

Pimpri Chinchwad Education Trust's

# **Pimpri Chinchwad College of Engineering, Pune**

(An Autonomous Institute affiliated to Savitribai Phule Pune University)



## **NATIONAL EDUCATION POLICY (NEP)-2020 IMPLEMENTATION DOCUMENT**

([www.pccoepune.com](http://www.pccoepune.com))

## PREFACE

Pimpri Chinchwad Education Trust's **Pimpri Chinchwad College of Engineering (PCCoE)** is one of the promising institutes in the Quality & Professional Education. Since 1999, PCCoE has been imparting value added quality education to satisfy the needs and expectations of the Stakeholders like Students, Parents, Industry etc. Focused efforts are made to achieve this, by providing state-of-the-art Engineering and Management education to Students. PCCoE has student centric academic system to ensure holistic development. Every possible opportunity is provided to the student to progress academically and excel.

The entire working is based on an indigenously designed Institute development philosophy profoundly known as four pillars of PCCoE namely, Academic Excellence, Research and Innovation, Professional Competence and Social Commitment. In order to provide global platform to Students and Faculty members, one more vertical is added in our working model in the form of International Relations for Academic and Research exchange with Foreign universities. Quality Assurance cell is well established to look after quality aspect in day-to-day functioning of the Institute. Stringent Academic Monitoring and Control has led towards Qualitative Results and Placements, thereby becoming the most opted Institute for admissions by engineering aspirants in and around Pune and all over the state of Maharashtra.

The institute intends to attain eminence by development and nurturing of skills and providing technical education of standard quality. The institute campus has well developed laboratories, library, class rooms, hostel, canteen & play ground with all amenities. It is one of the best engineering colleges in India.

The various programs offered at the Institute are as follows :

Sr. No.	Name of Program	Intake
1	Mechanical Engineering	180
2	Electronics & Telecommunication Engineering	180
3	Computer Engineering	240

4	Information Technology Engineering	120
5	Civil Engineering	60
6	Computer Engineering (AI and ML)	60
7	Computer Engineering (Regional Language)	60
8	M.Tech. Computer Engineering	18
9	M.Tech. (Mechanical) - Heat Power Engineering	18
10	M.Tech. (Mechanical) - Design Engineering	18
11	M.Tech. (E &TC) - Embedded Systems & VLSI Engineering	18
12	M.Tech. Information Technology Engineering	24
13	M.Tech. Construction Management (Civil Engineering)	18
14	Master in Computer Application (MCA)	60
15	Ph.D. in Computer Engineering	
16	Ph.D. in Mechanical Engineering	
17	Ph.D. in Electronics and Telecommunication Engineering	
18	B.VOC. Degree - Solar Systems	30
19	B.VOC. Degree - Industrial Refrigeration and Air Conditioning	30
20	B.VOC. Degree - Mechatronics Engineer	30
21	B.VOC. Degree - IoT Engineer	30

**Current Scenario:**

**Under Graduate:**

First Year, Second Year and Third Year of Engineering: Under Autonomy Curriculum

Final Year: Under SPPU Curriculum

**Post Graduate:**

All Post Graduate Program (M.Tech and MCA): Autonomy Curriculum.

*This document is prepared based on the guidelines given by Savitrbai Phule Pune University (SPPU) with reference to letter dated 19/07/2022, circular No.205/2022.*

## **VISION AND MISSION OF PIMPRI CHINCHWAD COLLEGE OF ENGINEERING**

### **Vision**

To serve the Society, Industry and all stake holders through Value Added Quality Education

### **Mission**

To serve the need of the society at large by establishing state-of-the-art Engineering, Management and Research institute and impart Attitude, Knowledge and Skills with Quality Education to develop individuals and teams with ability to think and analyze right values and self reliance.

# NATIONAL EDUCATION POLICY (NEP)-2020 IMPLEMENTATION AT PCCoE

## 1. **Multidisciplinary Education -Adoption of Multidisciplinary courses in Program Design, curriculum.**

All our Bachelor's degree programs offer a multidisciplinary approach in designing their curriculum. The minor and open elective courses are offered by all the programs so that students will learn the courses offered by other programs than their parent branch. Following is the status of minor and open elective courses floated by various programs in the third year B. Tech. for the academic year 2022-23.

