.07.2021	City Corporation, Ballari	6,173.00
36	Inspection of Hydraulic Crawler Mini Excavator SY35U to City Corporation, Ballari.	19.07.2021	City Corporation, Ballari	13,309.00

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37	Purchase of Hopper Tipper Dumper with 6.5 Cu.m Capacity to CMC, Siruguppa	25.07.2021	CMC, Siruguppa	11,913.00
			Total	2,48,112.00

Table 5.28: Details of Third party inspection for the year 2019-20

Sl. No	Project Title	Date of Inspection	Funding Agency	Amount
1	Inspection of Bench and Desk for Class rooms.	25.11.2019	DDPI Office- Ballari	Bill not Claimed
2	Inspection of Dust bins for Solid and Liquid Waste Management for Various Grama Panchayats Ballari District.	23.12.2019	Zilla Panchayat- Ballari	25,134.00
3	Inspection of Jetting Machine of 8000 litre Capacity for Underground Drainage Management of Ballari District.	17.03.2020	City Corporation –Ballari.	24,484.00
4	Inspection of Jetting Machine of 6000 litre Capacity for Underground Drainage Management of Ballari District.	17.03.2020	City Corporation –Ballari.	19,735.00
5	Inspection of 30 No. of Garbage Tipper Vehicle (TATA ACE HT) for Solid and Liquid Waste Management to Various Grama Panchayats of Ballari District.	20.03.2020	Zilla Panchayat- Ballari	86,730.00
6	Inspection of 50 No. of Garbage Tipper Vehicle (TATA ACE HT) for Solid and Liquid Waste Management to Various Grama Panchayats of Ballari District.	20.03.2020	Zilla Panchayat- Ballari	1,44,550.00
7	Inspection of Fully Closed Box Type Tipper (TATA ACE GOLD) For Solid Waste Management Of Town Panchayat Kudithini , Ballari District.	24.03.2020	Town Panchayat, Kudithini, Ballari District	10,921.00
8	Inspection of Hopper Tipper Dumper 2.5 Cubic Meter (TATA ACE GOLD) For Solid Waste Management Of Town Municipal Council, Kurugodu , Ballari District.	24.03.2020	Town Municipal Council, Kurugodu, Ballari District	5,192.00
9	Inspection of Dust bins for Solid and Liquid Waste Management for	11.05.2020	Zilla Panchayat- Ballari	27,320.00

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	Various Grama Panchayats in Ballari Taluk.			
10	Inspection of dustbins for solid & Liquid waste management for various grama panchayats of Ballari district.	11.06.2020	Zilla Panchayat- Ballari	3,304.00
11	Inspection of HDPE Tree Guard under D.M.F Project for Social Forest Division, Ballari.	16.06.2020	Social Forest Disvision, Ballari	5900.00
12	Inspection of Jetting Machine of 4000 litre Capacity for Underground Drainage Management of Ballari District.	18.07.2020	City Corporation - Ballari	18,363.00
			Totals	3,54,812.00

Table 5.29: Details of Third party inspection for the year 2018-19

Sl. No	Project Title	Date Of Inspection	Funding Agency	Amount
1	Inspection of Video Conference Equipment at Principal District & Sessions Court, Ballari.	07.11.2018	District & Session Court – Ballari.	4,130.00
2	Inspection of Steam Cooking Units at Central Prison, Ballari.	05.12.2018	Central Prison Ballari	7,552.00
3	Inspection of New Prison Call System for the Prisoners at Central Prison, Ballari.	05.12.2018 & 11.12.2018	Central Prison Ballari	7,552.00
			Total	19,234.00

5.8	Faculty Performance Appraisal and Development System (FPADS)	30
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A Faculty Performance Appraisal and Development System is essential to each academic institution looking forward to the long-term promotion of faculty competence and academic excellence.

The objectives of Faculty Performance Appraisal Development System:

1. To Assess and promote excellence in the teaching/learning process.
2. To Meet the educational needs of students and community by continually monitoring instructional performance.
3. To provide a constructive framework for evaluating faculty performance by identifying areas of strength and areas for improvement in classroom instruction.

4. To Provide a basis for professional growth and development.

I. Components of Faculty Performance Appraisal Development System:

1. Students Feedback
2. Faculty Self Appraisal

1. Students Feedback:

Following are the components considered for Students Feedback

1. Presentation of the subject matter
2. Preparation for the class
3. Oral communication
4. Regularity and punctuality in conducting classes.
5. Coverage of syllabus
6. Clearing the doubts inside/outside the class
7. Level of interest shown in the class.
8. Maintenance of discipline and relationship with the students
9. Availability of teacher in department for discussion
10. How comfortable are you with the teacher.

Each component is rated by giving 1 to 10 points.

- Below average:1-4
- Average:5-6
- Good:7-8
- Excellent:9-10

The performance analysis of faculty is carried out by calculating the average rating and the number of student responses for each component of the student feedback.

2. Faculty Self Appraisal form:

Individual faculty members rate themselves by completing the Faculty Self-Evaluation Form, being as objective as possible. Based upon self-evaluation findings or related areas of interest for self-improvement, the faculty member notes proposed professional development opportunities. The components of the Faculty Self- Appraisal Form are

Faculty contribution towards Research:

1. Publications in conferences and Journals

2. Submission of Research proposal
3. Contribution to growth of any industry, consultancy to industry, any solution developed by you is used in industry
4. Books, Printed lab journals, compendium, or any printed contribution to your academic area
5. Invited talks, workshops, conferences organized by you as coordinator or important role in the organization of the event
6. Funds received from funding agencies in last three years
7. Membership with Professional bodies (IEE,ISTE)

Faculty contribution towards curriculum:

1. Best practice that is introduced to improve teaching and learning process
2. Abstract why student should join your department for pursuing higher education (BE course)
3. Course taught by you which contributes to contents beyond syllabus
4. What is your role in publishing newsletter of the college/Department
5. Contribution to E-Learning contents
6. List students under your guidance acquired certificates that can be used as proof of Lifelong Learning
7. Your contribution to help direct and indirect analysis of NBA. Collection of feedback forms of Alumni, Parent, and Employer for assessment of PEO and PO.
8. What is the role played by you in finalization Vision, Mission, PEO, PSO's or any other document.
9. Analysis of CO-PO mapping in last three years and suggestion to improve attainment of PO's. Expected target level shall be more than 50%
10. Analysis of course exit survey and suggestions to improve attainment of CO and PO's
11. Analysis of CO-PO mapping of Project works through rubric form in last three years

Faculty contribution at Department/Institute level:

1. What is your contribution to the department in the current academic year?

2. Philosophy of teaching that includes staff member conception of teaching and learning, description of how staff members teach and justification for why you teach that way
3. Visiting status in other engineering institutions/universities
4. Have you helped the department to have MOU with any industry, Specify industry name and its activities.
5. Improvements in the department observed by you since last accreditation visit
6. List five strong and five weakness points about you
7. List at least three points why your presence or service is important to the department or college
8. List five strong and weakness of the department in preparation of NBA.
9. Role of Staff member at the institute level
10. Faulty publication in collaboration with peers of other institution
11. What is your contribution to improve campus placements /higher education etc.
12. Any other information that can help assessment of staff member or Help NBA process

Each faculty submits the Self Appraisal form annually to the HOD.

II Evaluation of faculty Form by Head of the department

Head of the department completes the Evaluation of Faculty Form using the information from observation of instruction, review of syllabi, evaluation of other duties, feedback from students, and subject results. HOD evaluates each faculty based on the following parameters:

1. Character and conduct
2. Regularity and punctuality/availability during the working hours/frequency of leaves availed
3. Attitude towards work.
4. Papers published
5. Papers presented
6. Sponsored projects
7. Presentation in class rooms/labs
8. Communication skills
9. Shouldering responsibility /Extra Curricular activities
10. Memos

Each component on the evaluation is rated by giving 1 to 10 points.

- Poor (2)
- Fair (4)
- Good (8)
- Excellent (10)

Based on the observation, HOD recommends promotion/increment for the faculty to the principal office.

III. Evaluation by Principal office:

1. Supports and monitor the execution of the system.
2. Verifies and accredits the results submitted by the respective departments.
3. Considers reevaluation applications submitted by each faculty.
4. Prepares final college faculty evaluation report.
5. Sends final report/s to the Office of Evaluation.

Based on the feedback given by HOD, the principal office recommends for further action.

IV. The Office of Evaluation:

1. General supervision of the application of the Faculty Performance Review and Development System.
2. Cooperation with the various departments of the colleges to implement the Review and Development System.
3. Contribution in overcoming problems arising at the time of implementation of the Review and Development System.
4. Preparation of the final Faculty Review and Development Report and submits to the management
5. Document Confidentiality: Evaluation documents and materials prepared and gathered in this process are treated as confidential and limited to authorized persons.

After completion of the system, the concerned Head of the Department is required to meet with every faculty member in person to provide necessary feedback on strengths and weaknesses of the faculty performance, so as to launch a better future plan.

Faculty Performance Appraisal form is as below:



**V.V.Sangha's
Rao Bahadur Y. Mahabaleswarappa Engineering College
Cantonment, Ballari - 583104**



Part – A : Faculty's General Information

1	Name					
2	Date of Birth (Age)					
3	Gender					
4	Blood Group					
5	Department					
6	Designation					
7	Employee ID					
8	Qualification Details	Degree	University	Specialization	% age	Passing Year
		Ph.D				
		M.Tech				
		B.E.				
9	Experience Details	Field			Years	Months
		Research				
		Administrative				
		Teaching (Other Institutions)				
		Teaching (RYMEC)				
		Total Experience : _____ Years _____ Months				
10	Present Pay / Scale of pay					
11	Date of Increment					
12	PF (if any) with PF Number					
13	Mobile Number					
14	Email ID					
15	Aadhar Number					
16	PAN number					
17	Membership of professional Bodies					
18	Permanent Address					
19	Current Address					
20	Any Other Relevant information					

Date:

Place:

Signature of the Faculty

Rao Bahadur Y Mahabaleswarappa Engineering College, Cantonment, Ballari - 583104.



Part – B : Faculty's Detailed information required for Appraisal

Workload					
	UG		PG		
	Theories	Labs	Theories	Labs	
Even Semester					
Odd Semester					
Projects / Research Guidance					
Projects Guided (UG/PG)	UG Projects				
	PG Projects				
Ph.D	Degree Awarded				
	Thesis Submitted				
	Course Work Completed				
	Registered				
Extra Works / Additional Responsibilities					
Departmental Level			Institutional Level		
No. of leaves availed during academic session					
No. of days of leave availed					
CL	EL	CM	RH	CO	OOD
Exam Duties					
Sl. No	Type of Duty		Venue	No. of Days	
Conferences and Journals Attended / Papers Published					

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Sl. No.	Type (NJ/NC/IJ/IC)	Details of Journal / Conference	Title of paper	ISSN/ISBN No.	Venue
Workshops and FDPs organized / attended					
Sl. No.	Type (WS / FDP)	Title	Duration	Date & Venue	Organized / Participated
Book(s) / Article(s) / Chapter(s) Published					
Sl. No.	Title with Page No's	Publisher & ISSN ISBN No.	Sponsoring Agency & Expenditure	Date of Publishing	
Projects / Researches Funded / Grants					
Sl. No.	Title of the Project	Funding Agency	Duration	Amount Granted	
Active Involvement in College Admission					
Any Other Relevant Information					

I hereby certify that all the information provided is correct as per records available with the Department / Institute / Personal and/or documents enclosed with the duly filled application.

Date:

Place:

Signature of the Faculty



Part – C
To be filled by the Head of the Department

Note : **A** for Excellent (10), **B** for Good (8), **C** for Fair (4) and **D** for Poor (2)

Sl. No.	Related to	A	B	C	D	Score
1	Character and conduct					
2	Regularity and punctuality/ Availability during working Hours					
3	Attitude towards work					
4	Papers published					
5	Papers Presented					
6	Sponsored Project					
7	Presentation in Classrooms / Labs					
8	Communication Skills					
9	Shouldering responsibility / Extra Curricular activities					
10	Memos					
Total Score for 100						
Overall Rating Measured on Scale of 10						
Feedback of Students						
Semester	Subjects / Labs taught	Result %			Feedback	
Even Semester						
Odd Semester						
Observations and Recommendations of the HOD						
Date:		Signature of the HOD				
Place: Ballari						
Observations and Recommendations of the Principal						

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Date:	Signature of the Principal
Place: Ballari	

Table 5.30: Faculty Interaction with outside world for the year 2020-21

Sl. No.	Name of the Faculty	Role of the Faculty	Event
1	Dr. Nagaraj Kori	Resource person	Delivered Invited talk on “Passive Cooling Methods-A Study on Thermal behaviour of opaque ventilated facades” on 23 rd April 2021 in Six days online Faculty development program on “Recent Developments in Mechanical Engineering” organized by Coorg Institute of Technology, Coorg
2	Dr. Nagaraj Kori	Awardee	Received “Innovative Technological Research & Dedicated, Dr. Nagaraj Kori Best Educationalist Award” by the Innovative Global Scientific Researches, Educationalist-Professionals and Journalist Awards and Fellowship honors convocation 2020-21 at Chennai
3	Dr. Hiregoudar Yerrannagoudaru	Awardee	Awarded “Bio Fuel Award-2019” from Department of Bio fuels and Bio energy, Government of Karnataka for research in Bio Fuels by Sri. K S Eshwarappa minister for rural development and Panchayat raj on 20.03.2021
4	Dr. C Thotappa	reviewer	Reviewer for logistic and supply chain management course for PGDM program at Ramaiah Institute of Management, Bengaluru on FEB 2021
5	Dr Shivamanappa G Desai	reviewer	Mechanism and machine theory, ELSEVIER, August 2020-21

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6	Dr. Sardar Kotresh	Resource person	Web Based Design and Manufacturing of Medical Implants using CAD/CAM/CAE” on 17th April 2021 at CMR University, Bengaluru.
7	Dr. Veerabhadrappe Algur	Resource person	Design of Experiments using Taguchi Optimization Techniques” on 21.06.2021 in 6 Days online FDP Program on “ Recent trends in mechanical Engineering” organized by Coorg Institute of Technology, Coorg.
8	Dr. Veerabhadrappe Algur	Awardee	Received “Innovative Researcher and Dedicated, Excellent Professional Achievement Award” by the Innovative Global Scientific Researches, Educationalist-Professionals and Journalist Awards and Fellowship honors convocation 2020-21 at Chennai.
9	Dr. Veerabhadrappe Algur	Member (BOE)	Member of Board of Examiner (BOE) for UG (FIS) and PG (SRE & FIS) courses at VSK, University ,Ballari for the academic year 2020-21
10	Dr. Veerabhadrappe Algur	Scientific committee member	Scientific committee member for international conference on recent challenges in engineering science and technology (ICRCEST) during 09 th -10 th April 2021 organized by Ramachandra College of Engineering, Eluru, Andhra Pradesh in association with IFERP
11	Dr. Veerabhadrappe Algur	Reviewer	Journal of tribology in industry, journal of Serbian tribology society, Jan 2020-21
12	Dr. Veerabhadrappe Algur	Reviewer	International journal of mechanical engineering and robotic research February 2021
13	Dr. Veerabhadrappe Algur	Reviewer	International research journal of modernisation in engineering technology and science, February 2021, 13 and 31 March 2021
14	K C Mahendra	Resource person	Training for IHB Fabricator under Up skilling fabricator partners program organized by JSW

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			Ekalavya Skill Academy on 12.03.2021 in association with Labour net
15	Dr. Nagaraj Kori	BOE Member	Department of Mechanical Engineering, Ballari institute of technology and management, Ballari (Autonomous Institute).
16	Dr Manjunatha K	Reviewer	Three papers are reviewed in Materials Today Proceedings, Published by Elsevier Ltd
17	Dr Manjunatha K	Reviewer	Six papers are reviewed in Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, Published by Taylor and Francis Ltd.
18	Dr Manjunatha K	Paper presentation in international conference	7 th -8 th May 2021, SJBIT, Bangalore.
19	Dr Manjunatha K	Beat Paper Award in International Conference	7 th -8 th May 2021, SJBIT, Bangalore.
20	Dr Manjunatha K	Reviewer	One paper is reviewed Asian in Journal of Engineering and Technology (AJET)

Table 5.31: Faculty Interaction with outside world for the year 2019-20

Sl. No.	Name of the Faculty	Role of the Faculty	Event
1	Dr. Kori Nagaraj	Judge	Social Innovation Ideathan at BITM, Ballari
2	Dr. K Veeresh	LIC Member	VTU, Belagavi
3	Dr. K Veeresh	MPC Member	VTU, Belagavi
4	Dr. S P Jagadish	State Scholarship E-attestation officer	VTU, Belagavi
5	Dr. S P Jagadish	State Scholarship E-attestation officer	Social welfare department, Govt. of Karnataka (SSP)
6	Dr. Veerabhadrappa Algur	Guest Speaker	3 Days workshop on “Realistic approach to wear mechanisms and measurements” held during 21 st to 23 rd Sep 2019 at Cambridge institute of technology north campus, Kundana, Bengaluru.

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7	Dr. Veerabhadrappa Algur	BOE Member	VTU, 2019-20.
8	Dr Manjunatha K	Reviewer	Two papers are reviewed in <i>Materials Today Proceedings</i> , Published by Elsevier Ltd
9	Dr Manjunatha K	Reviewer	Three papers are reviewed in Heat Transfer journal, Published by John Wiley & Sons, Inc.
10	Dr Manjunatha K	Reviewer	Three papers are reviewed in Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, Published by Taylor and Francis Ltd.
11	Dr Manjunatha K	Reviewer	One paper is reviewed Asian in Journal of Engineering and Technology (AJET)

Table 5.32: Faculty Interaction with outside world for the year 2018-19

Sl. No.	Name of the Faculty	Role of the Faculty	Event
1	Dr. K Veeresh	LIC Member	VTU, Belagavi
2	Dr. Kori Nagaraj	Session Chair	International conference on emerging trends in engineering, technology, and management at PDIT, Hosapete from 26 th & 27 th April 2019
3	Dr. Kori Nagaraj	Judge	3 rd State level Project Exhibition 2K19, Department of Computer Science, RYMEC, Ballari from 12 th & 13 th April 2019
4	Dr. Hiregoudar Yerrannagoudaru	Member of Editorial Board	GLACIER Journal of Scientific Research ISSN: 2349-8498
5	Dr. Hiregoudar Yerrannagoudaru	Awarded the prestigious “Adarsh Vidya Saraswati Rashtriya Puraskarm” (National Award of Excellence 2019)	GLACIER Journal research foundation, Global Management Council
6	Dr. C Thotappa	Judge	3 rd State level Project Exhibition 2K19, Department of Computer Science, RYMEC, Ballari from 12 th & 13 th April 2019
7	Dr Manjunatha K	Member Membership No:	International Society for Research and Development with Life Time.

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		M4150902268	
8	Dr Manjunatha K	Editorial Board Member	Editorial Board Member in Seventh Sense Research Group and SSRG International Journal of Mechanical Engineering with ID NO : SSRG- IJME-1087
9	Dr Manjunatha K	Editorial Board Member	World Academy of Science, Engineering and Technology, Riverside, Connecticut, CT 06878, USA.
10	Dr Manjunatha K	Member	International Institute of Engineers and Researchers
11	Dr Manjunatha K	Reviewer	for Taylor and Francis, Biofuel Journal Paper
12	Dr Manjunatha K	Editorial Board Member	International Journal of Civil, Mechanical and Energy Science (ICMES)
13	Dr Manjunatha K	Editorial Board Member	International Journal of Mechanical Engineering and Automation
14	Dr Manjunatha K	Reviewer	Journal of Energy and Power Engineering David Publishing Company, Valley Cottage, NY 10989, USA
15	Dr Manjunatha K	Editorial Board Member	VSRD International Journal of Mechanical, Civil, Automobile & Production Engineering
16	Dr Manjunatha K	Reviewer	Asian Journal of Engineering and Technology
17	Dr Manjunatha K	Reviewer	International Journal for Research in Mechanical Engineering with Reviewer ID : RVI15ME81352.
18	Dr Manjunatha K	Member	The Association for Science, Education and Technology (TASET), Sakarya University, Sakarya, TURKEY.
19	Dr Manjunatha K	Reviewer	International Journal of Mechanical Engineering Research , FOREX Publication-International Journals Publisher, New Delhi Taiwan New York.
20	Dr Manjunatha K	Reviewer	A Advances in Science, Technology and Engineering Systems Journal with

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			Reviewer ID: RVEMU0071, United States, United Kingdom.
21	Dr Manjunatha K	Reviewer	World Journal of Engineering , Manuscript Central Support, Emerald Group Publishing Limited, Howard House, Bingley, West Yorkshire, BD16 1WA, UK
22	Dr Manjunatha K	Reviewer	Energy Efficiency ISSN: 1570-646X (print version),ISSN:1570-6478 (electronic version), Journal no. 12053, Springer Publication.
23	Dr Manjunatha K	Reviewer	Energy Sources, Part A: Recovery, Utilization, and Environmental Effects Taylor & Francis Group,325 Chestnut Street, Suite 800, Philadelphia, PA 19106
24	Dr Manjunatha K	Reviewer	Reviewer for Heat Transfer –Asian Research, Edited By: William M. Worek Online ISSN:1523-1496,© Wiley Periodicals, Inc. Michelle Bayman, John Wiley & Sons, Inc. ,111 River St., Hoboken, NJ07030-5774 ,USA , HTJeditorial@wiley.com
25	Dr Manjunatha K	Reviewer	Materials Today: Proceedings, elsevier.com
26	Mr. Kotresh Sardar	Received award prize of Rs.5000/- for Poster exhibition	11th Annual Karnataka Science and Technology Academy conference, Bangalore.
27	Mr. Swamy N	Reviewer	International Journal of Engineering Research & Technology (IJERT)
28	Mr. Virupaksha Gouda H	Reviewer	International Journal of Creative Research Thoughts (IJCRT)
29	Mr. Virupaksha Gouda H	Reviewer	International Journal of Engineering Research & Technology (IJERT)
30	Dr Manjunatha K	Reviewer	Two papers are reviewed in Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, Published by Taylor and Francis Ltd.

5.9	Visiting/Adjunct/Emeritus Faculty etc	10
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Table 5.33: Details of Visiting/Adjunct/Emeritus Faculty

Sl. No.	Name of the Visiting Faculty	Course Name & Code	Year
1	Mr. Siddalingappa K B	Adalita Kannada (18KAK28/39/49)	2019-20
2	Mr. Siddalingappa K B	Vyavaharika Kannada (18KVK28/39/49)	2019-20
3	Mr. A M P Veeresh Swamy	Kannada Manassu (17KKM39/49)	2018-19
4	Mr. A M P Veeresh Swamy	Kannada Kali (17KKK39/49)	2018-19

CRITERION 6

CRITERION 6	FACILITIES AND TECHNICAL SUPPORT	80
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6.1	Adequate and well equipped laboratories, and technical manpower	30
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Sl. No	Name of the Laboratory	Number of students per set up (Batch Size)	Name of the Important Equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification
1	CAED Lab	60	1. Computers 2. Server 3. Printer 4. Projector 5. Scanner 6. UPS 7. Fire Extinguisher	All Program (5 Batches (15 hrs per week))	Mr. U Suresh	Instructor	Diploma
2	Material Testing Lab	25	1. Metallurgical Microscope 2. Magnetic particle testing kit 3. JIGS for polishing 4. Buffing Machine (Model: KA-DD) 5. Metzer Meta vision inclined Binocular Metallurgical microscope Model 6. Double disc polishing machines 7. Muffle furnace	6 Batches (18 Hrs per week)	1. Mr. Channaveera Swamy 2. Mr. S Yerriswamy	1. Instructor 2. Instructor	1. BE 2. ITI.

			<ul style="list-style-type: none"> 8. Impact testing machine Digital. 9. Brinell cum Rockwell hardness tester 10. UTM (60 Tonne) 11. Torsion testing machine 12. Fatigue testing machine 13. Portable Digital Ultrasonic flaw detector 14. Dye penetration test kit 				
3	Foundry & Forging Lab	25	<ul style="list-style-type: none"> 1. Moulding boxes 2. Core boxes 3. Muffle furnace 4. Sand / Sieve Shaker 5. Sand rammer with specimen tube. 6. Permeability meter 7. Moisture teller 8. USST Machine 9. Shatter index 10. Mould hardness tester 11. Core hardness tester 12. Sand Muller 13. Sand washer 14. Open hearth with electrical blower 15. Open hearth with hand blower 16. De Walt 14" cut-off machine 17. Electronic weighing scale (10 Kg capacity) 	6 Batches (18 Hrs per week)	<ul style="list-style-type: none"> 1. Mr. Anand Koti 2. Mr. Siddaramana Gouda 	<ul style="list-style-type: none"> 1. Helper 2. Mechanic 	<ul style="list-style-type: none"> 1. ITI 2. PUC

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4	CAMD Lab	25	<ol style="list-style-type: none"> 1. Computers 2. Server 3. Printer 4. Scanner 5. Projector 6. UPS 	6 Batches (18 Hrs per week)	Mr. Taher Basha	1. Instructor	1. ITI
5	Mechanical Measurements & Metrology Lab	25	<ol style="list-style-type: none"> 1. Two wire set 2. Digital O/S micrometer 3. O/S micrometer 4. Plugger Dial 5. Pressure measurement trainer 6. Temperature measurement trainer 7. Calibration of Load cell 8. LVDT trainer 9. Strain measurement trainer 10. Sodium monochromatic light unit. 11. Mechanical comparator 	6 Batches (18 Hrs per week)	<ol style="list-style-type: none"> 1. Mr. S. Yerriswamy 2. Mr. Prabhudev H 	<ol style="list-style-type: none"> 1. Instructor 2. Instructor 	<ol style="list-style-type: none"> 1. ITI 2. BSc
6	Machine Shop Lab	25	<ol style="list-style-type: none"> 1. Bench Grinding Machine 2. Azad power hachsaw m/c 3. Kirloskar Lathe EP-1330 4. Kirloskar Shimoga Lathes 5. Batliboi milling m/c 6. Rolax Surface Grinding m/c 7. Rolax Surface drilling m/c 8. Eiffico Radial drilling m/c 9. Eiffico Piller Drilling m/c 10. Sager grade I-Shaping m/c 18" 	6 Batches (18 Hrs per week)	<ol style="list-style-type: none"> 1. Mr.Ganganna * 2. Mr.Basava prabhu 3. Mr.Anand Koti 4. Mr.Thuppanagouda 	<ol style="list-style-type: none"> 1. Instructor 2. Asst. Instructor 3. Helper 4. Helper 	<ol style="list-style-type: none"> 1. ITI 2. ITI 3. ITI 4. ITI

			<ul style="list-style-type: none"> 11. Servo raj shaping m/c 12" 12. Efico slotting m/c 13. Kirloskar lathe 1550 14. Batli boi BGL-350 Lathe 15. Kirloskar – M K Capstan Lathe 16. Rolex Prime Hacksaw m/c 17. Bench Grinding 8" 18. Kirloskar Lathe (Harihara) 				
7	Fluid Mechanics Lab	25	<ul style="list-style-type: none"> 1. Venturi and Orifice meter setup 2. Friction in pipes and minor losses in pipe fittings setup. 3. Notch Calibration. 4. Impact of jet on vanes 5. Centrifugal pump Test rig 6. Metacentric height ship model 7. Bernoulli's apparatus (with Reynold's apparatus attachment) 8. Gear and vane pump test rig 9. Reciprocating pump test rig 10. Series and parallel pump test rig 11. Pelton wheel turbine 12. Francies turbine 13. Kaplan turbine 14. Open orifice and mouth piece setup 15. Calibration of broad crested weir- masonry work 	6 Batches (18 Hrs per week)	<ul style="list-style-type: none"> 1. Mr. B. Ganganna* 2. Mr. Kubera Reddy 	<ul style="list-style-type: none"> 1. Instructor 2. Assistant Instructor 	<ul style="list-style-type: none"> 1. ITI 2. ITI

			<p>16. Calibration of ogee spill way- masonry work</p> <p>17. Centrifugal air blower</p> <p>18. Centrifugal air blower</p> <p>19. Calibration of flow nozzle.</p>				
8	Energy Conversion Lab	25	<p>1. Pensky Martin Closed Cup Tester.</p> <p>2. Redwood Viscometer</p> <p>3. Aimil Saybolt Viscometer electrically Heated</p> <p>4. Two-Stage Air Compressor</p> <p>5. Four Stroke Cycle Diesel C.I. Engine (Water Cooled)</p> <p>6. Four Stroke Cycle Twin Cylinder Diesel Engine</p> <p>7. Two Stroke Petrol Engine with Air Cooled and Electrical Loading</p> <p>8. Junkers Gas calorimeter</p> <p>9. Single Cylinder 4 Stroke Petrol Engine Test Rig with Suitable Dc Generator and Resistance Load Bank</p> <p>10. Multi Cylinder Petrol Engine Test Rig with Hydraulic Dynamometer for Morse Test</p> <p>11. VCR Petrol Engine Test Rig.</p> <p>12. Torsion Viscometer</p> <p>13. Bomb Calorimeter</p>	6 Batches (18 Hrs per week)	<p>1. Mr. S. M. Basavaraj</p> <p>2. Mr. Thimma Reddy</p>	<p>1. Instructor</p> <p>2. Assistant Instructor</p>	<p>1. ITI</p> <p>2. ITI</p>

9	Heat Transfer Lab	25	<ol style="list-style-type: none"> 1. Thermal Conductivity of a Metal Rod set up. 2. Heat Transfer Coefficient of a Composite wall set up 3. Effectiveness on a Metallic fin set up 4. Free Convection on a vertical tube set up. 5. Forced Convection Flow through a Pipe set up 6. Emissivity of a Surface set up 7. Stefan Boltzmann Constant set up 8. Parallel Flow and Counter Flow Heat Exchangers set up. 9. Boiling of Liquid and Condensation of Vapour apparatus 10. Vapour Compression Refrigeration test rig. 11. Vapour Compression Air - Conditioner test rig. 12. Transient Conduction Heat Transfer set up. 13. Pebble Bed Heater. 14. Fluidize Bed Chamber 15. Electrical Analogy 	6 Batches (18 Hrs per week)	<ol style="list-style-type: none"> 1. Mr. S. M. Basavaraj 2. Mr. Basava prabhu 	<ol style="list-style-type: none"> 1. Instructor 2. Assistant Instructor 	<ol style="list-style-type: none"> 1. ITI 2. ITI
10	Modelling & Analysis	25	<ol style="list-style-type: none"> 1. Computers 2. Server 	6 Batches (18 Hrs per week)	<ol style="list-style-type: none"> 1. Mr. Taher Basha 2. Mr. Shivakumar 	<ol style="list-style-type: none"> 1. Instructor 2. Instructor 	<ol style="list-style-type: none"> 1. ITI 2. Diploma

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	Lab		3. Printer 4. Projector 5. Scanner 6. UPS 7. Fire Extinguisher		Hiremath		
11	CIM Lab	25	1. Computers 2. Server 3. Printer 4. Scanner 5. Projector 6. UPS	6 Batches (18 Hrs per week)	1. Mr. G Nagaraj 2. Mr. Shivakumar Hiremath	1. Assistant Instructor 2. Instructor	1. ITI 2. Diploma
12	Design Lab	25	1. Static and Dynamic Balancing Equipment. 2. Universal Governor Apparatus 3. Motorized Gyroscope 4. Whirling of shafts setup and Spares. 5. Journal Bearing Apparatus. 6. Polari scope 7. Vibration Set Up 8. Strain Gauge Rosette Apparatus	6 Batches (18 Hrs per week)	1. Mr. Nagabhushan 2. Mr. Prabhudev H	1. Instructor 2. Instructor	1. ITI 2. BSc
13	Workshop	30	1. Welding machines 2. Hand grinder, 3. Drilling Machine, 4. Power Hacksaw	All Program (10 Batches per week, 30 hrs per week)	Mr. Veerendra Patil	Helper	ITI

*. Mr. B. Ganganna was retired from his service on 30.06.2021.

