# COEP Technological University

## Academic Audit Pro-forma

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# Academic Audit Pro-forma

Name of the Department: Instrumentation and Control Engineering

Evaluation period: 01/07/2022 to 30/06/2023

| Part A : Department Information | | | |
|---|---|---|---|
| **1** | **Year of Establishment:** | | |
| | **Program Name** | **Year of establishment** | **Intake** | **Accreditation Status (YES/NO/NA)** |
| | **UG** | **1965** | **30** | **Applied** |
| | **PG** | **2000** | **36** | **Applied** |
| | **PGD** | **2021** | **30** | **NA** |
| | **PhD** | **2003** | **---** | **NA** |
| **2** | **NBA Accreditation details (letter no. and period)** | | |
| | **UG program:** <br> All Eligible 9 UG Programmes of COEP got NBA accredited for 5 years, In Tier I format (please refer F. No. NBA/ACCR-856 /2006 Dated 12/09/2014) W. e. f- 1/7/2014 Extension Letter No. F. No. 28-26-2010-NBA Dated 07/02/2022, **Applied for accreditation** | | |
| | **PG programs:** <br> Accredited for 5 years in Tier I format upto 30/6/2021 (please refer F. No. 28-26-2010-NBA Dated 5/10/2015), **Applied for accreditation** | | |
| **3** | **Department vision, mission, and goals** | | |
| | **Vision:** <br> <div align="center">**Vision of Institutions**</div> <br> • To be one of the best in the country by developing globally competent engineers, motivated entrepreneurs, prospective researchers, and aspiring academicians. <br><br> <div align="center">**Vision of Department**</div> <br> • To lead the field of Instrumentation and Control towards inclusive excellence through integration of teaching and learning, advancement of the knowledge base by research, innovations, scholarships and services to the society. | | |
| | **Mission:** <br> <div align="center">**Mission of Institutions**</div> <br> • To create globally competent students having ability to design, develop and test world class software, keeping pace with the latest technological developments. <br> • To promote continuous learning, all-inclusive research in core and emerging areas. <br> • To inculcate the spirit of inquiry, professionalism, team work, innovation and entrepreneurship among the students. <br> • To exchange expertise with industry, academic and research organizations. | | |

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|---|---|
|  | • To imbibe ethical and social values among students.<br>**Mission of Department**<br><br>• Set-up a mechanism for creating high quality undergraduate and post graduate programs in Instrumentation and Control Engineering.<br>• Adapt systems and methods for meaningful collaboration with stakeholders.<br>• Take-up socially relevant and nationally important issues and problems as project assignments.<br>• Inculcate creativity, entrepreneurial attitude and values amongst Learners. |
| **Goals:** | **Goals of Institutions**<br><br>• Establish minimum three state of art research laboratories in the contemporary areas such as, Natural Language Processing, Multimedia and Communication, Data Warehousing, High Performance Computing, Bioinformatics<br><br>• Enable all students to pursue their chosen career paths such as higher education, entrepreneurship and placement in reputed organizations.<br><br>• To have 80% faculty members with Ph.D. qualification by 2022<br><br>• At least 5 publications in reputed international journals/conference every year.<br><br>• Execute industry/R&D projects with annual 10% growth rate.<br><br>• Introduce a new postgraduate program in a contemporary area by 2022. |

| | Part B | | | | |
|---|---|---|---|---|---|
| 1 | **Curricular Aspects** | | | | |
| 1.1 | Curriculum Design and Development | | | | |
| 1.1.1 | Curriculum revision | | | | |
| | Program | Year of revision | | Frequency of revision | |
| | UG | 2019-20 | | Once in 04 years | |
| | PG | 2019-20 | | Once in 04 years | |
| | PGD | 2021-22 | | | |
| 1.1.2 | Curriculum Contents (% of total number of credits of the program ) **UG Program** | | | | |
| | | No. of Courses offered in the current revised structure | | No. of Courses offered in the previous structure | |
| | Curriculum Composition | Curriculum Content (% of total number of credits of the program ) | Total number of credits | Curriculum Content (% of total number of credits of the program ) | Total number of credits |
| | Basic Science Courses | 16.23 | 27 | 12.28 | 37 |
| | Engineering Science Courses | 12.65 | 18 | 9.03 | 15 |
| | Self-Learning Courses (Scheme A) / (Scheme B) | 5.4 | 6 | 0 | 0 |
| | Humanities/ Social Sciences / Management Courses | 6.02 | 10 | 4.81 | 8 |
| | Liberal Learning Courses | 0.6 | 1 | 0.6 | 1 |
| | Skill Based Courses (Scheme A) / (Scheme B) | 19.23 | 16 | 13.85 | 23 |
| | Interdisciplinary Foundation Courses | 3.61 | 6 | 0 | 0 |
| | Interdisciplinary Open Courses | 6.06 | 4 | 1.8 | 3 |
| | Department Elective Courses | 7.22 | 12 | 9.03 | 15 |
| | Program Core Courses | 30.12 | 48 | 37.95 | 63 |
| | Laboratory Courses | 19.27 | 18 | 12.04 | 20 |
| | Total | | 166 | | 170 |