**Table 1: Open Elective and courses floated by various programs in the third year B. Tech. for the academic year 2022-23**

Open Elective	Offering Department
BCE5601: Data Structures using Python	Computer Engg.
BCE5602: Programming with C++	Computer Engg.
BET5601: Smart City: An Electronic Perspectives	E&Tc
BET5602: Modeling and Simulation with MATLAB	E&Tc
BIT5601: Object Oriented Programming	IT
BME5602A: Industry 4.0	Mechanical Engg.
BCI5602.A: Total Quality Management	Civil Engg.

BAS5607: Statistical Data Analysis Using R	AS&H
<b>Minors</b>	
Entrepreneurship Development	Mechanical
Product Design and Development	Mechanical
Software Development	IT
Robotics	E&TC
Data Science	Computer
Advanced Web Development (AICTE LITE Program)	Computer
Sustainable Waste Management	Civil

In addition to this, in program electives, few elective courses related to basic courses of other programs are proposed in a few departments as follows.

**Table.2 Elective courses related to basic courses of other program**

<b>Sr. No.</b>	<b>Name of the Courses</b>	<b>Offering Department</b>
1	Wireless Sensor Networks (Program Elective – I)	Computer Engineering
2	Object oriented programming Wireless Sensor Networks (Program Elective – II)	Electronics and Telecommunications Engineering

3	Computational Tools for Data Analytics Wireless Sensor Networks (Program Elective – II)	Electronics and Telecommunications Engineering
4	Internet of Things	Computer Engineering

Similarly at S.Y.BTech level also students can enroll for the open electives related to mathematics as follows.

**Table. 3 Open Electives offered by Applied Science and Humanities Department**

Sr. No.	Name of the Courses	Offering Department
1	Numerical Methods	Applied Science and Humanities
2	Mathematical Optimization	
3	Calculus of Variation	
4	Mathematical Modelling and Simulation	
5	Financial Mathematics	
6	Neural Network and fuzzy logic Control	

This is how the beginning of multidisciplinary education is ensured through appropriate curriculum design steps in autonomy.

In addition to this, interested students work on multidisciplinary projects and work in various collegiate clubs like SAE BAHA, SUPRA, ROBOCON, SOLARIUM etc.

## **2. Academic Bank of Credits-Regulation of students in Academic Bank of Credits**

We are in the process of implementing the Autonomy curriculum. Currently the Autonomy curriculum has been implemented up to third year of under graduate Engineering

and in all the Post graduate Programs. Only Final year of undergraduate Engineering is under SPPU curriculum. Hence we are working on the academic bank credits and will be implementing the same at the earliest. Presently we are not having the Academic Bank of Credits system.

**3. Multiple Entry and Exit - offering of multiple entry and exit in academic programs of your college.**

As indicated in question No. 02, we are yet to implement autonomy at all year of undergraduate Engineering. Once Autonomy curriculum fully implemented across all the years and programs we will be moving towards the system of Multiple Entry and Exit system as per the standard guidelines. Presently we are working on the Multiple Entry and Exit system.

**4. NHEQF and CDCS (National Higher Education Quality Framework)**

**a. Adoption of NHEQF**

**i) Vocational Courses**

B. Voc. programs offer undergraduate courses in Internet of Things (IoT), Mechatronics Engineering, Industrial Refrigeration and Air Conditioning and Solar Systems affiliated to University Grant Commission (UGC), All India Council for Technical Education (AICTE), Government of Maharashtra, and Electronics Sector Skill Council of India (ESSCI). This course has been started in the academic year 2021-22. The department of B. Voc. Program is committed to provide a value-added quality education to undergraduate students through its B. Voc. Courses in Mechatronics Engineering, Industrial Refrigeration and Air conditioning, and Internet of Things.

B.Voc is Skill based three years degree program with 60% On Job Training in industry and 40% theory in college. B.Voc degree is equivalent to any other bachelor degree granted by the University Grants Commission (UGC) and AICTE. Students are eligible for higher studies like MBA/M.Voc. etc.

Students are eligible for Direct Second year Engineering admission for respective programs.