6.2	Additional facilities created for improving the quality of learning experience in laboratories	25
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Sl. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Area in which The students are expected to have enhanced learning	Relevance to POs/PSOs
1	CNC vertical milling machine	ACE Micromatics 3-Axis machining center (Model 430V)	Content beyond syllabus, training students, R&D and Consultancy	Students, R&D work and Consultancy	Advanced Manufacturing	PO1 PO3 PO5 PSO1 PSO2
2	Industrial Robot for arc welding applications	YASKAWA, MOTOMAN arc welding robot	Content beyond syllabus, training students, R&D and Consultancy	Students, R&D work and Consultancy	Advanced Manufacturing	PO1 PO3 PO5 PSO1 PSO2
3	CNC machining center	MTAB milling machine 3-Axis machining	Content beyond syllabus, training students, R&D and Consultancy	Students, R&D work and Consultancy	Advanced Manufacturing	PO1 PO3 PO5 PSO1 PSO2
4	3D Printer	ULTIMAKER 3 EXTENDED	Content beyond syllabus, training students, R&D and Consultancy	Students, R&D work and Consultancy	Advanced Manufacturing	PO1 PO3

						PO5 PSO1 PSO2
5	3D Scanner	EINSCAN SE 3D Scanner For Reverse Engineering	Content beyond syllabus, training students, R&D and Consultancy	Students, R&D work and Consultancy	Advanced Manufacturing	PO1 PO3 PO4 PO5 PSO1 PSO2
6	Imported Inverted Metallurgical Microscope with Real Time Based Live Image Analysis Software system	Daksh Quality System 14I Magnification with 10X eye piece, 100X,200X,300X, 400X & 1000X Magnification.	Content beyond syllabus, R&D and Consultancy	Students, R&D work and Consultancy	Material Testing	PO1 PO4 PO5 PSO2
7	Pin-on-disc wear testing machine	DUCOM Rotary Pin On Disc Tribometer	R&D & Consultancy	R&D work and Demonstration for the students	Material Testing	PO1 PO4 PO5 PSO1 PSO2
8	Feble bed heat exchanger	Heat transfer analysis	Content beyond syllabus, R&D & Consultancy	R&D work and Demonstration for	Energy Conversion	PO1 PO4

				the students		PSO1 PSO2
9	Emission test Rig	Natel make CO & HC determination	Content beyond syllabus , R&D & Consultancy	R&D work and Demonstration for the students	Energy Conversion	PO1 PO3 PO7 PSO2
10	MAT-Lab-software	R8.65 / 2015	Content beyond syllabus & R&D work	R&D work and Demonstration for the students	Industrial Design & analysis	PO1 PO3 PO4 PO5 PSO1
11	3D Experience Suite from Dassaults systems	3D Experience Suite comprise of 40 different tools for industrial design & development, research, digital manufacturing & consultancy	Content beyond syllabus to make students industry ready, R&D and consultancy	Training, R&D and consultancy	Industrial Design & Development, Digital Manufacturing and PLM	PO1 PO3 PO4 PO5 PSO1
12	MSC Software suite from MSC Softwares	MSC Software suite comprise of 73 different tools for analysis in different streams.	Content beyond syllabus to make students industry ready, R&D and consultancy	Training, R&D and consultancy	Industrial Design & analysis	PO1 PO3 PO4 PO5 PSO1
13	Robocell – V5	Software for Robot programming	Content beyond syllabus to make students industry ready and R&D	Training and R&D	Robotics	PO1 PO3 PO4

						PO5 PSO1
14	ISRO FEAST	Software for linear , non linear and thermal analysis	Content beyond syllabus to make students industry ready, R&D and consultancy	Training, R&D and consultancy	Industrial Design & analysis	PO1 PO3 PO4 PO5 PSO1
15	nCyclo-Turn	Software for training on CNC turning.	Content beyond syllabus to make students industry ready.	Training	Digital Manufacturing	PO1 PO3 PO4 PO5 PSO1
16	nCyclo-Mill	Software for training on CNC milling.	Content beyond syllabus to make students industry ready.	Training	Digital Manufacturing	PO1 PO3 PO4 PO5 PSO1
17	CFD	CFD Software	Projects and Research	Students and Research scholars	Simulation and Testing	PO11 PO12 PSO 1 PSO 2
18	Laptops, Tabs and Projector	7 Dell Tabs / 3 Sony projector DX140, 3200 Lukmens, VGA Cable and Compaq Presario-2200 Laptop, intel celeron1.4 Ghz, 30 GB HDD, 256 MB RAM	PPTs and Seminar presentation	Students & Staff	Communication	PO5 PO10

19	Communication Lab	Globarena – Eclient Software	Enhance Communication Skill	Students & Staff	Language	PO5 PO10
20	Internet Facility	10Mbps	Essential tool for information & Communication	Students & Staff	Information & Communication	PO12
21	High end Workstations (21 Nos)	HP Z4G4 intel Xeon Processor, 32 GB RAM, 8GB Quadro Graphics	Training, R&D & Consultancy	Training, R&D and consultancy	Information Technology	PO4 PO5 PO12
22	High resolution Monitors (42 Nos)	HP Z22NFG2 dual Bezel monitors	Training, R&D & Consultancy	Training, R&D and consultancy	Information Technology	PO4 PO5 PO12

6.3	Laboratories: Maintenance and overall ambiance	10
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1. Classrooms and Laboratories are Well-equipped with state-of-art facilities to meet the requirements of academic curriculum.
2. Classrooms and Laboratories have good ambiance with proper ventilation and lighting.
3. Classrooms and Laboratories are provided with LED Projectors.
4. Maintenance of equipment's, machines and instruments are carried out regularly as per the requirement.
5. Calibrations of the instruments are carried out.
6. Technical and Supporting staff with required qualification are allotted to maintain the Laboratories.
7. Cleanliness and safety measures are strictly followed in Classrooms and Laboratories.

6.4	Project laboratories	05
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1. The project laboratories have been established in the department to aid the students and faculties in project work and research.
2. Training program, hand on experience workshops will be conducted for students.
3. As per the guidance of faculty member the students will conduct tests related to the project work and fabrication facilities are also provided.
4. Network and internet facilities along with licensed software's are provided to students and faculties.
5. A project lab with an area of 75 Sq Mtr is ear marked exclusively for the purpose of planning/ preparation /development of student project work and allied purposes.
6. The research lab is provided with well equipped arrangements to conduct tests. Hardness Tester, Live Image analyzer for metallurgical microscope, pin on disc setup, Analytical balance will used by students and faculties to study the aspects.
7. The old project reports and the project models are displayed in the project lab premises for the reference of students.
8. Supporting staff provide their undue support to students in completing the project work successfully.

6.5	Safety measures in laboratories	10
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Sl. No	Laboratory Name	Safety Measures
1	CAED Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the workstations, it is provided with Uninterrupted Power Supply (40 KVA).4) Workstation is provided with proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.

		<p>6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.</p> <p>7) Lab is under CC Cameras surveillance</p>
2	Workshop Lab	<p>1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.</p> <p>2) For the safety of the equipment and wires, MCB and ELCB are provided.</p> <p>3) For the safety of the students, they are instructed to wear a dress code with shoes.</p> <p>4) Proper Earthing so that it will protect from internal faults.</p> <p>5) The laboratory is provided with fire extinguishers.</p> <p>6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.</p> <p>7) Lab is under CC Cameras surveillance</p>
3	CAMD Lab	<p>1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.</p> <p>2) For the safety of the equipment and wires, MCB and ELCB are provided.</p> <p>3) For the safety of the workstations, it is provided with Uninterrupted Power Supply (40 KVA).</p> <p>4) Workstation is provided with proper Earthing so that it will protect from internal faults.</p> <p>5) The laboratory is provided with fire extinguishers.</p> <p>6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.</p> <p>7) Lab is under CC Cameras surveillance</p>
4	Material Testing Lab	<p>1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.</p> <p>2) For the safety of the equipment and wires, MCB and ELCB are provided.</p> <p>3) For the safety of the students, they are instructed to wear a dress code with shoes.</p> <p>4) Proper Earthing so that it will protect from internal faults.</p> <p>5) The laboratory is provided with fire extinguishers.</p> <p>6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.</p>

		7) Lab is under CC Cameras surveillance
5	Foundry & Forging Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the students, they are instructed to wear a dress code with shoes.4) Proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.7) Lab is under CC Cameras surveillance
6	Mechanical Measurements and Metrology Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the students, they are instructed to wear a dress code with shoes.4) Proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.7) Lab is under CC Cameras surveillance
7	Machine Shop Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the students, they are instructed to wear a dress code with shoes.4) Proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.7) Lab is under CC Cameras surveillance
8	Fluid Mechanics Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.

		<ol style="list-style-type: none">2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the students, they are instructed to wear a dress code with shoes.4) Proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.7) Lab is under CC Cameras surveillance
9	Energy Conversion Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the students, they are instructed to wear a dress code with shoes.4) Proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.7) Lab is under CC Cameras surveillance
10	Heat and Mass Transfer Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the students, they are instructed to wear a dress code with shoes.4) Proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.7) Lab is under CC Cameras surveillance
11	Modelling & Analysis Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the students, they are instructed to wear dress code.

		<ol style="list-style-type: none">4) Proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.7) Lab is under CC Cameras surveillance
12	Design Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the students, they are instructed to wear a dress code with shoes.4) Proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.7) Lab is under CC Cameras surveillance
13	CIM & Automation Lab	<ol style="list-style-type: none">1) Do's and Don'ts statements and Safety charts are displayed in the laboratory.2) For the safety of the equipment and wires, MCB and ELCB are provided.3) For the safety of the students, they are instructed to wear a dress code with shoes.4) Proper Earthing so that it will protect from internal faults.5) The laboratory is provided with fire extinguishers.6) The laboratory is provided with First Aid Kits, also in house medical aid facility is provided under emergency.7) Lab is under CC Cameras surveillance

CRITERION 7

CRITERION 7	CONTINUOUS IMPROVEMENT	50
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7.1	Actions taken based on the results of evaluation of each of the POs	20
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Identify the areas of weaknesses in the programme based on the analysis of evaluation of POs attainment levels. Planned measures identified and implemented to improve POs attainment levels for the assessment years.

PO Attainment Levels and Actions for improvement CAY: Current Academic Year- 2020-21.

Table 7.1: Program outcome Attainment for CAY- 2020 -21

PO'S	Target level	Attainment Level	Observation
PO1 Engineering Knowledge	2.81	2.41	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Lateral entry students are not exposed to basic mathematics in those subjects.
Actions:			
Action 1: Extra classes and practical models are shown of mechanical systems. Action 2: More emphasis was given on complex concepts which have mathematical applications.			
PO2 Problem Analysis	2.50	2.12	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Students and few lateral entry students find difficult to identify and analyze numerical problem.
Actions:			
Action 1: More tutorials to be conducted to analyze and solve the engineering problems. Action 2: More diverse problems to be taught in extra classes.			

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PO3 Design/ Development of Solutions	2.27	1.99	<ol style="list-style-type: none">1. Achieved attainment is close to target and it is at level 3.2. Still students not knowing how to develop solutions using simulations and methodologies to solve complex problems.
Actions			
<p>Action 1: Design and thermal subjects were taught with NPTEL video presentation.</p> <p>Action 2: Difficult problems are always explained with the help of physical models.</p> <p>Action 3: Thermal and design classes were taken and students were able to explain and solve some problems in tutorial classes.</p>			
PO4 Conduct investigations of complex problems	2.16	1.88	<ol style="list-style-type: none">1. Achieved attainment is close to target and it is at level 3.2. Lack of research-based knowledge about various engineering materials, their properties and hands on experience.
Actions			
<p>Action 1: Students logged in to international journal papers based on syllabus topics. Using the data and properties of materials given in the researches, more examples on thermal and design were carried out considering case studies like cold storage design for agricultural products in rural areas.</p> <p>Action 2: Motivating students to prepare/built prototype models.</p>			
PO5 Modern tool usage	2.42	2.17	<ol style="list-style-type: none">1. Achieved attainment is close to target and it is at level 3.2. Very few Students are using CAD/CAM based analysis and software for the project works.
Actions:			

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<p>Action 1: Workshop on Application of CFD in Heat Transfer was conducted on 05 Dec 2020 by Basavaraj Kusummanavar, Department of mechanical Engineering RYMEC.</p> <p>Action 2: Workshop on Application of CFD in Fluid Mechanics was conducted on 05 Dec 2020 by Basavaraj Kusummanavar, Department of mechanical Engineering RYMEC.</p> <p>Action 3: Workshop on Use of POM – QM software for windows for Operation Research was conducted on 09 May 2021 by Dr Veerabadrappa Algur, Department of mechanical Engineering RYMEC.</p> <p>Action 4: In internship and training programs were continued for final year students were shown working of multi axis milling machine and industrial Robot (welding carried out) both procured from TATA Technologies Ltd., Pune.</p>			
PO6 The engineer and society	1.98	1.72	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Students are slowly learning that they are the part of the society and they are studying engineering to serve the society.
Actions:			
<p>Action 1: Awareness programme on COVID-19 in Haraginadone village was conducted on 10 Aug 2021, NSS team, RYMEC.</p> <p>Action 2: Grama Sabha Meeting in Haraginadone village to identify the major issues in the village was conducted on 10 Aug 2021, Lead team, RYMEC.</p> <p>Action 3: Village and Household survey in Haraginadone village to identify the problems in the village was conducted on 10 Aug 2021, Lead team, RYMEC.</p>			
PO7 Environment and sustainability	1.92	1.76	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Students should know the effect of various engineering applications on living beings and Environmental. 3. Students should go through case studies to analyse the problems and need for sustainable development.
Actions:			

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<p>Action 1: Workshop on Hybrid Vehicles was conducted on 25 May 2021 by Sajan Edakkadan, Assistant Manager, Toyota Learning & Development India, Toyota Kirloskar Motor Pvt. Ltd.</p> <p>Action 2: Workshop on Oxygen Challenge Program by planting the Trees was conducted on 17 Jun 2021 by NSS team, RYMEC.</p> <p>Action 3: Workshop on My Professional journey was conducted on 01 Aug 2021 by Mr. Nazeer Bhagwan Mr. Rajesh Nagari Mr. Neelakant swamy.</p> <p>Action 4: Workshop on Industry Adaption and Readiness was conducted on 21 Aug 2021 by B Venkat Narayan, Head of project division and procurement, Jayaswal Neco Industries Ltd, Raipur.</p> <p>Action 5: Student should practice and understand about carbon neutrality and thus avoid greenhouse gases CO₂, NO_x, SO_x, O₃, CH₄ etc hence mitigate the problem of green house effect and avoid increase in global temperature.</p>			
PO8 Ethics	2.11	1.84	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. Few students are tending to ignore ethics in engineering practices.</p>
Actions:			
<p>Action 1: Workshop on Value education was conducted on 24 Aug 2021 by Mr. Sanjay Chopra UHV Facilitator.</p> <p>Action 2: More examples on ethics to be practiced by students in extra classes.</p> <p>Action 3: Yoga classes are continued to improve the health and moral values.</p>			
PO9 Individual and team work	2.47	2.37	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. There is a scope for the students to improve in their individual performance and team work.</p>
Actions:			
<p>Action 1: Conducted activity “Oxygen Challenge Program by planting the Trees” for students through NSS.</p> <p>Action 2: Conducted activity “Awareness programme on COVID-19” in Haraginadone village for students through NSS.</p> <p>Action 3: A team of students visited Haraginadone village and discussed and identified major issues in the village through LEAD program.</p> <p>Action 4: Students were sent to other colleges and universities to carryout project work and they learnt how to work as a team.</p>			

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PO10 Communication	2.56	2.53	<ol style="list-style-type: none">1. Achieved attainment is close to target and it is at level 3.2. Few students are not having proper communication skills to convey importance of engineering applications.
Actions:			
Action 1: Pre-placement training will be given on group discussion, resume preparing and other communication skills to perform better in interviews.			
Action 2: Students are encouraged to participate in competitive events like essay writing, debate events etc.,			
Action 3: For Few courses one components of IA will be introduced as student seminar/presentation/report documentation.			
PO11 Project management and finance	2.08	1.94	<ol style="list-style-type: none">1. Achieved attainment is close to target and it is at level 3.2. Few students are not having knowledge of importance carrying out project works/cost and group discussions.
Actions:			
Action 1: Workshops to be conducted for students on various technologies and methodologies to manage a project effectively and efficiently with minimum finance.			
Action 2: Project works carried out by final year students much more efficiently and also by cost analysis.			
PO12 Life-long learning	2.16	1.90	<ol style="list-style-type: none">1. Achieved attainment is close to target and it is at level 3.2. For better career prospects, students need to learn continuously to update themselves on recent developments in the field of Mechanical Engineering.
Actions:			

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<p>Action 1: Seminars, technical talks and webinars on recent technologies are arranged in the college for alumni and students.</p> <p>Action 2: For lifelong self-learning, faculty and students were enabled with library resources like e- journals subscriptions and also through VTU consortium</p> <p>Action 3: Workshop on Significance of Small Steps in the Journey of Success was conducted on 26 Nov 2020 by Ranga Rao Desai.</p> <p>Action 4: Workshop on The Role of Mechanical Engineers in a Product Development was conducted on 21 Jun 2021 by Dr. Madeva Nagaral, HAL Bangalore.</p> <p>Action 5: Workshop on Life skills was conducted on 31 Jul 2021 by ISTE Student Chapter.</p> <p>Action 6: Guidance on Job opportunities in IT Industry was conducted on 25 Sep 2021 by ISTE Student Chapter.</p>			
PSO'S Attainment level and Actions for improvement (2020-21)			
PSO1 Create Mechanical Systems	2.23	1.97	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. Students lack confidence in solving real life career in the specific field of mechanical systems.</p>
Actions:			
<p>Action 1: Students are encouraged to involve major percentage by offering more number of projects involving design and / fabrication towards curriculum requirement.</p>			
PSO2 Research On Sustainable	2.01	1.75	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. Students should develop innovative techniques to use sustainable energy and composite materials.</p>
Actions:			
<p>Action 1: Practical approach on optimized use of research skills on energy sources like ethanol, biodiesel and other alternate fuel sources were carried out according to ASTM standards.</p> <p>Action 2: Design and use of composite material was adapted to economically replace various components.</p> <p>Action 3: To improve the performance of an IC engine using alternative fuels for different combustion chambers was carried out at BVB College of engineering, Hubballi.</p>			

**Table 7.2: Program outcome Attainment for 2019 -20 CAYm1:
(Current Academic Year minus one Year)**

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PO'S	Target level	Attainment Level	Observation
PO1 Engineering Knowledge	2.75	2.37	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Students are finding difficult in analysing and solving the core subjects.
Actions			
<p>Action 1: Two days workshop on emerging trends in industrial mechanical softwares and its applications was conducted on 17-18 Sep 2019 by Er. Pradeep Kumar Kallur, Director, Medini, Er. Mohan Prabhu, Technical Head, AEC and students learnt how to apply particular software.</p> <p>Action 2: Webinar on Industry Demands, coding and no coding options, job requirements, career guidance and certifications, 05 Jun 2020 by Prof. Sathyaprema, Web, and cloud projects, worked at IBM.</p> <p>Action 3: More efforts will be put to improve understanding of the basics of core subjects, which are usually confuses the students.</p>			
PO2 Problem Analysis	2.46	2.07	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Some students find difficult to identify and analyze numerical problem.
Actions:			
<p>Action 1: Additional classes to be conducted to solve the engineering problems.</p> <p>Action 2: More diverse problems to be taught in tutorial classes.</p> <p>Action 3: Many Students were able to solve problems on the board using charts and tables.</p> <p>Action 4: Mathematics courses were strengthened by various concepts and examples so that students improved their mathematics applications.</p>			
PO3 Design/ Development of Solutions	2.25	1.92	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Students are not exposed to issues related complex problems, safety, health and environmental considerations.
Actions			
<p>Action 1: Subjects were taught with the help of NPTEL video presentation.</p> <p>Action 2: More thermal and design classes were taken and concepts explained with the help of physical models.</p> <p>Action 3: Extra thermal and design classes were taken and few students were able to explain and solve some problems in tutorial classes using charts and tables.</p>			

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PO4 Conduct investigations of complex problems	2.14	1.80	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Lack of knowledge about research papers and various engineering materials, their properties and hands on experience.
Actions			
<p>Action 1: Students logged in to international journal papers based on syllabus topics. Using the data and properties of materials given in the researches.</p> <p>Action 2: To improve the performance of an IC engine using alternative fuels.</p>			
PO5 Modern tool usage	2.28	2.12	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Students are not using CAD based analysis and software for the project works.
Actions:			
<p>Action 1: Two days workshop on emerging trends in Industrial Mechanical Software's and its applications was conducted on 17-18 Sep 2019 by Er. Pradeep Kumar Kallur, Director, Medini, Er. Mohan Prabhu, Technical Head, AEC.</p> <p>Action 2: CADMAXX webinar was carried out by resource person Ashwin R L on 28 Mar 2020.</p> <p>Action 3: Webinar on Industry Demands, coding and no coding options, job requirements, career guidance and certifications, 05 Jun 2020 by Prof. Sathyaprema, Web, and cloud projects, worked at IBM.</p> <p>Action 4: CADMAXX webinar was carried out on Electrical Wire Harness Design Using CATIA V5 by resource person V Bernad Raja, Consulting Learning Expert, CADMAXX Solution, Bangalore on 29 Jun 2020.</p> <p>Action 5: In internship and training programs were continued for final year students were shown working of multi axis milling machine and industrial Robot (welding carried out) both procured from TATA Technologies Ltd., Pune.</p>			
PO6 The engineer and society	1.98	1.81	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Students are not aware that they are the part of the society, and they are studying engineering to serve the society and pollution effect on health.
Actions:			

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<p>Action 1: Created awareness to public on Digitalization was conducted on 20 May 2019 by LEAD Team.</p> <p>Action 2: Adopted a backward mining affected Janekunte Village, Near Ballari on 20 May 2019 by LEAD Team.</p> <p>Action 3: Voluntary Blood donation camp in Association with HDFC bank and Swami Vivekananda Blood bank was conducted on 21 Nov 2019 by NSS unit.</p>			
PO7 Environment and sustainability	1.95	1.78	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. Students lack on case studies to analyse the problems of technology and suggest remedies for sustainable development.</p>
Actions:			
<p>Action 1: Three day Industrial visit to Varahi plant, Udupi was successfully conducted on 24th to 26 Oct 2019.</p> <p>Action 2: Developments in Reducing Environmental Pollution: Bio-Fuels& Thermo acoustic Refrigeration was conducted on 29-31 Jul 2020 by Dr. B G Prashantha Dept of ME, JSSATE, B'lore Dr. Hiregoudaru Yerrannagoudaru and Dr. Manjunatha Kondikal, RYMEC, Ballari.</p> <p>Action 3: Student should practice and understand about carbon neutrality and thus avoid greenhouse gases CO₂, NO_x, SO_x, O₃, CH₄ etc hence mitigate the problem of green house effect and avoid increase in global temperature. Seminars were conducted for students by showing the NPTEL videos on climate change. By this students understood, if accumulation of CO₂ is not controlled how it leads to landslides, floods and melting of polar ice drowning low lying areas etc.</p>			
PO8 Ethics	2.12	1.84	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. Students lack in norms of engineering practice.</p>
Actions:			
<p>Action 1: Career orientation program on industry expectations from young engineers was carried out on 22 Nov 2019 by resource person Dr. Binoy Mathew, Director, CPC, VTU Bangalore.</p> <p>Action 2: Workshops were conducted on ethics so that students came to know how to improve personal performance in life, studies and duties as a citizen by inviting Seers and Pontiffs as resource persons.</p> <p>Action 3: Yoga classes are conducted to improve the health and moral values.</p>			
PO9 Individual and team work	2.47	2.27	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. Sometimes it is observed that correlation is absent among the team members (students).</p>
Actions:			

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<p>Action 1: Involved in activity “Created awareness to public on Digitalization” through LEAD.</p> <p>Action 2: Conducted activity “Adopted a backward mining affected Janekunte Village, Near Ballari” through LEAD.</p> <p>Action 3: Three days Industrial visit to Varahi Hydro Electric Power, Hosangadi, Sharavathy Generating Station, Jog Falls, Karnataka, Students learnt the working and performance of Kaplan and Francis hydraulic turbines.</p> <p>Action 4: Involved in activity “Voluntary Blood donation camp in Association with HDFC bank and Swami Vivekananda Blood bank” through NSS</p> <p>Action 5: Students were sent to other colleges and universities to carryout project work and they learnt how to work as a team.</p>			
PO10 Communication	2.76	2.63	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. Communication is most important parameter to express and majority of our students are from rural areas which requires lot of improvement.</p>
Actions:			
<p>Action 1: Career orientation program on industry expectations from young engineers was carried out on 22 Nov 2019 by resource person Dr. Binoy Mathew, Director, CPC, VTU Bangalore.</p> <p>Action 2: Webinar for the students on “Building Successful Career through Portals of RYMEC was conducted on 29 May 2020 by resource person Prof. Madhav Murthy, BMSCE, Bengaluru.</p> <p>Action 3: Orientation program for Students from Mercedes Benz was carried out by resource person on Jan 2020</p> <p>Action 4: Elocution competitions were conducted for students for improving communication skills where they gave seminar on burning topics like COVID 19 problem, Swatch Bharat Abhiyan and terrorism and religious unrest etc.</p> <p>Action 5: Students were encouraged for seminar presentation on advanced topics and report writing.</p> <p>Action 6: Pre-placement training will be given on group discussion, resume preparing and other communication skills to perform better in interviews</p>			
PO11 Project management and finance	2.23	2.11	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. Students are not having knowledge of importance carrying out project works/cost and group discussions.</p>
Actions:			
<p>Action 1: Lateral Thinking Approaches for Problem Solving was conducted on 06 Aug 2020 by resource person Prof. Rashmi Shetty, R V Institute of Management, B’lore.</p> <p>Action 2: Project works carried out by final year students much more efficiently and also by cost analysis.</p>			

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PO12 Life-long learning	2.14	1.89	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Continuous learning is important to build career by updating themselves on current technologies.
Actions:			
<p>Action 1: GATE exam orientation program for VII semester students was conducted on 23 Sep 2019 by resource person Mr. Prathap Choudary, Alumini of RYMEC.</p> <p>Action 2: Career orientation program on industry expectations from young engineers was carried out on 22 Nov 2019 by resource person Dr. Binoy Mathew, Director, CPC, VTU Bangalore.</p> <p>Action 3: Webinar on “Bridge the gap between class atmosphere and work atmosphere and carrier guidance & employability skills” was conducted on 20 Apr and 26 Apr 2020 by resource person Mr. Vijayananda Patil, Retired Air force officer, Mr. Naveen, Inmovidu Industrial training Partner for E-cell, IIT Guwahati.</p> <p>Action 4: Alumni will be invited to share their knowledge and experience for students to build a better career.</p> <p>Action 5: For lifelong self-learning, faculty and students were enabled with library resources like e- journals subscriptions and also through VTU consortium.</p>			
PSO’S Attainment level and Actions for improvement (2019-20)			
PSO1 Create Mechanical Systems	2.13	1.85	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Students have lack of confidence in solving real life career in the specific field.
Actions:			
<p>Action 1: Recent Trends in Robotics was conducted on 20 Aug 2020 by resource person Dr. Mr. R Jishnu, Senior Engineer, Embedded developer, Pantech.</p> <p>Action 2: Modifications in eight-legged walking machine were carried out which is a new mechanical system created in the project work</p> <p>Action 3: Practical approach of developing the systems was adapted where fire extinguishing Robot was developed.</p>			
PSO2 Research On Sustainable Energy	2.01	1.70	<ol style="list-style-type: none"> 1. Achieved attainment is close to target and it is at level 3. 2. Students should know that use of petro fuels was severe pollution thus investigate use of alternate fuels which are eco-friendly and comparatively cheaper. 3. In these days students should carry out research work on composite materials to replace conventional materials used in engineering applications.
Actions:			
Action 1: Bio-Materials & Technology: Recent Trends & Applications in Medical Field was			

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	conducted on 15 Jul 2020 by resource person Dr. Hanumanthraju H G, Dept.of ME, UVCE, Bangalore.
Action 2:	Students were sent to BVB College of engineering, Hubballi, to carry out the project work where they conducted load test on conventional diesel engine at different injection timings and injection pressures with Corn oil Methyl ester as alternative fuel successfully. Thus biodiesels can be taken as sustainable energy sources.