| | PG Program M.Tech Process Instrumentation Biomedical Instrumentation | | | | |
|---|---|---|---|---|---|
| | Curriculum composition | Curriculum Content (% of total number of credits of the program ) | Total number of credits | Curriculum Content (% of total number of credits of the program ) | Total number of credits |
| | Program Specific Mathematics Courses | 5.9 | 4 | 5.9 | 4 |
| | Program Specific Bridge Courses | 4.4 | 3 | 4.4 | 3 |
| | Department Elective Courses | 13.2 | 9 | 13.2 | 9 |
| | Program Core Courses | 26.4 | 18 | 26.4 | 18 |
| | Laboratory Courses | 8.8 | 6 | 8.8 | 6 |
| | Interdisciplinary Open Courses | 4.4 | 3 | 4.4 | 3 |
| | Liberal Learning Courses | 1.7 | 1 | 1.7 | 1 |
| | Self Learning Courses | 8.8 | 6 | 8.8 | 6 |
| | Skill Based Courses | 26.4 | 18 | 26.4 | 18 |
| | Total | 100 | 68 | 100 | 68 |

| | | |
|---|---|---|
| 1.1.3 | Courses focused on employability/ entrepreneurship/ skill development for UG/PG/PGD | |
| | Program | Course(s) name and credit assigned |
| | UG | **As per Attachment Appendix A1.1.3** |
| | PG | Effective Technical Communication (0), Artificial Intelligence and Machine Learning (3), Dissertation (18), Massive open online course (6) |
| | PGD | Communication Skill (1), PLC and SCADA (3), Sensors and Actuators (3), Industrial Protocols and IoT (3), Machine Learning for Process Control (3), Vision Based Automation (3) Advanced Process Control (3), MES and ERP (2) |
| **1.2** | **Academic Flexibility** | |
| 1.2.1 | New Courses introduced in the current revised curriculum | New Courses introduced in the previous curriculum |
| | UG-07 | UG-03 |
| | PG - 03 | PG-03 |

| | | |
|---|---|---|
| 1.2.2 | Choice Based Credit System/ Elective Course System implemented. | |
| | Honors' | Honor: Instrumentation and Control<br>IE(HT)-21004 Process Control: Design and Analysis<br>Honor: Instrumentation and Control<br>IE(HT)-21004 Process Control: Design and Analysis |
| | Minor | Minor: Industrial Automation<br>MI/ IE(MI)-21007 Industry 4.0 and Internet of Things<br>Minor: Biomedical Instrumentation<br>MI/ IE(MI)-21008 Imaging Techniques for Medical Applications<br>Minor: Industrial Automation<br>MI/ IE(MI)-21007 Industry 4.0 and Internet of Things<br>Minor: Biomedical Instrumentation<br>MI/ IE(MI)-21008 Imaging Techniques for Medical Applications |
| **1.3** | **Curriculum Enrichment** | |
| 1.3.1 | Value-added courses imparting transferable and life skills offered during the year (courses beyond program structure etc)<br><br>**Product Development Principles** as a Departmental Elective Course offered to T.Y. B. Tech. Instrumentation and Control Engineering Students. (Total Number of Students:27) | |
| 1.3.2 | MOOC / NPTEL / SWAYAM platform (UG/PG/PGD/PhD) | |

| | Course(s) name | No. of students registered | % of passing |
|---|---|---|---|
| | Artificial Intelligence: Knowledge representation and reasoning | 04 | 75 |
| | Sensors and Actuators | 02 | 100 |
| | Digital Signal Processing and its applications | 02 | 50 |
| | Introduction to Embedded system Design | 01 | 100 |
| | Non-conventional Energy Resources | 01 | 100 |
| | MI/ IE(MI)-21007 Industry 4.0 and Internet of Things | 09 | 89 |

