# Hearty Welcome To NBA Team


**Presentation By**

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# CONTENTS

**PART I:**



**PART II : OBE Philosophy of the Program**

# STRENGTH

| Sl. No. | Comments | Compliance |
|---|---|---|
| 01 | Good number of Ph.D faculty | • 09 faculties are successfully completed their Ph.Ds since from 2017<br>• 04 faculties are submitted the thesis and awaiting for final defence.<br>• 01 Faculty completed his Viva Voce and waiting for PDC |
| 02 | Labs are well equipped with good supporting staff. | • New equipments are procured in few of the labs.<br>• 03 supporting staffs are recruited in 2019-20 academic year. |
| 03 | Good classroom teaching. | • New teaching methodologies are implemented through online teaching tools on Google classroom & GREAT LEARNING LMS.<br>• Lecture videos are shared on YouTube channel.<br>• Validation of theoretical concepts using numerical methods<br>• Analysis tools are used. |
| 04 | Process of formulation of Vision, Mission, PEOs, PSOs is as per OBE. | • NBA Manual articulation procedure is adopted for formulation of the same.<br>• All the OBE procedures are carried out according to the formulation.<br>• Time to time review has been done through DAC & PAC committees. |
| 05 | Student enrolment is good. | • Due to covid-19 pandemic, National Health Crisis was the major reason in decline of admissions throughout the Nationwide. However there were good number of lateral entry admissions at Programme entry level. |

# WEAKNESS

| Sl. No. | Comments | Compliance |
|---|---|---|
| 01 | Dissemination of OBE to stake holders need enhancement | • Progressive action was implemented in dissemination of OBE among the stake holders.<br>• Dissemination of OBE to stakeholders was practiced through various exit surveys, newsletters, website, Parents meeting.<br>• Regular awareness programs on OBE were organised to all stake holders. |
| 02 | Research culture is missing with no consultancy | • Research centre is upgraded with new equipments since 2018 and research consultancy is provided to UG, PG & Ph.D scholars.<br>• CIIIT is established in association with Tata Technologies Ltd Pune in the year 2019. The facility is extend to industrial consultancy and public services.<br>• Research experience of the faculty is used for third party consultancy works for various organization. |
| 03 | Professional society chapters need to be strengthened | • Indian Society for Mechanical Engineers (ISME) and Indian Society for Technical Engineers (ISTE) professional society student chapters are formed.<br>• Activities have been carried out under these professional society chapters. |
| 04 | Placements need major effort. | • Efforts have been made to improve problem solving ability through various training programs organised both in online and offline mode.<br>• Steps have been initiated to focus on the companies to train the average students and enhance their employability factor.<br>• Domain based training have been provided to the students through internship along with hands on experience and technical skills are improved. |
| 05 | Identification of curriculum gaps / shortfalls needs to be taken care off. | • Systematic Process has been followed to Identify curriculum gaps.<br>• Letter has been communicated to VTU periodically and university has revised the curriculum to overcome the identified gaps periodically.<br>• CoE is establish in association with TTL and are successfully organising activities like internship, domain training, hands-on-experience to meet the gap.<br>• All the activities through Dept. Student's Forum, professional bodies, webinars, LEAD, NSS, industrial visit, etc have been carried out to overcome the shortfalls. |

# DEFICIENCIES

| Sl. No | Comments | Compliance |
|---|---|---|
| 01 | R & D activities less | • Research publications are published in various reputed journal.<br>• Research patents have been applied through R&D centre.<br>• 2 Research patents have been granted, 4 are awaiting for final exam,1 patent published and 6 patents are filed.<br>• R&D cell has supported Product development activities. |
| 02 | No consultancy. | • Under technical consultancy cell, third party inspections are being carrying out for various government agencies since 2018.<br>• CIIIT is established in association with Tata Technologies Ltd Pune in the year 2019. The facilities are extend to industrial consultancy. This facility is extended to students, faculty and external research consultancy. |
| 03 | Low placement | • Continuous improvement in Overall placements is observed due to supportive training in both general and technical skills. |
| 04 | Content beyond syllabus missing. | • Content beyond syllabus is practiced for few of the courses.<br>• Workshops & Technical talks have been organised to enhance their technical skills.<br>• Industrial visit were organised to learn present day industrial environment.<br>• Techno-cultural fest was organised in support of overall personality development of the student. |
| 05 | No visiting / adjunct faculty in the department leading to less knowledge of development in recent areas. | • Many invited lectures by subject experts/resource person from industry professional, academician, research scientist have been organised successfully. |

# Introduction

| Program Details | Year of Estb. | Initial Intake | Increase in intake | Year of increase |
|---|---|---|---|---|
| UG – Mechanical Engg. | 1980 | 40 | | |
| | | | 90 | 1994 |
| | | | 120 | 2005 |
| PG – Production Management | 2011 | 18 | | |
| PG-Thermal Power Engineering | 2011 | 18 | | |
| Research Center | 2011 | 07 Awarded 17 Pursuing | | |

| Carpet Area | |
|---|---|
| Instructional Area | 3097.13 Sq. Mtr |
| Administrative Area | 450.84 Sq. Mtr |
| Amenities | 52.44 Sq. Mtr |
| Circulation & Others | 1210.91 Sq. Mtr |
| Total | 4811.32 Sq. Mtr |

| Infrastructure | Faculty Strength | Technical Staff | R&D |
|---|---|---|---|
| Classrooms – 08 | Professors – 05 | Instructor - 08 | Research Supervisors -10 |
| Laboratories – 12 | Associate Professors- 05<br>Assistant Professors – 24 | Asst. Instructor - 03 | In house Faculty pursuing Ph.D - 10<br>Other Scholar pursuing Ph.D – 7 |
| Dept. Library – 01 | Faculty With Ph.D - 13<br>Faculty Pursuing Ph.D – 18 | Mechanic/Helper - 03 | Publications/Conferences in reputed journals since 2017 - 72<br>Books Published - 04 |
| Seminar Hall – 01 | Student Faculty Ratio – 16.33<br>Avg. Retention Rate -94.25 % | | Patents Granted - 2<br>Patents Amended - 4<br>Patents Published - 1<br>Patents Filed - 6<br>Total - 13 |
| Faculty Cabins - 28 | Avg. Experience ~Above 15 Years | | |

| | | |
|---|---|---|
| 1 | Accreditation | • Accredited Twice by NBA, New-Delhi<br>i) 15/02/05 to 14/02/08 (3 Years)<br>ii) 19/07/08 to 18/07/11 (3 Years)<br>iii) 2016-17 (Not Accredited)<br>• NAAC ACCREDITED Grade-B++ for 5 Years |
| 2 | Affiliation | • Permanent Affiliation to VTU Belagavi (2015-16 to 2020-21) |
| 3 | Professional Bodies | ISTE ISME |
| 4 | MOUs | MOUs with 09 reputed companies. |

| | | |
|---|---|---|
| 4 | Research Grants | **AICTE** 12.40 Lakhs; **MODROBS** 19.46 Lakhs<br>**VTU** 06.00 Lakhs; **KSCST** 0.805 Lakhs<br>**NIAN** 01.00 Lakhs; **V V Sangha** 240 Lakhs |
| 5 | Industry Sponsored Labs - Centre of Excellence | • Permanent TATA Technologies Ltd., Pune "Centre for Invention, Innovation, incubation and Training (CIIIT)"<br>• Technology Research and Development Centre<br>• Advanced Manufacturing Centre<br>• Bio Fuels |
| 6 | Technical Consultancy | • Technical Consultancy Cell - Third Party Inspection for Government Organization (ZP,TP, City Corp., TMC, Forest, DDWO) - Rs 08.68+ Lakhs |
| 7 | Ranks<br>Student Forum<br>News Letter<br>Magazines | • UG - 01 PG – 01<br>• Mech-Tantrika<br>• YANTRIKA<br>• YOJANE (Project Work), SAMSHODHANE (Research work), NIYOJANE (Placements) & TANTRIKA SALAHE (Technical Consultancy ) |
| 8 | Overseas Paper Presentations | • **Kyoto, Japan (2015)**<br>• **Beijing, China (2015)**<br>• **Bankok, Taiwan (2015)** |
| 9 | Overseas Paper Presentations (Online) | • Shahid Chamran University of Ahvaz, Iran (2021)<br>• MARMARA scientific research and innovation congress, Istanbul (2021). |

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# RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI.

## DEPARTMENT OF MECHANICAL ENGINEERING

## Faculty Achievements/Recognitions

**Biofuel Award-2019**

Department of Bio fuels and Bio energy, Government of Karnataka, on 20.03.2021


"Innovative Technological Research & Dedicated, Best Educational list Award", **2020-21 at Chennai**


"Innovative Researcher and Dedicated, Excellent Professional Achievement Award" **2020-21 at Chennai**


**Best paper Award - 2021**


**CONSOLATION in poster presentation 2019, KSTA, Dept of science & technology**


**"Adarsh Vidya Saraswati Rashtriya Puraskar"** by Global Management Council

- **Reviewers for reputed Journals - 09**
- Technical paper publications - More than 72 in reputed journals (since 2017)
- Delivered Invited talk, Guest lectures in various reputed colleges.
- Patents – 13 ( 02 Granted, 04 Amended state, 01 Published & 06 Filed)
- Books Published - 04
- BOE - VTU Belagavi, VSK University, Ballari , BITM (Autonomous) Ballari.
- Session chairs for International conferences.
- Prof. Deepak C is awarded as **"Pandit"** from Lucknow university for completing his higher research in Hindustani classical Music (Tabla specialization) during 2016-17.
- Scientific committee members for various international Conferences/Journals.

# Students Achievements

Mechanical students participated in **YUVA 2020** fest Organised by JSW Ltd., Toranagallu.

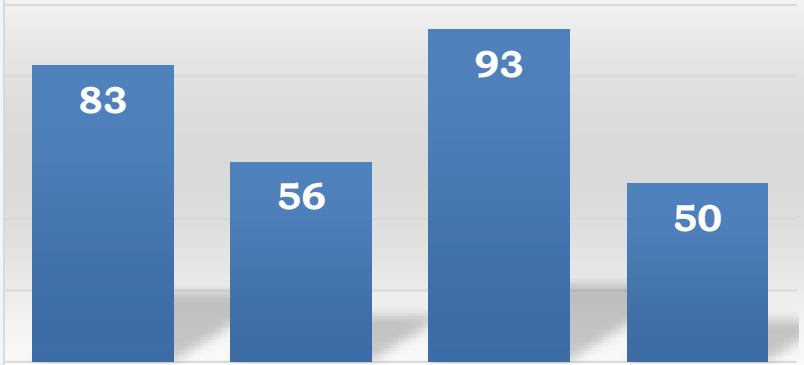

Indonesia - India International Throwball Championship for Women on 25th and 26th February at Fadang, Indonasia and secured First Position.

**Mr. H M Prajwal Kumar** awarded “Best Student Of The Chapter Award - 2019” by ISTE for active involvement in ISTE chapter activity on 22.02.2020

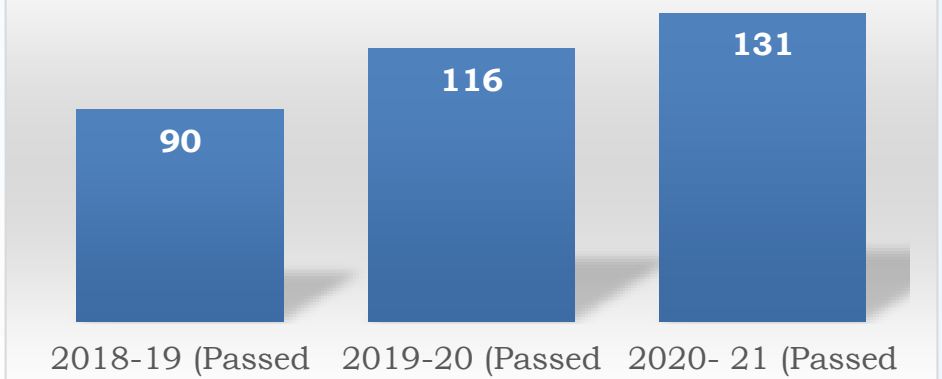
**Mr. Ravi K** secured University Gold Medal for the Academic Excellence in M.Tech (Thermal Power Engineering) by VTU, Belagavi (2018-19).

# Students Achievements

## Students Placed

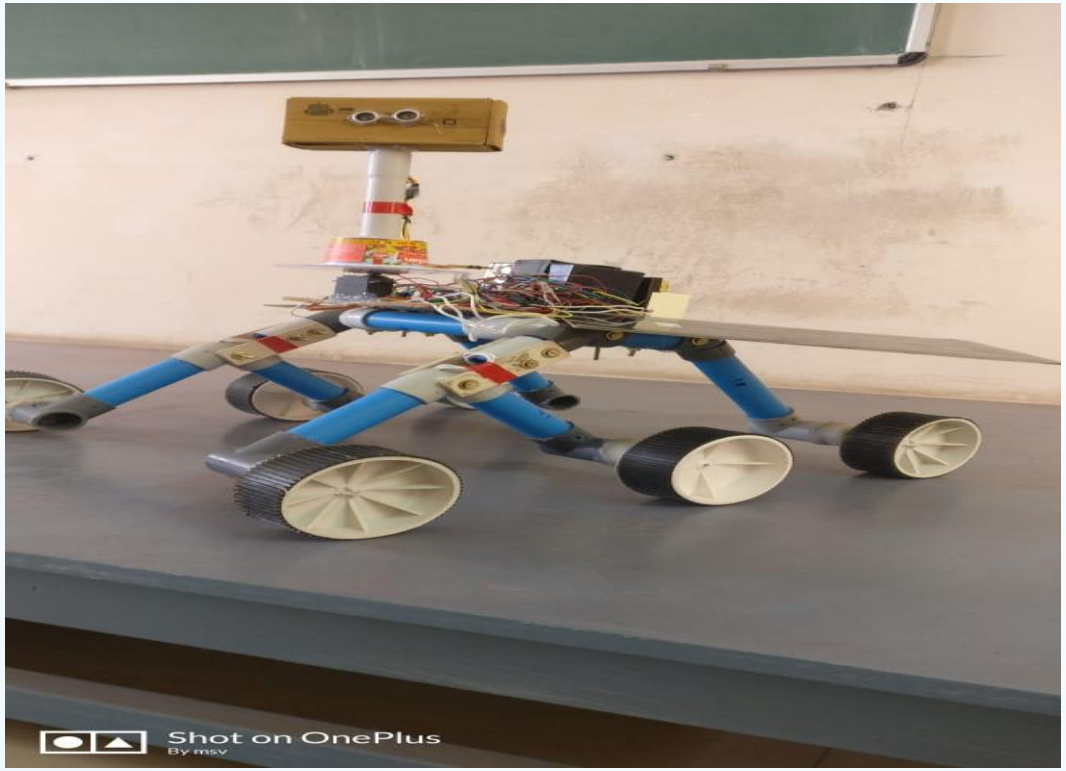



## FCD




Published journal

| Project Title | Duration | Funding Agency | Amount | Academic Year |
|---|---|---|---|---|
| Combinational Rover | 36 Months | NAIN | Rs:100000/- | 2019-20 |



## 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. |

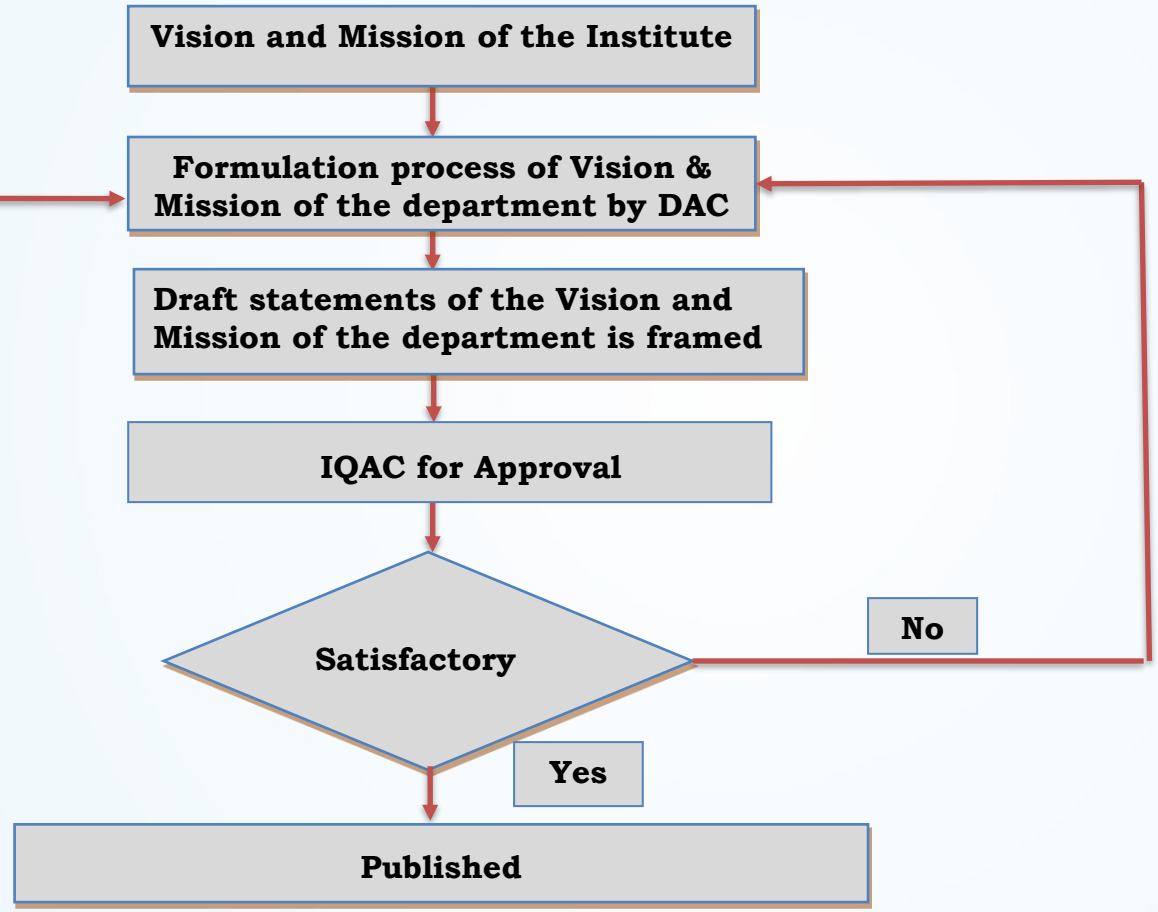
## THE VISION AND MISSION/PEO'S ARE PUBLISHED & DISSEMINATED AT

- **Institute / Department Website (http://www.rymec.in/), (http://www.rymec.in/EC.aspx).**
- **Social Media (Face Book Page: RYMEC, Mech & Dept mail id: mech@rymec.in)**
- **HOD Chamber, Staff Rooms, Laboratories, Class Rooms, Notice Boards, Department Library, Seminar Hall.**
- **College/Department Magazine/Newsletter, Lab Manuals/Records, CIE, Assignment Books, Project, Seminar and Internship reports.**
- **Workshops, Seminars, Conferences. FDPs, Training Programs for Students, Student Orientation Programs.**
- **Alumni and Parents meetings.**

# Process Flow for framing of Vision & Mission

**STAKEHOLDERS**
**Internal**
- **Management**
- **Faculty**
- **Students**

**External**
- **Parents**
- **Alumni**
- **Industry**




**Various Committees are framed to assess Vision & Mission:**
SAR, Course Committee (CC), Programme Committee (PC), Department Advisory Committee (DAC), Program Assessment Committee (PAC).