The biggest advantage of pursuing a B.Voc degree program is that a candidate has multiple exit points during this program and continuous industry exposure.



If a candidate is unable to complete his/ her B. Voc. program, he/she is still awarded a Certificate / Diploma / Advanced Diploma after successful completion of Six month / One year / Two years respectively.

**Table 4.B.Voc Award of certificate/Diploma/Advanced Diploma/Degree based on duration of study**

<b>Award</b>	<b>Duration</b>	<b>NSQF level</b>
Certificate	6 months	4
Diploma	1 year	5
Advanced diploma	2 years	6
Degree	3 years	7

B.Voc. is an emerging course that provides adequate skills required for a particular trade, which deals more with application-based studies rather than focusing on only theoretical knowledge.

Hence serves to integrate National Skill Qualification Framework ( NSQF ) within undergraduate level to enhance employability of the students and meet industry requirements at global level.

#### **b. Adoption of CBCS**

Yes we have Partial adoption of CBCS through programme electives. In the autonomy curriculum from semester 5 onwards, two program electives are offered every semester. The details of the various courses offered and students enrolled for those courses in semester 5, T. Y. B. Tech. 2022-23 are as follows.

As an example Program Elective Courses of IT are included

Semester- V

**Table 5. List of Professional Electives –I offered by IT Department**

<b>Course Code</b>	<b>Course Name</b>
<b>BIT5501</b>	Distributed Computing
<b>BIT5502</b>	Artificial Intelligence
<b>BIT5503</b>	Computer Graphics and Image Processing

**Table 6. List of Professional Electives –I Labs offered by IT Department**

<b>Course Code</b>	<b>Course Name</b>
<b>BIT5504</b>	Distributed Computing Lab
<b>BIT5505</b>	Artificial Intelligence Lab
<b>BIT5506</b>	Computer Graphics and Image Processing Lab

**Table 7. List of Professional Electives –Ii offered by IT Department**

<b>Course Code</b>	<b>Course Name</b>
<b>BIT5507</b>	Cyber Security
<b>BIT5508</b>	Foundations of Data Science
<b>BIT5509</b>	Software Design Patterns

**Table 8. List of Professional Electives –II Labs offered by IT Department**

<b>Course Code</b>	<b>Course Name</b>
<b>BIT5510</b>	Cyber Security Lab
<b>BIT5511</b>	Foundations of Data Science Lab
<b>BIT5512</b>	Software Design Patterns Lab

## **5. SWAYAM MOOCs**

### **a. Offering of MOOC courses through SWAYAM platform by faculty of the college**

No, till now we have not offered MOOC courses through SWAYAM platform by faculty of the college, but our faculty team are working on the same.

**b. MOOC courses on the SWAYAM platform are implemented in degree programs of the college.**

All our degree program ,Post Graduate Program offered MOOC Course in the curriculum. As per the curriculum structure, students needs to complete MOOC Course from any Platform like Swayam, Coursera, Udacity etc. Following are the details about program wise credit distribution.

**Table 9. Program wise credit distribution for the MOOC Courses**

Sr.No	Program Name	Year	Semester	Credits
1	B.Tech Mechanical	Fourth Year	Semester 8	0
2	B.Tech E&TC	Fourth Year	Semester 8	0
3	B.Tech Computer	Fourth Year	Semester 8	0
4	B.Tech IT	Fourth Year	Semester 8	0
5	B.Tech Civil	Fourth Year	Semester 8	0
6	M.Tech-Computer Engineering	Second year	Semester 3 and Semester 4	2 Credit Per Semester Total= 4 Credit(Sem 3 and Sem 4)
7	M.Tech - Mechanical Engineering Heat Power	Second year	Semester 3 and Semester 4	2 Credit Per Semester Total= 4 Credit(Sem 3 and Sem 4)
8	M.Tech - Mechanical Engineering Design	Second year	Semester 3 and Semester 4	2 Credit Per Semester Total= 4 Credit(Sem 3 and Sem 4)
9	M.Tech - E&TC VLSI and ED	Second year	Semester 3 and Semester 4	2 Credit Per Semester Total= 4 Credit(Sem 3 and Sem 4)
10	M.Tech - Civil Engineering- Construction Management	Second year	Semester 3 and Semester 4	2 Credit Per Semester Total= 4 Credit(Sem 3 and Sem 4)

11	M.Tech -IT	Second year	Semester 3 and Semester 4	2 Credit Per Semester Total= 4 Credit(Sem 3 and Sem 4)
12	MCA	Second year	Semester 4	1 Credit

**6. Open and Distance Learning (ODL) and online courses offered by your college**

**a. ODL (any collaboration with SOL, SPPU)**

No we are not offering any Open and Distance Learning courses.