| | |
|---|---|
| 1.3.3 | Department academic and Industry board |
| | Number of BOS / School Council meeting conducted in academic year along with dates<br>1st School Council July 17, 2023<br>4th BOS Meeting March 29, 2022<br>3rd BOS Meeting March 20, 2021<br>2nd BOS Meeting March 12, 2020<br>1st BOS Meeting July 05, 2019 |

| | | |
|---|---|---|
| | Number of IAB meeting conducted in academic year along with dates<br>November 20th, 2021<br>March 12th, 2021<br>May 18th, 2020<br>March 18th, 2017 | |
| **1.4** | **Feedback System** | |
| 1.4.1 | Whether structured feedback received from all the stakeholders. | |
| | Students | YES/~~NO~~ |
| | Employers | YES/~~NO~~ |
| | Alumni | YES/~~NO~~ |
| | Parents | YES/~~NO~~ |
| 1.4.2 | Analysis and action taken by Program assessment and Quality Improvement Committee (PAQIC) based on stakeholders feedback (100 words) | |
| | As per industrial requirements new course, "Product Development Principles," has been introduced for TY B Tech course. Course intended to understand industrial requirements and work profile. The course covered understanding product requirements, development, specifications, design, and customer requirements. Industry experts from Google, Tata Motors, and Nissan are available for the course.<br>To improve presentation skills, "Seminar and Technical Writing" course has been added to the Final Year B. Tech. Scheme C has been added for Final Year B. Tech. curriculum. Students have to work for six months in the industry. Students have to work on Industrial problem statements as their project work. The following five students opted for scheme C for AY 2022-23.<br>• Abhijeet Deshmukh - Schlumberger  India Tech<br>• Darshan Lunkad - Axlella Research & Analytic<br>• Aniruddha Nallawar - Baguss R & D Office<br>• Yash Agarwal - CIMER Aumation Ltd<br>• Sarthak Nimurmundhe - Bajaj Finance | |

| 2 | Teaching, Learning and Evaluation | | |
|---|---|---|---|
| 2.1 | Student Enrolment | | |
| 2.1.1 | Current academic year enrollment | | |
| | Programs | Sanctioned intake | Actual admitted students |
| | UG | 38 | 45 |
| | UG (NRI/PIO/CIWGC/JK) | 03 | 02 |
| | DSY | 05 (A. Y. 2021-22) | 05 |
| | PG-1 | 18 | 01 |
| | PG-2 | 18 | 02 |
| | PGD | 30 | 10 |
| 2.1.2 | MH-CET Ranking of UG students | | |
| | Opening Score/Rank | 99.40 | |
| | Closing Score/Rank | 88.96 | |
| 2.1.3 | JEE-Mains Ranking of UG students | | |
| | Opening Score/Rank | 96.65 | |
| | Closing Score/Rank | 80.83 | |
| 2.1.4 | GATE ranking for PG students | | |
| | Opening Score / Rank | 22.00 | |
| | Closing Score / Rank | 09.00 | |
| 2.1.5 | GATE qualified students: PG (All programs) | GATE non qualified students (PG All Programs) | Sponsored PG (All programs) |
| | 00 | 03 | |

| 2.2 | Student - Faculty Ratio | | | | |
|---|---|---|---|---|---|
| | Number of students enrolled in the UG program | All PG program sanction intake of PG (Both years numbers to be consider) | Total (UG+PG) | Number of full time faculty available in the department | SFR |
| CAY | 101 | 72 | 173 | 14 | 12.35 |
| CAYm1 | 99 | 72 | 171 | 15 | 11.40 |
| CAYm2 | 101 | 72 | 173 | 14 | 12.35 |

| 2.3 | Teaching - Learning Process | |
|---|---|---|
| 2.3.1 | Teaching innovation | |
| | Innovative Method | Number of Courses |
| | Flip class room teaching | 02, Project Engineering and Management, Optical Instrumentation |
| | Co-Teaching | Automotive Instrumentation, Batch Process Control, Product Design, Analog and Digital electronics. |
| | Project based learning | Mini-Project, Micro-Project and Major Project, PEM, Microcontroller and its applications |