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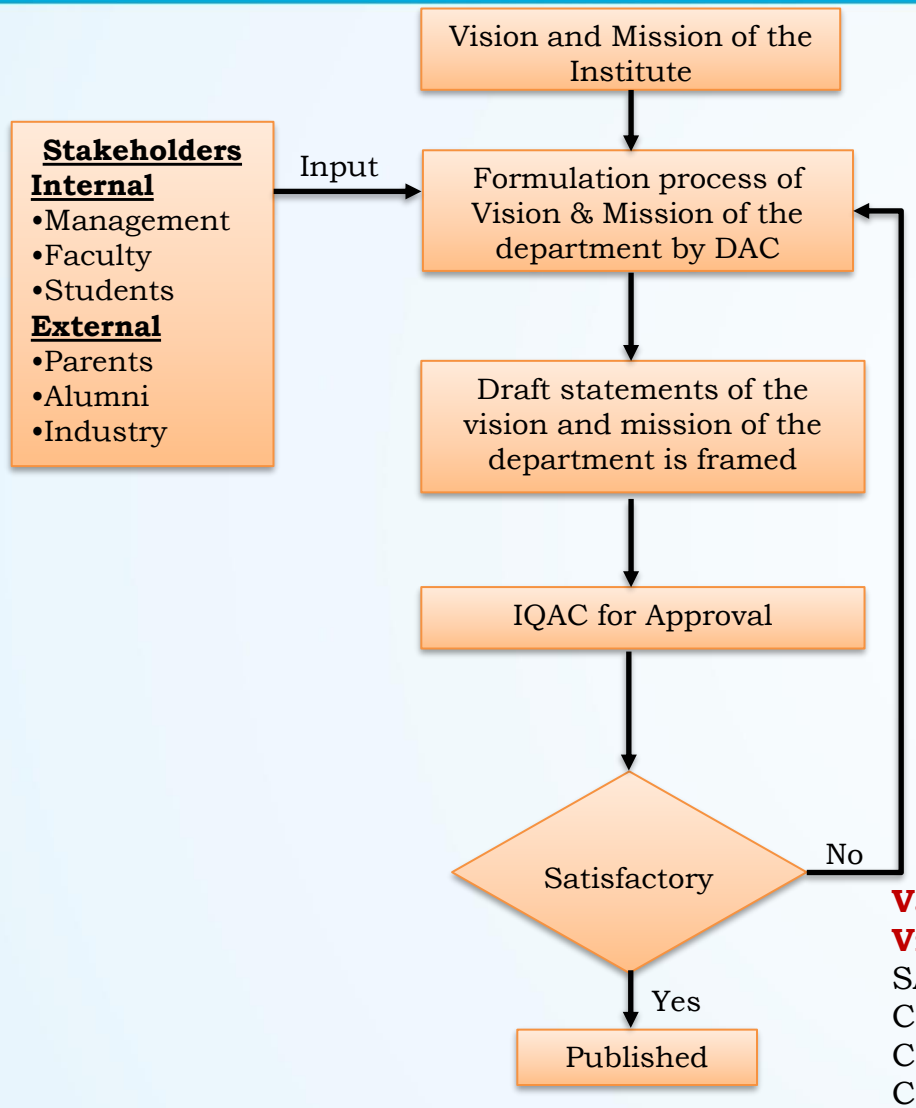
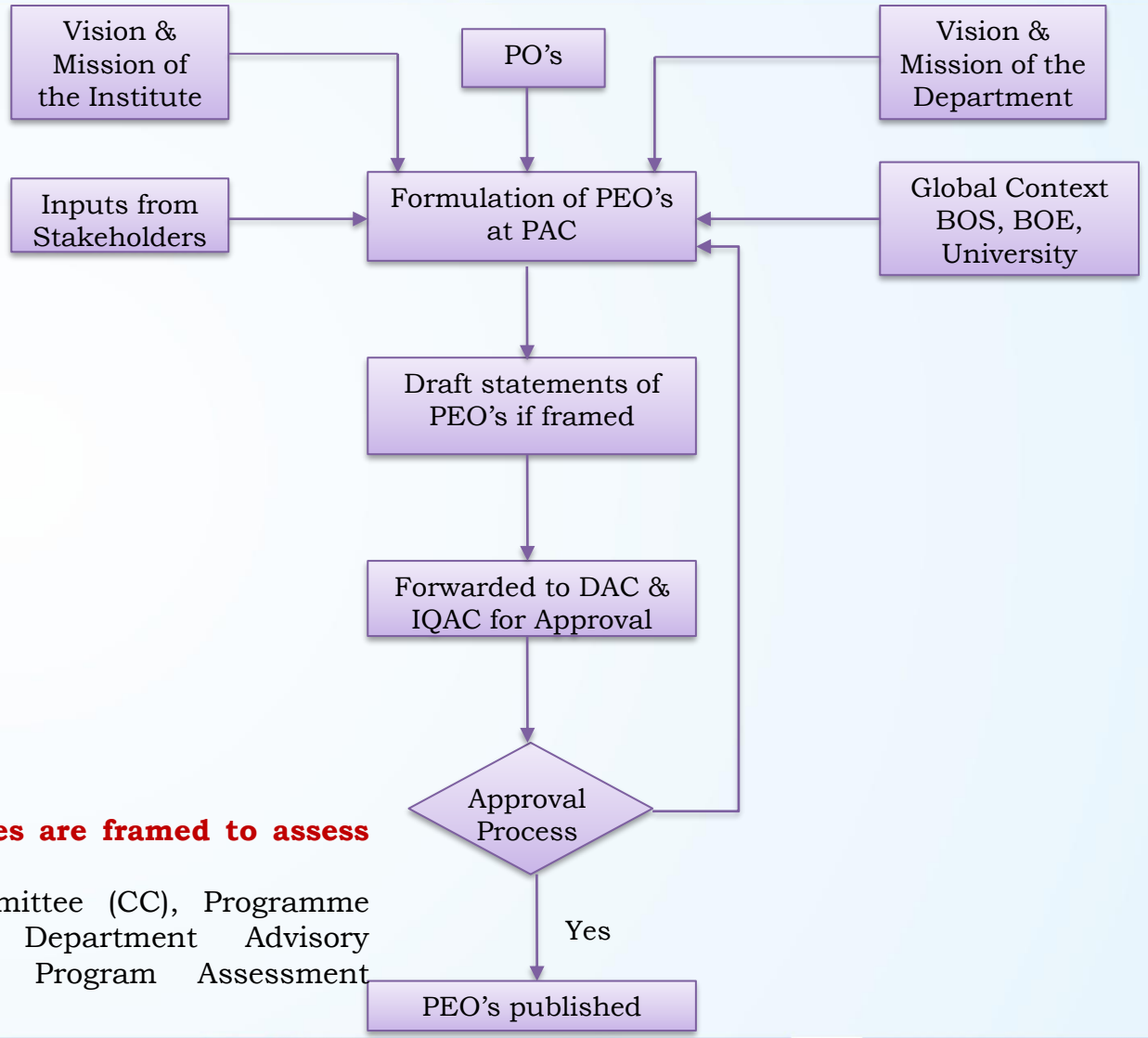
# RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI.

## DEPARTMENT OF MECHANICAL ENGINEERING

# Process Flow for framing of Vision & Mission




**Various Committees are framed to assess Vision & Mission:**

SAR, Course Committee (CC), Programme Committee (PC), Department Advisory Committee (DAC), Program Assessment Committee (PAC).

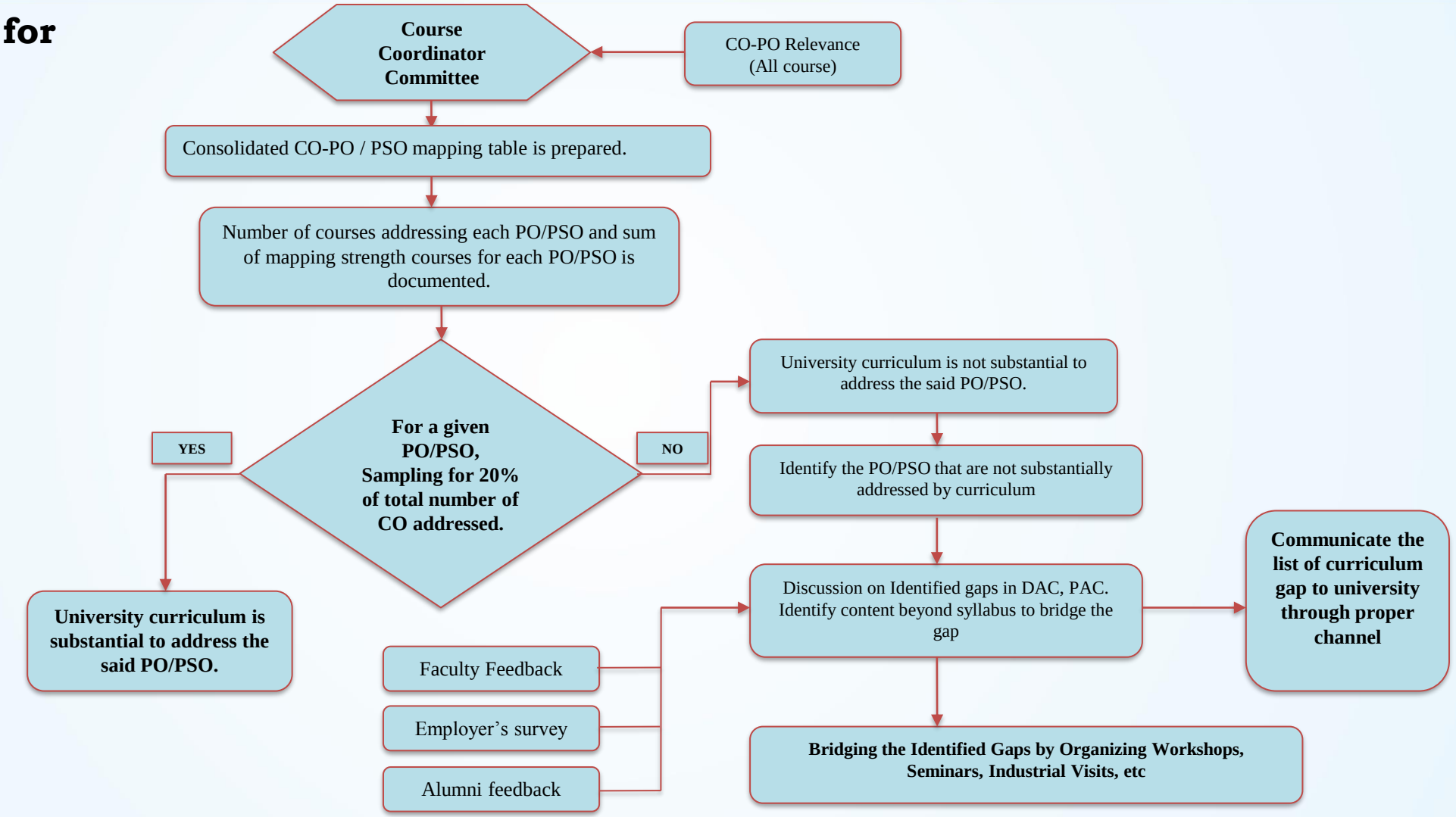
# Mapping of PEO & Mission of the Department

| | |
|---|---|
| **PEO 1** | Graduates of Mechanical Engineering shall Develop Strong Academic Foundation for **Successful Professional Career.** |
| **PEO 2** | Graduates of Mechanical Engineering Acquires **skills** to excel in the area of Mechanical Engineering both in **Industries and Academics**. |
| **PEO 3** | Graduates of Mechanical Engineering Possess awareness towards **Higher Education, R & D and Socio-Ethical values.** |

| PEO | M1 | M2 | M3 | M4 |
|---|---|---|---|---|
| PEO1 | 3 | 2 | 2 | 2 |
| PEO2: | 3 | 3 | 1 | 2 |
| PEO3: | 3 | 2 | 2 | 2 |

| | |
|---|---|
| **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. |

# Process followed for Gap Analysis:



## List of curricular gaps which are identified as gaps for 2015 and 2017 schemes:

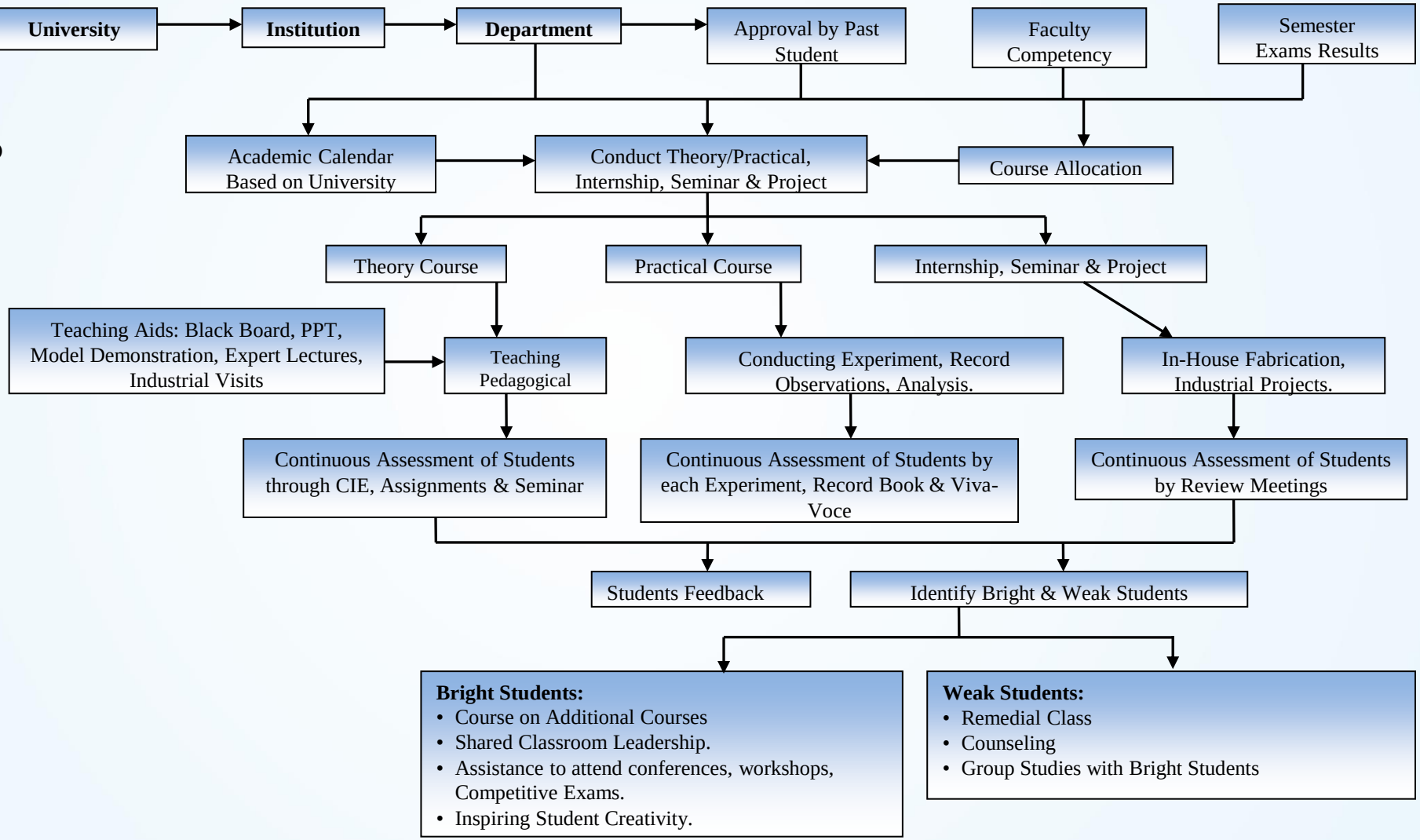
| Sl. No | Description |
|---|---|
| PO6 | The Engineering and society |
| PO7 | Environment and Sustainability |
| PO9 | Individual and the team work |
| PO10 | Communication |
| PO11 | Project management and Finance |

## Steps taken to get identified gaps included in the Curriculum:

| 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 |

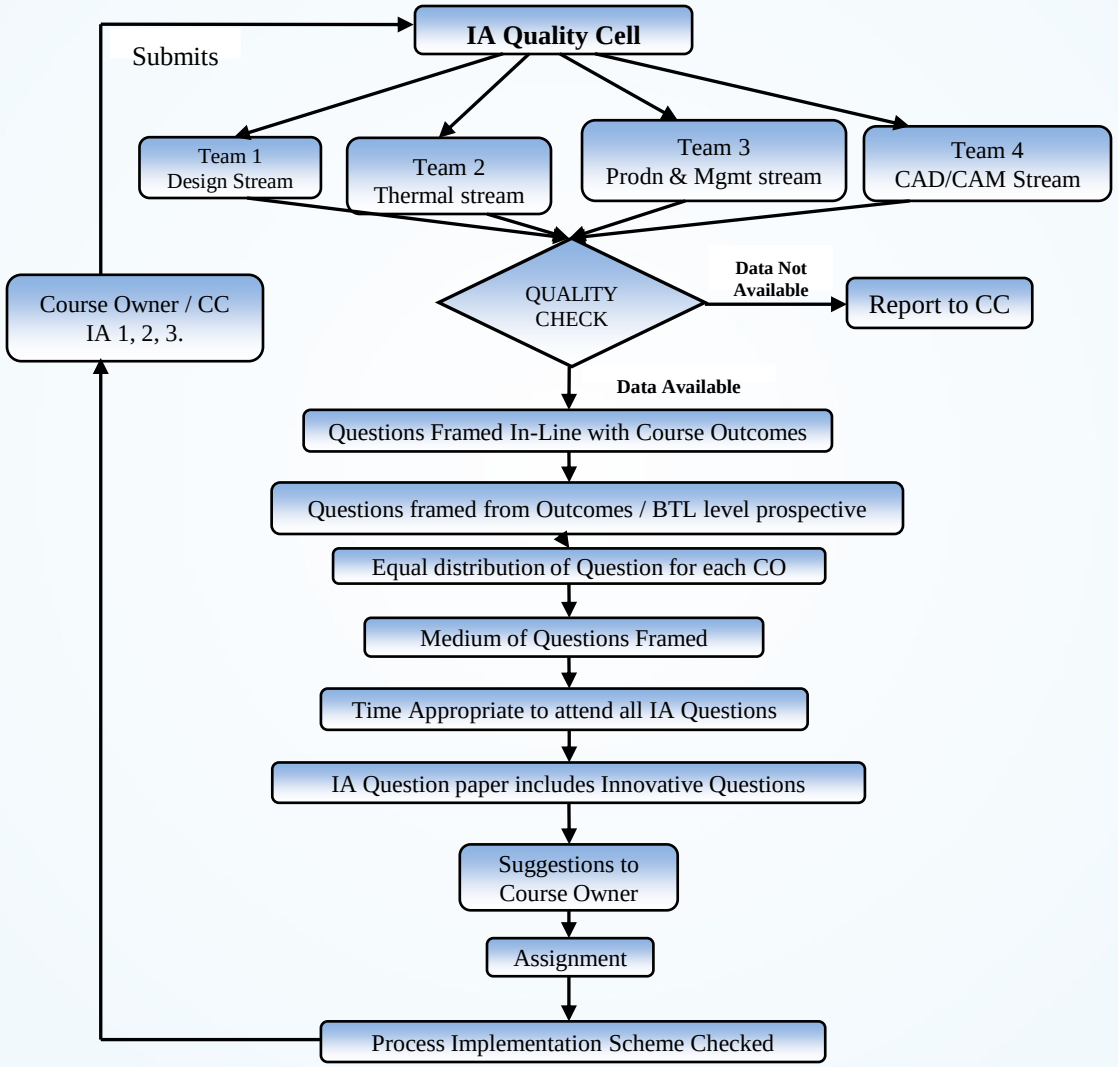
# Criterion 2 : Teaching Learning Process