**Table 7.3: Program outcome Attainment for 2018 -19 CAYm2:
(Current Academic Year minus two Years)**

PO'S	Target level	Attainment Level	Observation
PO1 Engineering Knowledge	2.74	2.39	1. Achieved attainment is close to target and it is at level 3.
Actions			
Action 1: C-Programming Training was conducted on 30 Jul 2018 – 01 Aug 2018 by RYMEC.			
Action 2: One Day workshop on Marine Engineering was conducted on 30 Oct 2018 by Prof. Shivasharannaiah Swamy, REVA university B'lore.			
Action 3: More efforts will be put to improve understanding the basics of tough subjects.			
PO2 Problem Analysis	2.44	2.10	1. Achieved attainment is close to target and it is at level 3.
Actions:			
Action 1: Additional classes to be conducted to solve the engineering problems.			
Action 2: Students may be asked to solve problems on the board using charts and tables. If anyone fails to do, time will be given until he solves.			
Action 3: Mathematics courses have to be strengthened so that students improve their math base and applications.			

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PO3 Design/ Development of Solutions	2.30	1.97	1. Achieved attainment is close to target and it is at level 3.
Actions			
Action 1: Three Day Workshop on Engine Technology was conducted on 26 Oct 2016 by Madhusudhan PS, Co-Founder & MD, M/S Rectangle Automotive Technologies LLP, Davangere.			
Action 2: Two Days work Shop on Geometric Dimensions & Tolerances was conducted on 5-6 Oct 2018 by Madhusudhan PS, Co-Founder & MD, M/S Rectangle Automotive Technologies LLP, Davangere.			
Action 3: Extra classes to be taken and students are asked to explain and solve problems in tutorial classes for the subjects using charts and tables.			
PO4 Conduct investigations of complex problems	2.22	1.93	1. Achieved attainment is close to target and it is at level 3.
Actions			
Action 1: Students should be exposed to international journal papers covering our syllabus topics. Using the data and properties of materials given in the researches, more examples on thermal and design to be carried out.			
PO5 Modern tool usage	2.29	2.13	1. Achieved attainment is close to target and it is at level 3.
Actions:			
Action 1: One day awareness program on Technical Publication was conducted on 24 Mar 2018 by M/S AAPTA in association with Vision Software Solutions.			
Action 2: Awareness Program on CAD, CAM & CAE was conducted on 29 Sep 2018 by Mr. Ashwin Kumar, Senior Trainee CAD MAX B'lore, Mr. Sanjeev Kumar, Mono Tech, Chennai.			
Action 3: Three days workshop on Overview in Aerospace Domain by VTU on 5th to 7th March 2019.			

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PO6 The engineer and society	2	1.83	1. Achieved attainment is close to target and it is at level 3.
Actions:			
Action 1: Awareness Program on Automation Technology by Voltspace Technology Bengaluru on 26th Sep 2018. Action 2: Three days workshop for students “Industrial Safety measures & Regulations” by Mr. Suresh Kumar Safety Engineer, JSW Steel Ltd. on 26th to 28 Apr 2019.			
PO7 Environment and sustainability	1.98	1.84	1. Achieved attainment is close to target and it is at level 3.
Actions:			
Action 1: Seminar on ‘Indhan Samrakshan Ki Zimmedari, Jan Gan ki Bhagidari’ was conducted on 13 feb 2017 by Indian Oil Corporation. Action 2: Industrial Visit to M/S. Mcallus, Manufacturers of Orthopedic Implants & Instruments and M/S. HalleysBlue Steels Pvt Ltd, Mundargi Industrial Area, Ballari on 09 May 2018. Action 3: Blood Donation at VIMS, Ballari on 26 Sep 2018 by Lead Team. Action 4: Swatch Bharath at Cantonment Railway Station on 02 Oct 2018 by Lead Team. Action 5: Industrial Visit to BTPS, Ballari on 29 Oct 2018. Action 6: Industrial Visit to JSW, Ballari on 10 Nov 2018.			
PO8 Ethics	2.12	1.83	1. Achieved attainment is close to target and it is at level 3.
Actions:			
Action 1: One day invited talk on “Reengineering- The Life Style” 01 Apr 2017 by Sri. Swamy Chidrupananda Saraswati. Action 2: Workshops to be conducted on ethics. Action 3: Yoga classes are conducted to improve the health and moral values.			
PO9 Individual and team work	2.43	2.26	1. Achieved attainment is close to target and it is at level 3. 2. Co-ordination is very important among the students when they work as a team.
Actions:			

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<p>Action 1: Students were taken for industrial visit to M/S. Mcallus, Manufacturers of Orthopedic Implants & Instruments and M/S. HalleysBlue Steels Pvt Ltd, Mundargi Industrial Area, Ballari.</p> <p>Action 2: Students were taken for industrial visit to JSW, Ballari</p> <p>Action 3: Students were taken for industrial visit to Bellary thermal power station, Ballari</p> <p>Action 4: Students were actively involved in “Swatch Bharath Abhiyaan” by cleaning the Cantonment Railway Station, Ballari through LEAD.</p> <p>Action 5: Conducted Blood Donation camp in association with VIMS, Ballari</p>			
PO10 Communication	2.68	2.59	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. It is observed that students need effective communication skills to convey importance of engineering applications.</p>
Actions:			
<p>Action 1: Students Induction program UVH was conducted for two weeks.</p> <p>Action 2: Zonal Level Mechanical Techno-Cultural fest - IRONICA, conducted for Students by Dept. of Mechanical Engg., RYMEC on 14th to 16th Nov 2018.</p> <p>Action 3: One day awareness program on Technical Publication was conducted.</p> <p>Action 4: Soft skills training were conducted to improve communication and other skills to perform better in interviews.</p>			
PO11 Project management and finance	2.23	2.08	<p>1. Achieved attainment is close to target and it is at level 3.</p>
Actions:			
<p>Action 1: One day workshop on Startup Entrepreneurship & Capital funds was conducted on 10 Mar 2018 by Sri. Manish Kumar, VP, KAMC-B'lore.</p> <p>Action 2: Workshops to be conducted for students to teach them the various technologies and methodologies to manage a project effectively and efficiently with minimum finance.</p> <p>Action 3: Lectures by expert professionals will be arranged, focusing on these aspects.</p>			
PO12 Life-long learning	2.14	1.88	<p>1. Achieved attainment is close to target and it is at level 3.</p> <p>2. It is essential to inculcate life-long learning skills to sustain in current technological changes.</p>
Actions:			

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<p>Action 1: One day workshop was conducted on Startup Entrepreneurship & Capital funds.</p> <p>Action 2: Conducted one day seminar on Awareness Program on CAD, CAM & CAE.</p> <p>Action 3: One day invited talk was conducted on Carrier Guidance on Higher Studies in abroad.</p> <p>Action 4: Three days workshop was conducted on Overview in Aerospace Domain.</p> <p>Action 5: Three days workshop was conducted for students “Industrial Safety measures & Regulations”.</p> <p>Action 6: For lifelong self-learning, faculty and students were enabled with library resources like e- journals subscriptions and also through VTU consortium.</p>			
PSO’S Attainment level and Actions for improvement (2018-19)			
PSO1 Create Mechanical Systems	2.15	1.85	1. Achieved attainment is close to target and it is at level 3.
Actions:			
<p>Action 1: Practical approach of developing the systems to be adapted.</p> <p>Action 2: Few batches of students were sent to BVB College of engineering, Hubballi, to carry out the project work where they developed and installed innovative mechanical system Common rail direct injection system (CRDI). They conducted experiment also on that system using bio diesel of Honge oil.</p> <p>Action 3: Students were asked to carry out various projects by using research skills so that they will learn to apply modifications and innovations to the existing mechanical systems.</p>			
PSO2 Research On Sustainable Energy	2.03	1.68	1. Achieved attainment is close to target and it is at level 3.
Actions:			
<p>Action 1: Practical approach on optimized use of research skills on energy sources like ethanol, biodiesel and other alternate fuel sources to be carried out according to ASTM and other standards.</p> <p>Action 2: Students were asked to design and use of composite materials to economically replace various components of any machinery.</p>			

7.2	Academic Audit and Action Taken therefore during the period of Assessment	10
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Academic Auditing

Academic Audit Report for the Academic Year 2018-19 to 2020-21

The Academic Audit is a faculty-driven model of ongoing self-reflection, collaboration, team work and peer feedback. It is based on structured conversations among faculty and peer reviewers all focused on a common goal to improve quality processes in teaching and learning and thus enhance student success.

Objectives of Academic Auditing:

1. To enhance the teaching and learning process and to ensure quality of technical education throughout the system
2. To take care functionalities of technical education.
3. To motivate teachers to adopt and use of ICT in teaching, learning process.
4. To provide feedback mechanism used for assessing the performance of teachers by students and for curricular development.
5. To provide Computer, internet and library facilities available.
6. To device Mentoring system...etc

Academic audits are conducted in order to monitor and evaluate the teaching learning process. Audits are conducted for teaching learning process, laboratory maintenance and departmental activities.

The Internal Quality Assurance Cell (IQAC) as per the guidelines of NACC and UGC, whose major responsibility is to conduct periodical audits and take corrective/preventive measures for assuring/improving the academic performance.

Audit Process and its implementation:

1. Dr. Veeragangadhara Swamy T.M, Professor of Computer Science & Engineering is the IQAC Convener. He with the consensus of the Principal and IQAC members constitutes a committee for assessing the academic performance of the different departments.
2. Academic audit is conducted for every year and the details are mentioned below:

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Table7.4: Audit Details

Sl. No.	Audit Date	Audit Members	Remarks
01	12/06/2017	1. Mr. Raghu Kumar K S, Assistant Professor, Dept. of CSE, RYMEC, Ballari. 2. Mr. Shiva Kumar V, Assistant Professor, Dept. of CSE, RYMEC, Ballari.	NBA Internal audit Committee
02	19/12/2018	1. Dr. Mohamed Rafi, Professor, Dept. of CSE, UBBDT, Davangere.	Academic audit by IQAC
03	28/06/2019	1. Dr. Girish H, Professor, Dept. of CSE, RYMEC, Ballari. 2. Mr. Shiva Kumar V, Asst Prof, Dept. of CSE, RYMEC, Ballari.	NBA Internal audit Committee
04	16/09/2019	1. Dr. Veeragangadhara Swamy T.M, Professor, Dept. of CSE, RYMEC, Ballari. 2. Mrs. Rakhee Patil, Professor, Dept. of ECE, RYMEC, Ballari. 3. Mr. Shivananda K B, Assistant Placement Officer, RYMEC, Ballari.	Administrative audit by IQAC
05	04/11/2019	1. Dr. Prashanth B.G, Professor, Dept. of Mechanical Engineering, JSS academy of Technical Education, Bengaluru. 2. Dr. Bhimasen Soragaon, Professor, Dept. of Mechanical Engineering, JSS academy of Technical Education, Bengaluru.	Academic audit by IQAC
06	12/10/2020	1. Dr. H.M. Mallikarjuna, Professor, Dept. of Civil Engineering, RYMEC, Ballari. 2. Dr. Kotresh S, Professor, Dept. of EEE, RYMEC, Ballari.	NBA Internal audit Committee
07	25/06/2021	1. Dr. Yadavalli Basavaraj, Professor, Dept. of Mechanical Engineering, BITM, Ballari. 2. Dr. Raghavendra Joshi, Professor, Dept. of Mechanical Engineering, BITM, Ballari.	NBA External audit Committee

Faculty audit: The following are the records of the faculty members that are verified during the internal academic audits.

- Calendar of Events.
- Lesson Plan, Execution Plan.
- Syllabus, Attendance Registers.
- Individual Time Table.

- IA Question Paper, Scheme of Evaluation and Assignment Questions.
 - Model Question Papers, Previous University Question Papers.
 - Lab Records, Lab Manuals, Ledger
 - Course File
 - Personal File
 - Remedial and Tutorial Class Records.
 - Result Analysis
 - Counseling and Mentoring Records.
 - Additional Resources to Students (Notes, PPT, Etc.)
 - Co-Curricular Activities: Seminar/Conference/Workshop/Guest Lecture Conducted And Attended.
 - Industrial Visits, Faculty Achievements: Paper publications, Books etc.
 - Feedback mechanism for assessing the Teaching-Learning Process.
3. Audit committee submits the report of audit to the IQAC Convener and also shares it with the concerned Head of the Department.
 4. IQAC Convener and members do the analysis of the report and initiates the corrective measures as necessary with the department.
 5. The Head of the department discuss the audit findings with the faculty and prepares plan of action in the DAC meeting for addressing any concern(s) identified by the auditor.
 6. Department Submits the Action taken report with respect to audit report to IQAC.

Corrective Measures for the improvement of academic performance:

Feedback from students – Course Exit Survey: A questionnaire about the course is prepared by the course coordinator and the program - coordinator for the students. This serves as a feedback at end of the semester to gauge the degree of attainment of POs and PSOs.

Feedback from parents: The Program coordinator will collect the feedback from parents about their experience and their wards opinion on the program. This activity is carried out once in every semester for the betterment of the system.

Feedback from the academic/industry experts: Curriculum reviews by Industry/Academic experts provide a broad-based internal and external feedback regarding the relevance and organization of a program's curriculum. Their feedback serves as an evidence for assessing significant changes (individual course competencies) required within a program when the change is inevitable.

Feedback from Alumni: A questionnaire is prepared by the program and course coordinator and is given to the alumni. It will be done once in every year on August 15 to gauge the degree of attainment of POs and PSOs. Open ended questions/experiments in the lab Open ended questions are designed for which students formulate meaningful solutions using subject knowledge. These open-ended questions tend to be more objective and less leading than closed-ended questions.

7.3	Improvement in Placement, Higher Studies and Entrepreneur	10
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Assessment is based on improvement in:

- ❖ Placement: number, quality placement, core industry, pay packages etc.
- ❖ Higher studies: performance in GATE, GRE, GMAT, CAT etc., and admissions in premier institutions.

7.3.1	Placement Details:
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Table 7.5: Placement Details for 2017-18

Sl. No.	Name of the Company	Total No. of Students	Pay Package/Annum in Rs.	Average Pay Package/Annum in Rs.
1.	Bhuvalka Pipes	01	280000	
2.	Shriram Transport	07	244920	
3.	Vee Technologies	03	150000	
4.	Pin Click	06	240000	
5.	International Electro Mechanical Services	01	300000	
6.	TCS	11	336875	
7.	Bosch	01	300000	
8.	Tasmai	01	144000	
9.	Mcallus	01	360248	
10.	Capgemini	01		

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11.	BMM Ispat	05		
12.	Yantra Digital	01	19200	
13.	Linde India			
14.	Wipro	02	56000	
15.	Agility	01		
16.	Rivigo	03		
17.	Halleys Blue	03	282115	

Table 7.6: Placement Details for 2018-19

Sl. No.	Name of the Company	Total No. of Students	Pay Package/Annum in Rs.	Average Pay Package/Annum in Rs.
1.	24/7	02		Rs.40940/-
2.	JSW Core	05	226000	
3.	Shriram Transport	07	244920	
4.	TATA Motors	01	200000	
5.	Infosys	01	300000	
6.	TCS	02	336875	
7.	Universal Education	02	360000	
8.	Vishal International	02	144000	
9.	Proficient KILN	01		
10.	Design Tech Systems	01		
11.	CAP Gemini	01		
12.	TATA Technologies	03		
13.	Team Lease	01		
14.	Halleys Blue	01		
15.	VOGO Automotive	01		
16.	Wistran	01		
17.	BYJU'S	01		
18.	Water Resource Dept	01		
19.	AAA Infra Pvt Ltd	01		

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Table 7.7: Placement Details for 2019-20

Sl. No.	Name of the Company	Total No. of Students	Pay Package/Annum in Rs.	Average Pay Package/Annum in Rs.
1.	SLK Softwares	05	320000	Rs.97532/-
2.	TCS	04	336875	
4.	Infosys	01	300000	
5.	Hyosong Electric	14	325000	
6.	No Broker	01	480000	
7.	Sunfra	01	240000	
8.	ZKTECO	01	300000	
9.	JSSL Group	04	316008	
10.	TATA Technologies	03		
11.	JSSL	04		
12.	Hyundai KIA	01		
13.	HUDL	01	300000	
14.	HCL	03	350000	
15.	Freenkart	08	325000	
16.	BYJU's	02	1000000	
17.	Bosch	01		
18.	Strucol	01		
19.	Man Power Group Services	01		

Table 7.8: Placement Details for 2020-21

Sl. No.	Name of the Company	Total No. of Students	Pay Package/Annum in Rs.	Average Pay Package/Annum in Rs.
1.	PVH Software Solutions	01	289000	Rs. 105096/-
2.	Maveric Systems	01	400000	
3.	Halleyes Blue	01	126000	
4.	BYJU's	03	1000000	
5.	Inmovidu Technologies	18	300000	
6.	TCS	01	336875	
7.	L & T INFOTECH	01	352000	
8.	Verzeo	05	300000	
9.	CAP Gemini	01	300000	

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10.	TATA Technologies	05	300000	
11.	JSW	01	500000	
12.	Urban Council India	01		
13.	Archance	01		

The average pay package per annum for the academic year 2017-2018 is Rs.54044/- for the academic year 2018-2019 is Rs.40940/-for academic year 2019-20 is Rs.97532/- and for the academic year 2020-21 according to available data till date the average pay package is Rs. 105096/-still placements are going on and more improvement in placements can be observed, further it is concluded that there is a improvement in placements every year.

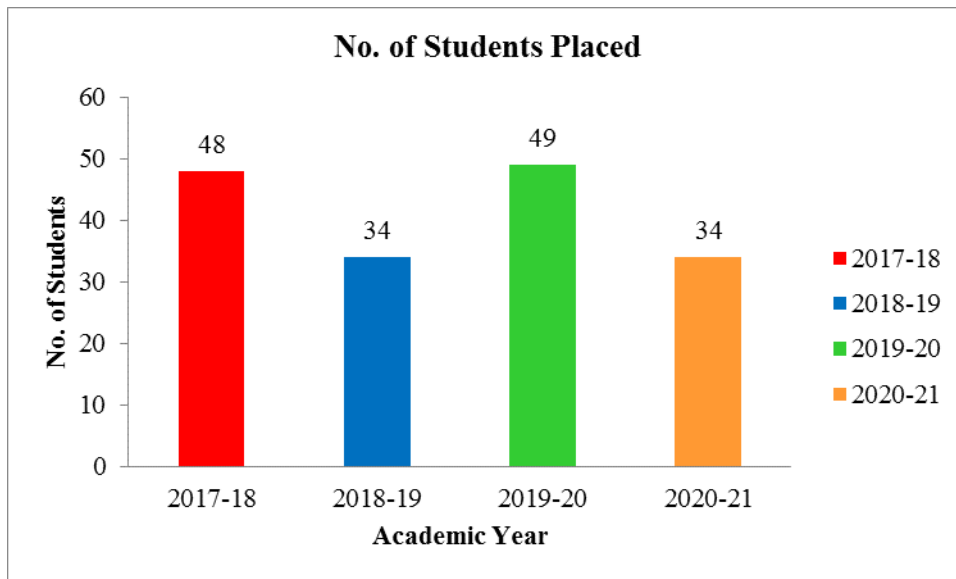


Fig. 7.1: No. of Students Placed

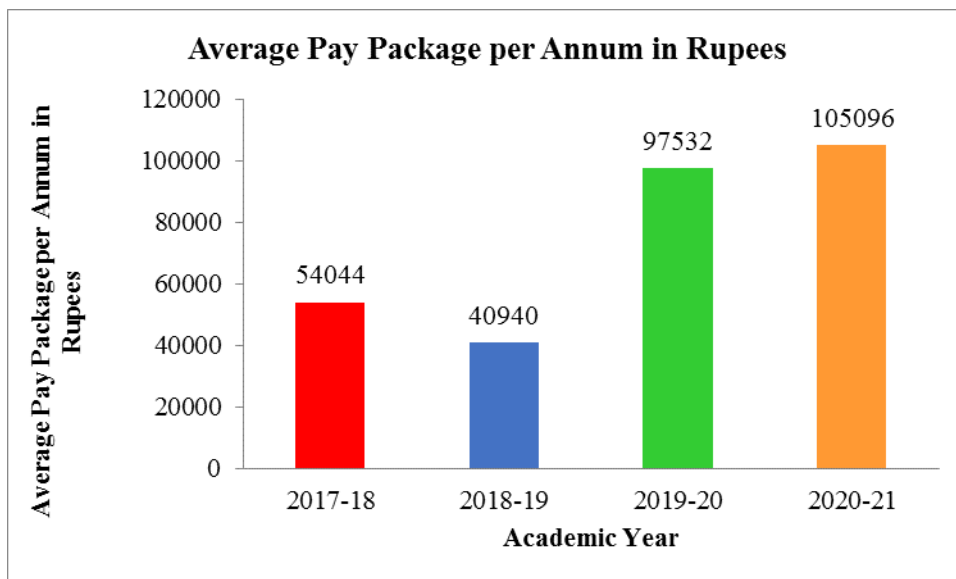


Fig. 7.2: Average Pay Package per Annum in Rupees

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7.3.2 Higher Studies:

Table 7.9: Higher Studies 2017-18

Sl. No.	Name	USN	College Name
1.	Gireesh Agrahara K S	3VC14ME028	M.Tech - VTU
2.	Md. Mushtaq	3VC14ME056	M.Tech – PESIT, Bangalore
3.	Vinaykumar J	3VC14ME120	M.Tech - VIT Vellore
4.	Abhishek B R	3VC14ME003	MBA – M S Ramaiah, Bangalore
5.	Pramod S V	3VC14ME069	JSS University, Mysore

Table 7.10: Higher Studies 2018-19

Sl. No.	Name	USN	College Name
1	Syed Meheboob Pasha	3VC15ME111	M.Tech - University of Visveswaraya College of Engineering, Bangalore.
2	G Rajavikram	3VC15ME127	M.Tech - M S Ramaiah University of Applied Sciences, Bangalore.

Table 7.11: Higher Studies 2019-20

Sl. No.	Name	USN	College Name
1.	NA	NA	NA

Table 7.12: Higher Studies 2020-21

Sl. No.	Name	USN	College Name
1	Admissions not yet started		

Our students have appeared in various competitive exams for higher studies, and have opted for premier institutions. Thus there is an improvement in this category.

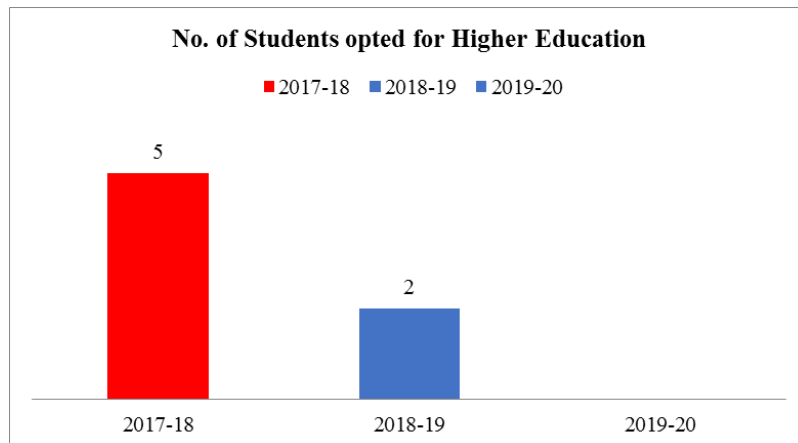


Fig. 7.3: No. of Students opted for Higher Education

7.3.3 Entrepreneur:

Sl. No.	Year	Entrepreneur
1.	2018-21	Nil

7.4 Improvement in the quality of students admitted to the programme 10

Assessment is based on improvement in terms of ranks / score in qualifying state level / national level entrances tests, percentage Physics, Chemistry and mathematics marks in 12th standard and percentage marks of the lateral entry student.