| | |
|---|---|
| 2.3.2 | List down strategies used to stimulate students participation in the classroom & enhance learning<br><br>**Active Learning Techniques:** Incorporate active learning strategies such as group discussions, peer teaching, problem-solving activities, and hands-on experiments. These methods encourage students to participate actively and apply their knowledge.<br><br>**Use of Technology:** Integrate educational technology tools, such as interactive whiteboards, online simulations, and educational apps, to make the learning experience more dynamic and interactive.<br><br>**Real-World Applications:** Relate theoretical concepts to real-world applications and examples. This approach helps students see the relevance of what they are learning and sparks their interest.<br><br>**Encourage Questions and Curiosity:** Create an open and supportive atmosphere where students feel comfortable asking questions and exploring their curiosity. This approach fosters a deeper understanding of the subject matter.<br><br>**Gamification:** Introduce elements of gamification in the classroom, such as quizzes, educational games, and rewards for active participation. This can increase motivation and engagement.<br><br>**Use of Visual Aids:** Utilize visual aids like diagrams, charts, and multimedia presentations to reinforce learning and cater to different learning styles.<br><br>**Active Classroom Discussions:** Facilitate regular classroom discussions on relevant topics, allowing students to express their opinions, share experiences, and learn from their peers.<br><br>**Flipped Classroom Model:** Consider implementing the flipped classroom model, where students review study materials before class and use class time for interactive activities and discussions.<br><br>**Diverse Teaching Techniques:** Use a variety of teaching techniques to accommodate different learning preferences. For example, combine lectures with group work, role-playing, and case studies.<br><br>**Formative Assessment:** Regularly assess students' understanding through formative assessments like quizzes, polls, and short assignments. This helps both students and teachers track progress and identify areas for improvement.<br><br>**Personalized Learning:** Tailor teaching methods and materials to address individual students' strengths and weaknesses, allowing for a more personalized learning experience |

| 2.4 | **Faculty profile** | | | |
|---|---|---|---|---|
| | | CAY(22-23) | CAYm1 | CAYm2 |
| 2.4.1 | Number of faculty in the department | 14 | 15 | 14 |
| 2.4.2 | Number of faculty with PhD degree | 12 | 13 | 12 |
| 2.4.3 | Number of FDP / conferences / workshops / seminars / STTP attended by faculty | 15 | 23 | 34 |
| 2.4.4 | Number of FDP / conferences / workshops / seminars / STTP organized | 02 | 01 | 04 |
| 2.4.5 | Number Honors', awards and recognitions received by faculty | 00 | 00 | 00 |
| 2.4.6 | Number of industries visited by faculty | 04 | 03 | 04 |
| 2.4.7 | Number of research collaboration by faculty with industry / higher learning institutes in India and beyond | 01 | 01 | 00 |
| 2.4.8 | Number of faculty undergone industrial / professional training more than 2 weeks | 00 | 00 | 00 |
| **2.5** | **Student Performance and Learning Outcomes** | | | |
| 2.5.1 | Course outcomes, Program outcomes, and program specific outcomes (CO/PO/PSO) for all programs offered by the institution are stated and displayed in website of the institution(to provide web link) | | | |
| | https://www.coep.org.in/departments/instru/vision | | | |
| 2.5.2 | List of assessment tools and processes used for measuring the attainment of Course outcomes and program outcomes (100 words) | | | |
| | <ul><li>Class Test-I (In Semester Examination I)</li><li>Class Test-II (In Semester Examination II)</li><li>ESE (End Semester Examination)</li><li>Continuous Assessment Tools (In Semester Assessment)<ul><li>Tutorial</li><li>Assignments</li><li>Project evaluation</li><li>Course Project</li><li>Oral Exam</li><li>Multiple choice questions(MCQ)</li><li>Surprise test</li><li>Report writing/Case study</li></ul></li><li>Practical Assessment<ul><li>Internal Assessment based on assignments and course project</li><li>External Practical exam and oral</li></ul></li><li>Seminar</li><li>Simulation/Demonstration</li><li>Mini Project, Project presentations</li><li>Internship</li><li>Blended MOOC courses</li></ul> | | | |

| 2.5.3 | Strategies for developing students capacity to Solve complex engineering problems (100 words) |
|---|---|
| | **Real-World Projects:** Incorporate real-world engineering projects and case studies into the curriculum. Working on authentic problems allows students to apply theoretical knowledge to practical scenarios, enhancing problem-solving skills

**Interdisciplinary Learning:** Encourage students to explore and understand how different engineering disciplines intersect and complement each other. Interdisciplinary learning helps students think holistically when approaching complex problems.