## Process followed to improve quality of Teaching and Learning:



# Criterion 2 : Teaching Learning Process

**Process of Quality of Internal semester question paper setting and its Evaluation:**



## Quality of Student projects

- Formation of Project Batches as per University Norms
- Assigning Batch Number On FCFS Basis
- Dividing Students based on area of interest
- Staff Allocation Based on Domain Expertise
- Periodic Interaction by Staff
- Topic / Title Finalization
- Approval from the Guide
- Phase – I Evaluation
- Phase – II Evaluation
- Final Submission

Mechanical Walker Using New Mechanism


Gesture Pick and Place Robot


Go Kart Racing


Aura Racing

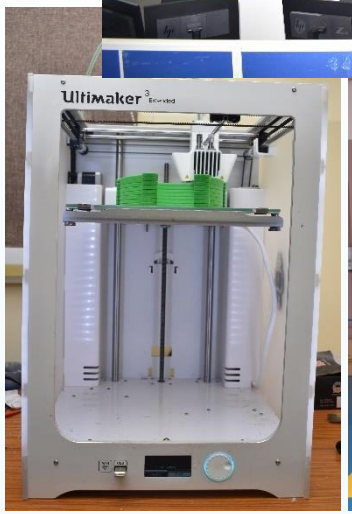
# Initiatives related to Industry Interaction (MoUs)

## Industry Supported Labs

| Sl. No | Company Name | Labs |
|---|---|---|
| 01 | Centre For Invention, Innovation Incubation & Training" Tata Technologies Ltd, Pune | Technology Research And Development Centre |
| 02 | | Advanced Manufacturing Centre |

## List of MoU's

| Sl. No | MoU's Name | Date |
|---|---|---|
| 1 | TATA Technologies Ltd., Pune | 10/06/2019 |
| 2 | HalleysBlue Steels Pvt. Ltd., Ballari. | 18/04/2016 |
| 3 | MCALLUS, Ballari. | 10/08/2016 |
| 4 | CADMAXX Solutions Pvt. Ltd., B'lore. | 19/11/2015 |
| 5 | CADD Centre, Ballari. | 12/07/2014 |
| 6 | M/S Shirdi Sai Steels Pvt. Ltd., Ballari. | 20/02/2016 |
| 7 | PRIMETECH HVAC & Refrigeration | 10/01/2018 |
| 8 | MEDINI, Bangalore. | 30/05/2019 |
| 9 | Manya Education Pvt. Ltd., Bangalore. | 30/05/2019 |




# Initiatives related to Industry Internship/ Summer Training:


Varahi Hydro electric Power station visit


JSW VISIT, Toranagallu

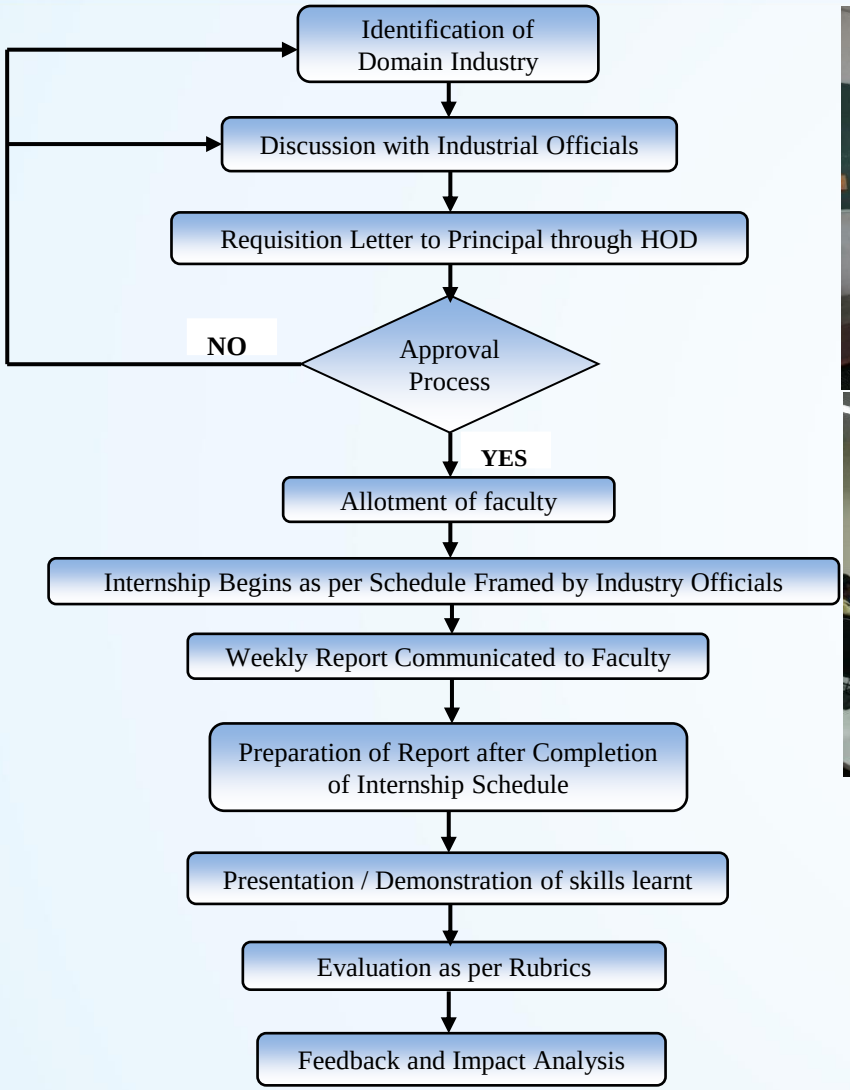

BTPS VISIT, Ballari


Mcallus visit, Ballari

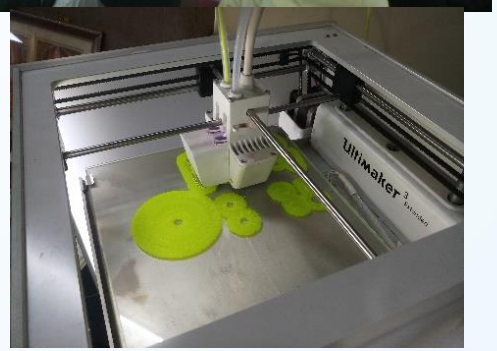
M/S Halleys Blue steels Pvt Ltd, Ballari

Visit to Diesel LOCO SHUD Hubli

# Criterion 2 : Teaching Learning Process







# Criterion 3 : Course Outcomes

| Subject: Fluid Power Systems | Course Code: C402 |
|---|---|
| **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. |

After defining the CO statements, CO-PO & PSO mapping matrix of course is prepared using correlation levels. "1" – Slight (low) "2" – Moderate (medium) "3" – Substantial (high)

## CO-PO-PSO MAPPING

| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C402.1 | 3 | 2 | 2 | 2 | 3 | | | 2 | | 2 | | 2 | 2 | |
| C402.2 | 3 | 2 | 2 | 3 | 3 | | | 2 | | 2 | | 2 | 2 | |
| C402.3 | 3 | 2 | 2 | 3 | 3 | | | 2 | | 2 | | 2 | 3 | |
| C402.4 | 3 | 2 | | | 3 | | | 2 | | 2 | | 2 | 3 | |
| C402.5 | 2 | 2 | 2 | | 3 | | | 2 | | 2 | | 2 | 2 | |
| C402 | **2.8** | **2** | **2** | **2.67** | **3** | | | **2** | | **2** | | **2** | **2.4** | |

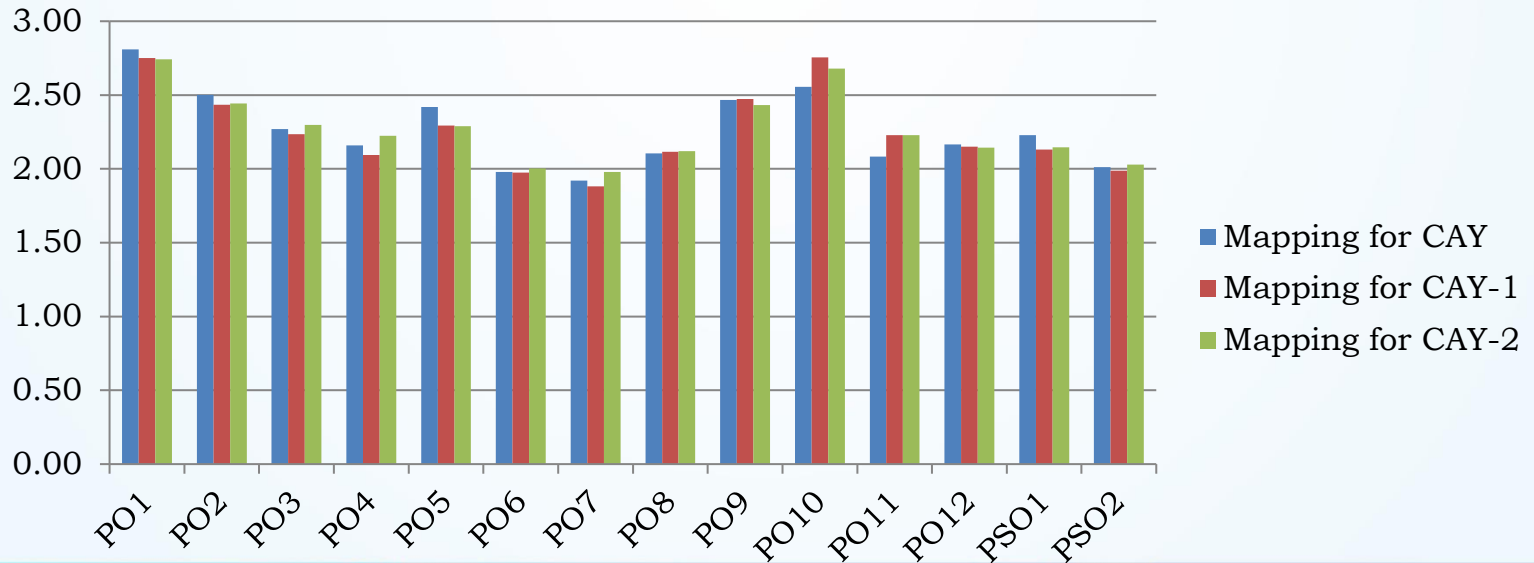
| PROGRAM SPECIFIC OUTCOMES | |
|---|---|
| **PSO1** | Graduates possess the knowledge to Design, Analyze and Develop Mechanical System. |
| **PSO2** | Graduates are Capable of Developing Research Skills in Self Sustainable Energy sources and Composite Materials. |

| PROGRAM OUTCOMES | |
|---|---|
| **PO1** | Engineering Knowledge |
| **PO2** | Problem Analysis |
| **PO3** | Design/Development of Solutions |
| **PO4** | Conduct investigations of complex problems |
| **PO5** | Modern Tool usage |
| **PO6** | Engineer & Society |
| **PO7** | Environment & Sustainability |
| **PO8** | Ethics |
| **PO9** | Individual & Team work |
| **PO10** | Communication |
| **PO11** | Project Management & Finance |
| **PO12** | Life long learning |

# CO-PO MAPPING AVERAGE FOR THREE Academic Years

| Academic Year | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2017 – 21** | 2.81 | 2.50 | 2.27 | 2.16 | 2.42 | 1.98 | 1.92 | 2.11 | 2.47 | 2.56 | 2.08 | 2.16 | 2.23 | 2.01 |
| **2016 – 20** | 2.75 | 2.44 | 2.24 | 2.10 | 2.29 | 1.98 | 1.88 | 2.12 | 2.47 | 2.76 | 2.23 | 2.15 | 2.13 | 1.99 |
| **2015 – 19** | 2.74 | 2.44 | 2.30 | 2.22 | 2.29 | 2.00 | 1.98 | 2.12 | 2.43 | 2.68 | 2.23 | 2.14 | 2.15 | 2.03 |

## CO-PO Mapping Average for Three Academic Years



# Criterion 3 : Evaluation Methods

- Affiliation system evaluation methods are CIE and SEE
- Schemes and evaluation guidelines

| Scheme | Output Batch | Year | CIE | SEE |
|---|---|---|---|---|
| 2015 - CBCS | 2018 - 19 | 2015 – 2019 | 20 | 80 |
| 2015 - CBCS | 2019 - 20 | 2016 - 2020 | 20 | 80 |
| 2017 - CBCS | 2020 - 21 | 2017 – 2021 | 40 | 60 |

- Various evaluation methods implemented are:
  - **CIE = Best Two out of Three Assessments i.e T-1, T-2 and T-3 + Assignment/quiz score (15 + 05) for 2015 Scheme.**
  - **CIE = Best Two out of Three Assessments i.e T-1, T-2 and T-3 + Assignment/quiz score 30+ 10) for 2017 Scheme.**
  - **SEE - Semester End Examinations are conducted by the affiliating University.**
  - **Grading system is SGPA and CGPA for 2015 Scheme and 2017 Scheme..**
  - **40% in both CIE and SEE is the PASSING Score for 2015 and 2017 Scheme.**
  - **Grading of S:≥90, A:<90 & ≥80, B:<80 & ≥70, C:<70 & ≥60, D:<60 & ≥45, E:<45 & ≥40, F:<40 for 2015 Scheme and 2017 Scheme.**
  - **Ranks and Gold medals are awarded by the University based on state wise performance.**