**b. Online Programs**

Online programs are not offered by Pimpri Chinchwad College of Engineering, but during Covid 19 pandemic situation most of the learning material was provided to student in softcopy format. The learning material includes the soft copies of reference and text books, PowerPoint presentations, pdfs and videos. The entire learning material was shared through the google classroom and Bodhitree (An LMS developed by IIT Bombay).

**7. Apprenticeship Embedded Degree Program- offering of apprenticeship/ internship embedded in degree program in your college.**

All our degree program (Under Graduate and Post Graduate) offered has an internship embedded. As per the curriculum structure, all the degree programs offer one internship course of 3 credits in the 7th or 8th semester as per the student's choice. All post-graduate courses (M.Tech) offer internship [Company/ In-house project] in the 3rd semester (II Year) of 2 credits for 3 months. Similarly Master of Computer Application (MCA) offers Internship-based project work for 1 full semester in the IV semester (II Year) for 16 credits.

**8. Academic Collaboration - Programs conducted by your college in collaboration with foreign/national -HEIs**

PCCOE support for International Relations mainly focuses on exchanging academic culture with foreign universities to provide a global platform to the students and faculty members. PCET's PCCOE has signed MoUs with foreign universities from USA, UK, Russia,

Malaysia, and Vietnam for joining hands for various student and faculty exchange programs, webinars, co-teaching, higher studies etc.

Following faculty development and students development Seminars /webinars are conducted by the PCCOE in collaboration with foreign HEIs.

**Table 10. Details of Faculty Development Programs**

<b>Sr No.</b>	<b>Name of FDP</b>	<b>Duration</b>	<b>Joint Organization</b>
1	International FDP on “Embedded System Design and Bioelectronic Interfaces”	21st to 23rd March 2022	Joint Organization by PCCOE Pune India and University of Malaya, Malaysia.
2	International Technical Workshop on “Essentials of Cloud Computing”	24th to 26th August 2021	Joint Organization by PCCOE Pune India and Thai-Nichi Institute of Technology, Bangkok Thailand
3	International Technical Workshop on “Big Data Analytics & Cloud Computing”	24th to 26th August 2021	Joint Organization by PCCOE Pune India and Thai-Nichi Institute of Technology, Bangkok Thailand
4	International Research Symposium	28th to 30th June 2021.	jointly organized by International Relations Cell of PCCOE and Can Tho University, Vietnam

**Table.11 Details of webinars organized for students**

<b>Sr No.</b>	<b>Name of the webinar</b>	<b>Date</b>	<b>Resource person details</b>
1	Preparation for MS Programs and Career Opportunities - MS Program in Ireland	26/11/2021	Mrs. Victoria Sukhia, Southern Seas Education

2	Preparation for MS Programs and Career Opportunities - Awareness on Fully Funded MS Programs	12/11/2021	Mr. Abhay Das, Ashiraj Overseas Education, Mumbai and Mr. Milind Govardhan, Ashiraj Overseas Education, Nigdi, Pune
3	Preparation for MS Programs and Career Opportunities - Preparation for English Proficiency Test - GRE/TOEFL	02/10/2021	Nupur Kulkarni(BE IT Student), Aditya Sapare(TU Dortmund, Germany), Yugali Bafna(Amazon)
4	Preparation for MS Programs and Career Opportunities - Selection of Universities (STEM Programs)	02/10/2021	Yash Joshi(MS in Media Informatics), Ujay Chajjed(MS From NYU)
5	MS Opportunity at Illinois Institute of Technology, Chicago	28/10/2020	Srikumar Panyam, Illinois Institute of Technology, Chicago
6	Academic career Opportunities in Germany	01/07/2021	Dr. Ing Sandeep Patil, RWTH Aachen University, Germany
7	MS Opportunity at Illinois Institute of Technology, Chicago	20/01/2021	SrikumarPanyam, Illinois Institute of Technology, Chicago
8	Cybersecurity Webinar' by Athlone Institute of Technology	03/04/2021	Dr. Brian Lee, AIT, Ireland
9	Design of Experiment	05/03/2021	Dr. Ben Baliga, St. Cloud State University, Minnessota, USA