**Team-Based Projects:** Assign group projects that require collaboration and teamwork. Complex engineering problems often require multiple perspectives and skills, and working in teams helps students learn from each other and build problem-solving capabilities collectively.

**Hands-On Experience:** Provide opportunities for hands-on experiences through labs, workshops, and internships. Practical exposure helps students gain a deeper understanding of engineering principles and fosters problem-solving aptitude.

**Critical Thinking and Analysis:** Foster critical thinking skills by challenging students to analyze complex problems from multiple angles, identify key factors, and develop innovative solutions.

**Design Thinking Approach:** Introduce the design thinking process, which involves empathizing with users, defining problem statements, ideating solutions, prototyping, and testing. This approach encourages creative problem-solving and iteration.

**Problem-Based Learning:** Integrate problem-based learning (PBL) methods, where students are presented with authentic engineering problems and are guided to explore solutions through research and critical analysis.

**Industry Collaboration:** Collaborate with industry partners to expose students to real engineering challenges and solutions. Industry projects provide insights into practical problem-solving approaches used by professionals.

**Simulation and Modeling**: Use computer simulations and modeling tools to analyze complex engineering problems. Virtual experimentation allows students to explore different scenarios and validate their solutions.

**Continuous Feedback**: Provide constructive feedback on students' problem-solving approaches. Encourage them to reflect on their methods and refine their strategies based on feedback.

**Ethical Considerations**: Emphasize the importance of ethical considerations in engineering problem-solving, including social, environmental, and economic impacts.

**Research Opportunities:** Encourage students to engage in research activities to |

| | explore advanced engineering problems. Participation in research enhances problem-solving skills and cultivates an inquisitive mindset. **Continuous Improvement:** Continuously review and update the curriculum to incorporate emerging engineering challenges and technologies. Stay abreast of industry trends to ensure students are prepared for the evolving landscape. By implementing these strategies, educators can help students develop the capacity to tackle complex engineering problems with confidence, creativity, and analytical rigor. | | |
|---|---|---|---|
| 2.5.4 | Student internship, publications and student exchange program | | |
| | Number of UG projects in association with Industry | | 05 |
| | Number of PG projects in association with Industry | | 00 |
| | Number of Publications by UG students | | 05 |
| | Number of Publications by PG students | | 01 |
| | Number of UG students successfully completed Summer internship | | 27 |
| | Number of PG students successfully completed Summer internship | | 00 |
| | Number of UG students participated in student exchange program | | 02 |
| | Number of PG students participated in student exchange program | | 00 |
| 2.5.5 | Success rate | | |
| | UG Program | | |
| | Number of students enrolled | Number of students graduated (Without back log) | % passing |
| CAYm1 | 45 | 42 (34) | 80.95 |
| CAYm2 | 43 | 36 (25) | 69.44 |
| CAYm3 | 44 | 39 (26) | 66.67 |
| | Number of students enrolled | Number of students graduated (With back log) | % passing |
| CAYm1 | 45 | 42 (42) | 100 |
| CAYm2 | 43 | 36 (36) | 100 |
| CAYm3 | 44 | 39 (36) | 92.33 |
| | PG Program | | |
| | Number of students enrolled | Number of students graduated (Without back log) | % passing |
| CAY m1 | 21-22 (00+05) | 8+8 | 100 |
| CAYm2 | 20-21 (10+10) | 15+03 | 100 |
| CAYm3 | 19-20 (19+04) | 19+11 | 100 |
| | Number of students enrolled | Number of students graduated (With back log) | % passing |
| CAY m1 | 21-22 (00+05) | --- | --- |
| CAYm2 | 20-21 (10+10) | --- | --- |
| CAYm3 | 19-20 (19+04) | --- | --- |
| 2.5.6 | Quality audit process for quality assessment of question paper is it in place? | YES/NO | |