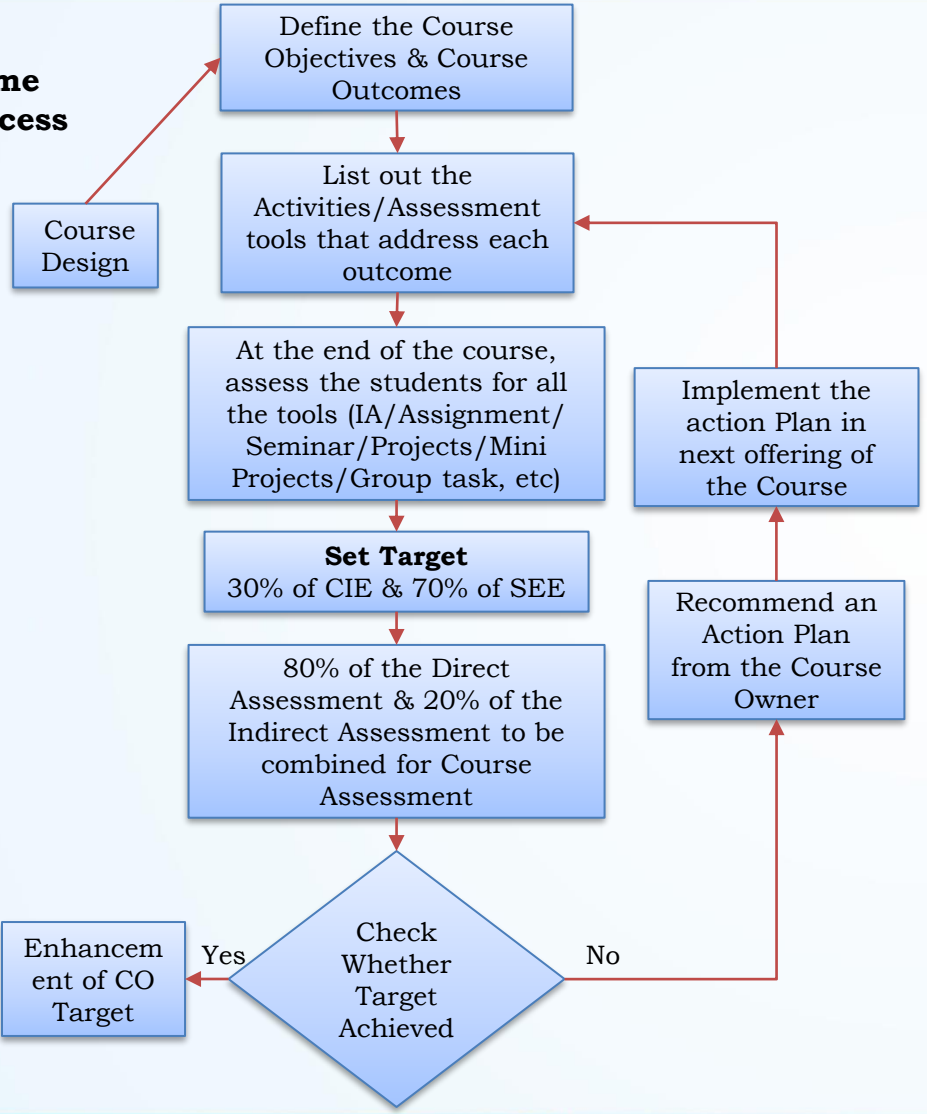
Veerashaiva Vidyavardhaka Sangha's

# RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI.

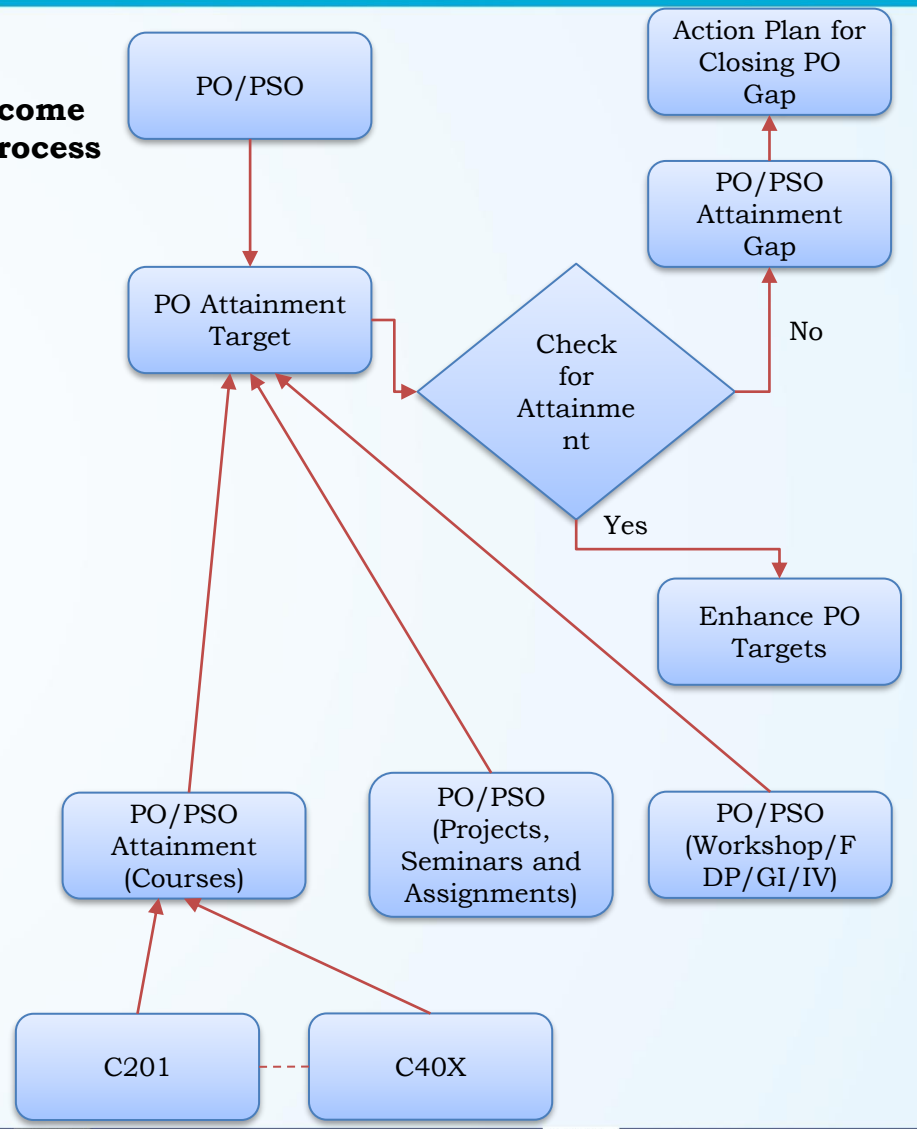
## DEPARTMENT OF MECHANICAL ENGINEERING

## Criterion 3 : CO & PO Assessment Process

### Course Outcome Assessment Process




### Program Outcome Assessment Process

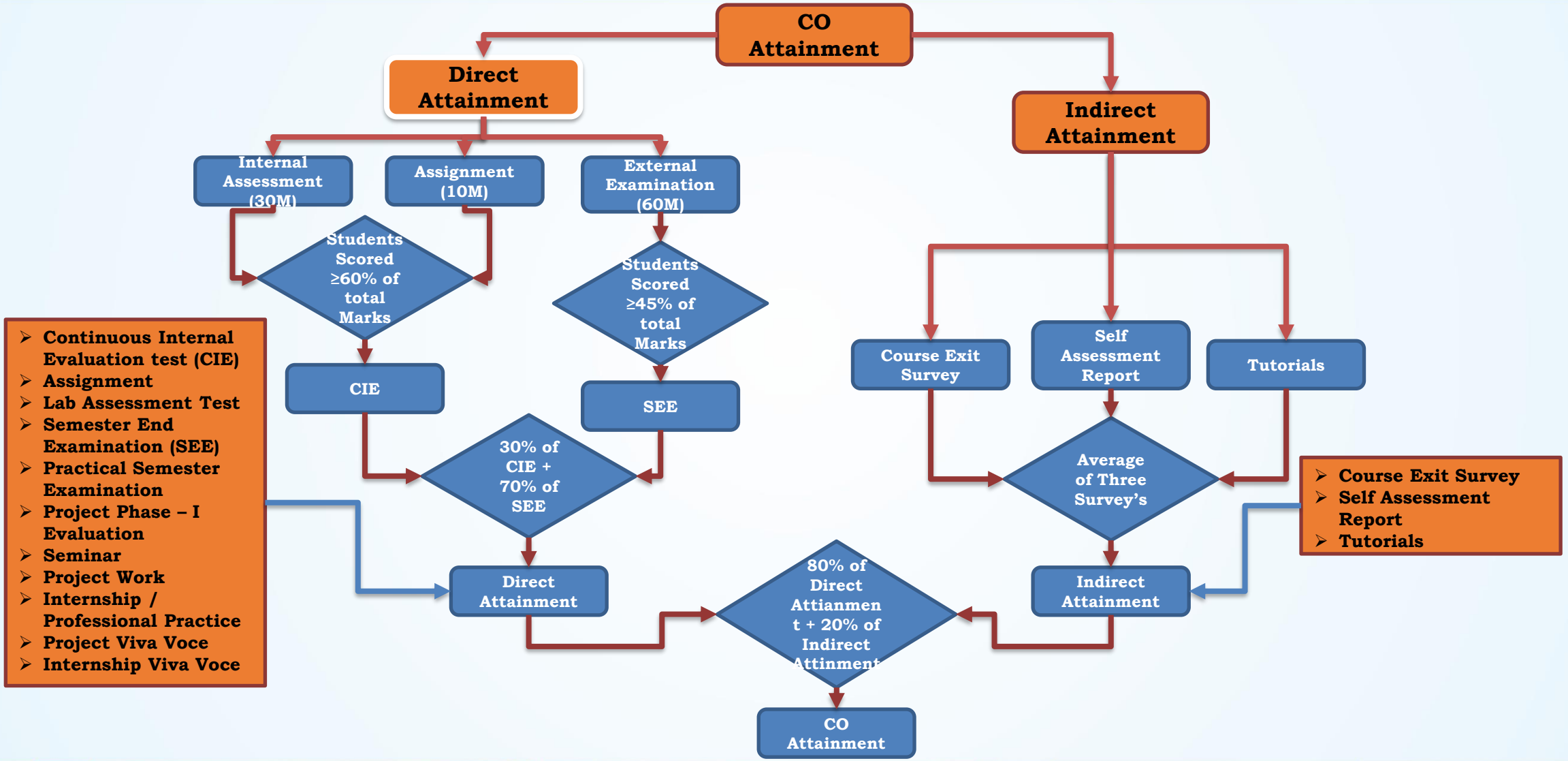


Veerashaiva Vidyavardhaka Sangha's

# RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI.

## DEPARTMENT OF MECHANICAL ENGINEERING

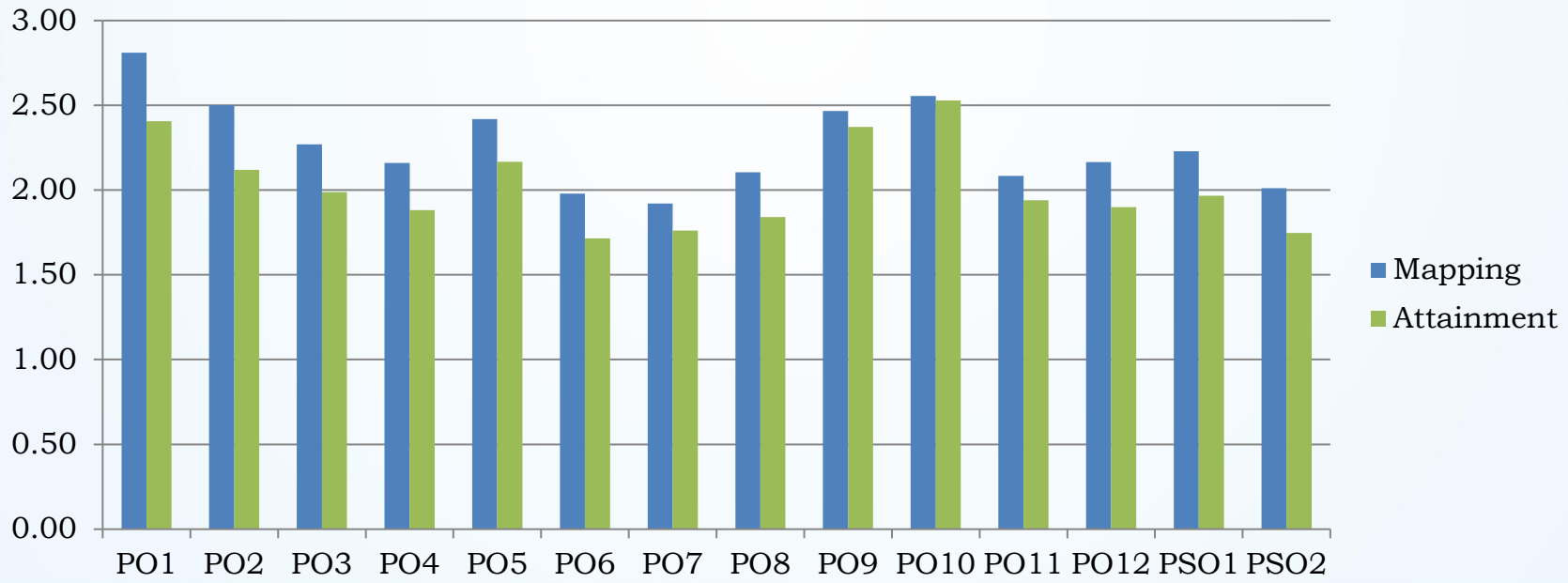
## Criterion 3 : CO & PO Attainment Process



# CO- PO DIRECT & INDIRECT ATTAINMENT FOR THE ACADEMIC YEAR 2017 - 21

| POS | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO- PO 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 | 1.97 | 1.75 |
| Mapping | 2.81 | 2.50 | 2.27 | 2.16 | 2.42 | 1.98 | 1.92 | 2.11 | 2.47 | 2.56 | 2.08 | 2.16 | 2.23 | 2.01 |

## CO-PO Attainment & Mapping for the Academic Year 2017 - 21



# STUDENTS ADMISSION DETAILS

| Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable) | CAY (2020-21) | CAYm1 (2019-20) | CAYm2 (2018-19) | CAYm3 (2017-18) |
|---|---|---|---|---|
| Sanctioned intake strength of the program (N) | 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 |
| Number of students admitted in 2nd year in the same batch via lateral entry (N2) | NA | 80 | 71 | 65 |
| Separate division students, if applicable (N3) | - | - | - | - |
| Total number of students admitted in the Program (N1 + N2 + N3) | 18 | 124 | 136 | 139 |
| Percentage of Students Admitted in the Program | NA | 89.85 | 90.66 | 92.66 |

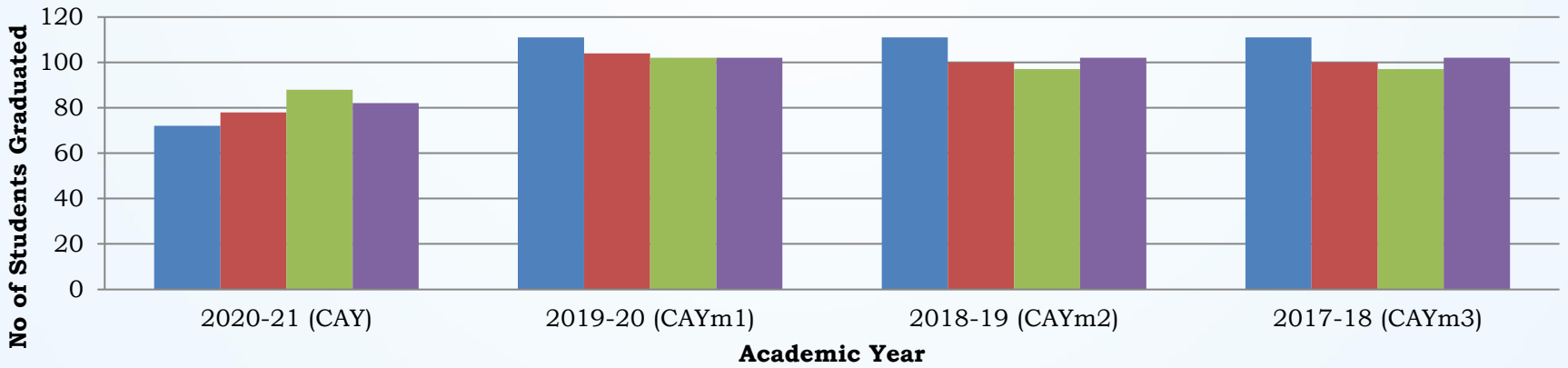
# STUDENTS ADMISSION DETAILS

| Parameter | CAY (2020-21) | CAYm1 (2019-20) | CAYm2 (2018-19) | CAYm3 (2017-18) |
|---|---|---|---|---|
| Enrolment Ratio (%) | 15 | 37 | 54 | 62 |
| Success Rate Without Backlogs in any Semester/ Year (%) | 19.4 | 16.4 | 9.4 | - |
| Success Rate With Backlog in stipulated period of Study (%) | 79.8 | 65.7 | 61 | - |
| Average Academic Performance (API) in Third Year | 5.51 | 4.21 | 3.84 | - |
| Average Academic Performance (API) in Second Year | 4.71 | 3.81 | 2.98 | - |
| Average Placement (%) | 31 | 49 | 37 | 52 |

# Criterion 4 : Students Successfully Graduated without Backlogs

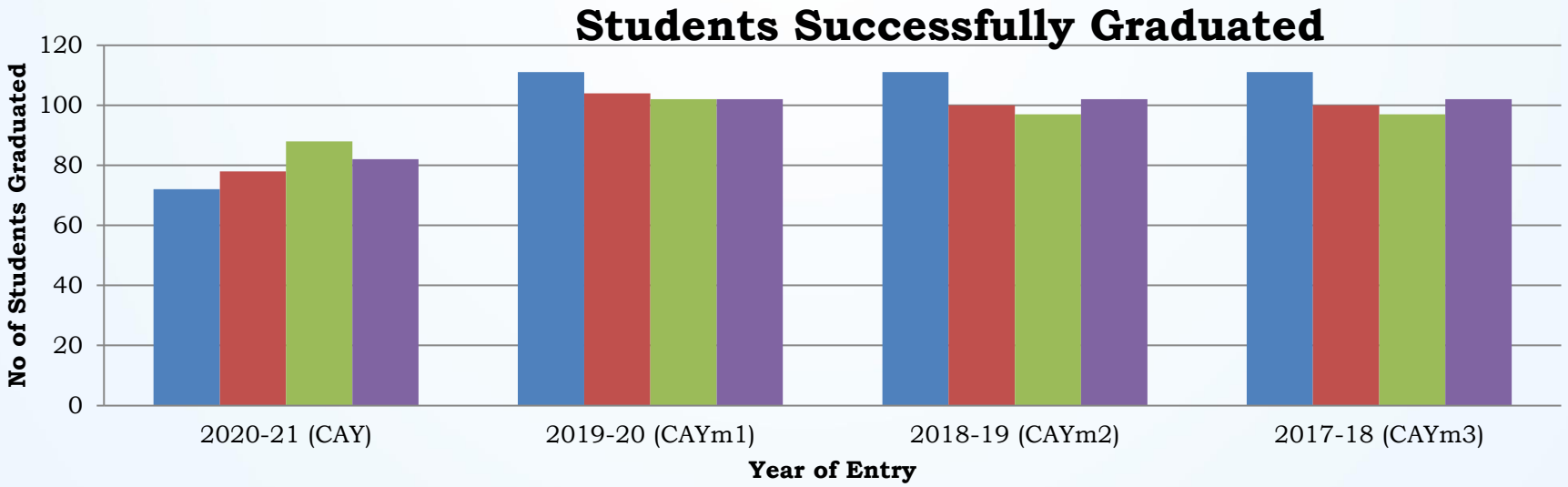
| Year of entry | N1 + N2 + N3 (As defined above) | Number of students who have successfully graduated without backlogs in any semester / year of study (Without Backlog means no compartment or failures in any semester/year of study) | | | |
|---|---|---|---|---|---|
| | | I Year | II Year | III Year | IV Year |
| CAY 2020-21 | 18+NA+0= 18 | 8 | - | - | - |
| CAYm1 2019-20 | 44+80+0 = 124 | 17 | 43 | - | - |
| CAYm2 2018-19 | 65+71+0 = 136 | 33 | 64 | 52 | - |
| CAYm3 2017-18 | 74+65+0 = 139 | 35 | 32 | 27 | 27 |
| CAYm4(LYGm1)2016-17 | 98+54+0=152 | 46 | 35 | 27 | 25 |
| CAYm5(LYGm2)2015-16 | 110+49+0= 159 | 36 | 20 | 16 | 15 |
| CAYm6(LYGm3)2014-15 | 112+47+0= 159 | 41 | 35 | 30 | 29 |

## Students Successfully Graduated In Minimum Period



# Criterion 4 : Students Successfully Graduated with Backlogs

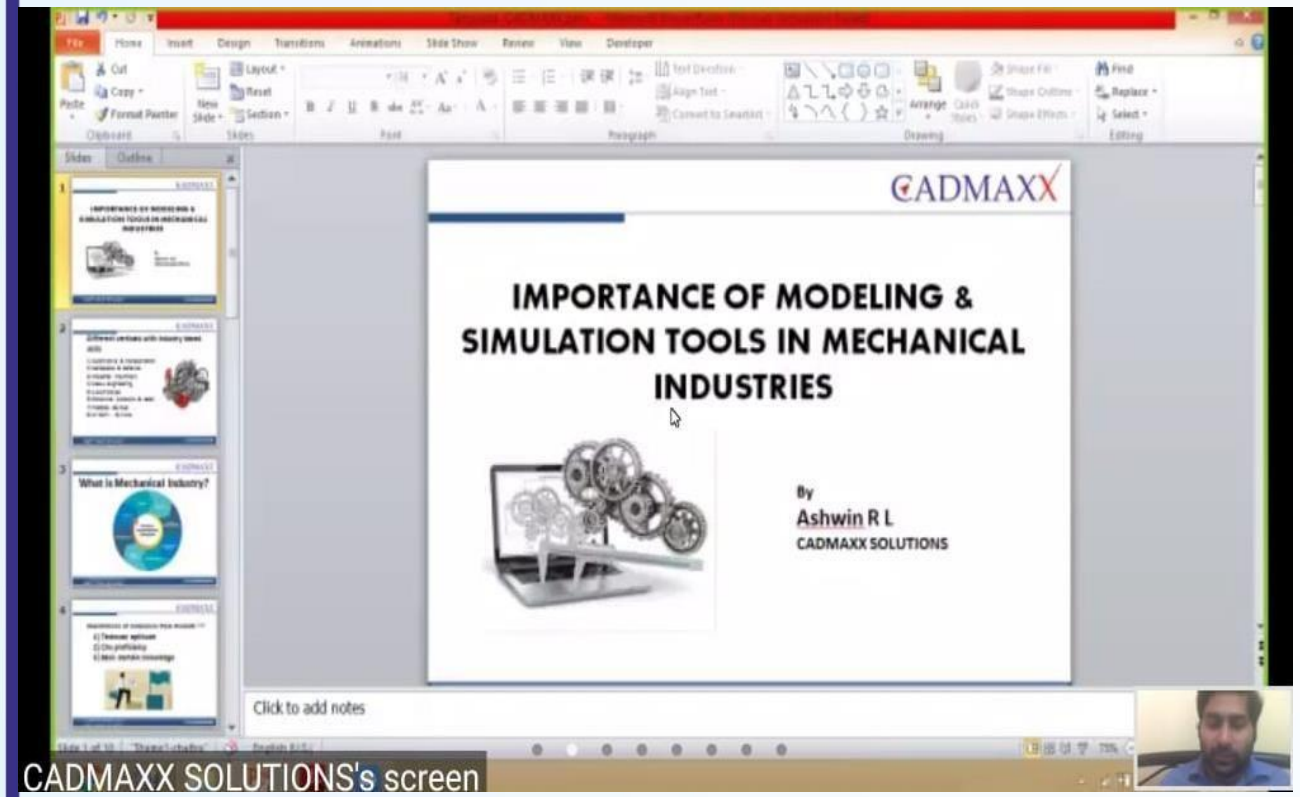
| Year of entry | N1 + N2 + N3 (As defined above) | Number of students who have successfully graduated | | | |
|---|---|---|---|---|---|
| | | I Year | II Year | III Year | IV Year |
| CAY 2020-21 | 18+NA+0= 18 | 18 | -- | -- | -- |
| CAYm1 2019-20 | 44+80+0 = 124 | 41 | 120 | -- | - |
| CAYm2 2018-19 | 65+71+0 = 136 | 50 | 116 | 116 | - |
| CAYm3 2017-18 | 74+65+0 = 139 | 72 | 111 | 111 | 111 |
| CAYm4(LYGm1)2016-17 | 98+54+0=152 | 78 | 104 | 100 | 100 |
| CAYm5(LYGm2)2015-16 | 110+49+0= 159 | 88 | 102 | 97 | 97 |
| CAYm6(LYGm3)2014-15 | 112+47+0= 159 | 82 | 102 | 102 | 102 |



## International Student Exchange Program on Young Ambassador Design Thinking Workshop

## Motivational Session

## Webinar on "Industrial Application of CAD/CAE/CAM




**Two Days Students Workshop On "Emerging Trends In Industrial Mechanical Software's And Its Applications"**

## Faculty Qualification details

| Years | No. of regular faculty with Ph.D. (X) | No. of regular faculty with M.Tech. (Y) | No. of regular faculty required to comply 20:1 Faculty Student ratio (F) | FQ=2.5 x [(10X +4Y)/F)] |
|---|---|---|---|---|
| CAY (2020-21) | 11 | 24 | 32.5 | 15.84 |
| CAYm1 (2019-20) | 9 | 26 | 29.00 | 16.72 |
| CAYm2 (2018-19) | 8 | 26 | 28 | 16.43 |
| **Average Assessment** | | | | **16.33** |