7.4.1 Total No. of Students Admitted to the Program

Table 7.13: Total No. of Students Admitted to the Program

ITEM	CAY 2020-21	CAY 2019-20	CAY 2018-19
K-CET Examination: No. of students admitted	19	44	70
Lateral Entry: No. of Students admitted (Diploma – CET)	80	71	65
Total No. of students admitted to the program	99	115	135

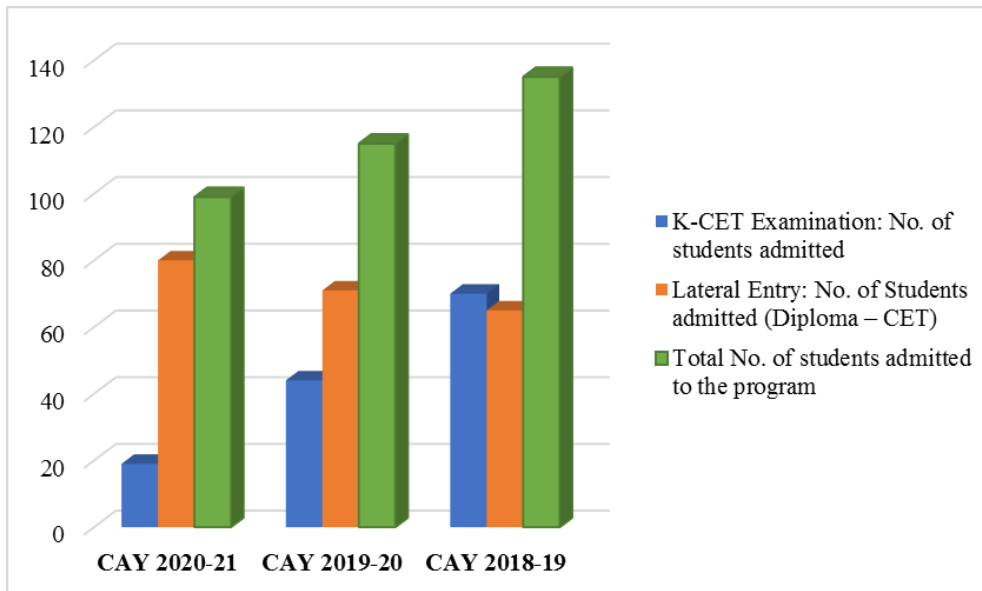


Fig. 7.4: Number of Students Admitted to the Program

7.4.2 Consolidated CET Rank Details (PUC)

Starting Rank and Ending Rank of the Students Admitted to the program

Table 7.14: PUC Consolidated CET Rank Details 2017-18 to 2020-21

Sl. No.	Academic Year	Starting Rank (PUC)	Ending Rank (PUC)
1	2017-18	31413	156818
2	2018-19	13186	142154
3	2019-20	48908	207138
4	2020-21	37136	114653

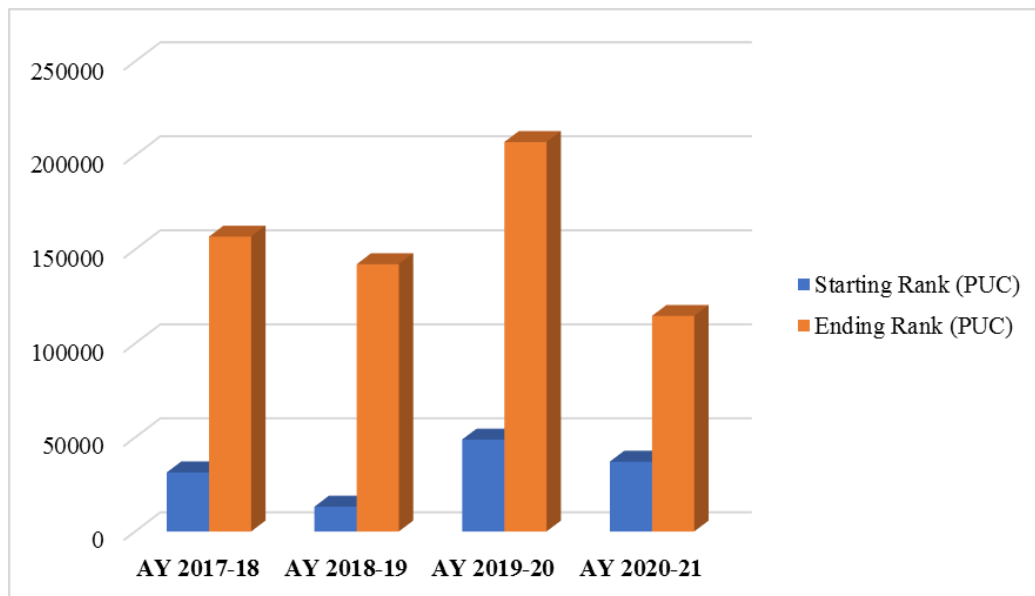


Fig. 7.5: PUC Consolidated CET Rank Details 2017-18 to 2020-21

7.4.3 Lateral Entry Students List for the Academic Year: - 2017-18 TO 2020-21

Table 7.15: Lateral Entry CET Rank Details 2017-18 to 2020-21

Sl. No	Academic Year	Starting Rank (LE)	Ending Rank (LE)
1	2017-18	206	15447
2	2018-19	365	13169
3	2019-20	1374	8707
4	2020-21	405	14740

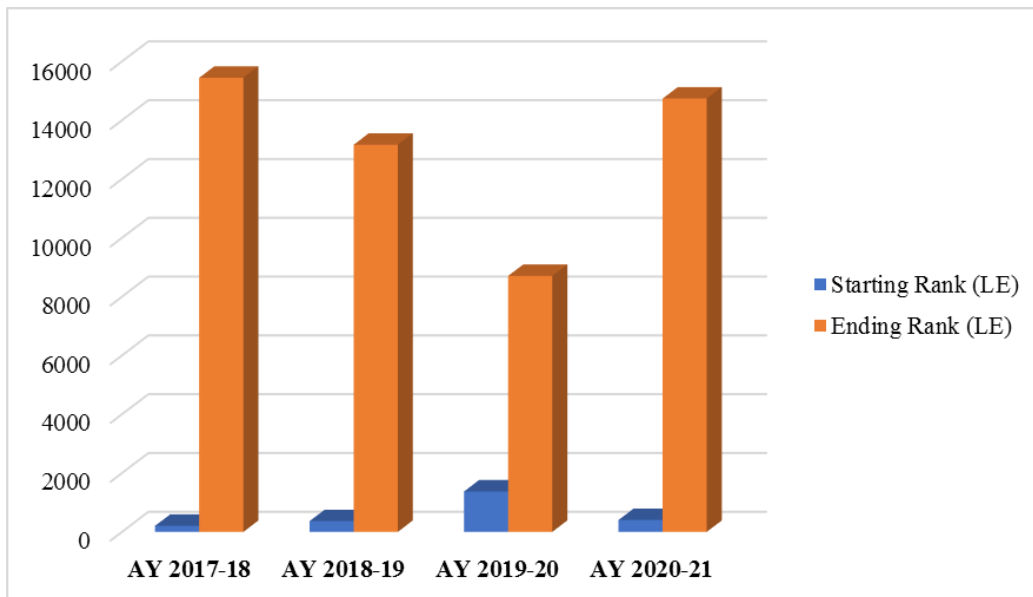


Fig. 7.6: Lateral Entry CET Rank Details 2017-18 to 2020-21

CRITERION 8

CRITERION 8	FIRST YEAR ACADEMICS	50
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8.1	First Year Student-Faculty Ratio (FYSFR)	05
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Data for first year courses to calculate the FYSFR:

Table 8.1: First year Student Faculty Ratio

Year	Number of students (approved intake strength)	Number of faculty members (considering fractional load)	FYSFR	*Assessment = (5 × 20)/ FYSFR (Limited to Max. 5)
2020-2021	760	34	22.35	4.47
2019-2020	760	34	22.35	4.47
2018-2019	760	39	19.48	5.00
<i>Average</i>	760	35.66	21.40	4.65

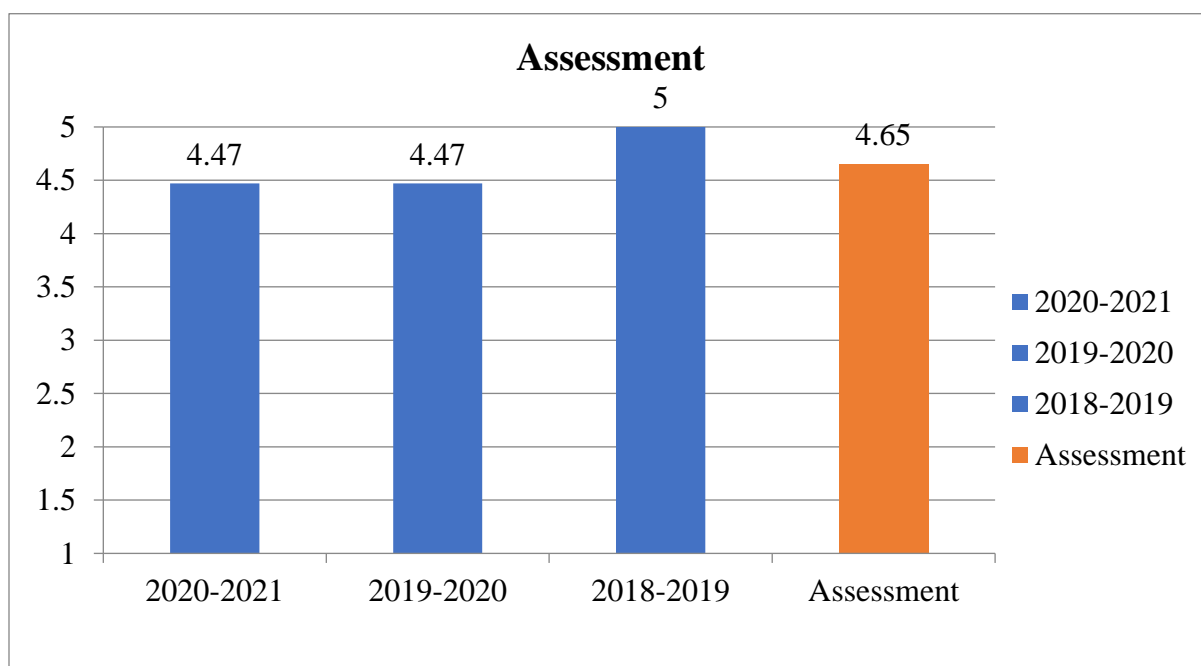


Fig. 8.1: First Year Student Faculty Ratio

8.2	Qualification of Faculty Teaching First Year Common Courses	05
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Assessment of qualification = $(5x+3y)/RF$, x = Number of Regular Faculty with Ph.D., y = Number of Regular Faculty with Post-graduate qualification RF = Number of faculty members required as per SFR of 20:1, Faculty definition as defined in 5.1.

Table 8.2: Qualification of Faculty Teaching First Year Common Courses

Year	x	Y	RF	Assessment of faculty qualification $(5x + 3y)/RF$
2020-2021	9	25	38	3.16
2019-2020	9	25	38	3.16
2018-2019	8	31	38	3.50
Average Assessment				3.27

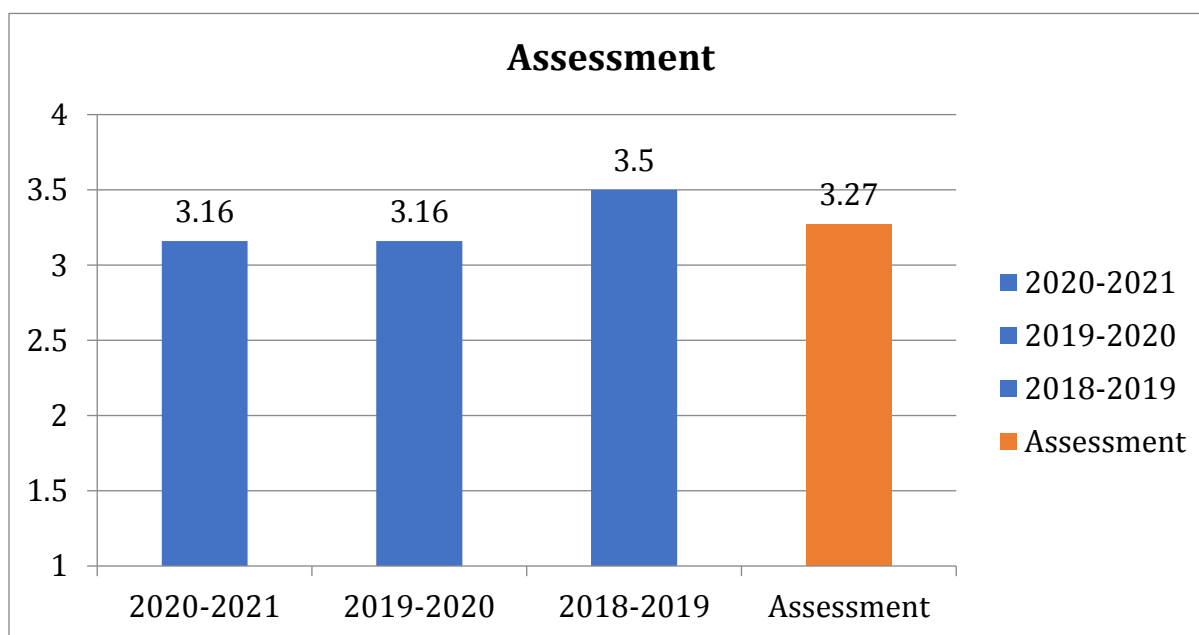


Fig. 8.2: Qualification of Faculty Teaching First Year Common Courses

8.3	First Year Academics Performance	10
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- Academic Performance = ((Mean of 1st Year Grade Point Average of all successful Students on a 10-point scale) or (Mean of the percentage of marks in First Year of all successful students/10)) x (number of successful students/number of students appeared in the examination)
- Successful students are those who are permitted to proceed to the second year.

Table 8.3: First Year Academics Performance

Academic Performance	2020-2021	2019-2020	2018-2019
Mean of CGPA or Mean Percentage of all successful student (X)	6.91	6.78	6.47

Total Number of successful students (Y)	372	457	391
Total number of students appeared in the examination (Z)	380	457	503
API [X * (Y / Z)]	6.76	6.78	5.03

Average API [(AP1+ AP2+ AP3)/3] = 6.19

Assessment [1.5 * Average API] = 9.28

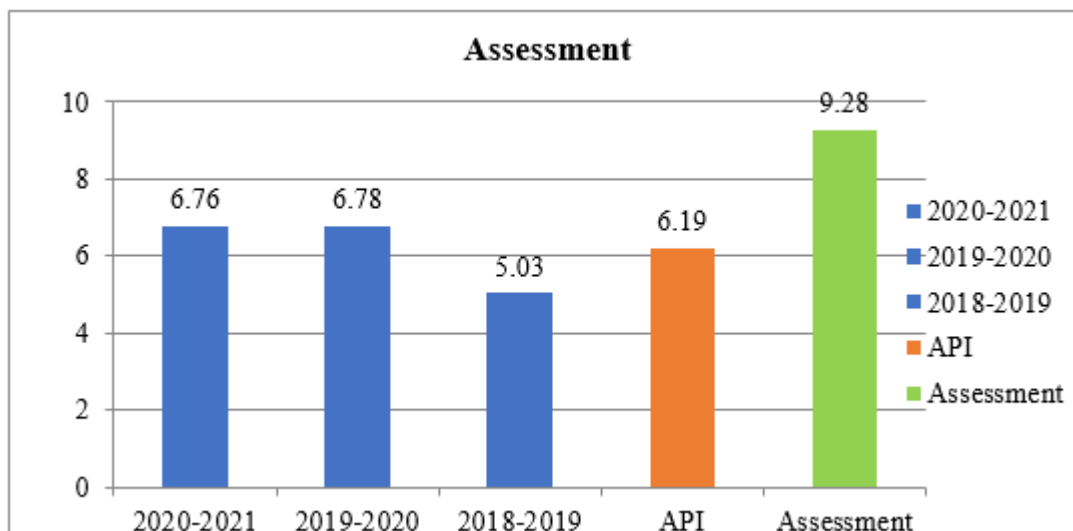


Fig. 8.3: First Year Academics Performance

8.4	Attainment of Course Outcomes of first year courses	10
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8.4.1	Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome of first year is done	05
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Procedure for calculation of grades for the academic year 2019-20 even semester:

As per the University Circular Ref No VTU/BGM/Reg (E)/PS/2020-2021/298 dated 31 July 2020, following is the method of calculation of grades for the students of 2019-20 even semester:

1. CIE marks of each course of current even semester shall be scaled to a maximum of 50.
2. SEE marks of all credit courses of the preceding odd semester shall be scaled to a maximum of 50 and then averaged. If a student has remained absent in the preceding semester, the SEE marks for that course shall be taken as zero.

3. The calculated average SEE marks shall be taken as the SEE marks for each course of the current even semester.
4. The minimum average SEE marks for passing shall be 10/50.
5. Regulations applicable to minimum CIE, SEE and total marks for the current even semester shall be as per applicable regulations.
6. Total marks for any course of the current even semester shall be the sum of CIE of the current semester (scaled to a maximum of 50 marks) and average SEE marks (scaled to a maximum of 50 marks) of all the credit courses of the preceding odd semester.
7. Grades shall be assigned based on the applicable regulations.

Where marks require scaling, fractional marks shall be rounded up to the next larger integer.

Academic Year 2020-21 and 2019-20

Table 8.4: Mode of Evaluation: Online / Offline for the Academic Year 2020-21 and 2019-20

2020-21 and 2019-20	<ul style="list-style-type: none">• Three internal online tests for a minimum mark of 50 are conducted and is reduced to 30 marks, average of three internals is considered. The remaining 10 marks shall be awarded based on the evaluation of assignment / unit tests / written quizzes that support to cover some of the course / program outcomes and added to the average internal assessment test marks. The final marks out of 40 are considered as CIE marks.• The performance of a student in internal assessment with respect to the CO's is recorded.• End semester university exam performance of student for the maximum marks of 100 is conducted. 60 % of the marks are considered as external exam performance.• The summation of these two performances of student is considered as cumulative assessment for a prescribed course outcome.• Continuous Internal Evaluation (CIE) and Semester End Examinations (SEE) to constitute the major evaluation prescribed for each course. SEE and CIE to carry 60 % and 40 % respectively, to enable each course to be evaluated for 100 marks, irrespective of its credits.• For laboratory assessment, the performance of a student in conduction of each experiment, final lab internal test and lab exam is considered. Marks are awarded by SEE and CIE to carry 60 % and 40 % respectively.• For the academic year 2020-21 and 2019-20 Even Semester, due to Covid-19 SEE have not been conducted by the University. Previous
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semester i.e.,2019-20 Odd Semester SEE results are considered after converting from 60 to 50 marks. Results for the academic year 2020-21 even semester are yet to be announced by the University.

2018-19: CBCS Scheme

Semester	Assessment	Marks
ODD	IA Test	50 MARKS (Reduced to 30 Marks)
	Assignment / Quiz / Test	10
	Total for IA	40
	Semester End Exam (SEE)	60 MARKS (100 Marks reduced to 60%)
	Total	100
EVEN	IA Test	50 MARKS (Reduced to 30 Marks)
	Assignment / Quiz / Test	10
	Total for IA	40
	Final IA converted to 50 from 40 marks	50
	Semester End Exam (SEE) (Not conducted due to COVID-19)	50 MARKS (Considered from 2019-20 ODD Semester results, converted from 60 to 50 marks.)
	Total	100

Course Attainment Procedure 2020-21 and 2019-20

Table 8.5: Course Attainment Procedure 2020-21 and 2019-20

DIRECT ATTAINMENT
Attainment tools used for Direct Attainment are
<ol style="list-style-type: none">1. Continuous Assessment Online/Offline Tests2. Assignments3. Semester End Examination
1. Internal Assessment Test – 30% Weightage to internal Assessment
<ul style="list-style-type: none">• 60 % of students score more than 60 % marks out of the relevant marks.• 70 % of students score more than 60 % marks out of the relevant marks.• 80 % of students score more than 60 % marks out of the relevant marks.

<p><u>Attainment Level 1:</u> 60 % of students score more than or equal to 18 marks out of the 30 marks.</p> <p><u>Attainment Level 2:</u> 70 % of students score more than or equal to 18 marks out of the 30 marks.</p> <p><u>Attainment Level 3:</u> 80 % of students score more than or equal to 18 marks out of the 30 marks.</p>
<p>2. Final Examination – 70 % of weightage to Final Examination</p>
<ul style="list-style-type: none"> • 60 % of students score more than 45 % marks out of the relevant marks. • 70 % of students score more than 45 % marks out of the relevant marks. • 80 % of students score more than 45 % marks out of the relevant marks.
<p><u>Attainment Level 1:</u> 60 % of students score more than or equal to 27 marks out of the 60 marks (for even semester 23 marks out of the 50 marks).</p> <p><u>Attainment Level 2:</u> 70 % of students score more than or equal to 27 marks out of the 60 marks (for even semester 23 marks out of the 50 marks).</p> <p><u>Attainment Level 3:</u> 80 % of students score more than or equal to 27 marks out of the 60 marks (for even semester 23 marks out of the 50 marks).</p> <p><u>Not Attained: < 60 %</u></p>
<p>3. Assignment</p>
<ul style="list-style-type: none"> • 60 % of students score more than or equal to 60 % marks out of the relevant marks. • 70 % of students score more than or equal to 60 % marks out of the relevant marks. • 80 % of students score more than or equal to 60 % marks out of the relevant marks.
<p><u>Attainment Level 1:</u> 60 % of students score more than or equal to 06 marks out of the 10 marks.</p> <p><u>Attainment Level 2:</u> 70 % of students score more than or equal to 06 marks out of the 10 marks.</p> <p><u>Attainment Level 3:</u> 80 % of students score more than or equal to 06 marks out of the 10 marks.</p>

Academic Year 2018-2019

Table 8.6: Mode of Evaluation: Offline for the Academic Year 2018-2019

2018-19	<ul style="list-style-type: none"> • Three internal tests for a minimum mark of 50 is conducted and reduced to 30 marks, average of three internals is considered. The remaining 10 marks shall be awarded based on the evaluation of assignment / unit tests / written quizzes that support to cover some of the course / program outcomes and added to the average internal assessment test marks. The final marks out of 40 is considered as CIE marks. • The performance of a students in internal assessment with respect to the
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	<p>CO's is recorded.</p> <ul style="list-style-type: none"> • End semester university exam performance of students for the maximum marks of 100 is conducted. 60 % of the marks is considered as external exam performance. • The summation of these two performances of student is considered as cumulative assessment for a prescribed course outcome. • Continuous Internal Evaluation (CIE) and Semester End Examinations (SEE) to constitute the major evaluation prescribed for each course. SEE and CIE to carry 60 % and 40 % respectively, to enable each course to be evaluated for 100marks, irrespective of its credits. • For laboratory assessment, the performance of a student in conduction of each experiment, final lab internal test and lab exam is considered. Marks are awarded by SEE and CIE to carry 60 % and 40 % respectively. <p align="center"><u>2018-19: CBCS Scheme</u></p> <table border="1"> <thead> <tr> <th align="center">Assessment</th> <th align="center">Marks</th> </tr> </thead> <tbody> <tr> <td>IA</td> <td align="center">50 MARKS (Reduced to 30 Marks)</td> </tr> <tr> <td>Assignment / Quiz / Test</td> <td align="center">10</td> </tr> <tr> <td>Total for IA</td> <td align="center">40</td> </tr> <tr> <td>External Exam (SEE)</td> <td align="center">60 MARKS (100 Marks reduced to 60%)</td> </tr> <tr> <td>Total</td> <td align="center">100</td> </tr> </tbody> </table>	Assessment	Marks	IA	50 MARKS (Reduced to 30 Marks)	Assignment / Quiz / Test	10	Total for IA	40	External Exam (SEE)	60 MARKS (100 Marks reduced to 60%)	Total	100
Assessment	Marks												
IA	50 MARKS (Reduced to 30 Marks)												
Assignment / Quiz / Test	10												
Total for IA	40												
External Exam (SEE)	60 MARKS (100 Marks reduced to 60%)												
Total	100												

Course Attainment Procedure 2018-2019

Table 8.7: Course Attainment Procedure 2018-2019

DIRECT ATTAINMENT
Attainment tools used for Direct Attainment are
<ol style="list-style-type: none"> 1. Continuous Internal Evaluation 2. Semester End Examinations 3. Assignment
1. Continuous Internal Evaluation – 30% Weightage to internal Assessment
<ul style="list-style-type: none"> • 60 % of students score more than 60 % marks out of the relevant marks.

<ul style="list-style-type: none"> • 70 % of students score more than 60 % marks out of the relevant marks. • 80 % of students score more than 60 % marks out of the relevant marks.
<p><u>Attainment Level 1:</u> 60 % of students score more than or equal to 18 marks out of the 30 marks.</p> <p><u>Attainment Level 2:</u> 70 % of students score more than or equal to 18 marks out of the 30 marks.</p> <p><u>Attainment Level 3:</u> 80 % of students score more than or equal to 18 marks out of the 30 marks.</p>
<p>2. Semester End Examinations – 70 % of weightage to Final Examination</p>
<ul style="list-style-type: none"> • 60 % of students score more than 45 % marks out of the relevant marks. • 70 % of students score more than 45 % marks out of the relevant marks. • 80 % of students score more than 45 % marks out of the relevant marks.
<p><u>Attainment Level 1:</u> 60 % of students score more than or equal to 27 marks out of the 60 marks.</p> <p><u>Attainment Level 2:</u> 70 % of students score more than or equal to 27 marks out of the 60 marks.</p> <p><u>Attainment Level 3:</u> 80 % of students score more than or equal to 27 marks out of the 60 marks.</p> <p><u>Not Attained: < 60 %</u></p>
<p>3. Assignment</p>
<ul style="list-style-type: none"> • 60 % of students score more than or equal to 60 % marks out of the relevant marks. • 70 % of students score more than or equal to 60 % marks out of the relevant marks. • 80 % of students score more than or equal to 60 % marks out of the relevant marks.
<p><u>Attainment Level 1:</u> 60 % of students score more than or equal to 06 marks out of the 10 marks.</p> <p><u>Attainment Level 2:</u> 70 % of students score more than or equal to 06 marks out of the 10 marks.</p> <p><u>Attainment Level 3:</u> 80 % of students score more than or equal to 06 marks out of the 10 marks.</p>

8.4.2	Record the attainment of Course Outcomes of all courses with respect to set attainment levels	05
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The CO Attainment through all the first-year courses for the year 2020-2021

Table 8.8: CO Attainment through all the first-year courses for the year 2020 - 21

Index	Course	CO1	CO2	CO3	CO4	CO5
C101	18MAT11	54.44	57.77	62.03	57.57	59.71
C102	18PHY12	48.13	44.49	49.63	48.70	

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C103	18ELE13	68.95	65.19	63.97	61.03	
C104	18CIV14	56.37	55.83	56.30	57.26	
C105	18EGDL15	72.33	86.79	87.89	86.08	85.87
C106	18PHYL16	94.26	94.26	94.26	94.26	
C107	18ELEL17	97.72	97.14	97.20	94.88	
C108	18EGH18	85.73	85.81	86.01	85.21	86.39
C109	18MAT11	54.37	54.63	57.30	57.00	57.33
C110	18CHE12	65.83	66.47	68.55	67.48	
C111	18CPS13	44.47	43.85	41.18	41.58	
C112	18ELN14	48.15	47.93	49.55	43.77	
C113	18ME15	93.27	93.03	93.43	93.25	94.84
C114	18CHEL16	91.41	91.94	91.41	91.41	
C115	18CPL17	99.71	99.71	99.19	100.00	
C116	18EGH18	53.41	74.92	75.14	74.01	75.71
C117	18MAT21	89.38	88.78	89.56	89.64	89.64
C118	18PHY22	74.35	77.92	77.45	74.61	
C119	18ELE23	66.99	64.88	66.88	65.34	
C120	18CIV24	56.21	56.04	56.52	56.55	
C121	18EGDL25	69.73	83.68	83.59	83.70	83.81
C122	18PHYL26	84.00	84.00	84.00	84.00	
C123	18ELE27	94.00	95.00	93.00	92.00	
C124	18EGH28	72.00	72.00	67.00	72.00	68.00
C125	18MAT21	93.00	92.00	92.00	92.00	92.00
C126	18CHE22	89.17	87.74	89.46	88.03	
C127	18CPS23	87.22	87.88	84.55	84.93	
C128	18ELN24	77.46	76.63	78.48	73.23	
C129	18ME25	87.35	85.68	87.05	82.17	86.24
C130	18CHEL26	86.00	83.00	83.00	83.00	
C131	18CPL27	73.00	68.00	66.00	66.00	

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C132	18EGH28	74.92	75.01	75.18	75.18	75.32
AVERAGE		75.1	76.19	76.46	75.5	79.57
TARGET		65	65	65	65	65

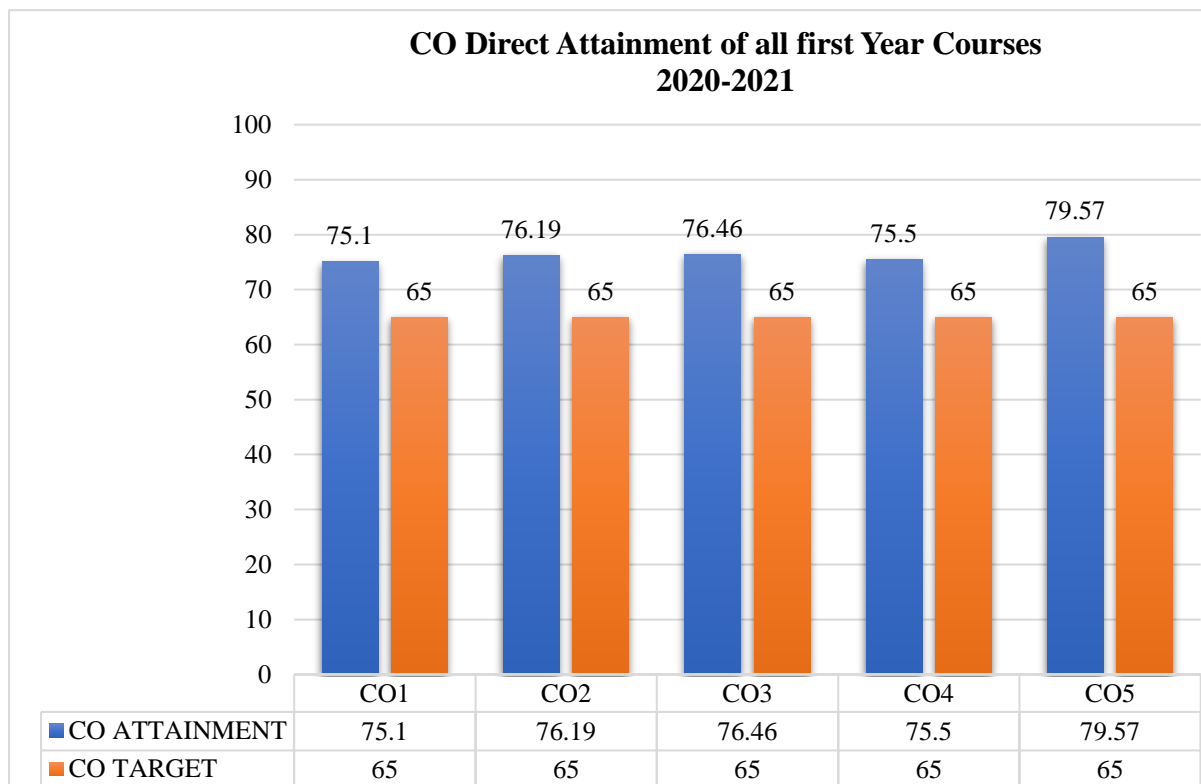


Fig. 8.4: CO Direct Attainment Average of all first-year courses 2020-21

Table 8.9: CO Attainment through all the first-year courses for the year 2019-2020

Index	Course	CO1	CO2	CO3	CO4	CO5
C101	18MAT11	70.6	71.62	72.94	74.24	74.22
C102	18PHY12	53.34	54.56	53.20	52.14	
C103	18ELE13	57.49	58.58	49.81	45.66	
C104	18CIV14	56.07	56.58	57.05	56.99	
C105	18EGDL15	73.82	88.59	90.59	86.90	87.27
C106	18PHYL16	76.00	76.08	76.48	77.04	
C107	18ELEL17	73.72	73.93	74.20	74.37	
C108	18EGH18	88.40	88.45	89.30	88.58	89.49
C109	18MAT11	61.56	64.16	64.74	65.6	65.58