| 3. | Research, Innovations and linkages | | | |
|---|---|---|---|---|
| 3.1 | Promotion of Research and Facilities | | | |
| 3.1.1 | Faculty awarded National / International fellowship for advanced studies / research | | | |
| Type | Name of the faculty awarded the fellowship | Name of the award | Date of award | Awarding agency |
| | Nil | Nil | Nil | Nil |
| 3.1.2 | Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other fellows in the department enrolled during the year | | | |
| | Number of students | Duration of the fellowship | Funding Agency | |
| | 09 | 03 (Can be Extended up to 01 Year) | DST, ADF, IDF, TEQIP-III, Hella Automotive India Pvt. LTD., QIP | |
| **3.2** | **Resource Mobilization for Research** | | | |
| 3.2.1 | Research funds sanctioned and received from various agencies, industry and other Organizations | | | |
| | Nature of the Project | Duration | Name of the funding agency | Total grant-in-aid Sanctioned | Amount received during the year |
| | BMS Algorithm Development: SOC, SOH and SOP | 1.5 Year 01/04/2023-30/09/2024 | HELLA India Automotive Pvt. Ltd, Pune | 21,90,320/- | 1.5 Year |
| | | | | | |
| **3.3** | **Innovation Ecosystem** | | | |
| 3.3.1 | Industry – academia innovative practices / co-teaching | | | |
| | Name of the course | Name of industry expert | Number of sessions (not less than 6 Hrs per course) | |
| | **Appendix A. 3.3.1** | | | |
| 3.3.2 | Awards for Innovation won by department / Faculty / Research scholars / Students during the year | | | |
| | Title of the innovation | Name(s) of Awardees' | Awarding Agency | Date of award | Category |
| | Electrochemical impedance Spectroscopy sensor for food adulteration or capacitive sensor for checking the composition | 111809030 Sayali Sanjay Shinde 111809035 Bhagyalakshmi Pawar 111809042 Shruti Pantawane | (Alumni Association) Project Prizes | 02/06/2022 | Best Project Award |

| 3.4 | **Research Outcomes** | | | |
|------|------|------|------|------|
| 3.4.1 | Ph. Ds  admitted / awarded during the year | | | |
| | PhD students admitted | Number of students pursuing PhD ( fulltime) | Number of students pursuing PhD ( others) | Number of PhD's Awarded |
| | 06 | 09 | 21 | 02 |
| 3.4.2 | Department research Publications in the Journals / conferences/ book / book chapters in current year | | | |
| | Category | CAY | CAYm1 | CAYm2 |
| | Journals | 12 | 20 | 13 |
| | SCI Journals | 12 | 10 | 10 |
| | Conferences | 15 | 36 | 34 |
| | Book chapters / Book | 01 | 00 | 00 |
| 3.4.3 | Total number of faculty member recognized as PhD research supervisor/guide : | | Total number of industry person enrolled as Co-guide : | Number of faculty / industry person recognized / registered as a PhD guide / co-guide during AY |
| | 09 | | 00 | 02 |
| 3.4.4 | Patents applied / published / awarded | | | |
| | Number of Patent applied | Number of Patent granted | | Number of  Patent published |
| CAY | 03 | 00 | | 02 |
| CAYm1 | 03 | 00 | | 02 |
| CAYm2 | 00 | 02 | | 01 |
| | | | | |
| 3.4.5 | Citations of the Department Publications during the year. (Based on Google scholar / Web of science) | | | |
| | | | Google scholar | Web of science |
| | Number of citations | | 5738 | |
| | Average citations/faculty | | 410 | |
| | | | | |
| 3.4.6 | Start up and Entrepreneur | | | |
| | Number of Start up and entrepreneur in last 5 academic years | | | Nil |
| | | | | |
| **3.5** | **Consultancy** | | | |
| 3.5.1 | Revenue generated from Consultancy CFYM1 (Financial Year 21-22) | | | |
| | Number  of consultancy | Amount of consultancy | | Revenue generated. (University share ) |
| CFYm1 | 09 | 6.05 Lakh | | |
| CFYm2 | 03 | 9.70 Lakh | | |
| CFYm3 | 03 | 92.40 Lakh | | |