## Faculty Retention details

| | CAYm2 (2018-19) | CAYm1 (2019-20) | CAY (2020-21) |
|---|---|---|---|
| **No. of Faculty Retained** | 34 | 33 | 32 |
| **Total No of Faculty** | 35 | 35 | 35 |
| **Percentage of Retention** | 97.14 | 94.2 | 91.42 |
| **Average percentage of Retention** | **94.25** | | |

## Publication Details in reputed Journals (Elsevier/ Springer/ Taylor & Francis/ WoS/ Scopus etc.)

| Academic Year | 2021-22 | CAY (2020-21) | CAYm1 (2019-20) | CAYm2 (2018-19) | CAYm3 (2017-18) |
|---|---|---|---|---|---|
| No. of publications | 6 | 22 | 11 | 17 | 16 |

## Details of Books Published

| Sl. No | Name of the Faculty | Title | Publisher |
|---|---|---|---|
| 1 | Dr. Hiregoudar Yerrannagoudaru | Investigation of Bio-Fuels and Low Cetane Fuels In CI Engine. | LAMBERT 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 |
| 4 | Mr. Virupaksha Gouda and Dr. R H M Somanatha Swamy | Non Traditional Machining | INSC International Publishers |

## Details of Ph.D Guided / Guiding

| Sl. No | Name of the Guide | No. of Research scholars guided | No. of Research scholars pursuing | Total |
|---|---|---|---|---|
| 1 | Dr. Hiregoudar Yerranna Goudaru | 03 | 06 | 09 |
| 2 | Dr. K Veeresh | 01 | 02 | 03 |
| 3 | Dr. A Thimmana Gouda | 03 | 03 | 06 |
| 4 | Dr. Chitriki Thotappa | - | 04 | 04 |
| | Dr. Nagaraj Kori | - | 04 | 04 |
| TOTAL | | 07 | 19 | 26 |

# List of Faculties Awarded Ph.D During Assessment Period

| Sl. No. | Name | Guide | Co-Guide | Ph.D Awarded |
|---|---|---|---|---|
| 1 | Manjunath K | Dr. Hiregoudaru Yerrenna goudaru | NA | 16/10/2017 |
| 2 | S P Jagadish | Dr. K R Dinesh | Dr. A. Thimmana Gouda | 18/06/2018 |
| 3 | Veerabhadrappa Algur | Dr. V R Kabadi | NA | 18/06/2018 |
| 4 | ChandraGowda M | Dr. Hiregoudaru Yerrenna goudaru | NA | 27/10/2018 |
| 5 | Sardar Kotresh | Dr. Rajshekar Patil | NA | 08/02/2020 |
| 6 | S G Desai | Dr. Anandkumar. R. Annigeri. | Dr. A. Thimmana Gouda | 03/04/2021 |
| 7 | M Balaji | Dr. Hiregoudaru Yerrenna goudaru | NA | 03/04/2021 |
| 8 | G Manjunath Swamy | Dr. G R Bharat Sai Kumar | Dr. K Veeresh | 03/04/2021 |
| 9 | K G Prakash | Dr. H K Ranga Vittal | Dr. A. Thimmana Gouda | 05/08/2021 |

# Patents Details

| 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 state |
| 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 state |
| 3 | Dr.Hiregoudar Yerranna Goudaru | "A Novel Rotating Liquid Fuel Swirl Diffuser Development for Diesel Swirl Injection in CI Engine". | Indian | Patent Registration No. 4097/CHE/2014 | Amended state |
| 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 state |
| 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<br>Patent No. 371721 | Granted on 12/07/2021 |
| 6 | Dr. S G Desai | "Crank Driven Walking Leg Mechanism" | Indian | Patent Application Number: 201841004795 Date. 9.02.2018 | Waiting for final exam |

# Patents Details

| Sl. No. | Name of Faculty | Details | Indian /other | Details | Status |
|---|---|---|---|---|---|
| 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 |
| 9 | Dr.Hiregoudar Yerranna Goudaru | A Novel Swirl booster manifold attachment device to enhance the intake air swirl, Engine performance | Indian | Patent Registration 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, Engine | 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, Engine | Indian | Patent Registration No. 202141002344 Dt: 19.01.2021 | Filed |
| 12 | Dr.Hiregoudar Yerranna Goudaru | A Novel Hemi-spherical grooved shape on inlet poppet valve sear surface and its impact on the intake | Indian | Patent Registration No. 202141002347 Dt: 19.01.2021 | Filed |
| 13 | Dr. Veerabhadrappa Algur | AI-Powered Intelligent financial management system for autonomous cost application | Indian | Patent Application No. 202141036930 Dt: 15.08.2021 | Published |

# Criterion 5 : Research & Development - Patent

One day workshop on fluid flow measurements for technicians and engineers of rural drinking water and sanitation department Government of Karnataka Zilla Panchayat, Bellary on 14.07.2021 by Department of Mechanical Engineering RYMEC, Ballari.



ಬೆಳಗಾಯಿತು

ಆರ್ ವೈ ಎಂ ಇ ಸಿ ಕಾಲೇಜಿನಲ್ಲಿ

## ಮೆಕಾನಿಕಲ್ ವಿಭಾಗದಲ್ಲಿ ಒಂದುದಿನದ ಕಾರ್ಯಗಾರ

ಬೆಳಗಾಯಿತು ವಾರ್ತೆ

ಬಳ್ಳಾರಿ: ನಗರದ ಪ್ರತಿಷ್ಠಿತ ರಾವ್ ಬಹದ್ದೂರ ವೈ ಮಹಾಬಲೇಶ್ವರಪ್ಪ ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯದಲ್ಲಿ ಮೆಕಾನಿಕಲ್ ಇಂಜನೀರಿಂಗ್ ವಿಭಾಗದಲ್ಲಿ ಜರುಗಿದ ಒಂದುದಿನದ ಕಾರ್ಯಗಾರ'' ಪ್ರೋ ಮೆಜರ್ಮೆಂಟ್ಸ್ ಎಡ್ವಾನ್ಸ್ ಮಾಡ್ಯೂಲ್ ಟ್ರಯಿನಿಂಗ್ ಆನ್ ಲಿಕ್ವಿಡ್ ವೇಸ್ಟ್ ಮ್ಯಾನೆಜ್ಮೆಂಟ್'' ಕಾರ್ಯಗಾರ ಹಮ್ಮಿಕೊಳ್ಳಲಾಗಿತ್ತು.ಈ ಕಾರ್ಯಕ್ರಮಕ್ಕೆ ಮೆಕಾನಿಕಲ್ ಇಂಜನೀರಿಂಗ್ ವಿಭಾಗದ ಡಾ।।ಶಿವಕುಮಾರಮೋದಿ, ಡಾ।। ಕೊಟ್ರೇಷ್ ಸರದಾರ್, ಸ್ವಾಗತಿಸಿದರು, ಹಾಗು ನಿರೂಪಣೆ ಮಾಡಿದರು.

ಪ್ರಾಂಶುಪಾಲರಾದ ಡಾ।। ಟಿ. ಹನುಮಂತರೆಡ್ಡಿ, ಉಪಪ್ರಾಂಶುಪಾಲರಾದ ಡಾ।। ಸವಿತಾ ಸೊನೋಳಿ, ಮೆಕಾನಿಕಲ್ ಇಂಜನೀರಿಂಗ್ ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥರಾದ ಡಾ।। ಕೋರಿ ನಾಗರಾಜ್ , ಡಾ।।ಶಿವಕುಮಾರಮೋದಿ, ಡಾ।। ಕೊಟ್ರೇಷ್ ಸರದಾರ್, ಪ್ರೋ. ಎಂ.ಆರ್. ಇಂದುಧರ್, ಪ್ರೋ.ಸೋಮನಾಥ್ ಸ್ವಾಮಿ, ಪ್ರೋ.ಕೆ. ಜಿ.ಮಹೇಶ್, ಪ್ರೋ.ನವೀನ್, ಪ್ರೋ. ವಿರೂಪಾಕ್ಷಗೌಡರು, ಹಾಗು ಜಿಲ್ಲಾಪಂಚಾ ಯತ್-ಬಳ್ಳಾರಿ ವತಿಯಿಂದ -ಇಂಜನೀರ್‌ಗಳು,ಅಧಿಕಾರಿ ವೃಂದದವರು- ಜಾನಕಿರಾಮ್ ಪ್ರಾಜೆಕ್ಟ್ ಡೈರೆಕ್ಟರ್, ಇವರ ತಂಡದಲ್ಲಿ -ಯಮನೂ ರಪ್ಪ, ಆರ್.ಪ್ರಭು, ಮತಿಐಶ್ವರ್ಯ , ಮತಿ ಸಂಧ್ಯಾ ಇನ್ನಿತರರು ಭಾಗವಹಿಸಿದ್ದರು.

ಇಲ್ಲಿ ಭಾಗವಹಿಸುತ್ತಿರುವ ಜಿಲ್ಲಾಪಂಚಾಯತ್-ಬಳ್ಳಾರಿ ವತಿಯಿಂದ ಇಂಜನೀರ್‌ಗಳು,ಅಧಿಕಾರಿ ವೃಂದದವರು ದಿನನಿತ್ಯವು ಸಮಾಜ ಹಿತ ಕಾರ್ಯಗಳಲ್ಲಿ ತೊಡಗಿರುತ್ತಾರೆ. ಅವರಿಗೆ ನಮ್ಮ ಮಹಾವಿದ್ಯಾಲಯದಲ್ಲಿನ ಮೆಕಾನಿಕಲ್ ಇಂಜನೀರಿಂಗ್ ವಿಭಾಗದ ನೂತನ ತಾಂತ್ರಿಕ ವಿಧಾನಗಳು,ಪದ್ಧತಿಗಳು ಉಪಯುಕ್ತವಾಗಬೇಕು, ಹಾಗು ಪ್ರಜೆಗಳಿಗೆ ಉತ್ತಮ ಸೌಲಭ್ಯಗಳು ಇವರಿಂದ ದೊರೆಯಲಿ.

-ಡಾ।। ಸವಿತಾ ಸೊನೋಳಿ,
ಉಪಪ್ರಾಂಶುಪಾಲರು.

ಶಿಕ್ಷಣವೆಂದರೆ ಮೊದಲೇ ಮನುಷ್ಯನಲ್ಲಿ ಇರುವ ಪರಿಪೂರ್ಣತೆಯನ್ನು ಪ್ರಕಾಶಪಡಿಸುವುದು. ನಿಮ್ಮಲ್ಲಿ ಶ್ರಮವಿರಲಿ, ನಿಯಮವಿರಲಿ, ಗುರಿ ಇರಲಿ, ವಿವೇಚನೆ ಇರಲಿ, ದಕ್ಷತೆ ಇರಲಿ.

-ಡಾ।। ಕೋರಿ ನಾಗರಾಜ್
ಮುಖ್ಯಸ್ಥರು,
ಮೆಕಾನಿಕಲ್ ಇಂಜನೀರಿಂಗ್
ವಿಭಾಗ

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# Criterion 6 : Facilities in the Department

CAED LAB
Area : 129.03 Sq.m

MT LAB
Area : 66.41 Sq.m

F & F LAB
Area : 113.28 Sq.m

CAMD / CAMA LAB
Area : 122.56 Sq.m

M M M LAB
Area : 109.43 Sq.m

M/c Shop LAB
Area : 350.46 Sq.m

FM LAB
Area : 306.45 Sq.m

EC LAB
Area : 244.0 Sq.m

HT LAB
Area : 94.38 Sq.m

C I M LAB
Area : 122.56 Sq.m

DESIGN LAB
Area : 109.43 Sq.m

WORKSHOP LAB
Area : 384.16 Sq.m

## Centre for Invention, Innovation, Incubation & Training (CIIIT)


**Hardware Configuration:**

Intel Xeon Silver, 32 GB RAM, 4GB Quadro Graphics, SDD with Dual Bezel Monitors

**Software:**

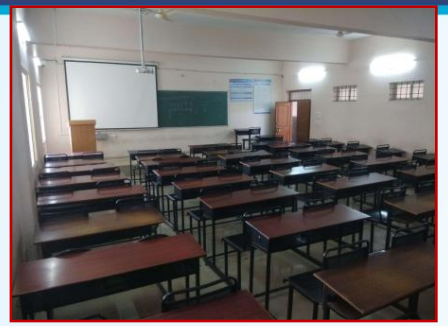
- **Dassualts Systemes Suite** for CAD, CAE, CAM and PLM
- **MSC Softwares Suite** for CAE and CFD Analysis
- **ISRO Feast** for FEA Analysis
- **TATA IGETIT** for E-Learning

Veerashaiva Vidyavardhaka Sangha's

# RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI.

## DEPARTMENT OF MECHANICAL ENGINEERING

**Criterion 6 : Facilities in the Department**



6 Classrooms & 2 Tutorials With ICT Facilities


Department A/C seminar hall with ICT Facilities

Staff Cabins - 28

## Safety Measures in Laboratories





## Details of Laboratories & Technical Manpower

| Instructor | Asst. Instructor | Helpers | Qualification of Technical Staff | Batch Size | Utilization |
|---|---|---|---|---|---|
| 8 | 3 | 3 | BE, DME, ITI | 20-25 Students | 3 - 6 Batches/week |

# ICT Facilities

| Sl. No. | Teaching Aids | Quantity |
|---|---|---|
| 1 | No of Systems | 186 |
| 2 | LCD Projectors | 11 |
| 3 | Laptops | 04 |
| 4 | Tablets | 07 |
| 5 | Printers | 13 |
| 6 | Scanners | 04 |
| 7 | Digital Pad | 01 |
| 8 | Cordless & Collar Mic | 02 |
| 9 | Podium Mic | 01 |
| 10 | Sound system | 01 set |
| 11 | Google meet – G Suite for education | |

# System Facilities

| Sl. No. | System Type | No. of Systems |
|---|---|---|
| 1 | **Dell PowerEdge R440** [Intel Xeon silver, 10 core 20 threads, 128 GB RAM, 1200 GB HDD for OD(RAID0), 1800 GB for Data (RAID5), windows server 2016] | 01 |
| 2 | **HP Workstaion Z4G4** [Intel Xeon, 32 GB RAM, 8GB Quadro graphics, 1TB+120 GB HDD, Windows 10 Pro with dual dezel monitors) | 20 |
| 3 | **Dell - Dual Core** | 51 |
| 4 | **HCL – Core2 Duo** | 23 |
| 5 | **Dell Optiplex i3** | 24 |
| 6 | **Dell Optiplex i5** | 60 |
| 7 | **Lenovo i5** | 05 |
| 8 | **Dell Optiplex i7** | 02 |
| | Total | **186** |

# Criterion 6 : List of Licensed Softwares

| Sl. No | Date of Purchase | Software | Quantity |
|---|---|---|---|
| 1 | 19/03/1997 | MTAB Lathe & Mill | 01 |
| 2 | 19/02/2001 | Solid Edge V9 | 20 |
| 3 | 14/12/2001 | 1.CAPSturn<br>2.CAPSmill | 10<br>10 |
| 4 | 09/02/2002 | Robocell | 03 |
| 5 | 21/02/2002 | NISA V12 | 04 |
| 6 | 19/03/2002, 30/03/2002 | Auto Cad LT 2000 | 05 |
| 7 | 23/09/2004 | ANSYS V10.0 | 05 |
| 8 | 01/09/2006 | Solid Edge V19 | 60 |
| 9 | 31/08/2009 | AMESim Hydraulics and Pneumatics Software | 04 |
| 10 | 08/03/2010 | ANSYS V12.0 | 25 |
| 11 | 16/04/2015 | 1.MATLAB<br>2.Simulink<br>3.Partial Differential Equation Toolbox<br>4.SimScape<br>5.Sim Mechanics<br>6.Sim Hydraulics<br>7.Simevent<br>8.Stateflow<br>9.Symbolic Math | 05<br>05<br>05<br>05<br>05<br>05<br>05<br>05<br>05 |
| 12 | 18/09/2015 | 1.CAPSturn<br>2.CAPSmill<br>3.seeNC-Turn<br>4.seeNC-Mill<br>5.Ncyclo Mill<br>6.Ncyclo Turn | 30<br>30<br>30<br>30<br>01<br>01 |
| 13 | 06/10/2015 | Robocell V5.6 | 30 |
| 14 | 10/07/2016 | Autocad 2021 | 125 |
| 15 | 18/08/2018 | Autodesk Inventor Professional 2021 | 125 |

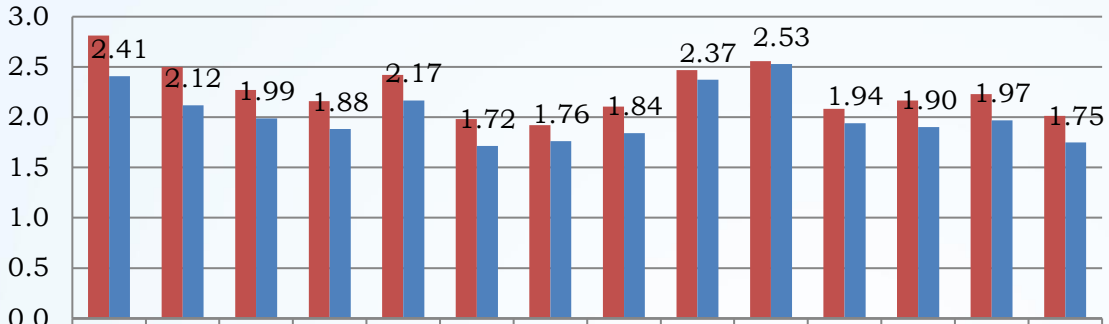
**Actions taken based on the results of evaluation of each of the POs**

- 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.