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C110	18CHE12	68.28	66.04	71.13	68.53	
C111	18CPS13	51.64	49.99	44.20	44.45	
C112	18ELN14	55.93	57.50	56.20	57.74	
C113	18ME15	75.74	72.99	73.00	75.17	65.02
C114	18CHEL16	96.08	79.92	79.92	79.92	
C115	18CPL17	71.85	65.32	63.40	64.72	
C116	18EGH18	88.40	88.45	89.30	88.58	89.49
C117	18MAT21	90.61	78.68	87.73	89.96	88.78
C118	18PHY22	66.13	67.78	69.07	69.47	
C119	18ELE23	82.72	71.20	73.10	70.31	
C120	18CIV24	54.78	56.00	55.67	57.15	
C121	18EGDL25	70.60	84.72	84.97	85.15	83.93
C122	18PHYL26	75.96	75.92	75.80	76.16	
C123	18ELE27	89.73	86.15	87.60	87.05	
C124	18EGH28	76.27	76.93	76.74	76.65	76.59
C125	18MAT21	81.91	71.72	77.00	80.51	80.62
C126	18CHE22	86.52	83.17	93.77	92.79	
C127	18CPS23	79.81	83.61	84.83	84.60	
C128	18ELN24	66.20	67.72	69.13	68.52	
C129	18ME25	81.41	88.64	86.57	90.10	69.19
C130	18CHEL26	85.93	71.59	71.59	71.59	
C131	18CPL27	81.85	75.32	73.40	74.72	
C132	18EGH28	72.85	73.07	73.10	73.12	72.97
AVERAGE		73.82	72.66	73.3	73.39	78.6
TARGET		60	60	60	60	60

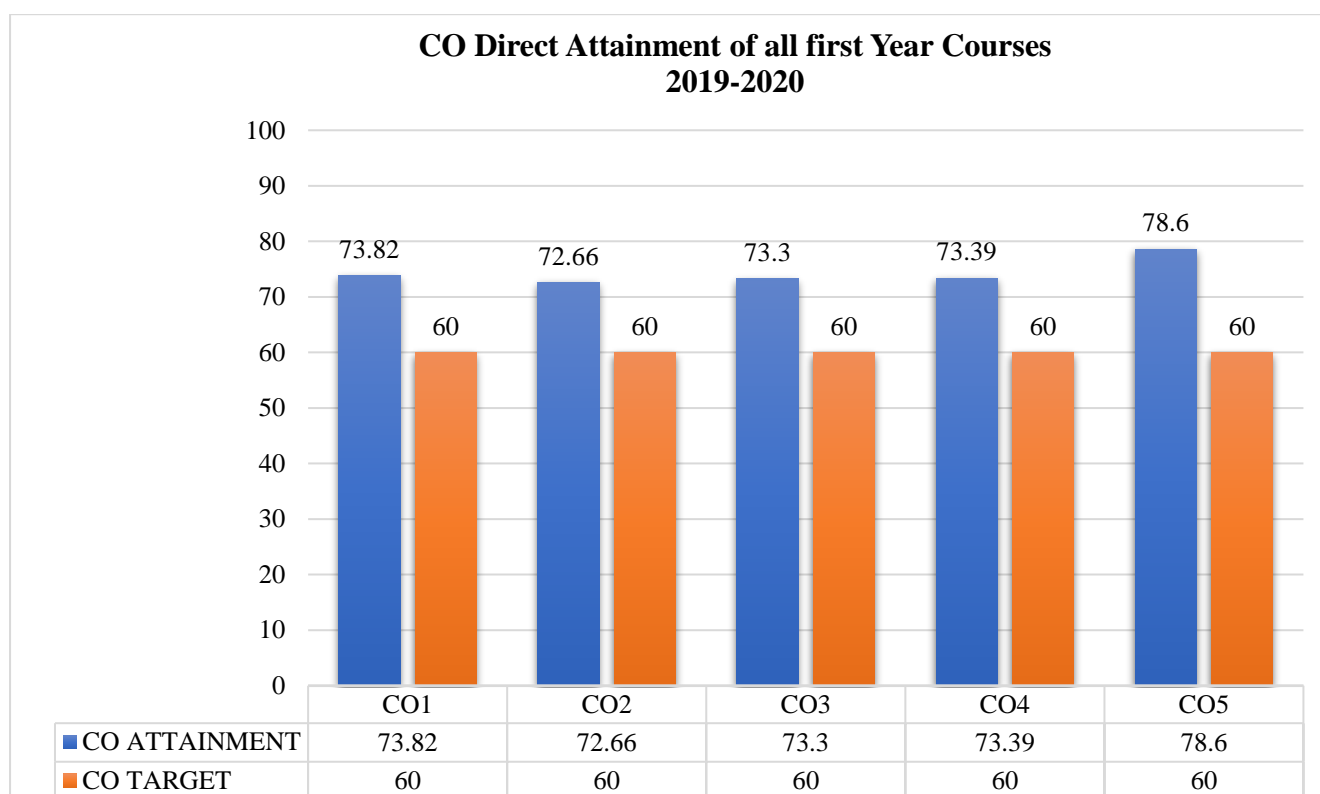


Fig. 8.5: CO Direct Attainment Average of all first-year courses 2019-20

Table 8.10: CO Attainment through all the first-year courses for the year 2018-19

Index	Course	CO1	CO2	CO3	CO4	CO5
C101	18MAT11	56.48	56.96	57.95	58.40	60.45
C102	18PHY12	41.38	40.24	37.43	39.73	
C103	18ELE13	53.44	50.85	38.56	39.16	
C104	18CIV14	55.67	57.98	58.25	58.97	
C105	18EGDL15	80.26	80.46	80.46	80.44	
C106	18PHYL16	79.09	78.86	78.6	78.63	
C107	18ELEL17	69.52	64.97	76.96	71.23	
C108	18EGH18	67.28	66.27	70.17	68.51	63.19
C109	18MAT11	56.72	57.24	59.88	61.7	62.44
C110	18CHE12	67.45	68.31	69.39	67.94	
C111	18CPS13	54.56	56.30	50.90	49.96	
C112	18ELN14	49.72	51.02	40.53	48.56	
C113	18ME15	69.53	70.40	59.79	73.57	67.04

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C114	18CHEL16	80.46	80.43	64.36	80.45	
C115	18CPL17	77.05	69.37	69.37	69.37	
C116	18EGH18	67.28	66.27	70.17	68.51	63.19
C117	18MAT21	57.70	56.05	58.61	59.14	58.67
C118	18PHY22	61.95	60.61	60.82	60.25	
C119	18ELE23	56.16	52.32	42.77	38.54	
C120	18CIV24	52.38	52.70	53.67	54.00	
C121	18EGDL25	81.42	81.49	81.55	81.02	
C122	18PHYL26	74.82	77.57	78.07	78.63	
C123	18ELE27	65.75	56.98	68.32	65.70	
C124	18EGH28	51.31	50.88	50.53	49.31	48.89
C125	18MAT21	62.92	60.98	62.22	64.00	62.88
C126	18CHE22	62.91	63.53	65.35	63.82	
C127	18CPS23	49.24	51.46	46.34	47.10	
C128	18ELN24	39.25	39.74	31.85	37.70	
C129	18ME25	61.39	64.12	54.16	68.23	63.64
C130	18CHEL26	78.84	78.82	63.06	78.83	
C131	18CPL27	79.28	71.34	71.34	71.34	
C132	18EGH28	51.31	50.88	50.53	49.31	48.89
AVERAGE		62.89	62.04	60.06	61.94	59.93
TARGET		60	60	60	60	60

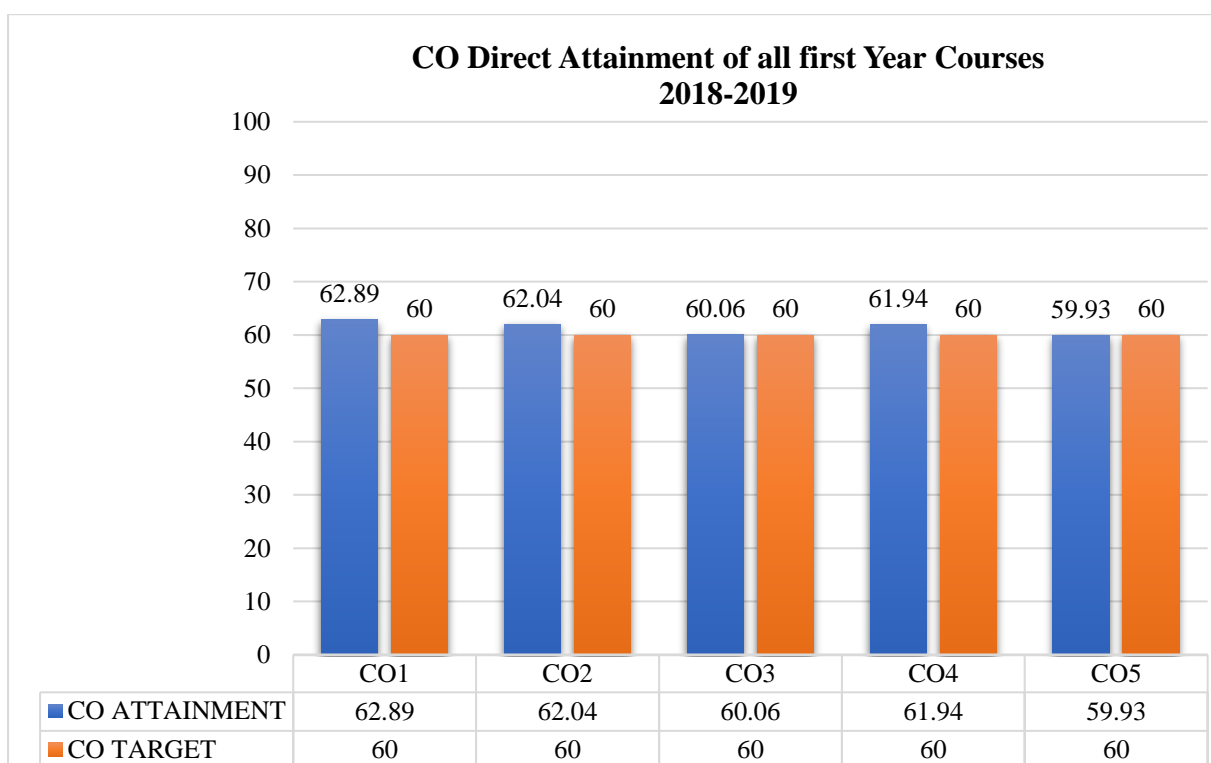


Fig. 8.6: CO Direct Attainment average of all first-year courses 2018-19

8.5	Attainment of Program Outcomes of all first year courses	20
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8.5.1	Indicate the results of evaluation of each relevant PO / PSO	10
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The PO Attainment through all the first-year courses for the year 2020-2021

Table 8.11: PO Attainment through all the first-year courses for the year 2020-2021

Course	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	18MAT11	1.72	1.72										
C102	18PHY12	1.41	0.94										
C103	18ELE13	1.58	1.47										
C104	18CIV14	1.69	1.71										
C105	18EGDL15	2.60	2.43			2.43					2.60		
C106	18PHYL16	1.89	2.83										
C107	18ELEL17	2.47	2.46							1.96	1.94		

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C108	18EGH18										2.23		2.58
C109	18MAT11	1.68	1.68										
C110	18CHE12	2.01	1.34										
C111	18CPS13	1.28	0.97	0.96									
C112	18ELN14	1.30	0.95										
C113	18ME15	2.61	1.65										2.11
C114	18CHEL16	2.74	2.05										
C115	18CPL17	2.13	2.27	2.31	2.22								
C116	18EGH18										1.93		2.26
C117	18MAT21	2.38	2.38										
C118	18PHY22	2.28	1.52										
C119	18ELE23	2.37	2.15										
C120	18CIV24	1.69	1.69										
C121	18EGDL25	2.51	2.34			2.34					2.51		
C122	18PHYL26	1.67	2.51										
C123	18ELE27	2.42	2.48							1.91	1.92		
C124	18EGH28										1.64		1.89
C125	18MAT21	2.66	2.66										
C126	18CHE22	2.66	1.77										
C127	18CPS23	2.76	2.07	2.07									
C128	18ELN24	2.10	1.53										
C129	18ME25	2.60	1.64										2.09
C130	18CHEL26	2.58	1.94										
C131	18CPL27	1.90	1.96	1.97	1.90								
C132	18EGH28										1.95		2.25

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AVERAGE	2.13	1.9	1.83	2.06	2.39				1.94	1.33		2.2
TARGET	2.7	2.44	2.29	2.25	2.8				2	2.55		2.8

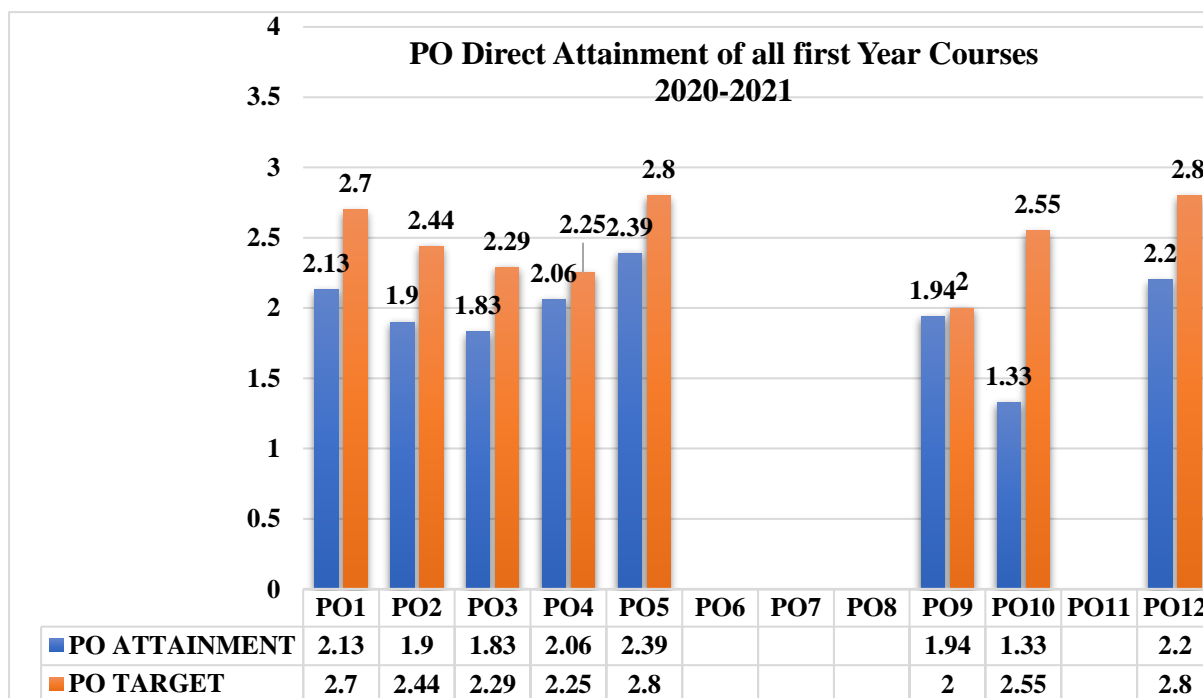


Fig. 8.7: PO Direct Attainment average of all first-year courses 2020-21

Table 8.12: PO Attainment through all the first-year courses for the year 2019-20

Course	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	18MAT11	2.18	2.18										
C102	18PHY12	1.66	1.10										
C103	18ELE13	1.58	1.47										
C104	18CIV14	1.69	1.67										
C105	18EGDL15	2.68	2.50			2.50					2.68		
C106	18PHYL16	1.78	2.65										
C107	18ELEL17	2.47	2.46							1.96	1.94		
C108	18EGH18										2.31		2.68
C109	18MAT11	1.93	1.93										

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C110	18CHE12	2.21	1.48										
C111	18CPS13	1.70	1.28	1.28									
C112	18ELN14	1.56	1.14										
C113	18ME15	2.26	1.51										1.82
C114	18CHEL16	2.88	2.16										
C115	18CPL17	2.23	2.24	2.28	2.24								
C116	18EGH18										2.31		2.68
C117	18MAT21	2.47	2.51										
C118	18PHY22	1.90	1.62										
C119	18ELE23	2.37	2.19										
C120	18CIV24	1.69	1.71										
C121	18EGDL25	2.54	2.37			2.37					2.54		
C122	18PHYL26	1.69	2.64										
C123	18ELE27	2.41	2.47						1.93	1.94			
C124	18EGH28									1.99			2.30
C125	18MAT21	2.24	2.36										
C126	18CHE22	2.67	1.78										
C127	18CPS23	2.59	2.59	0.82									
C128	18ELN24	1.86	1.36										
C129	18ME25	2.50	1.66										2.01
C130	18CHEL26	2.58	1.93										
C131	18CPL27	2.23	2.24	2.28	2.24								
C132	18EGH28										1.91		2.19
AVERAGE		2.16	1.97	1.67	2.24	2.44				1.95	2.2		2.28
TARGET		2.7	2.44	2.29	2.25	2.8				2	2.55		2.8

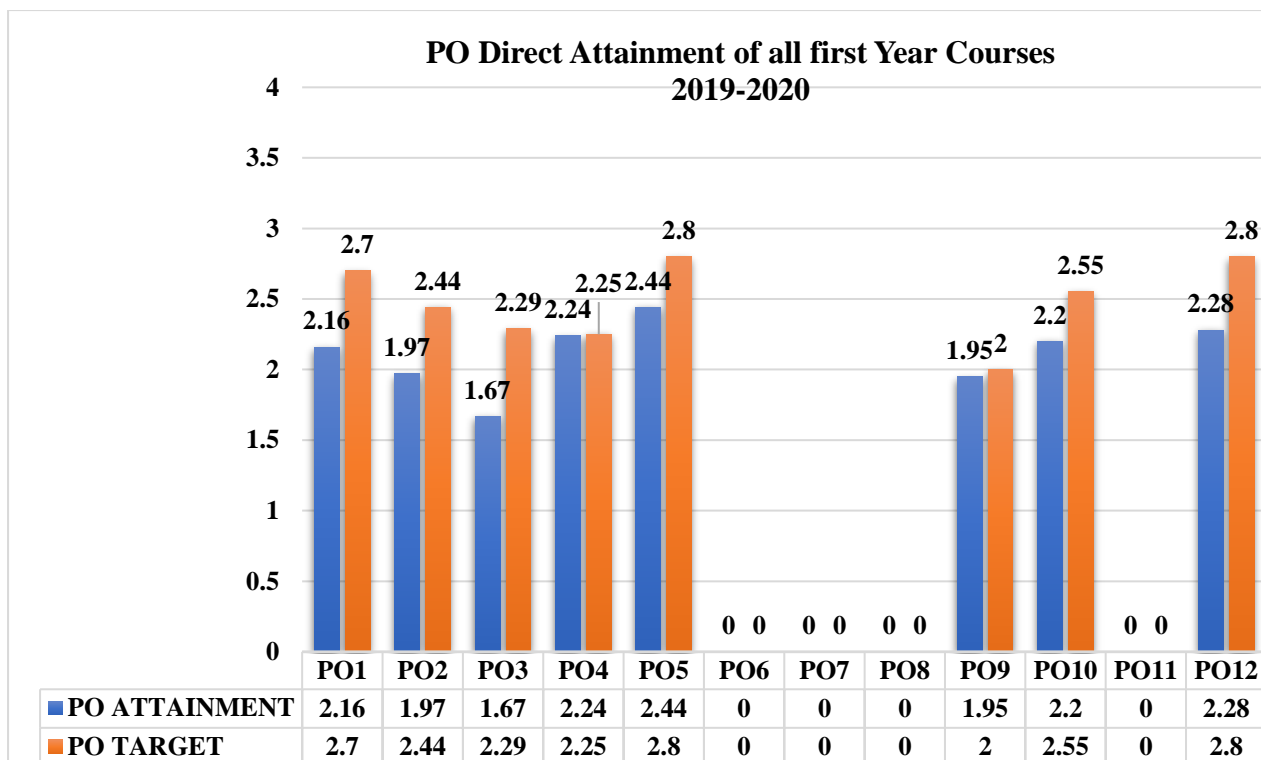


Fig. 8.8: PO Direct Attainment average of all first-year courses 2019-20

Table 8.13: PO Attainment through all the first-year courses for the year 2018-19

Course	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	18MAT11	1.67	1.67										
C102	18PHY12	1.51	1.05										
C103	18ELE13	1.26	1.53										
C104	18CIV14	1.60	1.60										
C105	18EGDL15	2.44	2.00			2.67							
C106	18PHYL16	1.77	2.68										
C107	18ELEL17	2.47	2.47							1.96	1.94		
C108	18EGH18					0.67					1.08		1.27
C109	18MAT11	1.76	1.76										
C110	18CHE12	2.1	1.42										

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C111	18CPS13	1.91	1.43	1.43								
C112	18ELN14	1.65	1.20									
C113	18ME15	2.70	1.81	1.86	0.92	1.76		0.94				2.52
C114	18CHEL16	2.09	2.47									
C115	18CPL17	2.08	2.16	2.16	2.08							
C116	18EGH18					0.67				1.08		1.27
C117	18MAT21	1.86	1.86									
C118	18PHY22	2.06	1.59									
C119	18ELE23	1.40	1.60									
C120	18CIV24	1.57	1.57									
C121	18EGDL25	2.55	2.12			2.75						
C122	18PHYL26	1.86	2.78									
C123	18ELE27	2.48	2.47						1.97	1.94		
C124	18EGH28					0.33				0.53		0.68
C125	18MAT21	2	2									
C126	18CHE22	2.05	1.39									
C127	18CPS23	1.75	1.31	1.31								
C128	18ELN24	1.29	0.94									
C129	18ME25	2.23	1.49	1.49	0.76	1.47		0.76				2.23
C130	18CHEL26	2.08	2.46									
C131	18CPL27	2.14	2.22	2.22	2.14							
C132	18EGH28					0.33				0.53		0.68
AVERAGE		1.94	1.82	1.75	1.48	1.33		0.85		1.97	1.18	1.44
TARGET		2.7	2.44	2.29	2.25	2.8				2	2.55	2.8

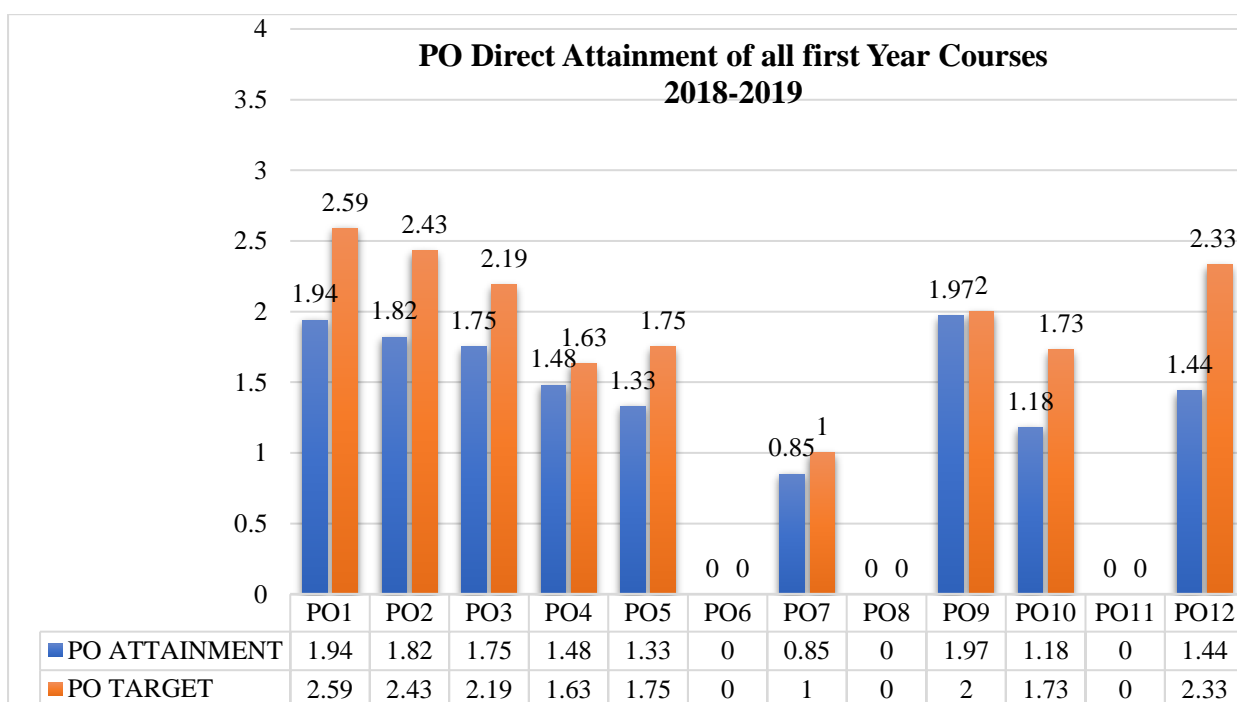


Fig. 8.9: PO Direct Attainment average of all first-year courses 2018-19

8.5.2	Actions taken based on the results of evaluation of relevant POs	10
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PO Attainment Levels and Actions for improvement: 2020 - 2021. Mention for relevant POs

Table 8.14: PO Attainment Levels and Actions for improvement – 2020-21

POs	Target Level	Attainment Level	Observations
PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	2.7	2.13	Not Attained.
Action: The activities to be carried out for enhancing the PO1 involves solving end chapter problems, understand the nature of the given problem, formulate and provide multiple solutions to the given complex problems.			
PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	2.44	1.90	Not Attained.

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Action: PO2 is addressed with the subset of the courses and to enhance the outcome, it requires considerable planning of the course owner, design activities of Assignment and Case Studies and develop appropriate rubrics for evaluation of the performance of each member of the group.			
PO3: Design / Development of Solutions: Design solutions for complex engineering problems and design system components or process that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, social, and environmental considerations.			
PO3	2.29	1.83	Not Attained.
Action: Improve the student's knowledge in applying engineering concepts by conducting extra lab experiments.			
PO4: Conduct Investigations of complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.			
PO4	2.25	2.06	Not Attained.
Action: Students are encouraged to study and interpret design of experiments, analysis, and result data will be carried out through laboratory experiments and Case Studies.			
PO5: Modern Tools Usage: Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.			
PO5	2.8	2.39	Not Attained
Action 1: Students are instructed to use the simulation tools and animations for hands-on experience to improve the attainment of problem solving and programming in C language.			
PO6: The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO6	NIL	NIL	NIL
Action:			
PO7: Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO7	NIL	NIL	NIL

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Action: Awareness on environment is to be created among the first year students. Motivate them to engage in the process of finding solution to global warming problems in future engineering career.			
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	NIL	NIL	NIL
Action: Inculcate Cyber Security Day activity celebration at the College level, Youth awareness day, Green Club activities and Professional responsibilities among the students wherever applicable.			
PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.			
PO9	2.0	1.94	Marginally attained. Need to revise the target level.
<p>Action 1: Students are encouraged to involve in activities like Self-discipline and mind control, Personality Development sessions</p> <p>Action 2: Group assignments that involve group decision making, division of work through negotiation are focused and strengthened to enhance the team work.</p> <p>Action 3: Students are encouraged to participate as a leader to give service towards the benefit of the society and to improve their leadership qualities. Co-curricular activities through e-groups must be encouraged to students.</p>			
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large such as, being able to comprehend and write effective reports and design documentation, make effective presentation and give and receive clear instructions.			
PO10	2.55	1.33	NIL
<p>Action 1: Oral Communication skills and Personality development sessions needs to be strengthened and students are to be encouraged to actively participate.</p> <p>Action 2: Student's participation in activities like Debate, Group discussion, Oral Presentation, Article writing etc..., needs to be strengthened through College and Intra college fest.</p> <p>Action 3. A short video presentation on seminar is to be recorded and presented to peers for evaluations. Further feedback on the activity is recorded with respect to rubrics designed for evaluation of communication skill.</p>			
PO11: Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
PO11	NIL	NIL	NIL
Action:			
PO12: Life-Long Learning: Recognize the need for, and have the preparation and ability to			

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engage in independent and life-long learning in the broadest context of technological change.

PO12	2.8	2.2	PO12 is not reached to the target level
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Action 1: To encourage students to make use of Interactive Learning Tools.

Action 2: To encourage students to do some certification courses on Technology changes, Recent Trends, Honor Degree and Communication Skills.