| 3.5.2 | Revenue generated other than consultancy work (Corporate / industry training / during the year) | | | | | |
|---|---|---|---|---|---|---|
| | Name of the faculty | Title of the programme | Agency seeking / training | Total amount received | Revenue generated. (University share) | Number of trainees/participant |
| | Prof. S. D. Agashe Dr. A. S. Deshpande Mrs. K. A. Ghodinde | PLC and SCADA Training | Jabil Circuit INDIA Pvt Ltd | 1,80,000 | | 12 |
| **3.6** | **Extension Activities** | | | | | |
| 3.6.1 | Number of extension and outreach programs conducted in collaboration with industry, community and Non- Government Organizations etc during the year | | | | | |
| | Title of the activities | Organising unit/agency/ collaborating agency | | Number of faculty participated in such activities | | Number of students participated in such activities |
| | Internship to Students | VPM,s Maharshi Parshuram college of Engineering, Velneshwar | | 3 | | 10 |
| | Internship to Students | MVPS Karmaveer Adv. Baburao Ganpatrao Thakare College of Engineering, Nasik | | 3 | | 39 |
| | Virtual Lab Workshop | N B Navale Sinhgad College of Engineering, Solapur | | 2 | | 833 |
| | Virtual Lab Workshop | KJEI's Trinity Academy of Engineering | | 2 | | 193 |
| **3.7** | **Collaborations** | | | | | |
| 3.7.1 | Number of Collaborative activities for research, faculty exchange, student exchange during the year | | | | | |
| | Nature of activity | Number of Participants | | Source of financial support | | Duration |
| | **Research Collaboration** Prof. D. N. Sonawaned Prof. Sorin Olaru) | 02 (Research Students 10) | | Indo France Exchange programme, AICTE, Govt of India | | 45 days |
| 3.7.2 | Number of MoUs signed with other universities, industries, corporate houses etc. during the year | | | 03 | | |
| | | | | | | |

| 4 | **Infrastructure and Learning Resources** | | |
|---|---|---|---|
| 4.1 | **Physical Facilities** | | |
| 4.1.1 | Details of augmentation in infrastructure facilities during the year | | |
| | Facilities | Existing (CAYm1) | Newly added (CAY) |
| | Class rooms | 03 | 00 |
| | Laboratories | 10 | 01 |
| | Seminar Halls | 02 | 00 |
| | Conference Room with ICT facilities | 00 | 01 |
| | Other | | |
| 4.1.2 | Procurement of laboratory equipment | | |
| | Year | Number of equipment procured above Rs 50,000/- | Total amount |
| | CAY | 02 TV + 03 Printer | 4,32,241 |
| | CAYm1 | | |
| | CAYm2 | | |
| 4.2 | **Industry supported labs** | | |
| | Name of the lab | Industry name | Amount |
| | Process Instrumentation | Endress+Hauser Private Limited, India | Rs. 30,00,000/- |
| 5 | **Student Support and Performance** | | |
| 5.1 | **Student Support** | | |
| 5.1.1 | Is mentoring / counseling system in place for students | YES/~~NO~~ | |
| | Number of UG students enrolled in the dept | Number of faculty as a mentor | Mentor: Mentee ratio |
| | 40 | 02 | 1:20 |
| | Number of mentor-mentee meeting held<br>25th November 2022, 26th November 2022, 03rd December 2022, 10th December 2022, 28th January 2023, 04th February 2023 and 11th February 2023 | | |
| | Meeting outcomes(100 words)<br>• Helps newly admitted students to feel comfortable in the new environment<br>• Help to build bonds with other students and faculty members.<br>• Help to develop awareness, sensitivity, about self, people around them and society<br>• Develop confidence, ethics and human values. | | |
| 5.2 | **Student Progression** | | |
| 5.2.1 | Student progression to higher education during the year | | |
| | Number of Pass out UG students (Last three years) enrolling into higher education during CAY | Within India | Beyond India |
| | | 01 | 03 |

| | Number of Pass out PG students (Last three years) enrolling into higher education during CAY | Within India | Beyond India |
|---|---|---|---|
| | | 00 | 00 |

| 5.2.2 | Students qualifying in state / national / international level examinations during the year (e.g.: GATE/GMAT/CAT/GRE/TOFEL/Civil Services/State Government Services) UG and PG | |
|---|---|---|
| | Examination | Number of students selected / qualifying |
| | GATE, CAT | 02 |

| 5.3 | **Student Participation and Activities** | | | | |
|---|---|---|---|---|---|
| 5.3.1 | Number of awards / medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one) during AY | | | | |
| | Name of the award/medal | National / International | Number of awards for Sports | Number of awards for Cultural | Name of the Student |
| | **Appendix A. 5.3.1** | | | | |
| 5.3.2 | Activity of Student Council /clubs/ representation of students on academic & administrative bodies/committees of the department. (club secretary/ body member/ committee member) | | | | |
| | club secretary/ body member/ committee member | Number of students | | | |
| | | | | | |