**2020-21 LYG: (Latest year of graduation)**

**2019-20 LYGm1: (Latest year of graduation minus one year)**

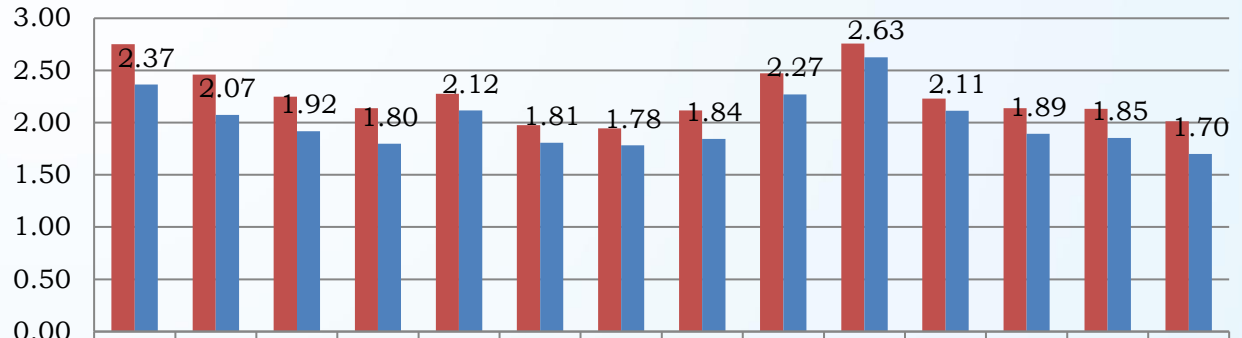
**2018-19 LYGm2: ( Latest year of graduation minus two years)**




| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PS O1 | PS O2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO - PO Mapping Average | 2.8 | 2.5 | 2.3 | 2.2 | 2.4 | 2.0 | 1.9 | 2.1 | 2.5 | 2.6 | 2.1 | 2.2 | 2.2 | 2.01 |
| Direct & Indirect PO Attainment Average | 2.41 | 2.12 | 1.99 | 1.88 | 2.17 | 1.72 | 1.76 | 1.84 | 2.37 | 2.53 | 1.94 | 1.90 | 1.97 | 1.75 |

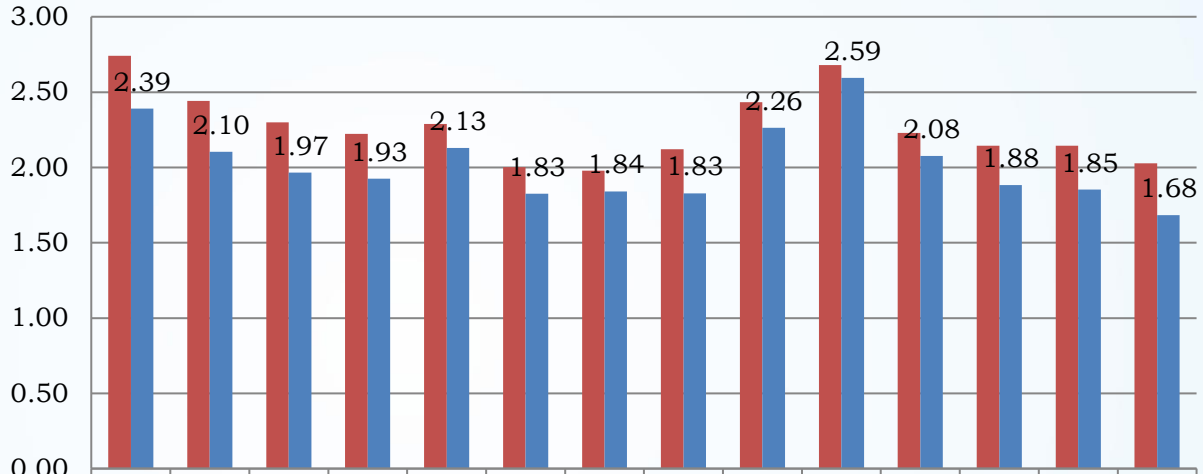
**PO Direct & Indirect Attainment 2020-21**

**PO Direct & Indirect Attainment 2019 - 20**




| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO - PO Mapping Average | 2.75 | 2.46 | 2.25 | 2.14 | 2.28 | 1.98 | 1.95 | 2.12 | 2.47 | 2.76 | 2.23 | 2.14 | 2.13 | 2.01 |
| Direct & Indirect PO Attainment Average | 2.37 | 2.07 | 1.92 | 1.80 | 2.12 | 1.81 | 1.78 | 1.84 | 2.27 | 2.63 | 2.11 | 1.89 | 1.85 | 1.70 |

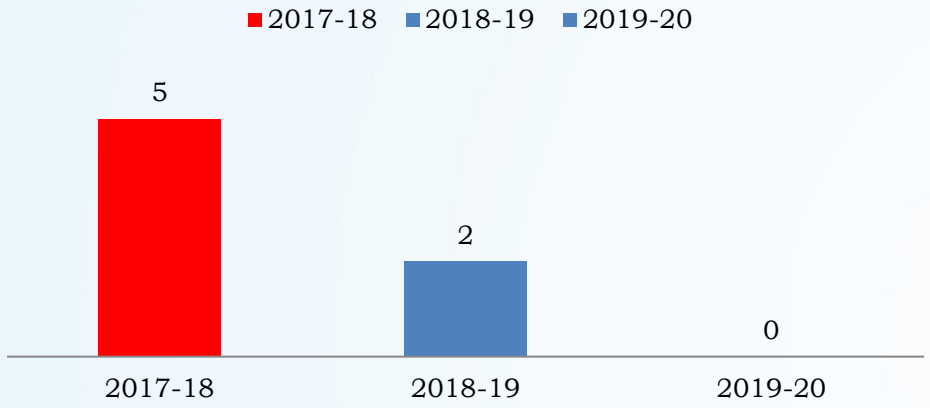
## PO Direct & Indirect Attainment 2018-19



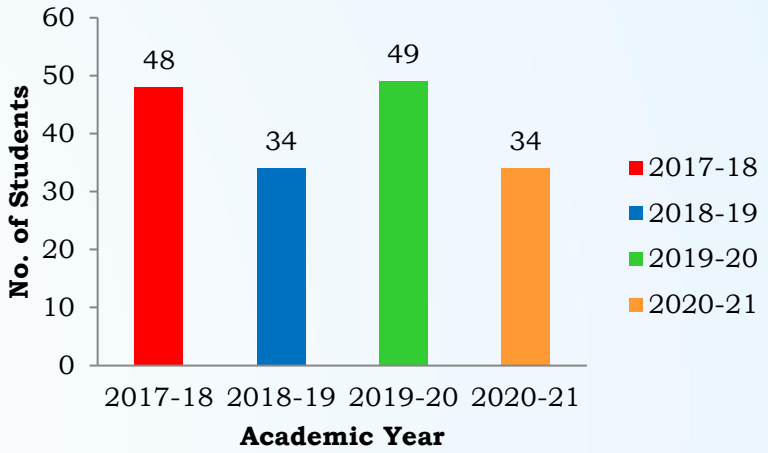

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO - PO Mapping Average | 2.74 | 2.44 | 2.30 | 2.22 | 2.29 | 2.00 | 1.98 | 2.12 | 2.43 | 2.68 | 2.23 | 2.14 | 2.15 | 2.03 |
| Direct & Indirect PO Attainment Average | 2.39 | 2.10 | 1.97 | 1.93 | 2.13 | 1.83 | 1.84 | 1.83 | 2.26 | 2.59 | 2.08 | 1.88 | 1.85 | 1.68 |

| Sl. No. | Audit Date | Audit Members | Remarks |
|---|---|---|---|
| 1 | 12/06/2017 | 1. Mr. Raghu Kumar K S, Assistant Professor, Dept. of CSE, RYMEC, Ballari.<br>2. Mr. Shiva Kumar V, Assistant Professor, Dept. of CSE,RYMEC, Ballari. | NBA Internal Audit committee |
| 2 | 19/12/2018 | 1. Dr. Mohamed Rafi, Professor, Dept. of CSE,UBDT, Davangere. | Academic audit by IQAC |
| 3 | 28/06/2019 | 1. Dr. Girish H, Professor, Dept. of CSE, RYMEC, Ballari.<br>2. Mr. Shiva Kumar V, Asst Prof, Dept. of CSE, RYMEC, Ballari. | NBA Internal audit Committee |
| 4 | 16/09/2019 | 1. Dr. Veeragangadhara Swamy T.M, Professor, Dept. of CSE, RYMEC, Ballari.<br>2. Mrs. Rakhee Patil, Professor, Dept. of ECE, RYMEC, Ballari.<br>3. Mr.Shivananda K B, Assistant Placement Officer, RYMEC, Ballari. | Administrative audit by IQAC |
| 5 | 04/11/2019 | 1. Dr. Prashanth B.G, Professor, Dept. of Mechanical Engineering, JSS academy of Technical Education, Bengaluru.<br>2. Dr. Bhimasen Soragaon, Professor, Dept. of Mechanical Engineering, JSS academy of Technical Education, Bengaluru. | Academic audit by IQAC |
| 6 | 12/10/2020 | 1. Dr. H.M. Mallikarjuna, Professor, Dept. of Civil Engineering, RYMEC, Ballari.<br>2. Dr. Kotresh S, Professor, Dept. of EEE, RYMEC, Ballari. | NBA Internal audit Committee |
| 7 | 25/06/2021 | 1. Dr. Yadavalli Basavaraj, Professor, Dept. of Mechanical Engineering, BITM, Ballari.<br>2. Dr. Raghavendra Joshi, Professor, Dept. of Mechanical Engineering, BITM, Ballari. | NBA External audit Committee |

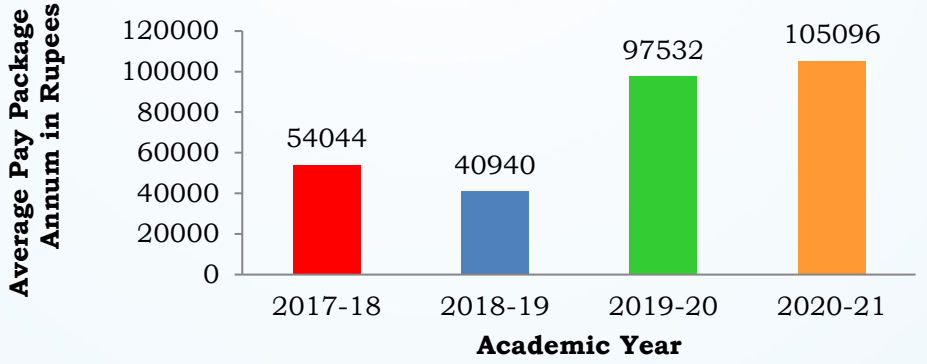
## No. of Students opted for Higher Education




## No. of Students Placed

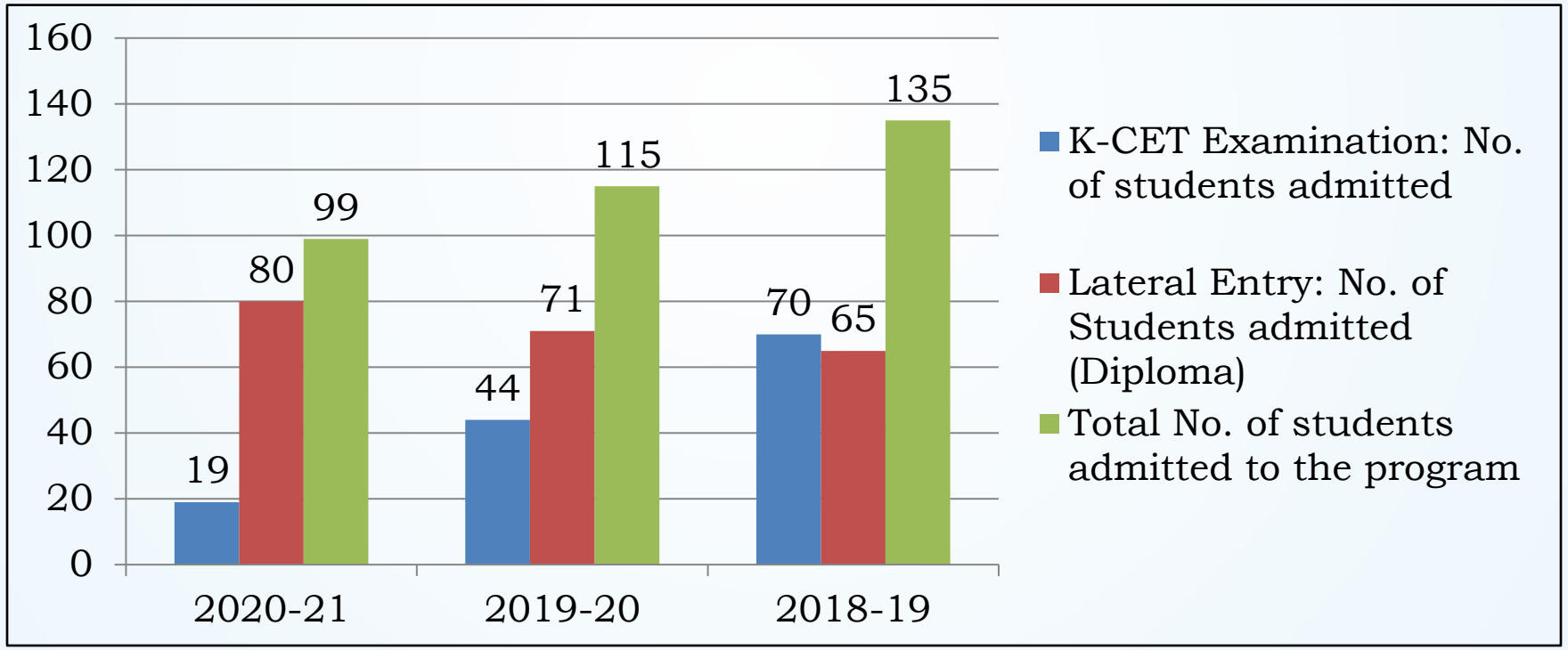



## Average Pay Package per Annum in Rupees



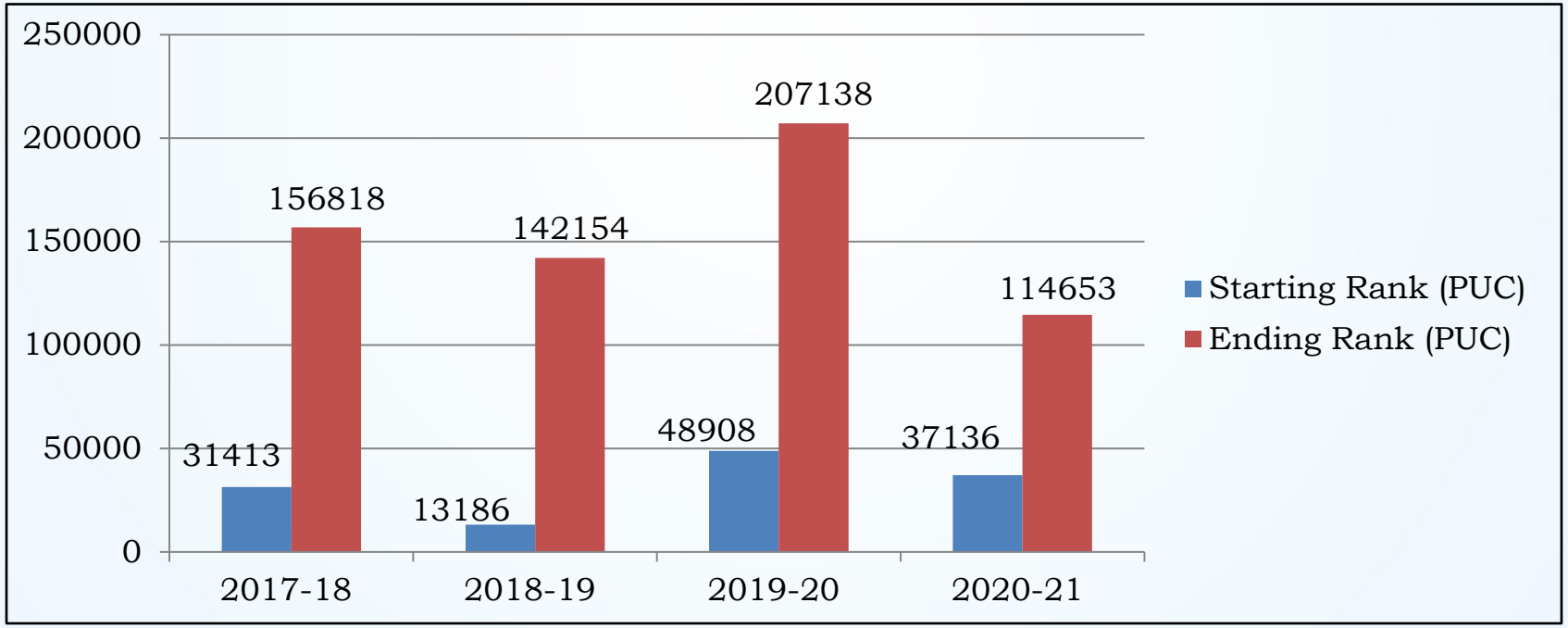
## Total No. of Students Admitted to the Program

| 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) | 80 | 71 | 65 |
| Total No. of students admitted to the program | 99 | 115 | 135 |



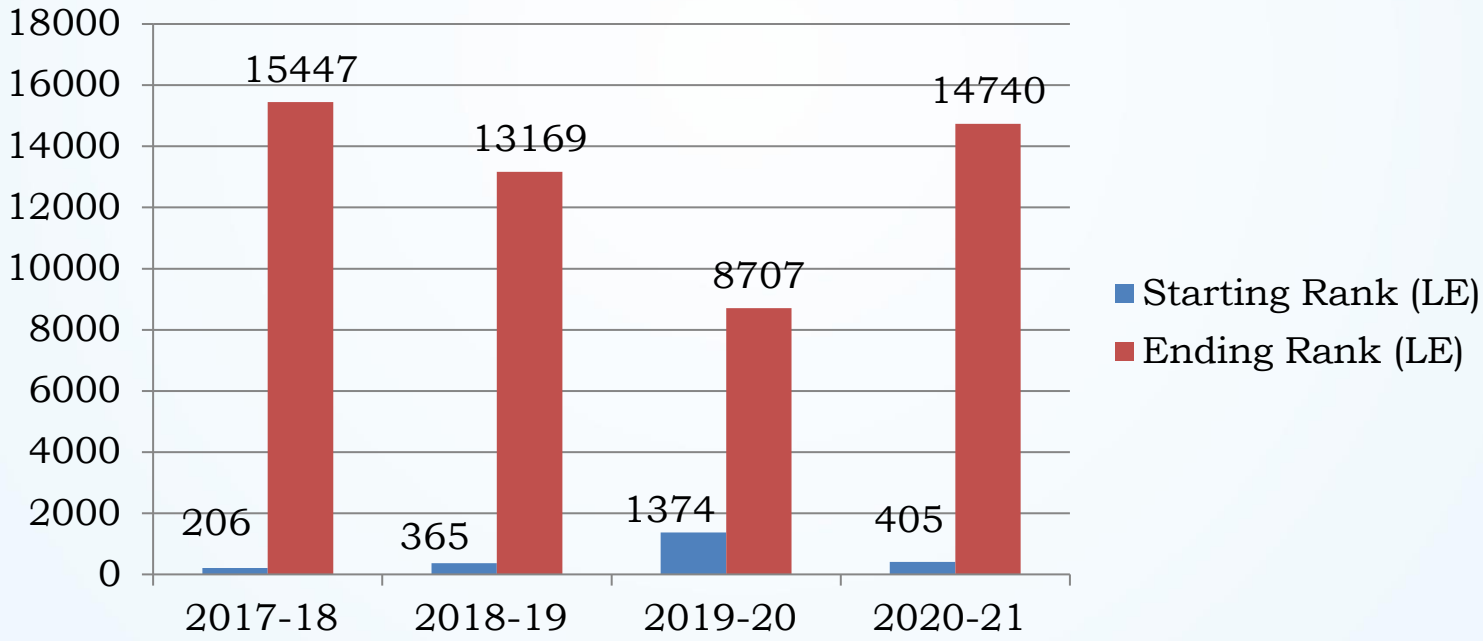
# Starting Rank and Ending Rank of the Students Admitted to the program

| 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 |



# Starting Rank and Ending Rank of Lateral Entry Students

| 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 |



## List of Journals subscribed for Mechanical Engineering Department

| Sl. No. | Title of Journal | Publication | National/International |
|---|---|---|---|
| 1 | Indian Journal of Advance Mechatronics & Robotics | GBS | NAT |
| 2 | Indian Journal of Advanced Material Science | GBS | NAT |
| 3 | Indian Journal of Material Sciences and Technology | GBS | NAT |
| 4 | Indian Journal of Mechanical Material & Maching | GBS | NAT |
| 5 | Indian Journal of Mechanics and Thermodynamics | GBS | NAT |
| 6 | Indian Journal of Modern Production Engg. | GBS | NAT |
| 7 | Journal of Indian Mechanical Engg. | GBS | NAT |
| 8 | International Journal of Advanced Manufacturing Systems | SP | NAT |
| 9 | International Journal of Materials Science and Engineering | SP | NAT |
| 10 | International Journal of Product Design | SP | NAT |
| 11 | Journal of Metallurgical Engineering | SP | NAT |
| 12 | Materials Processing Science and Technology – An International Journal | SP | INT |
| 13 | Mechanical Engineering | ICFAI | NAT |

- 8 e-Journal subscription.
  - IEEE
  - Springer
  - Pro quest
  - ACM
  - Science direct
  - Knimbus
  - Taylor and Francis
- e Resource subscription
- On campus IP: 192.168.8.4 and Off campus IP: 202.62.93.75.
- 1.30 Lakhs resources.
- Books: No. of titles: **1829,** and No. of Volumes: **21416.**

Veerashaiva Vidyavardhaka Sangha's

# RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI.

## DEPARTMENT OF MECHANICAL ENGINEERING

**Social Responsibility**

## Manufactured and supplied Face Shield Masks for COVID 19 Warriors to Deputy Commissioner, Ballari, District Hospital, Ballari and Doctors in and around Ballari.