10	Internship Opportunities in Ural Federal University, Russia	16/03/2021	Yana Aymasheva, UFU, Russia
11	Deep Learning Projects and Opportunities in Japan	10/05/2021	Dr.Ferdin Joe John Joseph,Thai - Nichi Institute of Technology, Bangkok, Thailand
12	Innovation and Agriculture	11/05/2021	Mr. Anand Kannan, Director, Avas Digitech International Private Limited
13	Mechanical behaviour of hierarchically structured biomaterials	21/05/2021	Dr.-Ing. Sandeep P. Patil, Group Leader, Institute of General Mechanics, RWTH Aachen University, Germany
14	Creative Innovation and Digital Fabrication	10/06/2021	Dr. Alejandro Veliz, University of Plymouth
15	Power Electronic Converters in EVS and Renewables	02/09/2020	Dr.Sanjeevkumar Padmanaban, Allborg University, Denmark
16	The Potential of Millimeter Waves for future 5G Wireless Networks	08/09/2020	Dr. Marco Giordani, University of Padova Italy
17	Application of AI & IOT in optimizing performance and Management of Waste Water Treatment Plants	19/09/2020	Samantha Deoraj, Territory Manager, Nexys Canada
18	Women Empowerment: What if Women Build the Nation	26/09/2020	Arlene MaConnell, System Manager, Maritime Engineering, Canada
19	Network and Application Security	02/05/2020	Mr. Vishal Maurya, Amazon US



20	Covid 19: Challenges & Opportunities for Engineers	08/05/2020	Dr. Suresh Vishwakarma, Vancouver Canada
21	Invest in Strengths and Not in Weaknesses	12/05/2020	Captain Parag Atre, Marine Pilot, UAE

**Table.12 Details of Co-teaching**

Sr. no.	Co-teaching course	Name of the faculty	Dates
1	Artificial Intelligence, Machine Learning (IT/Comp ) students	Dr Said Jadidi A Kadir	24 <sup>th</sup> March, 2022

## 9. Support for International Students

PCCOE has an international Relations Cell, where we support international student exchange by floating summer and winter school programs, virtual sessions by PCCOE faculty etc. Currently, PCCOE does not have any international admissions, but soon, PCCOE is welcoming its entries for international students.

## 10. Alumni connect -Alumni cell to connect with alumni

Please provide

### a. Details about Alumni Cell of the college -

#### **PCCoE Alumni Association (कल्पतरू)**

PCCoE Alumni Association was formed in the year 2005. We are proud of PCCoE Alumni working in various reputed organizations across the globe. The PCCoE Alumni Association has been registered with registrar of society's as per society registration act 1860. The association was registered on 2nd Feb. 2005 at Pune with registration number: Maharashtra/150/2005/Pune.

b. List its activities –

**Table.13 List of activities conducted in the last three years**

<b>Sr. No.</b>	<b>Name of Activity</b>
1	An Online session on "Final steps to succeed in Campus Placements" : Speakers : PCCOE Alumnus Mr.Sagar Deshmukh & Mr.Pranav Thorat for only PCET - Nutan students of 2021 batch & 2020 batch
2	Preparation for Campus Placements : Tips to Crack Aptitude & Interviews by PCET Alumni (T&P Volunteers of Central Placement Cell of PCET-Nutan)
3	CV Writing, personal interview, Technical , HR interview
4	Mock Technical , HR interview
5	GD , PI, How to be industry Ready, Resume Writing
6	Data Structures For interview
7	Expectations of Industry, Online GD, online PI,Placement Drive
8	Webinar on OOps Deep Dive, Webinar on Demystifying educationAbroad , Angular JS Training
9	Online session On "All you need is : A strong vision and mindset", Developing Strategies for Better Tomorrow", Career planning in Electronics, Marketing & how to craft contagious Content,"Art with photography and managing your professional life",
10	Online session On 'Future Opportunities in E&Tc Engineering"
11	Seminar on “ANALOG & MIXED SIGNAL CIRCUIT VERIFICATION” and GRE Preparation
12	Resource person for lecture on MPSC Preparation
13	Resource person for lecture on Guidance on Career in Defence (Indian Army)
14	Resource person for lecture on Applications of Remote Sensing & GIS in Civil