| 5.4 | **Student Placement** | |
|---|---|---|
| | UG Program | |
| | Number of students graduated | Number of students placed |
| CAY | 42 | 35 + 04 |
| CAYm1 | 37 | 25 + 00 |
| CAYm2 | 40 | 30 + 04 |
| | Number of students graduated with CGPA below 7 | Number of students placed |
| CAY | 06 | 05 |
| CAYm1 | 06 | 06 |
| CAYm2 | 10 | 05 |
| | PG Program | |
| | Number of students graduated | Number of students placed |
| CAY | 00 + 05 | 00 + 01 |
| CAYm1 | 09 + 09 | 09 + 07 |
| CAYm2 | 18+03 | 09+00 |

| 6 | Leadership and Management | | |
|---|---|---|---|
| 6.1 | **Faculty Empowerment Strategies** | | |
| 6.1.1 | Faculty provided with financial support to attend conferences / workshops / FDP / STTP etc during the year | | |
| | Name of faculty | Name of conference / workshop attended for which financial support provided | Amount of support |
| | Prof. S. L. Patil | *IECON 2022 – 48th Annual Conference of the IEEE Industrial Electronics Society*, Brussels, Belgium, 2022 | 2,00,000/- |
| | | | |
| 6.1.2 | Support towards membership fee of professional bodies | | |
| | Name of faculty | Name of the professional body for which membership fee is provided | Amount of support |
| | Prof. S. L. Patil | IEEE Industrial Electronics, Measurement and Instrumentation | 7338 |
| | Dr. P. D. Shendge | IEEE Industrial Electronics | 5884 |
| | Dr. U. M. Chaskar | IEEE Industrial Electronics, Measurement and Instrumentation | 7338 |
| | Dr. A. S. Deshpande | IEEE Industrial Electronics, Measurement and Instrumentation | 7338 |
| | Mrs. K. A. Ghodinde | IEEE Industrial Electronics, Measurement and Instrumentation | 7338 |
| | Dr. K. A. Bhole | IEEE Industrial Electronics, Measurement and Instrumentation, Computational Intelligence | 7338 |
| | Mrs. Meera Khandekar | IEEE Industrial Electronics, Measurement and Instrumentation, Computational Intelligence | 7338 |
| 6.2 | **Internal Quality Assurance System** | | |
| 6.2.1 | Program assessment and quality improvement committee (PAQIC) in place | YES/~~NO~~ | |
| | Number of meetings conducted along with dates | 03, 6th December 2021, 1th December 2020, 2nd December 2019 | |
| **6.2.2** | **List of Quality Initiatives undertaken during the year** | | |
| | AICTE ATAL CPDP (Two Week): **Machine Learning Applications to Optimization Based Control** completed in Academic year 2022-2023, held on 12th -23rd December 2022. **Department of Instrumentation and Control Engineering, COEP Technological University, Pune.** 02-days training program for GSDA officers "**Tools and Techniques of Groundwater Level Measurement and Monitoring" held on** 25th -26th November, 2022. Department of Instrumentation and Control Engineering, COEP Technological University, Pune. | | |

| 6.2.3 | List the departmental best practices |
|---|---|
| | • Most of elective courses are offered by an industry and co-taught by industry experts.<br>• Revised syllabus structure and curriculum design.<br>• Project and Skill Based Learning<br>• Faculty members are involved in research and consultancy work. |
| **7** | **Future Plans of action for next academic year (500 words)** |
| | • Encouraging faculty members and students to engage in research and collaboration with industry partners or other academic institutions can promote innovation and knowledge exchange.<br>• Industry Internships and Placements: Strengthen ties with industries to provide students with opportunities for internships, cooperative education, or placements, which can help bridge the gap between academia and real-world applications.<br>• Encourage students to participate in practical projects and competitions related to instrumentation and control, both within the institution and at national/international levels.<br>• Foster a strong network of alumni and industry professionals to provide guidance, mentorship, and potential job opportunities for current students.<br>• Organize outreach programs to create awareness about instrumentation and control among school students and the general public<br>• Adapt its plan of action based on the evolving needs of the field and the feedback from stakeholders. Each institution may have its unique priorities and challenges, so the plan should be tailored to meet their specific goals and objectives. |

**Audit Report:**

**Critical observations / suggestions / inputs:**

1. Curricular Aspects:

2. Teaching, Learning, and Evaluation:

3. Research, Innovation and Linkages:

4. Infrastructure, and Learning Resources:

5. Student Support and Progression:

6. Leadership and Management:

**(Name and Signature)**                                                    **(Name and Signature)**

**Expert 1**                                                                        **Expert 2**