Vijayanagara Institute of Medical Sciences, Central Lab, Ballari

ಆರ್.ವೈ.ಎಂ.ಸಿ.ಯಿಂದ ಜಿಲ್ಲಾಡಳಿತಕ್ಕೆ
3ಡಿ ಪ್ರಿಂಟಿಂಗ್ ತಂತ್ರಜ್ಞಾನದ ಮಾಸ್ಕ್ ನೀಡಿಕೆ

ಬಳ್ಳಾರಿ, ಏ.18- ಬಳ್ಳಾರಿ ನಗರದಲ್ಲಿ ಪ್ರತಿಷ್ಠಿತ ವೀ.ವಿ.ಸಂಘದ ರಾವ್ ಬಹದ್ದೂರ್ ವೈ ಮಹಾಬಲೇಶ್ವರಪ್ಪ ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯವು (ಆರ್.ವೈ.ಎಂ.ಇ.ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯ), ಕೋವಿಡ್-19 ಗಣಪಡಿಸಲು ಹೋರಾಡುತ್ತಿರುವ ವೈದ್ಯರು, ನರ್ಸ್‌ಗಳು, ಪಾಗು ಎಲ್ಲಾ ಆರೋಗ್ಯ ಕಾರ್ಯಕರ್ತರುಗಳ ನೆರವಿಗಾಗಿ, ತಮ್ಮಲ್ಲಿರುವ ಯಾಂತ್ರಿಕ ವಿಭಾಗದ ಅತ್ಯಾಧುನಿಕ 3ಡಿ ಪ್ರಿಂಟಿಂಗ್ ತಂತ್ರಜ್ಞಾನದ ನೆರವಿನಿಂದ ಮುಖಕವಚಗಳನ್ನು ತಯಾರಿಸಿ, ಬಳ್ಳಾರಿ ಜಿಲ್ಲೆಯ ಜಿಲ್ಲಾಧಿಕಾರಿಗಳಿಗೆ ತಲುಪಿಸಿದ್ದಾರೆ. ಕಾಲೇಜಿನ ಈ ಸಾಮಾಜಿಕ ಕಳಕಳಿಗೆ ಜಿಲ್ಲಾಧಿಕಾರಿಗಳು ಪ್ರತಿಕ್ರಿಯೆಯನ್ನು ವ್ಯಕ್ತಪಡಿಸಿ, ಸಾರ್ವಜನಿಕರಲ್ಲಿ ಇನ್ನು ಹೆಚ್ಚಿನ ಸಂಖ್ಯೆಯಲ್ಲಿ ಮುಖಕವಚಗಳನ್ನು ಒದಗಿಸಲು ಕೋರಿರುತ್ತಾರೆ ಎಂದು ಕಾಲೇಜಿನ ಪ್ರಾಂಶುಪಾಲರು ತಿಳಿಸಿದ್ದಾರೆ.

ಈ ಸಮಾಜಮುಖಿ ಕಾರ್ಯವನ್ನು ಯಂತ್ರಶಾಸ್ತ್ರ ವಿಭಾಗದ ಅಧ್ಯಕ್ಷರಾದ ಪ್ರೊ.ಎಸ್.ಬಸ ನೀರಿಂಗ್ (ಯಾಂತ್ರಿಕ) ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥರಾದ ಡಾ||ಕೋರಿ ಸಾಗರ ಮಾಹಾಜ್, ವಕೀಲರು, ಇವರ ಸಹ ಲಿರುವ ಅತ್ಯಾಧುನಿಕ 3ಡಿ ರಾಜ್, ಡಾ|| ಶಿವಕುಮಾರ್ ಸರ ಹಾಗು ಮೆಲ್ವಿಚಾರಣೆಯಲ್ಲಿ ಪ್ರಿಂಟಿಂಗ್ ತಂತ್ರಜ್ಞಾನದ ನೆರವಿ ಮೋದಿ, ಡಾ|| ಕೊಟ್ರೇಶ್ ಸರ ಕ್ಟೆಗೊಳ್ಳಲಾಗಿರುತ್ತದೆ. ನಿಂದ ಮುಖಕವಚಗಳನ್ನು ರಾವ್, ಶ್ರೀ ಗಡಿಗಿ ವಿಷಯ್, ಶ್ರೀ ರಾವ್ ಬಹದ್ದೂರ್ ವೈ ಮಹಾ ತಯಾರಿಸಿದ ತಂಡದಲ್ಲಿ ಪ್ರಾಂಶು ಪಿನ್ಸ್ ಕೇತನ್, ಶ್ರೀ ಬಾಲರಾಜ್ ಬಲೇಶ್ವರಪ್ಪ ತಾಂತ್ರಿಕ ಮಹಾವಿ ಪಾಲರಾದ ಡಾ|| ಕುಮ್ಮಗರ್ , ಶ್ರೀ ಕೆ.ಬಿ ಮಂಜುನಾಥ್.ಇನ್ನಿತ ವಿದ್ಯಾಲಯದ ಮೆಕ್ಯಾನಿಕಲ್ ಇಂಜ ವಿಕೇತ್, ಯಾಂತ್ರಿಕ ವಿಭಾಗದ ರರು ಭಾಗವಹಿಸಿದ್ದರು.

ಸಂಜೆವಾಣಿ Sat, 18 April 2020 https://epaper.sanjevani.com/c/51074292

ಆರ್.ವೈ.ಎಂ.ಇ.ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯದಲ್ಲಿ ಮೆಕ್ಯಾನಿಕಲ್ ಇಂಜಿನೀರಿಂಗ್ ವಿಭಾಗದಲ್ಲಿರುವ ಅತ್ಯಾಧುನಿಕ
3ಡಿ ಪ್ರಿಂಟಿಂಗ್ ತಂತ್ರಜ್ಞಾನದ ನೆರವಿನಿಂದ ಮುಖಕವಚಗಳ ತಯಾರಿ

District Hospital, Ballari

# Distributed food for needy during COVID-19 Pandemic on 28th and 29th April 2020


# Department Strength

## V.V. Sangha's
## Rao Bahadhur Y. Mahabaleswarappa Engineering College Ballari.

## Department Of Mechanical Engineering

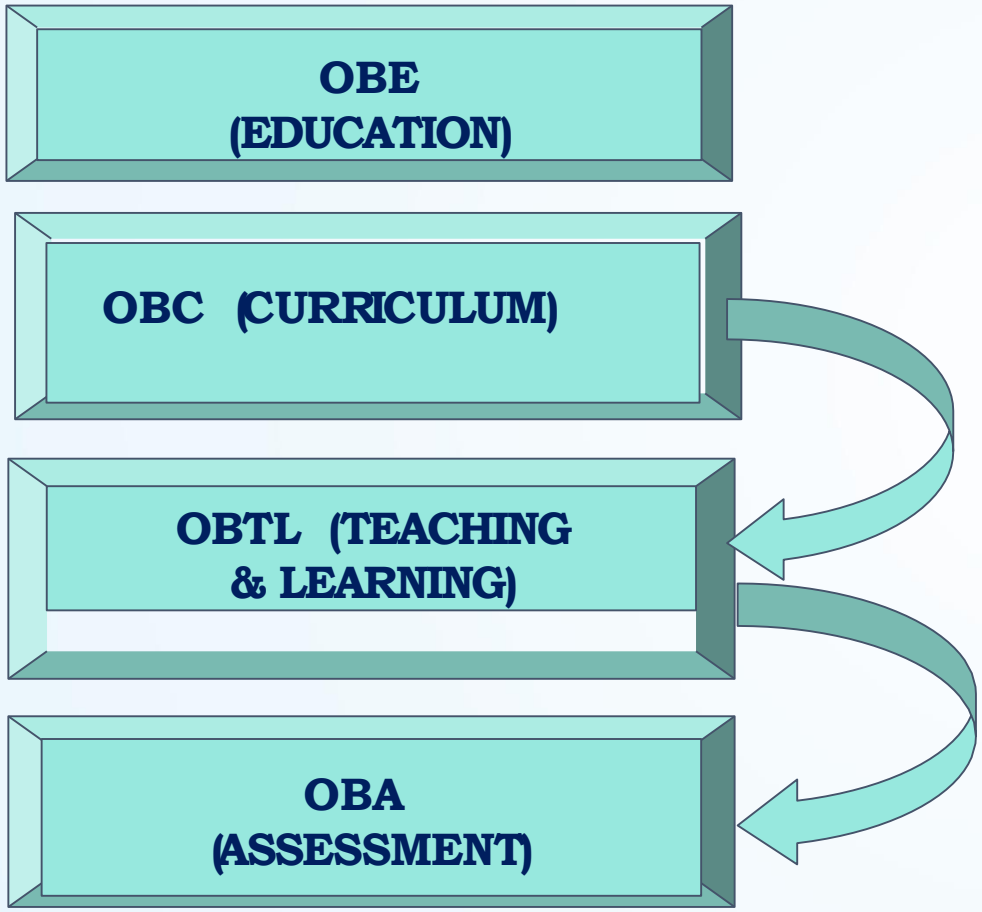
Teaching & Non Teaching Staff

# PART II
# Outcome Based Education Philosophy of Mechanical Engineering Department

- **Outcome Based Education (OBE) System** referred as standard based education, has proven to be success in helping institutions to measure the learning outcomes and enabling the students to develop skills for global recognition.
- **OBE** helps institution to achieve defined **Vision and Mission**.
- **OBE** is a student-centric teaching and learning methodology in which the course delivery, assessment are planned to achieve stated objectives and outcomes.

# Outcome Based Education

## OBE Process

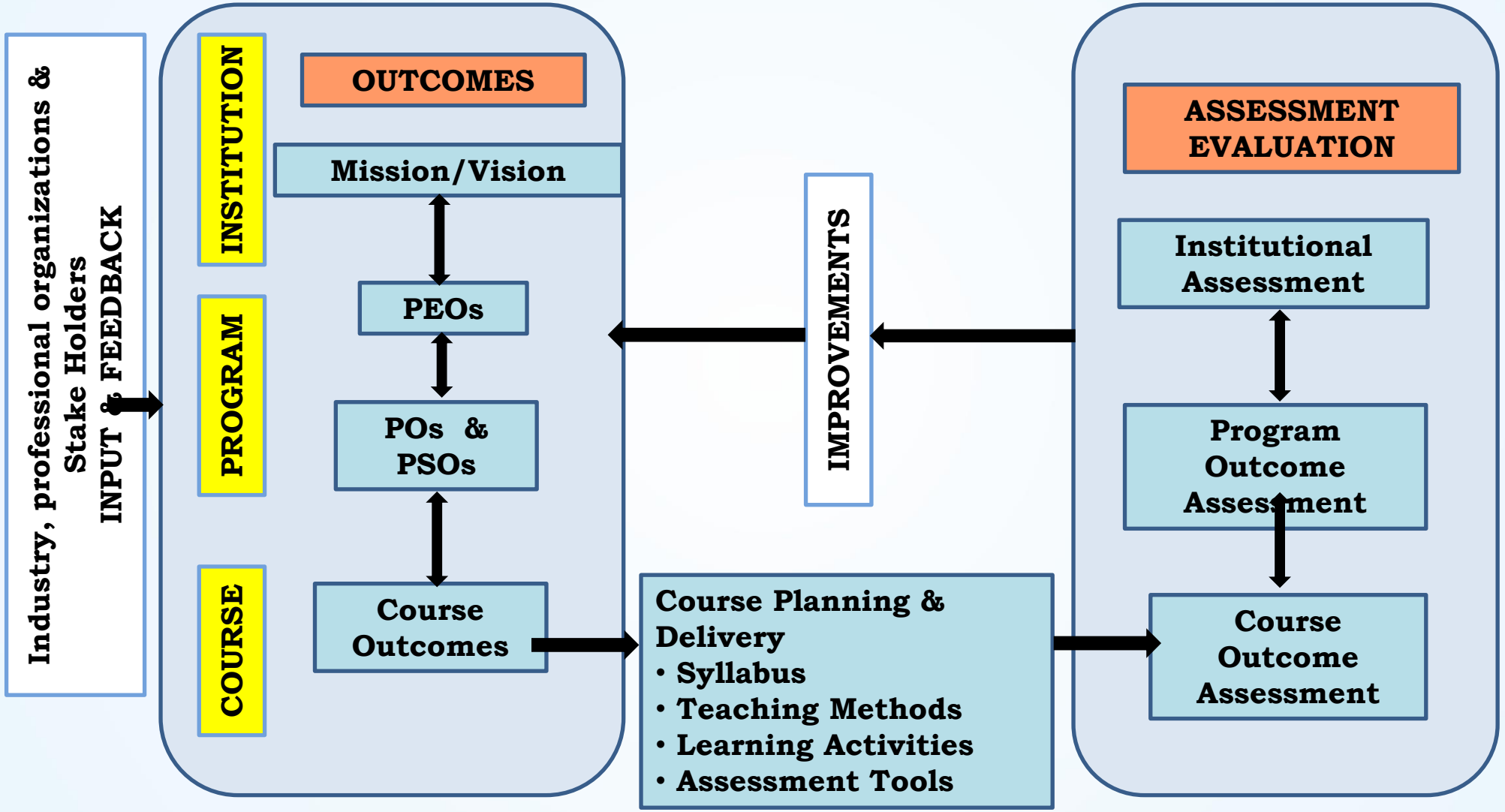



## OBE Components

- VISION & MISION
- PROGRAM EDUCATIONAL OBJECTIVES(PEO)
- PROGRAM SPECIFIC OUTCOMES(PSO)
- PROGRAM OUTCOMES(PO)

| COURSE 1 | COURSE 2 | ..... | COURSE n |
|---|---|---|---|
| CO1,CO2,CO3, CO4,CO5 | CO1,CO2,CO3, CO4,CO5 | | CO1,CO2,CO3, CO4,CO5 |

# Outcome Based Education



# Vision, Mission, PEO and PSO

## 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. |

## PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

| | |
|---|---|
| **PEO 1** | Graduates of Mechanical Engineering shall Develop Strong Academic Foundation for Successful Professional Career. |
| **PEO 2** | Graduates of Mechanical Engineering Acquires skills to excel in the area of Mechanical Engineering both in Industries and Academics. |
| **PEO 3** | Graduates of Mechanical Engineering Possess awareness towards Higher Education, R & D and Socio-Ethical values. |

## PROGRAM SPECIFIC OUTCOMES (PSO's)

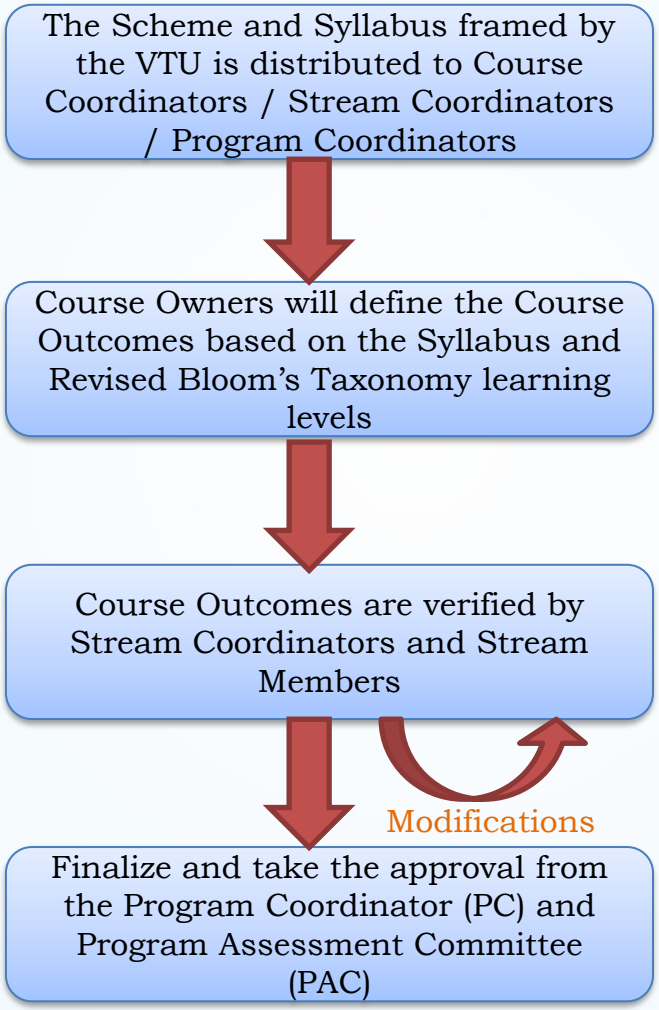
| | |
|---|---|
| **PSO 1** | Graduates possess the knowledge to Design, Analyze and Develop Mechanical System. |
| **PSO 2** | Graduates are Capable of Developing Research Skills in Self Sustainable Energy sources and Composite Materials. |

# Outcome Based Education

| | |
|---|---|
| **Course** | Course is defined as a Theory, Lab, Projects, Seminar & Internship subjects studied in a semester. For Eg. Machine Tool & Operations, Machine Shop, etc. |
| **Course Outcome (CO)** | Course outcomes are statements that describe significant and essential learning that learners have achieved and can reliably demonstrate at the end of a course. Generally, Five course outcomes may be specified for each course. |
| **Program** | Program is defined as the specialization or discipline of a Degree. It is the interconnected arrangement of courses, co-curricular and extracurricular activities to accomplish predetermined objectives leading to the awarding of a degree. For example: B.E., Mechanical Engineering. |
| **Program Outcomes (POs)** | Program outcomes are narrower statements that describe what students are expected to be able to do by the time of graduation. POs are expected to be aligned closely with Graduate Attributes. |
| **Program Educational Objectives (PEOs)** | The Program Educational Objectives of a program are the statements that describe the expected achievements of graduates in their career, and also in particular, what the graduates are expected to perform and achieve during the first few years after graduation. |
| **Program Specific Outcomes (PSO)** | Program Specific Outcomes are what the students should be able to do at the time of graduation with reference to a specific discipline. Usually there are two to four PSOs for a program. |

# COURSE OUTCOMES FRAMING PROCESS

- **Course Outcomes (COs)** are what the student should be able to do at the end of a course.
- It is an effective ability, including attributes, skills and knowledge to successfully carry out the identified activity
- The most important aspect of a CO is that it should be Specific, Measurable, Achievable, Relevant, and Time bound (SMART).
- Structure of a CO statement - Action, Knowledge, Condition and Criteria.