	Engineering
15	Resource person for lecture on Opportunities in government jobs (Indian Railways)
16	Judge for Poster & Model Making Competition for Environmental Engineering II subject
17	Alumni Interaction during SE Induction Program
18	Resource person for Workshop on Model Making using Popsicle sticks
19	Resource person for lecture on Preparation of Government Exams
20	Resource person for lecture on My journey along with Global aspect of Engineering
21	Resource person for lecture on Business opportunities in Civil Engineering
22	Judge for Poster & Model Making Competition for Environmental Engineering II subject
23	Resource person for lecture on Higher Studies opportunities in IISc Bangalore
24	Judge for BE Project Competition,
25	Awareness session on How to Secure Scholarship & Quality Placements while Studying Abroad, Parallel Programing, Introduction to Data Structures, AWA, Software Engineering, UPSC/MPSC Study,
26	Online session On "All you need is : A strong vision and mindset", "Developing Strategies for Better Tomorrow", "Career planning in Electronics, "Marketing & how to craft contagious Content", "Art with photography and managing your professional life", IES, IOT
27	Mentor to our students at Knorr Bremse, Cummins India, Solarium, Ambush, Automotons
28	Yes+ Followup in College, One day training on PLC Automation
29	Cosmic Solar, Lecture Structural Analysis, Battery Charging Station, Solarium Team
30	One day 3D printer design workshop , CCNA Addon Training Course

## **11. Research and Development Cell - R&D cell in college**

The R&D cell is present in the college.

### **A. Members of R&D cell:**

The office order is attached as Annexure 01.

### **B. Research Policy:**

The policy duly approved by the college authorities is attached as Annexure 02.

### **C. Research Areas:**

Each department has identified the research areas as Special Interest Groups, listed as follows:

#### **Computer Engineering:**

- Machine Intelligence and Optimization Algorithms
- Biomedical Applications and Soft Computing
- Applied Artificial Intelligence in Visual Computing
- Computer Networks and Information Security

#### **Electronics and Telecommunication Engineering:**

- VLSI and Embedded Systems
- Signal Processing
- Process Automation and Non-Conventional Energy Sources

#### **Mechanical Engineering:**

- Robotics and Automation
- Renewable & Sustainable Energy
- Composites
- NVH & Stress Analysis
- Thermal & Fluidic Engineering

- Transportation & Automobile

**Civil Engineering:**

- Construction Management
- Water Resource and Environmental Engineering
- Structural Engineering
- Geotechnical and Transportation Engineering

**Information Technology:**

- Artificial Intelligence and Machine Learning
- Computer Network and security

**Applied Science and Humanities:**

- Electrical
- Applied Sciences
- Mathematics

**Master of Computer Application:**

- Business Management and Entrepreneurship Development
- Data Analytics
- Application Development

**D. Research Outcomes:**

**(i) Copyrights in the last three years:**

**Table.14 Copyrights obtained in last three years**

<b>Year</b>	<b>MECHANICAL</b>	<b>CIVIL</b>	<b>E&amp;TC</b>	<b>COMPUTER</b>	<b>IT</b>	<b>MCA</b>	<b>AS&amp;H</b>	<b>Total</b>
<b>2021-22</b>	3	0	8	6	36	NIL	1	54
<b>2020-21</b>	7	5	11	14	0	1	8	46
<b>2019-20</b>	4	2	12	20	5	1	0	44
<b>Total</b>	<b>14</b>	<b>7</b>	<b>30</b>	<b>40</b>	<b>41</b>	<b>2</b>	<b>9</b>	<b>144</b>