Table 8.15: PO Attainment Levels and Actions for improvement – 2019-20

POs	Target Level	Attainment Level	Observations
PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	2.7	2.16	Not Attained. Difficult to cope up with engineering & science and fundamentals
Action: The activities to be carried out for enhancing the PO involves solving end chapter problems, understand the nature of the given problem, formulate and provide multiple solutions to the given complex problems.			
PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	2.44	1.97	Not Attained. Difficult to analyze complex Engineering
Action: PO2 is addressed with the subset of the courses and to enhance the outcome, it requires considerable planning of the course owner, design activities of Assignment and Case Studies and develop appropriate rubrics for evaluation of the performance of each member of the group.			
PO3: Design / Development of Solutions: Design solutions for complex engineering problems and design system components or process that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, social, and environmental considerations.			
PO3	2.29	1.67	Not Attained.
Action 1: Improve the student's knowledge in applying engineering concepts by conducting extra lab experiments.			
PO4: Conduct Investigations of complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and			

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synthesis of the information to provide valid conclusions.			
PO4	2.25	2.24	Overall Target marginally achieved, need to revise the target level.
Action 1: Design of experiments, analysis, and interpretation of data will be carried out through open ended experiments in the laboratory, in Assignment and Case Studies.			
PO5: Modern Tools Usage: Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.			
PO5	2.8	2.44	Not Attained
Action 1: Students are instructed to use the simulation tools and animations for hands-on experience to improve the attainment of problem solving and programming in C language.			
PO6: The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO6	NIL	NIL	NIL
Action:			
PO7: Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO7	NIL	NIL	NIL
Action:			
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	NIL	NIL	NIL
Action:			
PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.			
PO9	2	1.95	Marginally attained, needs to raise the target and then we need to plan for achieving the next target level

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<p>Action 1: Group assignments that involve group decision making, division of work through negotiation are focused to enhance the team work.</p> <p>Action 2: Students are encouraged to participate as a leader in giving services to social related problems and in Co-curricular activities to improve their leadership qualities.</p>			
<p>PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large such as, being able to comprehend and write effective reports and design documentation, make effective presentation and give and receive clear instructions.</p>			
PO10	2.55	2.2	Not Attained
<p>Action 1: Student's participation in activities like Debate, Group discussion, Oral Presentation, Article writing etc., needs to be strengthened through College and Intra college fest.</p> <p>Action 2: A short video presentation on seminar is to be recorded and presented to peers for evaluations. Further feedback on the activity is recorded with respect to rubrics designed for evaluation of communication skill.</p>			
<p>PO11: Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</p>			
PO11	NIL	NIL	NIL
<p>Action:</p>			
<p>PO12: Life-Long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.</p>			
PO12	2.8	2.28	Not Attained
<p>Action 1: To encourage students to make use of Interactive Learning Tools.</p> <p>Action 2: To encourage students to do some certification courses on Technology changes, Recent Trends, Honor Degree and Communication Skills.</p>			

Table 8.16: PO Attainment Levels and Actions for improvement – 2018-19

POs	Target Level	Attainment Level	Observations
<p>PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.</p>			
PO1	2.64	1.94	Improved compared to last year
<p>Action 1: Invited Guest Lectures.</p> <p>Action 2: Fundamental concepts were discussed in class room periodically.</p>			

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PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	2.42	1.82	Scope for improvement. Ability to identify, formulate and analyze the problems can be enhanced.
Action 1: Invited Guest Lectures.			
PO3: Design / Development of Solutions: Design solutions for complex engineering problems and design system components or process that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, social, and environmental considerations.			
PO3	2.19	1.75	Scope for improvement. Design skills can be improved.
Action 1: Lab demonstrations / video presentations to design and develop solutions for problems to be arranged.			
Action 2: Collaborative learning by group activity, arrange activity to solve different problems to different groups and share the answers [Reference: Assignments]			
PO4: Conduct Investigations of complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.			
PO4	1.63	1.48	Scope for improvement. Guest lectures.
Action 1: Invited Guest Lectures.			
PO5: Modern Tools Usage: Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.			
PO5	1.75	1.33	Lack of knowledge in application of modern tools
Action 1: Invited Guest Lectures.			
Action 2: Laboratory.			
PO6: The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO6	NIL	NIL	NIL
Action:			
PO7: Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for			

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sustainable development.			
PO7	1	0.85	Scope for improvement.
Action 1: Discussion on environment and sustainability concepts by different fields of engineering.			
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	NIL	NIL	NIL
Action:			
PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.			
PO9	2	1.97	Scope for improvement. Group activities can be arranged.
Action 1: Encouraging students as volunteers in technical and cultural fests.			
Action 2: Encouraging students to participate in sports events.			
Action 3: Group Assignments.			
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large such as, being able to comprehend and write effective reports and design documentation, make effective presentation and give and receive clear instructions.			
PO10	1.73	1.18	Scope for improvement. Presentation and communication skills can be improved.
Action 1: English course as an extra learning is arranged [Reference: English course].			
Action 2: Ability to participate in group activity and communicate effectively.			
PO11: Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
PO11	NIL	NIL	NIL
Action 1:			
Action N:			
PO12: Life-Long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.			
PO12	2.33	1.44	Scope for improvement. Ability to participate in group activity and communicate effectively.

Action 1: Encouraging students to participate in various co-curricular activities.

Action 2: Orientation Program on interdisciplinary applications in engineering.

CRITERION 9

CRITERION 9	STUDENT SUPPORT SYSTEMS	50
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9.1	Mentoring system to help at individual levels	05
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"Mentoring is to support and encourage people to manage their own learning in order that they may maximize their potential, develop their skills, improve their performance and become the person they want to be."

Mentoring is a powerful personal development and empowerment tool. It is an effective way of helping students to progress in their careers and is becoming increasingly popular as its potential is realized. It is a partnership between two people (mentor and mentee) normally working in a similar field or sharing similar experiences. It is a helpful relationship based upon mutual trust and respect. A mentor is a guide who can help the mentee to find the right direction and who can help them to develop solutions to career issues. Mentoring provides the mentee with an opportunity to think about career options.



The RYMEC Institute is working towards enhancing the institutional culture to better serve the needs of an ever-changing and dynamic learning community. Effective mentoring begins with the faculty. When it comes to academic success and persistence, there is no substitute for a healthy relationship between faculty and students. Mentoring and Guidance provides

- Encouraging students to discuss their ideas.
- Encouraging students to try new techniques and expand their skills.

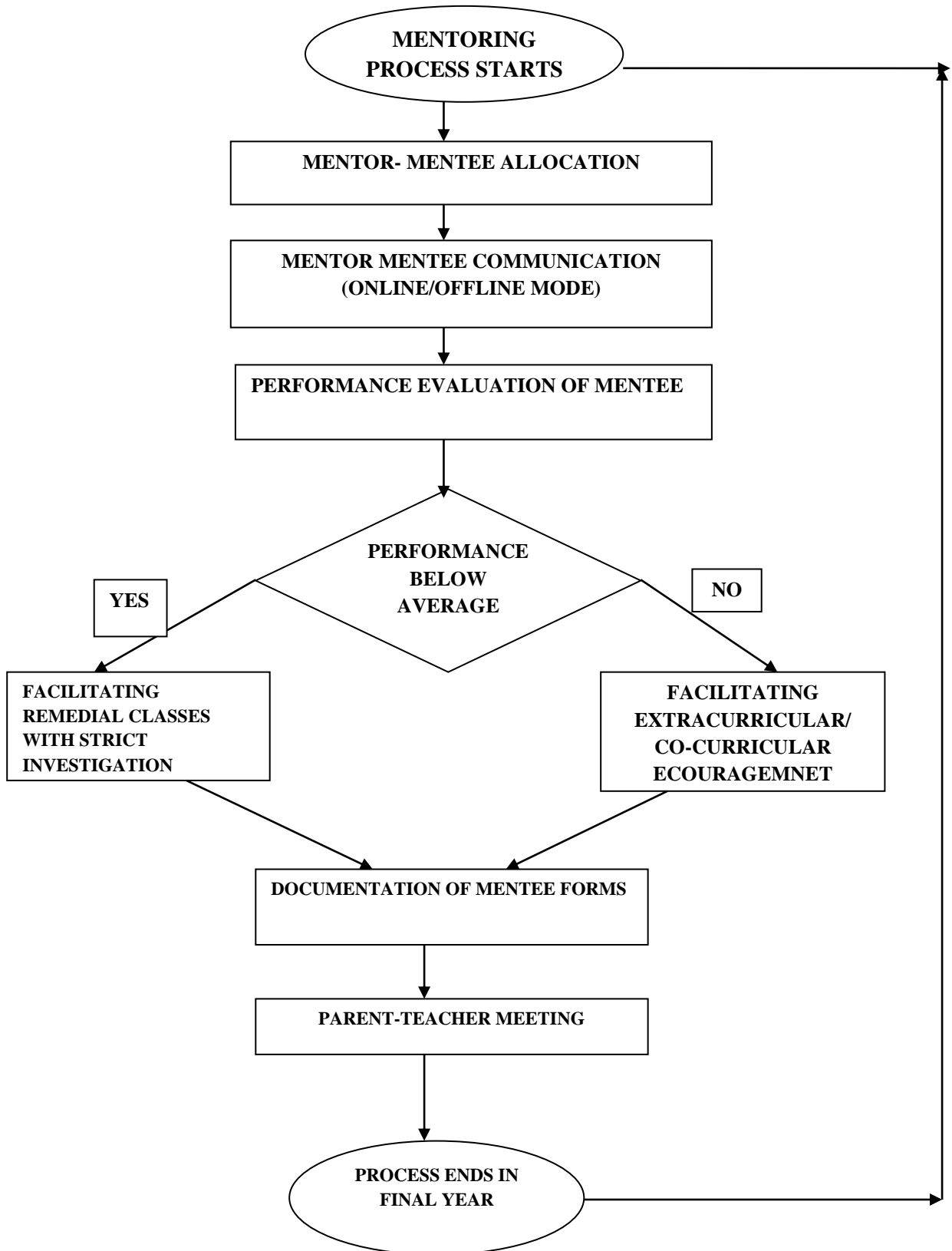
Each faculty is assigned 15 to 20 students. The faculty monitors their progress and reports to department in-charge of counseling cell. This mentoring is for over-all

development of the student. A counseling sheet is maintained by faculty, where attendance, examination marks and family details are recorded. The same is continued till the student completes his/her graduation. The periodic status will be submitted to the parents/Guardians.

9.1.1	Objective of the Mentoring System
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- To provide guidance to students towards achieving professional fulfilment and assessment of his/her academic progress as well as personal growth.
- To familiarize the greater culture of the institution to all aspiring graduates and in still the realization of potential of successes through accomplishment of qualitative education.
- To create collaborative environment amongst students and facilitators while aptly establishing network of transparency both in academic and administrative matters.
- To lay the foundation of lifelong learning and ethical conduct and behaviour in all aspects of larger life through dissemination of knowledge compounded with positive motivation, morale boosting and sense of community acceptance.

9.1.2 Process Flow Diagram



9.1.3 Types of Mentoring Systems

Table 9.1: Types of Mentoring Systems

SL. NO.	TYPES OF MENTORING SYSTEM	FUNCTIONS
1.	ACADEMIC SPECIFIC	<ul style="list-style-type: none"> Identify academically slow learning students and council them in presence of HOD to ensure that they improve their attendance. Identify academically weaker students and provide them with additional reading materials, model questions along with solutions.
2.	PROFESSIONAL GUIDANCE/ CAREER ADVANCEMENT	<ul style="list-style-type: none"> Motivate them to expand their domain knowledge base through participating in technical competitions. Stimulate students to exhibit innovations in project by participating in project exhibitions. Encourage students to present their ideas through paper presentations in conference. Encourage students to do certification course which adds value in addition to their qualifications related to the career such as MOOC, NPTEL, Placement Preparation Provide career guidance and workshop apart from soft skill training provided by training and placement cell.
3.	ALLROUND DEVELOPMENT	<ul style="list-style-type: none"> To encourage the students to learn teamwork, leadership and motivate them to participate them in sports and cultural activities. To create ethical and moral awareness. Encourage and motivate students in social and environmental causes, national service scheme (NSS) and blood donations camps.
4.	PSYCHOLOGICAL COUNSELLING	<ul style="list-style-type: none"> Conducting workshops to support the students to strength their interpersonal relationships, improve their Inferiority Complex, Exam Phobia etc. Conducting Yoga/ Meditation training classes to students to manage their stress levels.

9.1.4 Policy mechanism of Mentoring System

Table 9.2: Policy mechanism of Mentoring System

1	Mentors	Teaching faculty act as Mentor
2	No. of students per mentor	15 to 20 plus
3	Frequency of meeting	Meeting conducted every month after internal assessment by OFFLINE MODE/ONLINE MODE/PHONECALLS/SMS/WATSAPP GROUP

4	Parents feedback	The Parents feedback is collected after every parents meet in the department or through phone calls.
5	Analysis	The feedback analysis will be referred by the HOD's for corrective measures, through Head of the Institution

9.1.5	Outcome of Mentoring System
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- Improvement in student attendance.
- Students excel in academics performance and technical skills and participate in extracurricular activities.
- Improvement in quality of projects.
- Improvement in personality development of an individual student mental stamina.
- Enhances the scope for career advancement of each student and aiming for higher education.
- Proficiency in addressing the societal issues.

9.2	Feedback Analysis and Reward/Corrective measures taken if any	10
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The feedback collection process is very important for quality improvement of the Institution. The faculty feedback is collected from the students every semester. This process contributes to evaluate the faculty performance for reward / corrective measures. The online feedback will be taken from the students in regular class hours and monitored by the inter department faculty.

Average Percentage of Students who participate: Students having attendance more than 75% are participated.

The feedback analysis process:

The inter department faculty collect the feedback from students through online and consolidated report generated online is forwarded to the Principal's Office for further Corrective Measures. The same will be sent to respective HOD's.

Table 9.3: Feedback analysis grading

Grading	Points
Excellent	9.01 - 10
Good	7.01 - 9.0
Average	3.01 - 7.00

Poor	1.00 – 3.00
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The teaching performance indices are analyzed by the Principal's Office and the same is conveyed to the concerned.

Basis of Reward / Corrective Measures:

The indices used for measuring the quality of teaching, learning and summary of the index values are mentioned in below.

- 1) Creating interest in the Subject.
- 2) Regularity in handling the Classes/E-Classes.
- 3) Presentation of the Subject.
- 4) Audibility or Clarity of Speech.
- 5) Interaction with Students.
- 6) Clarifying Students Doubts.
- 7) Fairness in evaluation of I.A test and assignment books.
- 8) Ability to design Quizzes/Tests/Assignments/Examinations and projects to evaluate students understanding of the course.
- 9) Interact and encourages students to ask question/participation.
- 10) Fulfilment of course objectives and outcomes.

System of Reward:

Best performing faculty is rewarded by issuing a Letter of Appreciation. Performance rating of faculty through student feedback system is one of the factors in evaluating the annual performance and to release the annual increment.

Corrective Actions taken:

The faculties performing below average are trained continuously through Faculty Development Program to improve the quality of the staff.

9.3	Feedback on facilities	05
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Assessment is based on student feedback collection, analysis and corrective action taken.

Feedback on facilities

A standard procedure for feedback on facilities is taken up in the college. Feedback is collected from the students on facilities available in the college such as Water facility, Internet facility, Canteen facility, Sports and Gymnastic facility, etc.

The feedback is analyzed and the necessary corrective measures are implemented after discussions with the Management.

Following is the process of feedback on facilities.

- i. Feedback collection process
- ii. Feedback analysis
- iii. Corrective measures

i) Feedback collection process:

Table 9.4: Details of feedback collection process

Items	Description
Feedback collected on all facilities provided by the college.	YES
Feedback collection process	Computerized
Feedback receiver	Administrative officer / Admin manager / Academic Dean
Frequency of feedback collection	Once in a semester
Metrics used for calculation	Poor: 1 to 3
	Average: 3.01 to 7
	Good: 7.01 to 9
	Excellent: 9.01 to 10
Purpose of comments	For improving the quality of facilities.

FORMAT of Student Feedback on Facility:

Questionnaires:

1. Interaction with the Principal.
2. Interaction with HODs.
3. Response at the Reception
4. Good support/interaction from Office
5. Availability of Staff in working Hours.
6. Extra-Curricular Activities.
7. Discipline in Campus.

8. Internet facility at Internet Centre
9. House Keeping at College Campus
10. Drinking Water Facility
11. Washroom facilities and maintenance
12. Sports Activities
13. Mentor-Mentee System
14. Are you happy with the food served in the present canteen?
15. Are you aware of the NSS Activities in our University?

Rating of Scale

- Poor --- 1 to 3
Average --- 3.01 to 7
Good --- 7.01 to 9
Excellent --- 9.01 to 10

ii) Feedback analysis:

The feedback given by the students is consolidated and analyzed. Principal will discuss about the consolidated report with the management and come out with necessary actions.

iii) Corrective measures:

Corrective measures will be implemented at the college level with respect to the decision made by the management.

9.4	Self-Learning	05
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Self-learning helps the students to develop sense of responsibility that equips with the essential attributes required for their career. Self learning helps the students in gaining the knowledge and applying to larger domains. Self learning helps better understanding of the discipline. Self learning facility is provided for both students and staff such as webinars, MOOCS, NPTEL, SWAYAM, SWAYAM PRABHA, EDUSAT, AICTE, FDP'S etc. Self learning helps to actively participation in industrial training.

Facilities, Materials and Scope for self learning facilities provided by the college.

- E-learning
- Technical Talks
- Workshops

- Webinars
- Industrial Tour
- Internship
- Project Exhibitions
- MOOC certificates
- NPTEL
- SWAYAM
- EDUSAT
- AICTE webinars
- SWAYAM PRABHA

E-learning details

Table 9.5: E-learning details

Sl. No	Facilities	Information Resources
1	SWAYAM	Available Online
2	SWAYAM PRABHA	TV CHANNAL
3	IIT Bombay -X	FDP101X, SKANI-101X, FDP201X, ET611TX, CS101.1X, ET702X-MOOC, SKVIZ101X .
4	NPTEL online courses	Available Online
5	NITTTR	Available Online
6	E-SHIKSHANA	Available Online
7	VTU E-LEARNING CENTRE	e-CONTENT, e-RESOURCES, e-LIBRARY Available.
7	VTU EDUSAT	CD's available for all the subjects
8	WEBINAR	Available Online
9	Digital Library	Notes, Question Papers, Manual Solutions etc
10	Language Lab	Communication skills, vocabulary, phonetics, etc.
11	TEACHING SKILLS	Available Online
12	Professional activities	Available Online
13	Soft skills	Available Online
14	Work place communication	Available Online

15	English for oral communication	Available Online
16	Financial literacy	Available Online
17	Handling large project	Available Online

MOOC

A massive open online course is an online course aimed at unlimited participation and open access via web. In addition to traditional course materials such as filmed lectures, readings and problem sets, many MOOCs provide interactive user forums to support community interactions between students, professors and teaching assistants (TAs). MOOCs are a recent and widely researched development in distance education which was first introduced in 2008 and emerged as a popular mode of learning in 2012.

Learning beyond syllabus and creation of facilities for self-learning is to make the students well-verse in all the directions. The format for this system is as specified below.

CONTENTS BEYOND SYLLABUS

RYMEC supports for students to learn the subjects in a broader way so as to inculcate the skills of creativity, applying domain knowledge for practical problems and to improve the quality of self-learning. Contents beyond the syllabus are given to students by respective subject teachers in the form of:

- Case Studies
- Mini Projects
- Assignments
- Quiz

9.5	Career Guidance, Training and Placement	10
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Career Guidance

Career guidance for engineering students is a must so that graduates can discover their strengths and weaknesses before venturing out into the highly competitive world, some Precautionary as well as career-boosting measures need to be taken by graduates.

Career counseling or career guidance process involves individuals (school or college students or professionals) exploring various career options, understanding more about the opportunities, analyzing the career prospects and earning potential. The process also includes an all-inclusive career assessment test which evaluates individuals' interests, strengths and

weaknesses, ability/aptitude, personality traits and capabilities. The Students are guided by mentors and also career guidance program is conducted by companies like

- i) RARE MINDS, Bengaluru
- ii) AECC Global India, Bengaluru
- iii) NEOPAT Chennai
- iv) TYOTA KIRLOSKAR MOTOR Pvt. Ltd.
- v) FACE pulse, Coimbatore
- vi) ETHNUS, Bengaluru

Table 9.6: Career Development workshop

Sl. No.	Orientation Program	Resource person/ Company
1.	Managing Your Personality in World Working Virtually	RARE MINDS, Bengaluru
2.	UNLOCK Jobs Part-2	SA-MUDRA FOUNDATION
3.	How to get Scholarship on Microsoft Google certification	QUANTUM LEARNING
4.	Career Pathway & Study Abroad Opportunities	AECC Global India, Bengaluru.
5.	Carrier Opportunities in VLSI industry	Chip Edge Technologies, Bengaluru
6.	Web Development as Carrier for Engineers	Face pulse, Coimbatore
7.	Young Ambassador Program	QtPi Robotics, Bangalore
8.	Industry Expectations from Young Engineers	By Dr. Binoy Mathew Director, VTU CPC, Bengaluru
9.	Software Development & Testing	By Mr. Keshav CEO, JSPIFERS, Bengaluru
10.	How to land in a dream IT Product company job as a fresher	FACE-PREP, Coimbatore

Training and Placement Cell

Campus training and placements play a major role in shaping up the career goals of students. It is the dream of every engineering student to get placed in a top organization visiting their campus for recruitment. A placement year can **give students inspiration for final year projects and dissertations**. It can also help develop your soft skills, such as being able to work in a team and the ability to solve complex problems, which are all valuable assets for both your academic and professional career. To cater this, an independent Training and

Placement Cell is in function in the institute since 2001. The Training and Placement Cell is headed by Concerned Officers and supported by Departmental co-coordinators. The vision of the training and placement cell is “**Transforming every student – an employer's choice**”. Our mission is “Develop the students to face global competitive world with confidence and attain desired placement”. Our industry partners are TCS, JSW. Our Trusted recruiters are TCS, HCL, Emphasis, IGATE, Cigital, SLK Software Services, Advanced electronics Ltd, Global Edge, Tech Mahindra, L&T, Accenture, Mind Tree, JSW, Kirloskar and many more.

Pre Placement Training:

Pre-placement training is imparted to all the final year students, as part of the curriculum to enhance the competency among students with respect to various soft skills and domain specific areas like finance, HR etc. During campus placements, recruiters test for an array of skill sets in their potential employees. In addition to being knowledgeable in their core subjects, students should also possess a great aptitude and soft skills. Hence pre placement training is necessary. The Pre placement training has been conducted by **Universal Education Bangalore, Bizotic, Bangalore GTT, Pune and Ethnus, Bangalore** the contents of Pre Placement training are mention as below.

CONTENTS OF PRE-PLACEMENT TRAINING

Quantitative aptitude

- Basic math
- HCF, LCM and simple and compound interest
- Data sufficiency 1
- Data sufficiency 2
- Analytical Reasoning
- Logical Reasoning 2
- Progression
- Permutation and Combination
- Ratios and Proportion
- Averages and Blood Relations
- Percentages, Profit and loss
- Speed, time and distance
- Time and Work
- Logical Reasoning 1
- Data Interpretation 1

- Data Interpretation 2

Verbal aptitude

- Parts of speech & Vocabulary Building
- Synonyms, Antonyms
- Analogies
- Sentence Completion Sentence Correction & Incorrect sentence
- Reading comprehension 1
- Reading comprehension 2
- Error detection

Soft skills

- Group discussion
- Personal interviews
- Language Skill (Written)
- Resume building
- Communication Skill
- Grooming

9.6	Entrepreneurship cell	05
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EDC is headed by Dr. Srishaila J M, Associate Professor, Department of Civil Engineering with a team of faculty coordinators from other departments of the college.

The goal of EDC is to assist students, entrepreneurs, including Institution faculty, with pre-venture, start-up or existing business with financial management, marketing, technology and product development, commercialization issues, to understand the employability options, opportunities to control unemployment and to create better opportunities for youngsters.

Working in collaboration with New Age Incubation Network (NAIN) Government of Karnataka and District Industry Centre – DIC, BALLARI. EDC has conducted various activities for the college students creating and promoting entrepreneurship awareness in the campus.

Recent activities carried out at college premises:

1. VTU TEQIP 1.3 Sponsored (STTP) 3 day short term training program for students Program on Employability & Entrepreneurial Skills On 6th - 8th September 2019 In Association with Visvesvaraya Technological University Belagavi, Karnataka

Aryabhata Knowledge University Patna, Bihar Biju Patnaik University of Technology Rourkela, Orissa

2. BOOT CAMP in association with K-Tech and Department of IT-BT, Government of Karnataka on 29th August 2019. Many students presented their ideas during above said activities.
3. Ideathon programme is organized to students to present their ideas on projects as on 7/9/2019.
4. Online Covid Quiz is organized to students as on 30/05/2020.
5. Webinar on Artificial Intelligence is organized in association with K-Tech and Department of IT-BT, Government of Karnataka on 7th October 2020.
6. Webinar on IOT is organized in association with K-Tech and Department of IT-BT, Government of Karnataka on 23rd March 2021.
7. Webinar on Entrepreneurship, startups in association NAIN as on 28th May 2021.
8. BOOT CAMP in association with K-Tech and Department of IT-BT, Government of Karnataka on 8th June 2021

9.7	Co-Curricular and Extra-curricular Activities	10
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NSS-UNIT RYMEC

NSS UNIT of RYMEC is headed by Prof. Virupaksha Gouda H of Mechanical Engineering Department. NSS UNIT of our college is functioning from many years and organizing several useful programs for the society.

The programs like Voluntary Blood donation camps, Tree plantation, Health education & Health orientation programs, Essay writing- Drawing competitions, Free medical and Health checkup camps, helping towards flood affected people etc.

Objective of NSS:

1. Creating awareness of social service for the students
2. Motivating the students to serve for society in tree plantation, blood donation etc.,
3. Not only education also promoting the students towards moral ethics, healthy and sound thinking about society.
4. Helping for the poor and disabled people by organizing health orientation programs.

Outcome of the programs:

From our NSS UNIT many patients, poor and disabled people were benefited.

i) Covid-19 Vaccination Drive-3:

The Covid-19 Vaccination drive was organized by NSS Team Members in the college on 12-07-2021 from 10.00am onwards, in association with District Health and Family Welfare Office, Ballari. All teaching, non-teaching staff members and students of various departments are participated in the vaccination drive and around 375+ have got vaccinated.

Covid-19 Vaccination Drive-2

As per the Circular received from VTU Registrar, instructed to ensure that, the Covid-19 related vaccination for all Staff and Students of institution be taken up and to be completed by 8th of July 2021. In view of this the Covid-19 Vaccination drive was organized by NSS Team Members in the college on 02-07-2021 from 10.00am onwards, in association with District Health and Family welfare Office, Ballari. All teaching, non-teaching staff members and students of Various departments are participated in the vaccination drive and around 600+ have got vaccinated.





ii) Oxygen Challenge

As per the Circular received from Department of NSS and Youth Empowerment and Sports, Govt. of Karnataka to organize “Oxygen Challenge” program to plant 5 lac Seed Balls thought the Karnataka State on occasion of “International Environment Day”. In this connection the Plantation Programme was organized in the premises of RYM Engineering College, Ballari near Ganesha Temple in association with ABVP, Karnataka State and Ballari Division on 17-06-2021 from 10:30am onwards. Dr. D Basavana Gouda, Professor of EEE Dept and NSS Team Members have taken initiation to organize the plantation program. All teaching, non-teaching staff members and students of Various departments are participated in the program and made it huge success. Around 1500 Seed Balls sown in and around campus.



iii) AICTE Sponsored Work Shop on Sansad Adarsh Grama Yojana

Dr. K Veeresh, Principal, RYMEC and Dr. Kotresh. S & Prashanth Keni of NSS UNIT, RYMEC participated in AICTE sponsored workshop on SANSAD ADARSH GRAMA YOJANA (SAGY) at Nagarjuna College of Engineering & Technology, Bengaluru on 25th & 26th of November-2017.



SAANSAD ADARSH GRAM YOJANA

M.P. Constituency: Ballari

Member of Parliament: Sri B. Sriramulu (during 2017)

Village: Tambrahalli: Taluk: H.B. Halli.

NSS UNIT: Rao Bahadur Y. Mahabaleswarappa Engineering College

Brief Report:

We the NSS Unit of RYMEC visited the Tambrahalli village (120KM from Ballari) which was declared as Saansad Adarsh Gram Yojana from the honorable Member of Parliament Sri B. Sriramulu. In this visit, we collected the information related to this program from the villagers and we organized some orientation programs Viz., Solar energy awareness, water conservation, Rain water harvesting, Global warming awareness to the people. The programs were organized in Kinnal Porammambe Gurusiddappa High school, Thambrahalli village.



LEAD ACTIVITY

LEAD team of RYMEC is headed by Prof. Dr. Chidananda.H of Computer Science & Engineering department. Our college LEAD team is functioning from 2017.

ABOUT LEAD

The LEaders Accelerating Development (LEAD) Program of Deshpande Foundation, Hubballi, Karnataka fosters innovative and entrepreneurial thinking within college students by exposing them to social issues and by encouraging them to volunteer their time and effort into the community. LEAD ignites their latent talent to come up with creative solutions.

LEAD is an incubator where innovation meets implementation, knowledge meets experience, social issues meet solutions and efforts meet impact.

Activates carried out under LEAD:

i) 'Break the chain' campaign to fend off the Covid-19 spread.

On 5th April 2020 RYMEC LEAD students, presented an online presentation to provide awareness to the public regarding the pandemic situation.





Feeding Voiceless creatures during COVID-19 period

ii) CHILD LABOUR_DAY

World Day against Child Labor 2020 focuses on the impact of crisis on child labor. The COVID-19 health pandemic and the resulting economic and labor market shock are having huge impact on people’s lives and livelihoods. Unfortunately, children are often the first to suffer. The crisis can push millions of vulnerable children into child labor. On this day i.e 12/06/2020 our LEAD Students have given a meaningful message to the society:

Do not ask children to take tool Instead send them to School (after school reopening)



iii) International Yoga Day On the occasion of 6th International Yoga Day i.e 21st June 2020, our LEAD students performed some yoga practice and given training to others to prevent from the unprecedented pandemic.



YOGA training to children on International YOGA Day

iv) Webinar on " Post COVID-19 and How to Enhance Our Immune System" with Dr. Khadar Vali on 29/06/2020.