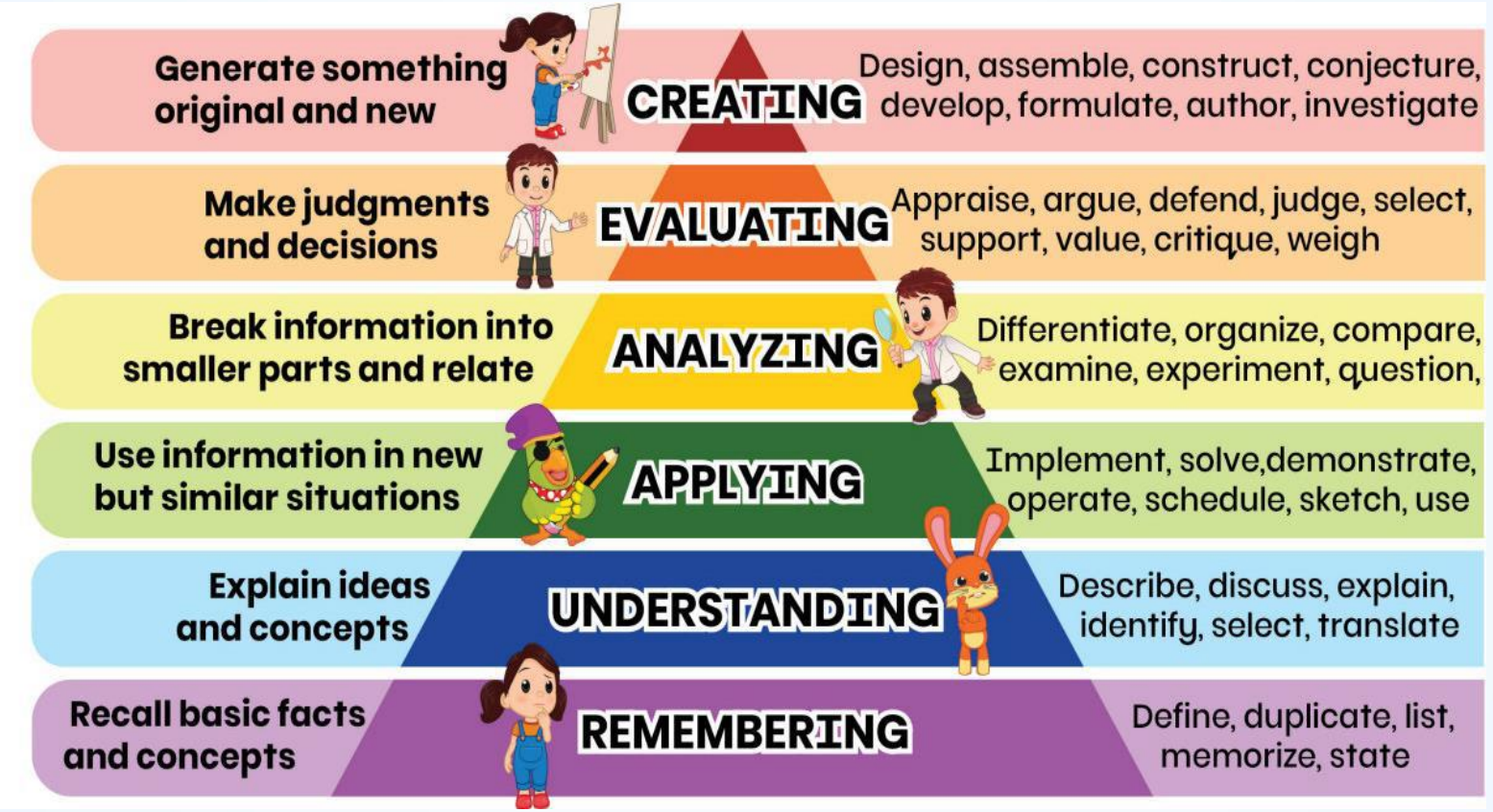

- Allotment of Courses
- Meeting Proceedings (HOD)

- Analyze the relevance of framed Course Outcomes
- Check the Suitability of RBT learning levels.
- Meeting Proceedings (Stream Coordinator)

- Meeting Proceedings (Program Coordinator & PAC)
- Disseminate the finalized Course Outcomes to Students.

# Defining Course Outcomes

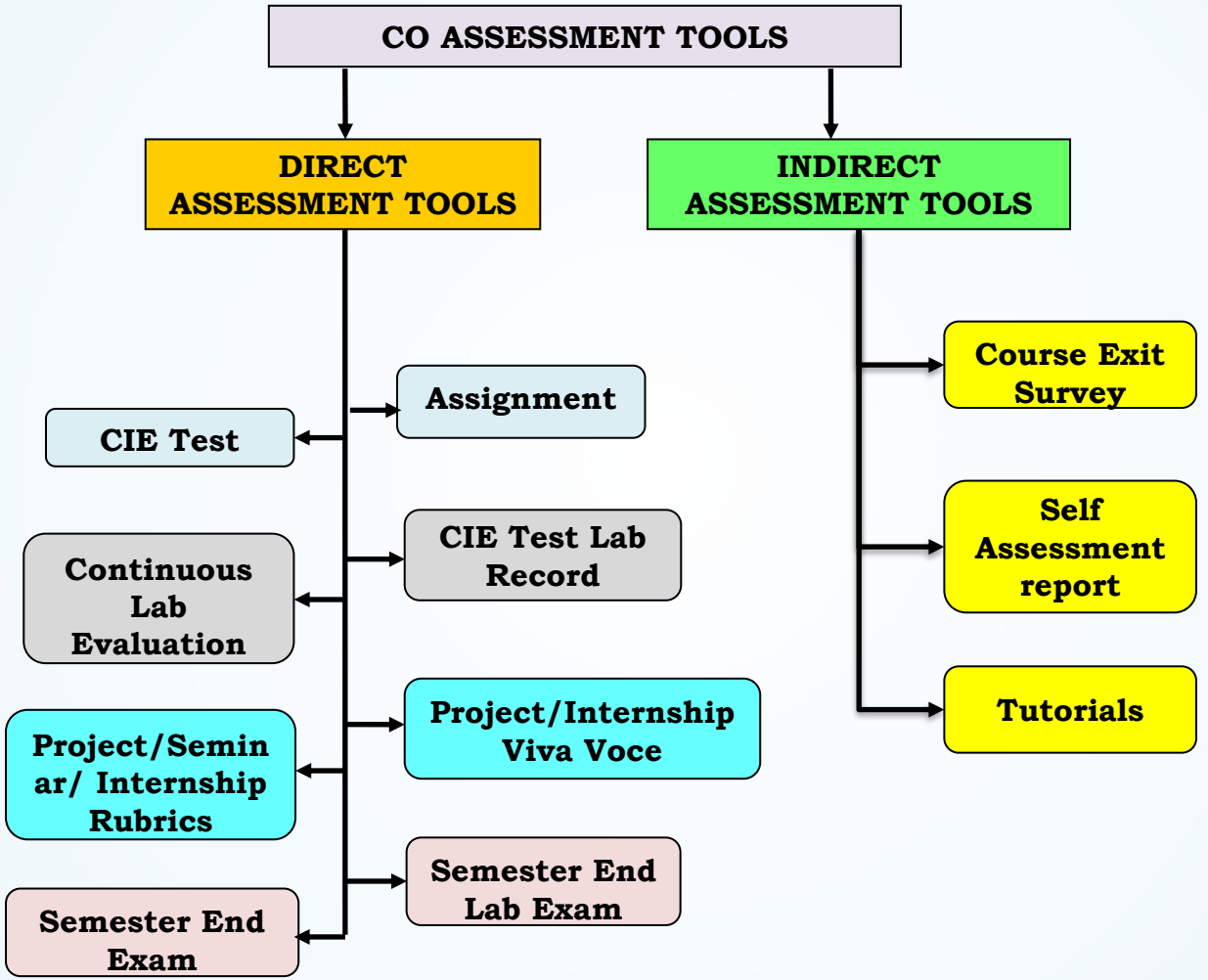
**"The Course Outcomes are framed keeping in mind the revised BLOOM's Taxonomy"**




**Cognitive Style of BTL**

- **Course outcomes (COs) of all the courses together must cover all the POs (and PSOs).**
- **For a course COs are mapped to POs through the CO-PO matrix and to PSOs through the CO-PSO matrix.**

# CO Assessment Tools

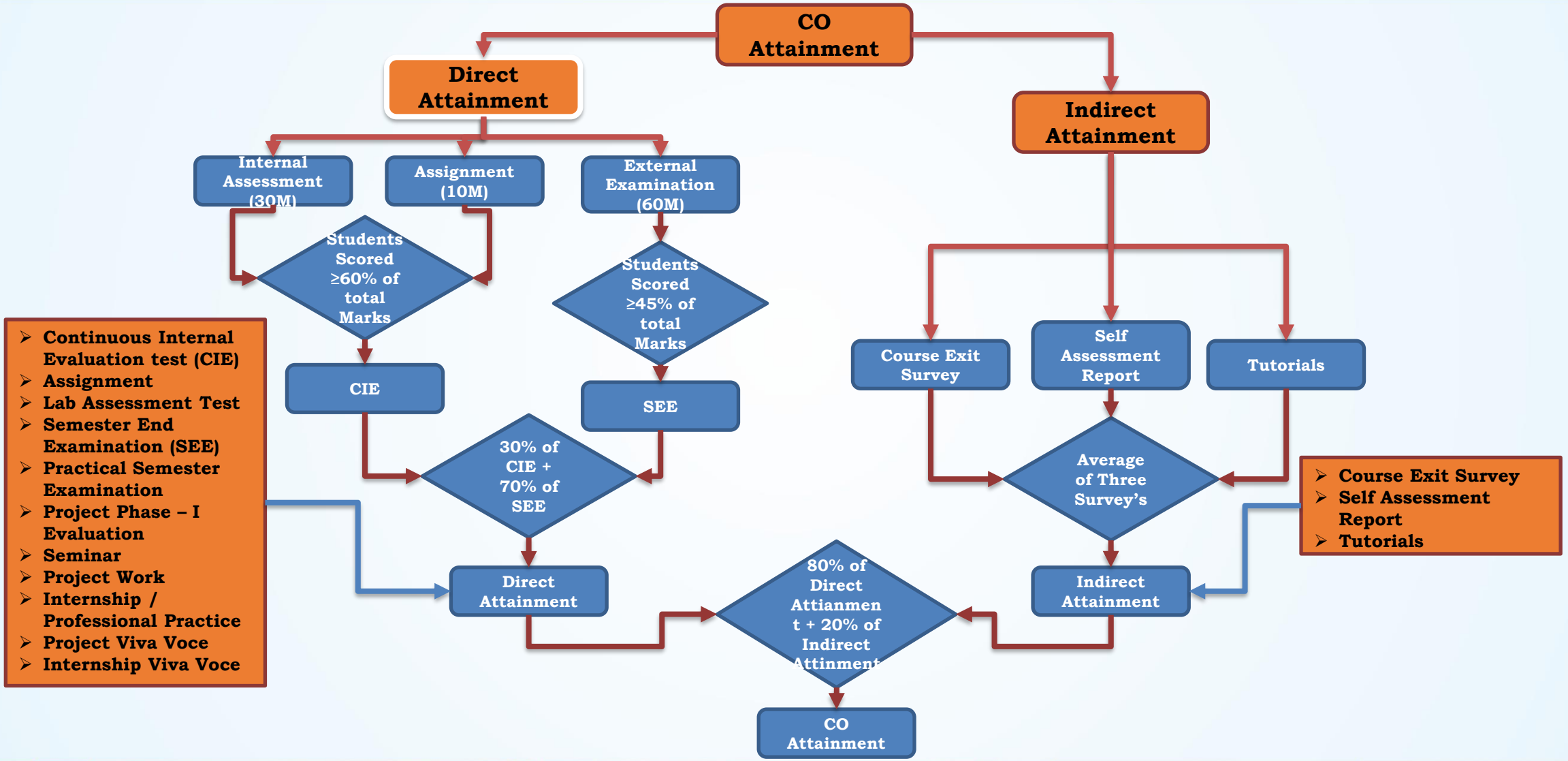


Veerashaiva Vidyavardhaka Sangha's

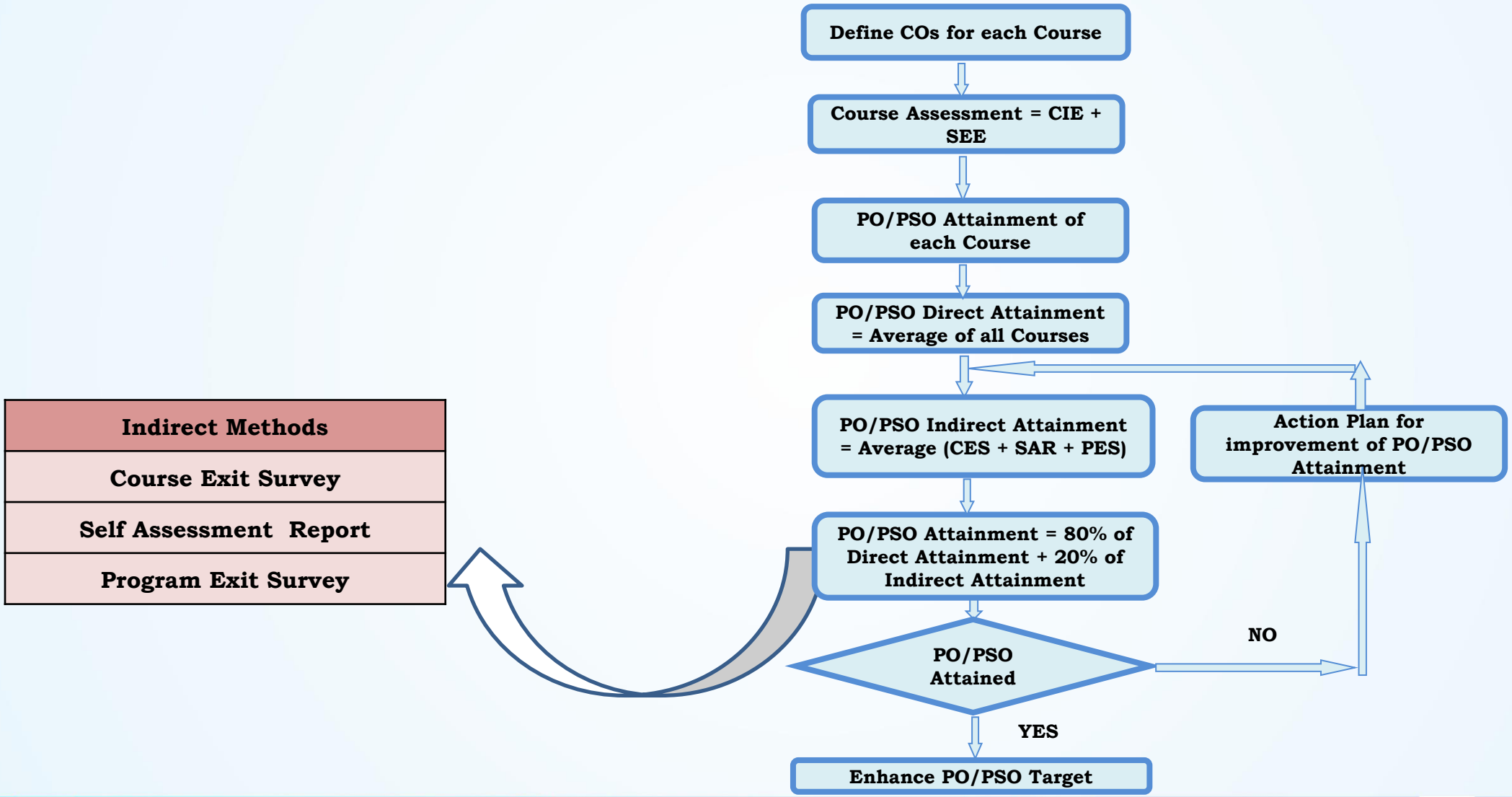
# RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI.

## DEPARTMENT OF MECHANICAL ENGINEERING

## CO & PO Attainment Process



# PO & PSO Attainment Process



# Assessment Methods

| Sl. No | Assessment Method | Assessment frequency | Assessment Tool |
|---|---|---|---|
| 1 | Internal Assessment Test | At the end of 6th, 10th and 14th weeks of each semester. | Student's performance in internal assessment booklets. |
| 2 | Assignment | Before / After Conduction of CIE Test | Student's performance in Assignment assessment booklets. |
| 3 | Lab Assessment Test | At the end of the semester | Student's performance in conducting experiments and journal writing. |
| 4 | Semester End Examination | At the end of the semester | Student's performance in university exams. |
| 5 | Practical Semester Examination | At the end of the semester | Student's performance in conducting experiments during university exams. |
| 6 | Project Phase – I Evaluation | During 7th Semester | Rubrics |
| 7 | Seminar | During the 8th semester | Rubrics |
| 8 | Project Work | During the 8th semester | Rubrics |
| 9 | Internship | During the 8th Semester | Rubrics |
| 10 | Project Work Viva-voce | At the end of the 8th semester | Student's performance in University Exams |
| 11 | Internship Viva-Voce | At the end of the 8th semester | Student's performance in University Exams |
| 12 | Course Exit Survey | Semester end | Student survey |
| 13 | Self Assessment Report | Semester end | Student survey |
| 14 | Tutorial | Semester end | Student survey |
| 15 | Program Exit Survey | Annually | Exit report from graduates |
| 16 | Alumni: PEO Survey Questionnaire | Annually | Exit report after 2 years of graduation |
| 17 | Parent: Survey Questionnaire | Twice in a year | Parents survey and focus discussions |
| 18 | Employer's Feedback | Annually | Performance report on employees |
| 19 | Student Feedback (About OBE) | Twice in a year | Student survey |
| 20 | Feedback on Facilities | Twice in a year | Student survey |

# Department Committees

| Committees | Roles and Responsibilities |
|---|---|
| Department Advisory Committee (DAC) | • To monitor progress of the Programme and device plans to improve PO PEO and PSO's attainment results.<br>• Develops & Recommends new or revised programme goals and objectives.<br>• Takes Decisions regarding current & issues related to programme |
| Program Assessment Committee (PAC) | • Evaluates programme effectiveness and proposes necessary changes.<br>• Prepares periodic reports that records on programme activities, progress, status or other special reports for management.<br>• Interact with students, faculty, Program Coordinators, Course Coordinator and outside/community agencies (through their representation) in facilitating program educational objectives. |
| Programme Committee (PC) | • Schedules program work plan in accordance with specifications of program objectives and outcomes.<br>• Oversees daily operations and coordinates activities of program with interrelated activities of other programs,<br>• Conducts and interprets various surveys required to assess POs. |
| Course Committee (CC) | • Responsible for assessment of the course objectives and outcomes<br>• Analyzes results of particular course and recommends the Program coordinator and/or Head of the Department to take appropriate action. |

Veerashaiva Vidyavardhaka Sangha's

# RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI.

## DEPARTMENT OF MECHANICAL ENGINEERING

## Extension Activities-NSS, LEAD & Youth Red Cross



**Vaccination Drive held on 2nd & 12th July 2021**


**Oxygen Challenge**

**Blood Donation Camps**


**Service to Old Age Homes**

Veerashaiva Vidyavardhaka Sangha's

# RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BALLARI.

## DEPARTMENT OF MECHANICAL ENGINEERING

## Distinguished Alumni


**Sri. L Jayaram Naidu,**
Managing Director, GROB Machine Tools India Pvt. Ltd. Hyderabad. AP

**Dr. Sreenath Beldona**
Professor & Dean, College of Business, University of Dallas, USA.

**Sri. Rama Krishna Koganti**
Member, American Society of Mechanical Engineers, USA

**Sri. Mahesh Kolli**
President & CEO, GREENKO Group of Companies

**Sri. A Chakrapani**
CEO, Enmas GB Power Systems Projects Limited, Chennai

**Sri. Adi Shankar Kumar**
Rayaprolu, Field Service Officer, Indian Air Force, Telangana

**Sri. Vishwa Murthy K M**
Director & CEO, Halleys Blue Steels Pvt. Ltd., Ballari

**Sri. H M Shiva Prasad**
Consultant & Associate Vice President, Plant & Machinery, Kalynani Technical Management Services, Pune

**Sri. Rajiv**
Manager, Ford Motor Compnay, Toronto

**Sri. K Chandrashekar**
Chief Engineer, Dynacom Tankers Management Pt. Ltd.

# Thank You