**(ii) Patents in last three years:**

**Table.15 Number of Patents filed, Published and Granted**

<b>Year</b>	<b>Filed</b>	<b>Published</b>	<b>Granted</b>
2021-22	20	13	6
2020-21	15	18	4
2019-20	11	21	0
<b>Total</b>	<b>46</b>	<b>52</b>	<b>10</b>

(iii) **Research Publications in the last three years (2019-20 to 2021-22)****Table.16 Research Publication details department wise**

<b>Publication Type</b>	<b>IT</b>	<b>Civil</b>	<b>Comp</b>	<b>E&amp;TC</b>	<b>Mech</b>	<b>MCA</b>	<b>AS&amp;H</b>	<b>Total</b>
<b>International Journal</b>	59	29	270	86	47	12	67	491
<b>International Conference</b>	36	14	135	46	29	nil	nil	260
<b>Book Chapters</b>	20	nil	19	11	11	0	nil	61
<b>Total No. of Publications per department</b>	115	43	424	143	87	12	67	891

(iv) **Ongoing Funded Research Projects:****Table.17 Ongoing Research Projects**

<b>Year</b>	<b>Project Title</b>	<b>Faculty Name</b>	<b>Duration</b>	<b>Funding Agency</b>	<b>Funds sanctioned, Rs.</b>	<b>Department</b>
<b>2021-22</b>	Utilization of Green Energy Source for the development of solar system for biomedical application	Mrs. G V Phadtare, Dr P A Deshmukh	3 years 2022-25	AICTE	12.14 Lacs	Mechanical Engineering
<b>2021-22</b>	Design and development of miniature liquid fuel film combustor for thermoelectric power generation	Dr. Umesh Potdar, Dr. Narendra Deore	3 years, 2021-24	SERB-DST	25.5 Lacs	Mechanical Engineering

<b>2021-22</b>	Development and optimization of 3D concrete printer considering nozzle and pump with digital twinning	Dr. D.S. Lal	2 year	Dassault Systems Foundation	10.97 Lacs	Civil Engineering
<b>2021-22</b>	Flexi-auto Pathway :- Smart Elevator for Indian Railways	Mrs. Ashwini Ladekar	6 months	La Trobe University, Australia	43,200	Information Technology
<b>2021-22</b>	QLess- Indoor Navigation Shopping Recommendation & Queue Less Billing Based Shopping assistant using AI and AR	Dr. Sonali D Patil	6 Months	La Trobe University, Australia	27,000	Information Technology
<b>2021-22</b>	Anti-Horn System	Mrs. Rohini Pise	6 Months	La Trobe University, Australia	13,500	Information Technology
<b>2020-21</b>	CerviTester: A Smart and Portable Screening Device for AI-Assisted Automated Diagnosis of Cervical Cancer in Low Resource Settings	Dr. Swati V. Shinde, Ms. Madhura Kalbhor	2 years 2021-23	DST-BDTD R&D Project	37 Lacs	Computer Engineering



2020-21	Design and Development of Open Pan Heat Exchanger Based on Thermic Fluid for Organic Jaggery Making	Prof. Abhijit Kore	1 year, 2020-21	Dassault Systems Foundation	4,40,000/-	Mechanical Engineering
2020-21	Design and Development of a liquid immersion cooling system for high performance electric three wheelers	Dr. Anindita Roy, Dr. Narendra Deore	1.5 years, 2020-22	Dassault Systems Foundation	4,00,000/-	Mechanical Engineering

(v) **Registered Start-ups in the last three years:**

**Table.18 Start-up Registered**

Sr. No	Name of Company	Founders	Product
1	Syntronics LAB PVT. LTD	Mr. U R Shirode	Contactless Hand Sanitizer System
2	Nayan Mechatronics LLP	Dr Sanjay Lakade Mr. Arun Jangam	Pani Puri Serving Machine
3	eSakhi EV Fleets India Private Limited	Mr.Nitin Banait	Electric Vehicle Training and Development
4	SIM Electro-Connect	Mrs. Mrunalini S. Bhandarkar	Deep Prabha LED Series