V.V. Sangha's
ರಾಜ್ ಬಹದ್ದೂರ್ ಯೆ. ಮಾಹಾಬಲೇಶ್ವರಪ್ಪ ಇಂಜಿನಿಯರಿಂಗ್ ಕಾಲೇಜ್, ಬಳ್ಳಾರಿ
Rao Bahadur Y. Mahabaleswarappa Engineering College, Ballari
Cantonment, Ballari-583104, Tel: 08392-244899, Fax: 08392-242148

LEAD
RYMEC LEAD
Organizes a Webinar on
"Questions and Answers Session on various Health Issues with Dr Khadar Vali"

Resource Person
Dr. Khadar Vali
Independent Scientist, Food & Health Expert and Homeopathic Physician

Platform
GoToMeeting
Date: 27th July 2020
Time: 10:00 AM to 11:15 AM
Registration Link: <https://forms.gle/orhQS9DfRL4BZZmy6>

Convenor: Dr. Chidananda H
RYMEC LEAD Incharge

Dr. T Hanumantha Reddy
Vice Principal, Prof & HOD-CSE

Dr. K Veeresh
Principal

Sri J S Basavaraj
Chairman-RYMEC

Sri Aravatigi Prabhu
G.B.Member, RYMEC

Sri.K.M.Shivamurthy
G.B.Member, RYMEC

Please Maintain ***** SOCIAL DISTANCE - MASK - SANITIZATION (SMS) *****

v) LEAD RYMEC, on 26/07/2021 prepared handmade greetings, a gift to express gratitude to our indomitable courage of the Indian soldiers on the occasion of #KARGIL VIJAY DIVAS



vi) RYMEC LEAD Students received as a BEST TEAM AWARD 2K18 in LEAD Valedictory Program



Activities carried out under Youth Red Cross – Unit RYMEC

i) Visit to Old-Age Home

A visit to old Age home has been organized, students involved voluntarily and distributed clothes and served food for the senior citizens. Students have spent a meaningful time with them and made them happy. Program was organized by Youth Red Cross coordinator Mr. Aladalli Sharanabasappa. Old age home in-charge Mr. Venkobanna was thankful to the management and students for such a gentle program.



Students serving Food at Old Age Home

Sports Achievements

B Balaji of ECE branch, 5th semester has won GOLD MEDAL in WORLD KARATE CHAMPIONSHIP of 2019 held at Jaipur, Rajasthan from 10th to 13th January 2019 more than 40+ countries participated.



Mr. Balaji has secured First Place, with Gold Medal in “IMAS World Kumite Championship – 2019”.

- Aruna Kumari Branch: IP participated in women’s Indonesia-India International Throwball Championship from 25th to 26th February 2018
- Prashanth Kumar H. Branch – Mechanical, selected for VTU Hockey team Inter University tournament held at Bangalore University, Bangalore, from 22nd to 28th January 2018.
- Laxmikanth N. Branch – Civil, selected for VTU Hockey team Inter University tournament held at Bangalore University. Bangalore, from 22nd to 28th January 2018.
- Girish K M. Branch – Mechanical, selected for VTU KHO-KHO team Inter University tournament held at Mysore University. Mysore, from 17th to 20th January 2018.
- RYMEC students represented Karnataka Men and Women’s Handball Team and secured First place in All India Tournament and Men Team secured 3rd Place at Delhi organized by Student Olympic Association of India from 26-10-2018 to 28-10-2018
In this event following students has participated: Sahana Deshpande, Rajani S, Divya D, Sai Akhila V, Saidu Begum, Sushma Police Patil and Murali Krishna.
- VTU Inter- Zone Cricket team got 4th place, game held at RYMEC Ballari from 15th to 18th March 2018.

- VTU Rest of Bangalore Zone volley ball women's team got 3rd place, game held at GMIT Davangere from 7th and 8th march 2018
- VTU Kalburgi Zone Cricket team game organized at RYMEC Ballari from 9th to 13th March 2018 and RYMEC won the game with winner title.
- VTU Kalburgi Zone Kho-Kho game organized at RYMEC Ballari on 06th& 07th April 2018 and RYMEC won the game with winner title.
- VTU Kalburgi Zone shuttle badminton for men winner tournament held at GNDEC Bidar on 27th& 28th Aug. 2018
- VTU Kalburgi Zone shuttle badminton for women winner tournament held at GNDEC Bidar on 27th& 28th Aug. 2018
- VTU Kalburgi Zone table tennis women team runners held at Shetty IT Kalburgi from 3rd and 4th September 2018
- VTU Rest of Bangalore Zone volleyball women's team 3rd place held at NMAMIT NITTE from 17th to 19th March 2019.
- Shiva Kumar STM. Branch: Mechanical. Selected for Indian Throw ball team for Indo-Bangladesh International Throw Ball Championship held at Chhattisgarh India from 14th to 16th MAY 2017.
- Shiva Kumar STM. Branch: Mechanical Selected for Indian Throw ball team for Indo-Thailand International Throw ball series held at Bangkok Thailand from 21th to 25th JUNE 2017.

Unnat Bharat Abhiyan, a flagship program of Ministry of Human Resource Development (MHRD)

RYMEC selected under Unnat Bharat Abhiyan, a flagship program of Ministry of Human Resource Development (MHRD) Government of India through a challenge mode application. RYMEC selected the cluster of villages under Unnat Bharat Abhiyan (UBA) in consultation with the District Collectors.

About Unnat Bharat Abhiyan:

- It is a flagship program of the Ministry of Education. It was launched in 2014.
- It aims to link the Higher Education Institutions (HEIs) with a set of at least (5) villages, so that these institutions can contribute to the economic and social betterment of these village communities using their knowledge base.
- It covers two major domains for holistic development of villages – human development and material (economic) development - in an integrated way.

- The Indian Institute of Technology Delhi (IIT, Delhi) has been designated as the National Coordinating Institute (NCI) for the UBA scheme.

Main Objectives:

1. To engage the faculty and students of HEIs in identifying development issues in rural areas and finding sustainable solutions for the same.
2. Identify & select existing innovative technologies, enable Customisation of technologies, or devise implementation methods for solutions, as required by the people
3. To allow HEIS to contribute to devising system for smooth implementation of various Government Programs .

Name of the Proposed Villages:

1. Sanganakal
2. Haraginadone
3. Somasamudra
4. Kolur
5. Sirivaram

Chief coordinator:

- Dr. U M Netravati acting as a UBA Chief coordinator of RYMEC.
- Dr. Chidananda H, Sri. U Shantha Kumar, Sri. Aparna K S, Sri. Virupaksha Gouda H, Sri. Shiva Kumari I, Sri. M I Basavalinganagouda, Sri. Chennaveeranagouda and Sri. K Suresh are the team members

i) Activities organized under UBA-RYMEC:

On 10/08/2021 Grama Sabha Meeting conducted in Haraginadone village to identify the major issues in the village by discussing with village people.



1. On 10/08/2021 Village and Household survey conducted in Haraginadone village to identify the problems in the village.



2. Awareness programme on COVID-19 organized by UBA-RYMEC in Haraginadone village on 10/08/2021.



Swachha Bharath Mission Cell RYMEC

Name of the Convener's: Mrs. Anusuya Patil and Mr. Santosh Mugali

Objective of the SBM:

1. Maintaining RYMEC campus clean
2. Discussing about the trees leaves and others renewable things to compost
3. Preparation of Display boards about cleanness
4. Collection of Feedback and Suggestion s from Students and Staff
5. All members of Swachha Bharat Mission Cell RYMEC to Instruct and Guide to House Keepers to maintain Cleanness campus of RYMEC and Toilet room.





Co-curricular Activities

i) MANDARA

ii) VIDHARA

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING AND INFORMATION SCIENCE ENGINEERING is organizing ****VIDARA 2020**** ON 26th and 27th November 2020.

VIDARA is a tech fest conducted in the dept of CSE every year, VIDARA means a flower that blossoms in a desert. This flower is an emblem for a student who needs to grow and blossom in every hard time.

Opportunities for learning, growing and achieving exist everywhere at RYMEC, Life at RYMEC is a blend of academics, extracurricular and co-curricular activities. VIDARA 2020 allows students' to explore their new ideas of problem solving ,it strengthens students' logical thinking skills and it develops students' potential and talents to the fullest.

This tech fest is a platform for all students to participate in various technical and non-technical events so as to identify the hidden talents. The various events conducted in Vidara2020 are:

List of events:

Event 1: “SHODHANA”: Inviting new and innovative startup solutions for day-to-day problems.

Event 2: Elocution Competition

Event 3: Photography (Inviting you to share photos from your celebrations of Diwali in this pandemic, Show us your most creative and unique pictures of the festival of lights.)

Event 4: Quiz

Event 5: Crossword

Event 6: Alumni Talk

VIDHARA-TECH FEST conducted annually by CSE-FORUM by CSE staff and students, for tall the basic degree students and technical degree students. The various events conducted are both technical like debugging, coding, quiz etc. and nontechnical event alike dancing, singing, video games, movie making etc.



iii) TALENTRONICS FORUM

Department of Electronics and Communication Engineering is organizing Every year Talentronics Forum. The various events conducted are both technical like debugging, coding, quiz etc and nontechnical event alike dancing, singing, video games, movie making etc.

Main Objectives of Forum

- To bring holistic development of students of the ECE Department through technical and cultural events.
- To increase their exposure to the professional world by organizing expert lectures.
- To organize Industrial Visits to places related to the ECE field.
- To encourage Student projects related to ECE.
- To organize Intra-department technical and non-technical competitions.

iv) Dept of Mechanical facilitates a techno cultural democracy for the students. The department has inaugurated student's forum with the title "MECH-TANTRIKA".

v) Department of EEE having forum named has "VIDYUTSAV" under this forum, the events like Technical Talk, photo hunt, Brainstorming Activities were conducted, also Competitions like Logo Design, Rangoli and Skits were organized.

CRITERION 10

CRITERION 10	GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES	120
10.1	Organization, Governance and Transparency	40
10.1.1	State the Vision and Mission of the Institute	05

VISION OF THE INSTITUTE

“To build Professionally Excellent, Knowledgeable, Globally Competitive, Socially Responsible Engineers and Entrepreneurs”

MISSION OF THE INSTITUTE

- M1.** To provide quality education in Engineering and Management.
- M2.** To establish a continuous Industry Institute interaction, Participation and Collaboration to contribute skilled Engineers.
- M3.** To develop human values, social values, entrepreneurship skills and professional ethics among the technocrats.
- M4.** To focus on innovation and development of technologies by engaging in cutting edge research areas.

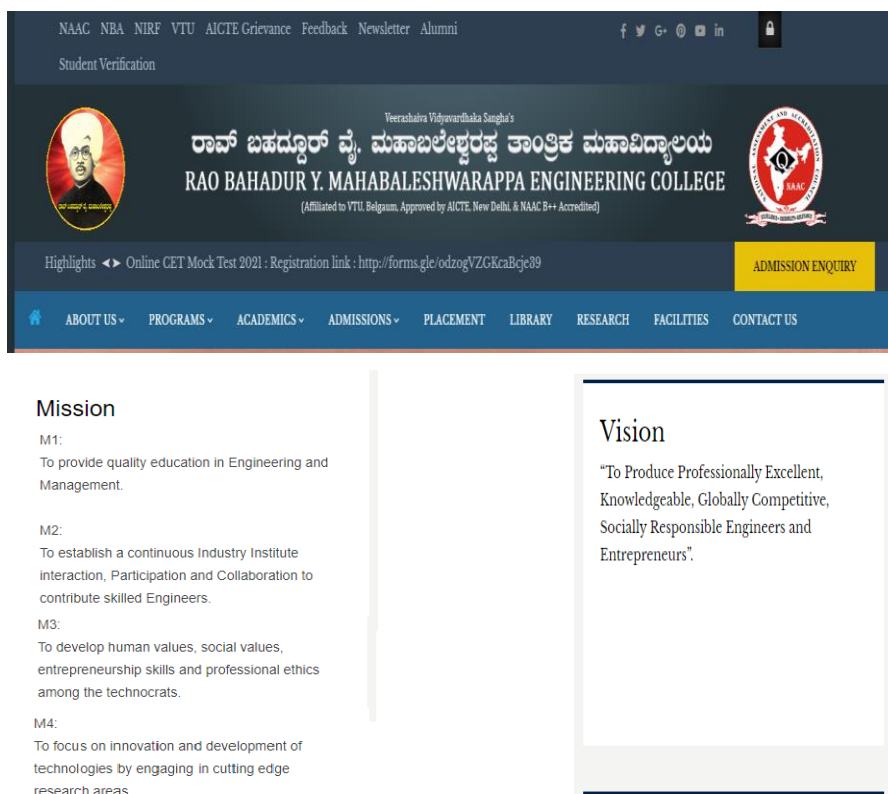


Fig. 10.1: Vision and Mission of the institute displayed in college Website <https://www.rymec.in>

10.1.2	Governing Body, Administrative Setup, and Functions of Various Bodies, Service Rules, Procedures, Recruitment, and Promotional Policies	10
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The Governing Body:

Governance is the key activity that connects between the management, staff, students and the community. The governing body of Institution is a legal structure responsible for the overall functioning of the college. In general, it is responsible for the Quality of service (QoS) the college offers to the student and other local community and society, as well as the college annual budget, health, and strategic direction. Institution has a governing body in place wherein the members are drawn from distinguished cross-sections of the society as shown in Table 10.1.

Table 10.1: Structure of Governing Body

Sl. No.	Name	Designation	Occupation
1.	Sri. H.M. Gurusidda Swamy	President., V.V. Sangha, Ballari.	Advocate
2.	Sri. Allum Channappa	Vice President/Chairman, RYMEC, Ballari.	Advocate
3.	Sri. B.V. Basavaraj	Secretary, V.V. Sangha, Ballari.	Advocate
4.	Sri. Gonal Rajshekhar Gouda	Treasurer	Business
5.	Dr. T. Hanumantha Reddy	Member - Secretary	Principal, RYMEC, Bellary
6.	Dr. Parama Shiva Murthy	VTU Nominee	Principal, Govt Engineering College, Chamarajanagar
7.	Sri. R. Manjunath	Director, DTE	Director, DTE Bangalore
8.	Sri. Shakthi Velu	Regional officer	Regional officer, AICTE, Bangalore.
9.	Dr. K. Ramesh Gopal	Industrial Representative	Business

The Administrative Setup:

Institute believes in dedicated work culture with love and affection to each and every stakeholder. Involvement of each and everyone in the decision-making and transparency associated therein also form the important features of the work culture. A core team of 24 to 28 members lead the processes in the institute. The administrator list is given below.

Table 10.2: List of Administrators

Sl. No.	Name	Designation	Responsibility
1.	Sri. Allum Chanappa	Chairman, RYMEC	Administration
2.	Dr. T. Hanumantha Reddy	Principal	Administration
3.	Dr. Savita Sonoli	Vice-Principal, Professor & HOD, ECE	Admission Head
4.	Dr. Girisha H	Professor & HOD, CSE	Dean Academics
5.	Dr. B Sreepathi	Professor & HOD -ISE Dean Examinations	VTU Examinations, Network Maintenance, Digital Library, Online Placement Test, Consultancy Work for online Test. Web site coordinator
6.	Dr. Hiregoudar Yerrenagoudaru	Professor & PG Coordinator	Dean R & D at Institute Level
7.	Dr. C Thotappa	Professor & PG Coordinator	Mechanical Dept. NBA Co- ordinator.
8.	Dr. H M Mallikarajuna	Professor & HOD, Civil Engineering	Departmental Academic Work, Consultancy Work.
9.	Dr. Kori Nagaraj	Professor & HOD, Mechanical Engg.	Departmental Academic Work
10.	Sri. Shambulingana Gouda	Assistant Professor	Electrical Maintenance
11.	Dr. A Thimmana gouda	Professor, MBA Co-ordinator	Departmental Academic Work
12.	Dr. Phakirappa Jeevargi	Professor & HOD, Mathematics & 1 st Year Coordinator	Departmental Academic Work, Dean (Academic & Student Welfare for first year).
13.	Dr. Hiremath Suresh Babu	Professor & HOD, Chemistry.	Departmental Academic Work
14.	Dr. N M Nagabhushan	Professor & HOD, Physics	Research Coordinator (Physics)
15.	Dr. Prabhavathi. S	Professor, ECE Dept.	NIRF coordinator
16.	Dr. Veeragangadharaiah Swamy	Professor	IQAC Coordinator
17.	Sri. Gururaj K K	Assistant Professor & Placement Officer	Training & Placement

DEPARTMENT OF MECHANICAL ENGINEERING

18.	Sri. Virupaksha Gouda H	Assistant Professor	NSS /RED CROSS Coordinator
19.	Dr. S. P. Jagadeesh	Associate Professor	Chief warden
20.	Smt. Sridevi S Malipatil	Assistant Professor	Girls Hostel Warden
21.	Sri. K.M. Shiva Prasad	Assistant Professor	Boys Hostel Warden
22.	Smt. Girija Vani	Assistant Professor	Girls Hostel Warden
23.	Sri. Phanindra Reddy	Assistant Professor	Boys Hostel Warden
24.	Smt. Chinna V Gowdar	Assistant Professor	EDUSAT Co-ordinator
25.	Sri. Sridhar Belagi	Assistant Professor	A-View Co-ordinator
26.	Sri. Vishwanath Reddy	Librarian	Library

Functions of Various Bodies:

Roles and Responsibilities of Governing Council of RYMEC, Ballari as per Byelaw of V.V Sangha, Ballari.

1. Governing council responsible to monitor day to day overall affairs of the Institution.
2. Governing council responsible to implement guidelines given by Management Committee of V.V. Sangha, Ballari.
3. It is Responsible to take cooperation, favour and Sympathy from all stake holders.
4. To gather Funds required for Management of the Institution and maintenance of audit reports of financial resources of the institution.
5. To Make Independent in its working and dynamic strategy implementation to make institution independent.
6. It is mandate given by V.V. Sangha Ballari for Governing Council to prepare and submit Annual and supplementary Budget proposals to the V.V Sangha Management for approval.
7. Prepare Annual reports and submit it to Management committee of V.V Sangha for approval.
8. Budget requirement of equipment's, construction and maintenance of \ Building and Academic activities shall be submitted to the management committee for approval
9. Promotions and extensions of service after retirement of staff members shall be submitted to the secretary with recommendation.

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10. Management of Teaching and Nonteaching staff members of RYMEC, Ballari.
11. Verify audit statements from time to time to check its authenticity and correct the audit statements if any deficiencies.
12. All expenditure of the institution shall be within the budget approved by V.V Sangha, Ballari.
13. Submit Annual report to Management committee of V.V Sangha, Ballari and propose measures to resolve problems and issues raised in administrative activities of the Institution.
14. Day to day activities of Teaching, Non-Teaching and office staff members shall be monitored by Governing body of the institution initiate punishment if any violation of service manual of the institution.
15. Follow in letter and spirit advises and directions given by Management Committee of V.V Sangha, Ballari for overall growth of the institution.
16. Governing Body shall take advice from senior academic leaders and experts, Industry, Senior legal luminaries, Senior Medical experts, achievers and other Known persons of the society for overall growth of the institution.
17. Governing Council responsibility to follow diligently rules and regulations prescribed by statutory bodies namely Government, VTU, AICTE, UGC and other regulatory agencies.
18. It is responsibility of governing council to follow guidelines as amended by V.V Sangha time to time to accommodate dynamic changes in technical education, general society and other important segments of the society.

Service Rules:

Service rules are constituted by V.V Sangha and is made available to all the departments for the sake of the information to the employees.

RECRUITMENT RULES:

1	<p>There shall be three categories of faculty/staff members:</p> <ul style="list-style-type: none">• Academic: Professor, Associate Professor, Assistant Professor, Librarian, etc.,• Technical: System Analyst, Programmer Foreman, Instructor, Assistant Instructor, Helpers, Mechanic, etc,
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	<ul style="list-style-type: none">• Office Staff: Office Superintendents, FDA, SDA, Attenders and Peon etc.,
2	The Appointing Authority for all the above positions there shall be a Governing Council at the institution level including Principal as the Governing Council Member.
3	<p>The appointment of staff members at an Institution shall be made by the Governing council by adopting an open and transparent selection procedure namely:</p> <ul style="list-style-type: none">• Issue of attractive advertisement for the posts at State-level English and Kannada Daily News Papers;• Issue of rolling announcement of vacancies in an appropriate site;• Adherence of Policy matters given by the Management;• Short listing of candidates will be done as per AICTE/VTU/GOK Norms to meet the requirements• Intimating eligible candidates for the recruitment process after short listing as per norms• Setting up Screening Committees to identify candidates to be interviewed;• Setting up Selection Committees to interview the identified candidates including the subject expert in the concerned domain;• Placing the Selection Committee Reports before the GC for approval;• Placing selected candidates in MC Meeting at Management Level <p>Issue of Appointment Letters by the Secretary/Chairman of the Management</p>
4	Each appointment shall be normally made against a sanctioned post at the Institute. However, the GC shall have the powers to make any other appointment/s, after determining and fixing a source of fund for the expenditure.
5	The GC may also consider and appoint well qualified/experienced candidates to the Institution in various departments/sections.

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6	The pay scales admissible to the faculty/staff members at the institution shall follow the AICTE/VTU/GOK/Management norms and standards.
7	All the other staff members of the institution shall be entitled to receive pay, allowances and other privileges as prescribed by the State Government from time to time.
8	The Service Conditions for all academic, administrative and technical staff members of the institution shall be as prescribed in the Service Manual of the Management.
9	There shall be a Code of Ethics to be strictly followed by all academic, administrative and technical staff as prescribed in the <i>Service Manual</i> of the Management

Procedures and Promotional Policies:

- Policies regarding promotion are as per RYMEC Promotional Policies.

FACULTY NORMS - PRESCRIBED BY AICTE FOR VARIOUS PROGRAMMES

(Engineering & Technology, MBA followed by Rao Bahadur Y Mahabaleswarappa
Engineering College, Ballari – 583104)

A. FACULTY NORMS - PRESCRIBED BY AICTE

BE./B.Tech.

Programme	Cadre	Qualification	Experience
Engineering & Technology	Assistant Professor	BE / B. Tech & ME / M. Tech in relevant branch with 1st class or equivalent either in BE/B.Tech or ME / M.Tech.	
	Associate Professor	Qualifications as above that is for the post of Assistant Professor, as applicable and PhD or equivalent, in appropriate discipline. Post PhD publications and guiding PhD students is highly desirable.	Minimum of 5 years' experience in teaching / research / industry of which 2 years post PhD experience is desirable.
	Professor	Qualifications as above that is for the post of Associate Professor, applicable.	Minimum of 10 years teaching / research / industrial experience of which at least 5 years should

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		Post PhD publications and guiding PhD students is highly desirable.	<p>be at the level of Associate professor. or Minimum of 13 years' experience in teaching and / or Research and / or Industry.</p> <p>In case of research experience, good academic record and books / research paper publications / IPR / patents record shall be required as deemed fit by the expert members of the selection committee.</p> <p>If the experience in industry is considered, the same shall be at managerial level equivalent to Associate Professor with active participation record in devising / designing, planning, executing, analyzing, quality control, innovating, training, technical books / research paper publications / IPR / patents, etc., as deemed fit by the expert members of the Selection committee.</p>
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ME./M.Tech

Qualifications as prescribed above

Programme	Cadre	Qualification	Experience
Management (MBA)	Assistant Professor	First Class or equivalent in Master's Degree in Business Administration or equivalent and 2 years relevant Experience is desirable	
	Associate Professor	Qualifications as above that is for the post of Assistant Professor, as applicable and PhD or equivalent, in appropriate discipline. Post PhD publications and guiding PhD students is highly desirable.	Minimum of 5 years' experience in teaching / research /industry of which 2 years post PhD experience is desirable.
	Professor	Qualifications as above that is for the post of Associate Professor, applicable.	Minimum of 10 years teaching/ research /industrial experience of which at least 5 years should

DEPARTMENT OF MECHANICAL ENGINEERING

		Post PhD publications and guiding PhD students is highly desirable.	<p>be at the level of Associate professor.</p> <p>or</p> <p>Minimum of 13 years' experience in teaching and / or Research and / or Industry.</p> <p>In case of research experience, good academic record and books / research paper publications / IPR / patents record shall be required as deemed fit by the expert members of the selection committee.</p> <p>If the experience in industry is considered, the same shall be at managerial level equivalent to Associate Professor with active participation record in devising/ designing, planning, executing, analyzing, quality control, innovating, training, technical books / research paper publications / IPR /patents, etc., as deemed fit by the expert members of the Selection committee.</p>
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Principal

Programme	Cadre	Qualification	Experience
	Principal	<p>Qualifications as above that is for the post of Professor, as applicable.</p> <p>Post PhD publications and guiding PhD students is highly desirable.</p>	<p>Minimum of 10 years' experience in teaching / Research / Industry out of which at least 3 years shall be at the level of Professor.</p> <p>or</p> <p>Minimum of 13 years' experience in teaching and/ or Research and / or Industry In case of research experience, good academic record and books / research paper publications / IPR / Patents record shall be required as deemed fit by the expert members of the Selection committee.</p> <p>If the experience in industry is considered, the same shall be at managerial level equivalent to</p>

			<p>Professor level with active participation record in devising / designing, developing, planning, executing, analyzing, quality control, innovating, training, technical books / research paper publications / IPR / patents, etc. as deemed fit by the expert members of the Selection committee.</p> <p>Flair for Management and Leadership is essential.</p>
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10.1.3	Decentralization in Working and Grievance Redressal Mechanism	10
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Decentralization in Academics

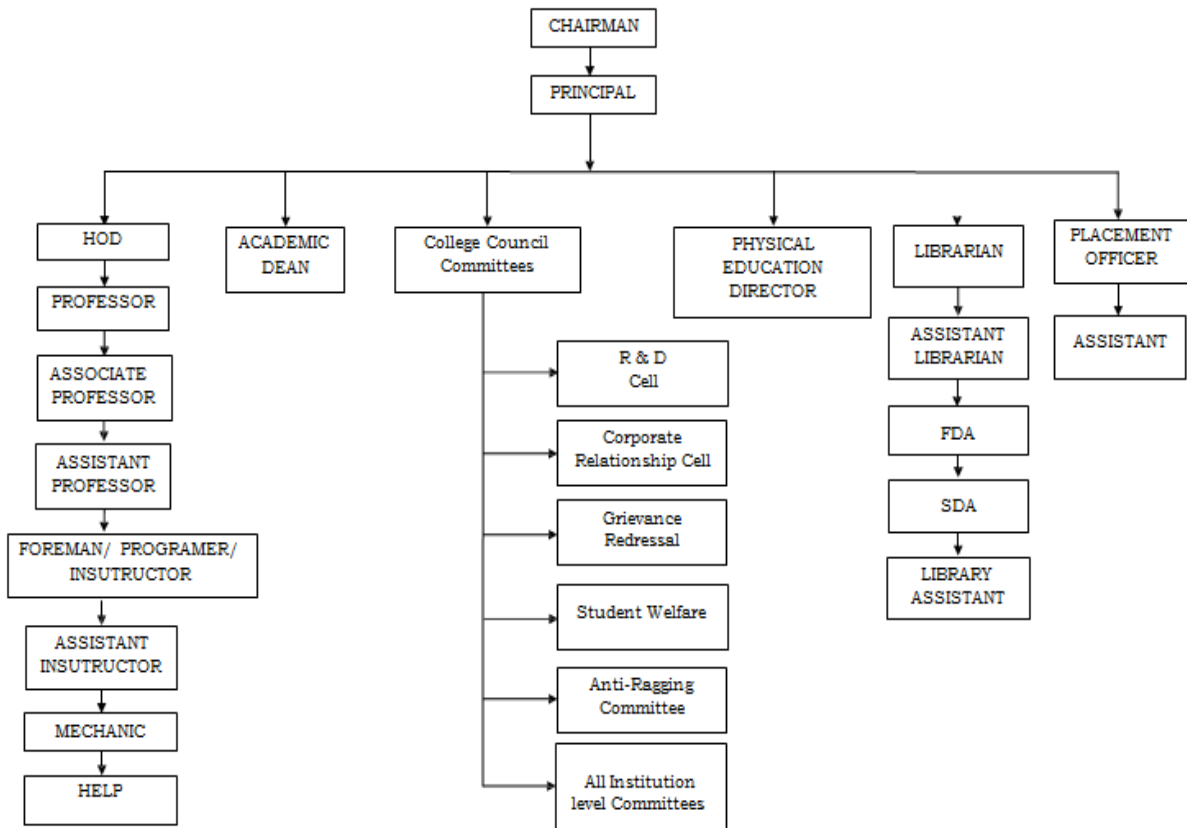


Fig. 10.2(a): Decentralized Academics

Decentralization in Administrations

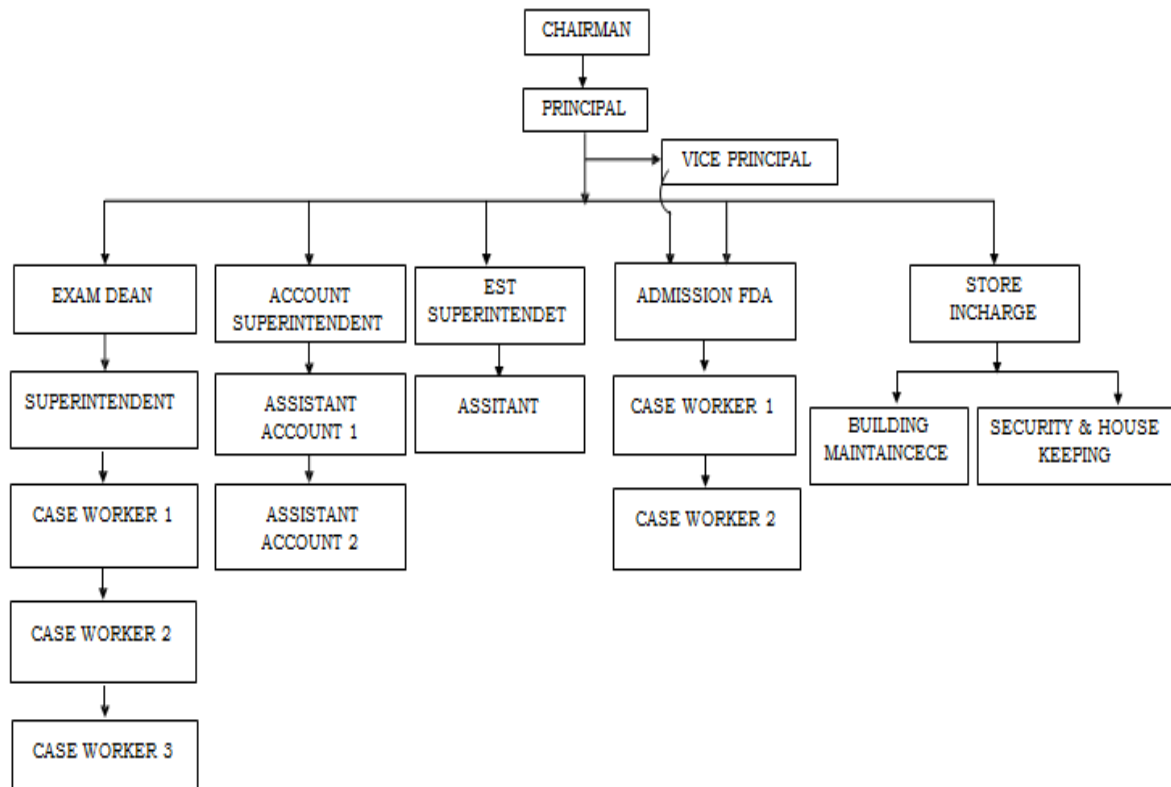


Fig. 10.2(b): Decentralized Administrations

GRIEVANCE REDRESSAL CELL

The function of the cell is look into the complaints lodged by any student if any and then judge its merit. The grievance cell is also empowered to look into matters of harassment. Anyone with a genuine grievance may approach the department members in person or in consultation with officer in-charge student's grievance cell. In case person is unwilling to appear in self, grievance may be dropped in writing at the letter box/suggestion box of the grievance cell at administrative block.

Mechanism for Collecting Grievances

1. **SMS** to Department Committee Member, HODs, Hostel Warden, Convener and Principal.
2. **Email** to Principal, Convener and Committee Member of the Department.
3. **Written Complaint** to Principal, Convenor and Committee Member of the Department.
4. **Orally** to Department Committee Member, HODs, Hostel Warden, Convener and

Principal.

Process for disposal of Grievances

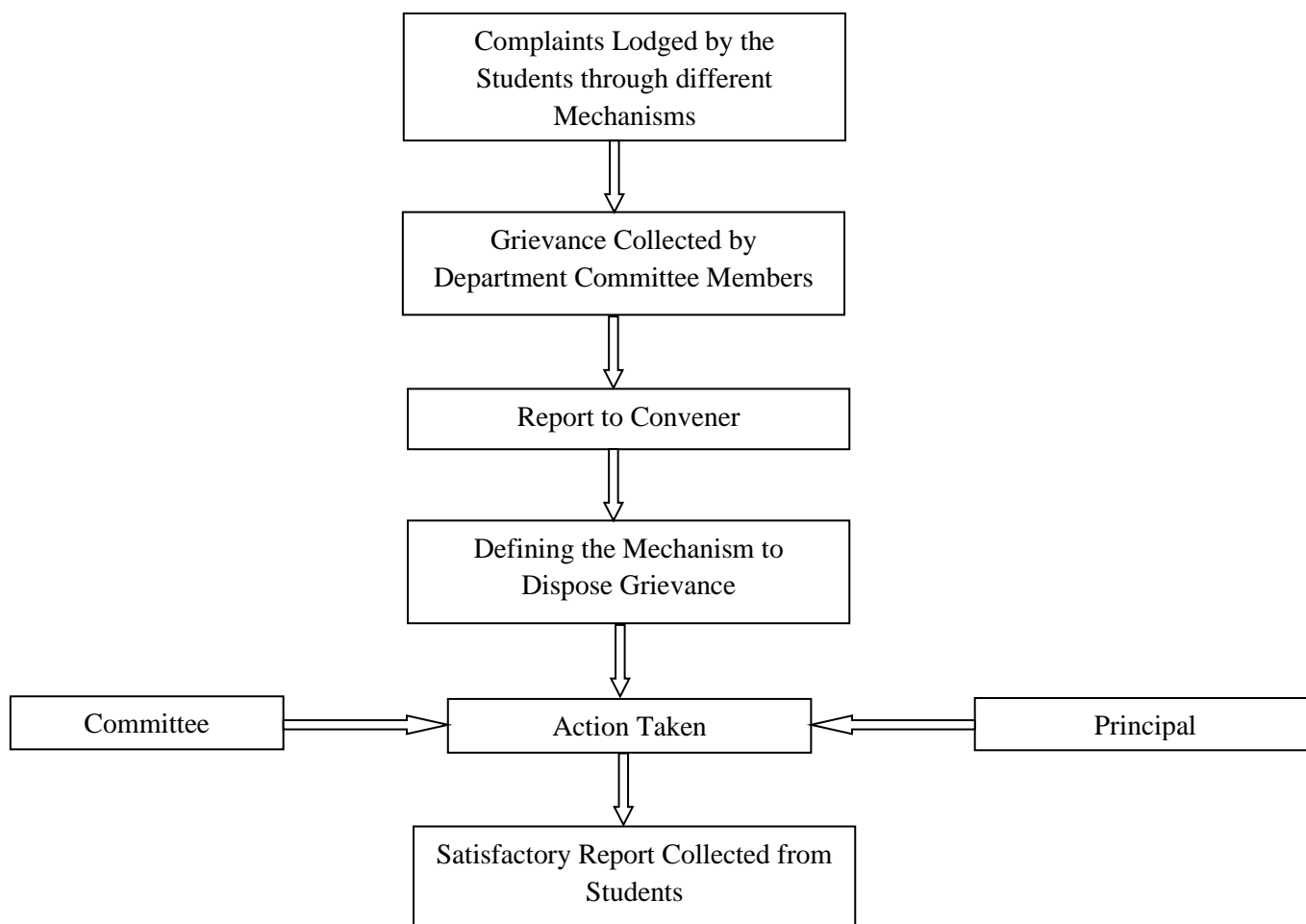


Fig. 10.3: Grievance Disposal Mechanism

Table10.4: Central Grievance Redressal Cell Committee

Sl. No.	Name of the Faculty	Designation	Department	Role	Contact Number
1	Dr. Prabhavathi.S	Professor	E&CE	Convener	8105289789
2	Mrs. Amrutha G E	Assistant Professor	EEE	Member	7349138852
3	Mr. A. M Shivaprakash Swamy	Assistant Professor	Mechanical	Member	9036900991
4	Mrs. Manjula Patil	Assistant Professor	ISE	Member	9986413377
5	Mr. Sharanagouda.V.Patil	Assistant Professor	E&CE	Member	9980376126
6	Mr. ShivaKumar	Assistant Professor	CSE	Member	9449556693
7	Mr. Basavalinganagouda M. I.	Assistant Professor	Civil	Member	9739967538
8	Mr. Prabhakar Meti	Assistant Professor	Mathematics	Member	9036550309

Anti-Ragging Committee

- The following team members are informed to act members of Anti-Ragging group.
- Group members are informed to make surprise visits as per the schedule given and one of team members are requested to write a brief report after inspection.
- These groups are formed to prevent and curb the menace of Ragging.

Table 10.5: Anti Ragging Committee

Sl. No.	Name of the Member	Designation	Department	Role	Contact Number
1	Dr. B. Doddabasavana Goud	Professor	EEE	Convener	9449171271
2	Dr. D. Sai Madhavi	Associate Professor	CSE	Member	9945829150
3	Sri. M. R. Vijaykumar	Associate Professor	Civil	Member	9886893258
4	Sri. Manjunatha H.M	Associate Professor	Mathematics	Member	9481709495
5	Smt. K. R. Bhagya	Assistant Professor	Physics	Member	8762707799
6	Sri. Vasanth Kumar	Police Sub-Inspector	Police	Member	
7	Sri. S. M. Sanna Basaiah	Parents/Guardian	Rtd. Health Inspector	Member	
8	Sri. M. Venu Gopal	Parents/Guardian	Govt. Official	Member	

Table10.6: Anti Ragging Squad

Sl. No.	Name of the Member	Designation	Department	Role	Contact Number
1	Sri. Shridhar Bilagi	Assistant Professor	E&CE	Member	8105828383
2	Sri. Adhana Gouda	Assistant Professor	Civil	Member	9972612107
3	Sri. K. Phanindra Reddy	Assistant Professor	E&CE	Member	9241220917
4	Sri. Prabhakar Meti	Assistant Professor	Mathematics	Member	9036550309
5	Sri. S. P. Jagadeesh	Associate Professor	Mechanical	Member	9481716642

Table10.7: Monitoring Cell on Ragging

Sl. No.	Name of the Member	Designation	Department	Role	Contact Number
1	Sri. K. Raghavendra Prasad	Associate Professor	EEE	Member	9448035570

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2	Sri. B. Veeresh	Associate Professor	Mathematics	Member	9449632718
3	Sri. Khaja Mouinuddin	Associate Professor	E&CE	Member	8105263354
4	Mrs. Sridevi Mali Patil	Assistant Professor	CSE	Member	9008055312
5	Mrs. Rohini H. M.	Assistant Professor	E&CE	Member	9902502026

Table10.8: Committee of Wardens

Sl. No.	Name of the Member	Designation	Dept.	Contact Number
1	Sri. K. M. Shivaprasad	Asst. Professor & Warden of GN Boys Hostel	CSE	7899964163
2	Sri. Phanidhar Reddy	Asst. Professor & Warden of Campus Boys Hostel	E&CE	9241220917
3	Mrs. Sridevi Mali Patil	Asst. Professor & Warden of WW Hostel	CSE	9008055312
4	Mrs. Girija Vani G	Asst. Professor & Warden of Gandhinagar Girls Hostel	E&CE	9481718384

10.1.4	Delegation of Financial Powers	10
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Financial powers are delegated/authorized to Principal to spend up to Rs. 1,00,000(One Lakh Rupees) and the HOD's of all the departments of this Institute are also authorized to spend up to Rs. 25,000(Twenty-Five Thousand Rupees) for academic purposes.

10.1.5	Transparency and availability of correct / unambiguous information in public domain	05
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Dissemination and Availability of institute/program specific information through the web:

- The institute has hosted its own website which is updated regularly. The institute and programme specific information is made available to all aspirants through the web-site.
- The web-site URL is: **www.rymec.in**

Table10.9: URL Links

Sl. No.	Content	URL
1	Institution Mission & Vision	https://www.rymec.in/
2	Audited Statements	https://www.rymec.in/index.php/about-us/location
3	NSS	https://rymec.in/index.php/nss
4	Placement	https://www.rymec.in/index.php/placement-main
5	AICTE Mandatory	https://www.rymec.in/index.php/aicte-mandatory

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6	NBA Accreditation Programs	https://www.rymec.in/index.php/nba-acreditation-programs
7	IQAC	https://www.rymec.in/index.php/iqac-bot
8	Facebook	www.facebook.com/rymec1980
9	YouTube	https://www.youtube.com/channel/UC11Ds9esAQmsLD2nabcnmlw
10	NBA	https://rymec.in/index.php/nba-top https://rymec.in/index.php/nba-top?start=1

10.2	Budget Allocation, Utilization, and Public Accounting at Institute level	30
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CFY-2020-21

Table 10.10: Details of Total Income and Expenditure 2020-2021

Total Income: 17,80,68,290				Actual Expenditure: 16,46,38,354			Total Number of Students: 2580
Fee	Govt.	Grant	Other Sources	Recurring Including Salaries	Non-Recurring	Special Projects/ Any other, Specify	Expenditure per Student
16,88,61,837	19,250	26,86,000	65,01,203	15,39,97,620	1,06,40,734	--	63,813

CFYm1-2019-20

Table 10.11: Details of Total Income and Expenditure 2019-2020

Total Income: 18,52,52,434				Actual Expenditure: 21,87,41,442			Total Number of Students: 2516
Fee	Govt.	Grant	Other Sources	Recurring Including Salaries	Non-Recurring	Special Projects/ Any other, Specify	Expenditure per Student
17,15,92,742	65,300	14,96,415	1,20,97,976	17,60,24,016	4,27,17,426	--	86,940

CFYm2-2018-19

Table 10.12: Details of Total Income and Expenditure 2018-2019

Total Income: 18,19,56,393				Actual Expenditure: 17,81,11,619			Total Number of Students: 2565
Fee	Govt.	Grant	Other	Recurring	Non	Special	Expenditure

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			Sources	Including Salaries	Recurring	Projects/ Any other, Specify	per Student
16,68,55,086	36,000	63,500	1,50,01,807	16,91,49,356	89,62,263	--	69,439

CFYm3-2017-18

Table 10.13: Details of Total Income and Expenditure 2017-2018

Total Income: 21,02,84,966				Actual Expenditure: 19,37,07,423			Total Number of Students: 2590
Fee	Govt.	Grant	Other Sources	Recurring Including Salaries	Non Recurring	Special Projects/ Any other, Specify	Expenditure per Student
17,46,79,277	38,451	10,00,000	3,45,67,238	17,77,51,819	1,59,55,604	--	74,790

Table 10.14: Actual Expenses during 2017-2021

Items	Budgeted in CFY	Actual expenses in CFY	Budgeted in CFY m1	Actual expenses in CFY m1	Budgeted in CFY m2	Actual Expenses in CFYm2	Budgeted in CFY m3	Actual Expenses in CFYm3
	2020-2021		2019-2020		2018-2019		2017-2018	
Infrastructure Built-up	2,00,00,000	86,32,644	3,50,00,000	3,20,30,375	30,00,000	27,51,639	1,25,00,000	1,16,70,452
Library	10,00,000	7,38,158	40,00,000	22,88,084	40,00,000	24,14,111	40,00,000	30,39,712
Laboratory equipment	50,00,000	16,22,273	50,00,000	88,81,746	50,00,000	42,25,128	1,00,00,000	37,77,440
Laboratory consumables	10,00,000	1,35,118	5,00,000	2,21,946	5,00,000	4,15,132	10,00,000	3,63,180
Teaching and non-teaching staff salary	13,00,00,000	11,28,72,483	13,00,00,000	12,95,62,982	13,00,00,000	12,81,57,804	13,00,00,000	12,87,68,357
Maintenance and spares	1,00,00,000	70,88,964	1,25,00,000	1,16,77,731	1,25,00,000	92,63,565	1,25,00,000	1,17,28,486
R&D	50,00,000	25,345	10,00,000	3,90,527	10,00,000	5,63,767	10,00,000	7,01,299
Training and Travel	50,00,000	2,33,596	20,00,000	17,74,712	20,00,000	12,09,662	20,00,000	14,07,863
Miscellaneous expenses *	50,00,000	16,50,813	25,00,000	20,18,071	25,00,000	16,69,763	35,00,000	20,12,649
Other, specify	5,00,00,000	3,15,75,497	3,25,00,000	3,04,35,399	3,25,00,000	2,74,42,444	3,25,00,000	3,02,37,985
Total	23,20,00,000	16,45,74,891	22,50,00,000	21,92,81,573	19,30,00,000	17,81,13,015	20,90,00,000	19,37,07,423

10.2.1	Adequacy of budget allocation	10
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The Budget proposal for the academic year is prepared by the individual departments as per the guidelines by V.V Sangha and Principal office. The collective budget proposals are scrutinized by the budget committee at the college level and further taken to governing council and management council for approval and sanction. Once it is sanctioned, the Principal will issue the budget order accordingly. The budget allocation and utilization for the last three years is adequate.

10.2.2	Utilization of allocated funds	15
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Table 10.15: Utilization of allocated funds during 2017 - 2021

	2020-21	2019-20	2018-19	2017-18
Utilization of the Budget (%)	70.93	97.45	92.28	92.68

10.2.3	Availability of the audited statements on the institute's website	05
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The audit statements of the academic years are available in the institute website: www.rymec.in/index.php/mandatory-disclosures

10.3	Programme Specific Budget Allocation, Utilization	30
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CFY – 2020-2021

Table 10.16: Total Budget Allocation and Utilization 2020-21

Total Budget: 7,00,000		Actual Expenditure: 5,31,849		Total Number of Students: 434
Non-Recurring	Recurring	Non-Recurring	Recurring	Expenditure per Student
5,00,000	2,00,000	4,62,202	69,647	1,225

CFYm1 – 2019-2020

Table 10.17: Total Budget Allocation and Utilization 2019-20

Total Budget: 8,00,000		Actual Expenditure: 6,08,901		Total Number of Students: 435
Non-Recurring	Recurring	Non-Recurring	Recurring	Expenditure per Student
5,00,000	3,00,000	3,79,303	2,29,598	1,400

CFYm2– 2018-2019

Table 10.18: Total Budget Allocation and Utilization 2018-19

DEPARTMENT OF MECHANICAL ENGINEERING

Total Budget: 6,00,000		Actual Expenditure: 4,92,950		Total Number of Students: 459
Non-Recurring	Recurring	Non-Recurring	Recurring	Expenditure per Student
2,00,000	4,00,000	1,56,909	3,36,041	1,074

CFYm3 – 2017-2018

Table 10.19 Total Budget Allocation and Utilization 2017-2018

Total Budget: 14,60,000		Actual Expenditure: 12,44,541		Total Number of Students: 506
Non-Recurring	Recurring	Non-Recurring	Recurring	Expenditure per Student
10,00,000	4,60,000	9,26,414	3,18,127	2,460

Table 10.20: Actual Expenses during 2017-2021

Items	Budgeted in CFY (2020-21)	Actual expenses in CFY (2020-21)	Budgeted in CFYm1 (2019-20)	Actual expenses in CFY m1 (2019-20)	Budgeted in CFY m2 (2018-19)	Actual expenses in CFY m2 (2018-19)	Budgeted in CFYm3 (2017-18)	Actual expenses in CFY m3 (2017-18)
Laboratory Equipment	5,00,000	4,62,202	5,00,000	3,79,303	2,00,000	1,56,909	10,00,000	9,26,414
Software	--	--	--	--	--	--	--	--
Laboratory Consumable	25,000	17,200	25,000	16,362	1,50,000	1,33,250	1,00,000	64,573
Maintenance and Spares	1,00,000	43,697	2,00,000	1,69,663	50,000	40,958	2,00,000	1,36,759
R&D,	25,000	--	25,000	15,474	50,000	34,586	50,000	24,670
Training and Travel	25,000	4,000	25,000	17,951	50,000	33,800	10,000	8,500
Miscellaneous Expenses for academic activities (AC's)	25,000	4,750	25000	10148	1,00,000	93,447	1,00,000	83,625
Total	7,00,000	5,31,849	8,00,000	6,08,901	6,00,000	4,92,950	14,60,000	12,44,541

10.3.1	Adequacy of budget allocation	10
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The department wise budget is sanctioned by VV Sangha office and the sanction letters are sent to the Principal, RYMEC. The principal along with the respective HOD's further over sees the utilization of the sanctioned budget. After approval of the budget from governing council and management council the process of procuring is carried out as per the

norms specified by the V.V.Sangha.

10.3.2	Utilization of allocated funds	20
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Table 10.21: Budget Utilization 2017-2021

Year	2020-21	2019-20	2018-19	2017-18
Mechanical Utilization of the Budget (%)	75.97	76.11	82.15	85.24

10.4	Library and Internet	20
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10.4.1	Quality of learning resources (hard/soft)	10
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Relevance of available learning resources including e-resources:

“Knowledge Centre” is established along with the parent institution in the year 1980 with prime objective of supporting the parent organization programs. It is having, functionally designed building and it is located in the convenient accessible place in the college campus to the different group of library users. The main goal of the knowledge centre is improving the service effectiveness, economy and efficiency of library management system, safeguard the interest and benefits of the stakeholders and facilitate to develop the innovative thoughts and knowledge sharing culture among the library users. The Knowledge Centre enfolded both print and digital form of global standard mass and scholarly knowledge contents.

The collection includes books, e-books, Journals (Print and Electronic), Conference proceedings etc., and Library gives utmost importance to collection development of learning materials. *The department heads in consultation with the department faculties with reference to VTU Syllabus, recommend the required learning materials to be added to the library. The number of titles and volumes are added every year in accordance with the norms and standards set by V.T.U. and A.I.C.T.E.*

Table 10.22: Library Collection:

The rich collection of the library comprises the following resources:

Sl. No.	Learning / Reading Materials	Nos.
1	Print Books	1,69,883
2	e-Books	24,220

3	Print Journals	131
4	e-Journals	07 Databases
5	Bounded Journals	776

E-Resources: The Library collaborated with VTU Consortium for subscription of E-Resources (e-Journals and e-Books).

Table 10.23: E – Journals databases

Sl. No.	Publishers	No. of Resources	URL
1.	ELSEVIER	296Journals	www.sciencedirect.com
2.	IEEE Proceedings Order Plan (POP)	530,000 papers – from 100 core IEEE conference titles in POP	https://ieeexplore.ieee.org
3.	Springer Nature	690 Journals	https://link.springer.com/
4.	Taylor & Francis	555 Journals	https://www.tandfonline.com/
5.	Emerald	120 Journals	https://www.emeraldinsight.com/
6.	ProQuest	Fulltext: 3900 Journals Indexed: 7800 Abstract	https://www.proquest.com/165290
7.	Knimbus	E-Books: 10,000+	https://new.knimbus.com

Table 10.24: E – Books

Sl. No.	Publishers	No. of Resources	URL
1.	ELSEVIER	436 e-Books	www.sciencedirect.com
2.	Springer Nature	13139 e-Books	https://link.springer.com/
3.	Taylor & Francis	4950 e-Books	https://www.taylorfrancis.com/
4.	McGraw-Hill Education	505 e-Books	https://www.expresslibrary.mheducation.com/bookshelf
5.	New Age International	220 e-Books	https://digital.elib4u.com/bookshelf
6.	Packt	5000 e-Books	https://rbmec.knimbus.com/user#/home
7.	Knimbus	10,000+e-Books	https://digital.elib4u.com/bookshelf

Digital library

Digital library system is integrated with campus network to enhance the learners' body of knowledge. Digital Library server comprises of *VTU e-Learning/NPTEL Learning Resources of different courses and subjects, Career Oriented Tutorial Videos, PPTs, PDFs*

of study materials Previous Question Papers, Research Materials etc.,

The library users can also access digital resources throughout campus network. The users can access the digital resources by using web browsers and File Explorer by using following link/URL in the campus network:

- \\192.168.8.8 - File Explorer
- \\192.168.8.4 – File Explorer
- <http://192.168.8.4/> - NPTEL/VTU E-learning – Videos

Table 10.25: Accessibility to students

Carpet Area	943 sqm
Seating Capacity	150
Library Hours	8.00 am to 8.00 pm Reference 10.00 am to 5.30 pm Lending on all working days.
Access Type	Open Access
Average users per day.	46.02 users for Reference Section (2017-2020)
Average Circulation per day.	301 Books (2017-2020)
Membership	VTU Consortium for E-Journals and E-Books
	DELNET for Inter Library Loan.
Automation and Barcode	Yes with KOHA LMS Software
Web-OPAC	Yes with patron account.
Digital Library Contents	Yes- On-Campus Access through Intranet
	Yes - Off-Campus - IP Based Remote Access
NPTEL Facility	Yes on-Campus
General Library Circulation	Yes
Book Bank Facility	Yes – Self-Finance
Library Advisory Committee	Yes
Wifi	Yes
Multimedia Computers	Yes with high speed Internet Facility

- **Reference Service:** The Library maintains a separate reference collection consisting of encyclopedias, dictionaries, directories, Competitive books, general books, handbooks, technical data, atlases, bibliographies, etc., with seating capacity of 150 users.

- **E- Services:** Computer Centre is setup with latest configuration Computers at Library for accessing and downloading e-Resources (E-Journals & E-books etc.,) with 35 Mbps leased line internet connection. These services are IP enabled. Computer Centre is also equipped with sophisticated Multimedia headphone for accessing NPTEL Videos. Library is part of Campus Network, all the e-resources are accessible throughout the campus view intranet. A dedicated server is available for remote access of e-resources.
- **E- Services:** Computer Centre is setup with latest configuration Computers at Library for accessing and downloading e-Resources (E-Journals & E-books etc.,) with **35 Mbps leased line internet connection**. These services are IP enabled. Computer Centre is also equipped with sophisticated Multimedia headphone for accessing NPTEL Videos
- **Reprographic Service:** The library offers photocopy services. However, this service is offered to users under special arrangement with the librarian.
- **Lending Section:** The Library allows its users to borrow information resources for a specific duration dictated by the user group. Books from the open shelves and Reserves are loaned out from the Circulation Desk.
- **Inter Library Loan:** The library is a member of the DELNET and participates in all the resource sharing initiatives that include library cooperation. These initiatives enable library users to access and use other libraries, to benefit from such arrangement contact the librarian for more information.
- **Web-OPAC Service:** Online catalogue facility is available to users through intranet and internet. Link <http://103.44.2.242/>. **Mobile App** is provided for users for easy access of their transactions and for OPAC
- **Book Bank Service:** Very economic and Self-Financing Book Bank facility is extended to student user community. A set of books for the whole semester will be issued at the starting of the semester for one semester period and same should be returned after semester and students can borrow the next semester books.
- **Question Bank Service:** Hard Copy of the VTU Old Question Papers are available for the reference use and Soft copy of the same may be downloaded from Digital Library.
- **User Education/Orientation:** As a part of Induction programme Library tour is arranged for newly admitted students. The students can download the **USER**

MANUAL from our website from Library User Manual tab/link. User Manual provides the entire information of the library system including retrieval of learning material. Many awareness events are conducted for the benefit of the users of library like e-resources access, book exhibition etc.,

Support to Students for Self-learning activities:

Everything in engineering cannot be taught in the classroom or laboratories. The explosion in knowledge related to applied science and engineering has been so much that four years is too short a period even to cover one branch of engineering. This fact calls for the relevance for self-learning for young engineers. Library is provided adequate facilities like Computer Centre with high-speed internet, Wi-Fi etc., for self-learning to students so that they get motivated to learn more and more and ultimately become life-long learners and innovators.

The Library provides excellent facilities and academic ambience for the users for self-learning following activities.

- **VTU e-Learning / NPTEL:** Library has established separate server to host VTU e-Learning / NPTEL videos which can be accessed via intranet within the campus. One can access the videos in the entire campus without internet. It offers more than 750+ videos of different streams of Engineering and Management. These videos serve as a supplement to classroom teaching and learning activities
- **SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) and MOOC (Massive Open Online Courses):** Library has made arrangements for the user to access SWAYAM and MOOC.
- **e-PG Pathshala:** e-PG Pathshala is an initiative of the MHRD under its National Mission on Education through ICT (NME-ICT). Link to e-PG Pathshala is provided to create awareness and to encourage students to take online courses
- **Shodhganga:** The Shodhganga@INFLIBNET Centre provides a platform for research students to deposit their Ph.D. theses and make it available to the entire scholarly community in open access. Link to Shodhganga is provided to create awareness and to encourage students to use it.
- **Open access resources:** Link of many open access resources is provided which helps in self-study of the students
- **National Digital library:** Our library has obtained Institutional membership of NDL. We enroll our students and faculty to NDL and encourage to use lakhs of resources

available freely

- **DELNET:** Institution is member of DELNET. DELNET offers access to nearly 1.75 crore records of books, periodicals, articles, thesis and dissertations and other databases. Besides this also provides inter library loan and document delivery services all its member libraries.

10.4.2	Internet	10
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Table 10.26: Internet details for the year 2020-21

Name of the Internet provider	AirTel
Available bandwidth	835 Mbps
Wi-Fi availability	Yes
Internet access in labs, classrooms, library and office of all department	Yes
Security arrangements	Yes

Table 10.27: Existing Internet Connections in College FY 2020-21

Sl. No	Service Provider	Type of Connection	Bandwidth	Remarks	Service Agent
1	AIRTEL	Leased line/OFC	35 MBPS	Used for e-journal access at Library, Wi-Fi, Common facilities like Principal Office, Placement, FY Dept, Admission, EST etc	Wave Enterprises
2	AIRTEL	FTTH/Unlimited	100 MBPS	MBA dept	Shreya Enterprises
3	AIRTEL	FTTH/Unlimited	100 MBPS	ME/IPE dept	
4	AIRTEL	FTTH/Unlimited	100 MBPS	Librarydept	
5	AIRTEL	FTTH/Unlimited	100 MBPS	ECE dept	
6	AIRTEL	FTTH/Unlimited	100 MBPS	CSE dept	Shreya Enterprises
7	AIRTEL	FTTH/Unlimited	100 MBPS	ISE dept	
8	AIRTEL	FTTH/Unlimited	100 MBPS	Civil dept	
9	AIRTEL	FTTH/Unlimited	100 MBPS	EEE dept	
		Total	835 Mbps		

Wi-Fi Locations: Corridor Main Building, Library &PG Block, CSE /ISE and All Hostels.

PART C

Declaration

(The head of the institution needs to make a declaration as per the format given)

I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines in force as on date and the institute shall fully abide by them.

It is submitted that information provided in this Self Assessment Report is factually correct. I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA, in case any false statement/information is observed during pre-visit, visit, post visit and subsequent to grant of accreditation.

Date: 22/11/2021

Place: BAKARI



Signature & Name

T. HANUMANTHA REDDY.

Head of the Institution with seal