5	ABCD Programmer	Dr. Sonali D. Patil	Training Modules to learn Computer Technologies
6	TRIVIDYA	Dr. Roushani Raut	Smart Slate for Online Teaching
7	REFORMUP LLP	Miss Tejashree Ghule	Fin Tech
8	ConstroMatic Automations LLP	Dr.D.S.Lal	Automation Based Technology.
9	3 D Wizard	Mr. Abhinay Mane	Digital Fabrication
10	Klutch Bilectric LLP	Mr. Sarang Kawade	Electric Vehicle

## **12. Courses in Indian Languages offering of courses in Indian languages in the college**

PCCOE is the first Private Engineering College in India to offer BTech in Computer Engg (Marathi). The course is be exclusively designed for students with vernacular background and no exposure to English language. The teaching-learning is executed in blended mode so that students will be comfortable in understanding the concepts. Faculties are also prepared to conduct courses in blended learning mode. Being the first year the admission was also full and the program has obtained lots of laurels across the state and country.

## **13. IKS-Offering of Programs/courses in Indian Knowledge System**

No, IKS is not offered in form of program/courses presently.

## **14. Development Plan-A five-year plan for college development**

The institute has developed a well structured five year plan for the college development in line with its vision and Mission statement indicated earlier. A summary of the five year plan for the college development is as follows :

(i) Academics

- Provide basic and advanced education that complies with the requirements of the institute vision and mission of a level that is comparable to that of the best of India.
- Offer curriculum that are adaptive to the demands of the region in which the institute operate, including the local and international market.
- Make higher education and advanced studies more accessible to the target audience.
- Improve the institute's academic reputation by using its resources wisely and providing customers with quality service.
- Stringent academic audits to improve the quality of teaching, learning, and assessment.
- Developing learning resources in public media.
- To enhance faculty qualification (100% Ph.D. Faculty members)
- To strengthen association with industry for co-teaching, internship and Projects.
- Establishing "Center of Excellence in AI"

(ii) Research

- Timely notification of Different "Call for Proposals" by various funding agencies.
- Processing of Seed Funding to PCCOE Faculty and Students every year
- Facilitation through the expert sessions on- publication, IPR and Funding
- To increase the number of IPRs
- Focus on improvement of Project Quality
- Developing the ecosystem for multidisciplinary B.Tech Project
- Receiving and disbursement of research funding through SIRO recognition
- Organization of Showcase Conference "Kshitij" for connecting projects to industries
- Processing SPPU-BCUD-QIP Activities
- To contribute in 2035 VISION of country.

(iii) Training and Placement

- To improve the placement percentage by 5 to 10 %
- To improve the Internships by 5 to 10 %

- To Improve the number of placements in companies with salaries more than 10 Lacs by 5 to 10 %
- To invite more companies for the Campus recruitment with salaries more than 10 Lacs by 5 %
- More Utilization of strong Alumni Base for Placement / Internship / Mock Interviews Purpose
- To improve the Industry Interaction.
- Internships from renowned companies with 50% of internship under paid Internships.

(iv) Students Development and Welfare

- To participate in the Government's initiative of Digital India.
- To support the School Children in Coding/ hardware building as a social activity.
- To be recognised at national/International level through students activities.
- To build state of the art sports facility.
- To reach top 5 position at different stae and National level Karandaka competitions.
- To provide scholarship (Government/Industry) to the needy students.

(v) International Relationship

- To collaborate with reputed National and International universities for student and faculty exchange program
- Increase in Students going for Higher Studies with Top Universities in QS ranking
- Establishment of International Education Office: Increase and diversify access to study abroad participation.
- Designing innovative interdisciplinary study abroad programs with partner universities.
- Facilitation for Student mobility for Internships, Research projects etc.
- Strengthening University collaborations and partnerships: Proactively advance strategic and legacy partnerships.

- Attracting and supporting international students for education in PCCOE:  
Improve the international student experience, so they can thrive across all aspects of academic and campus life.
- Academic Exchange: Achieving excellence in global education for all students.
- Fostering global learning in curriculum
- Faculty engagement: Supporting faculty internationalization through research exchange, faculty development, more accessible information regarding existing programs and opportunities for collaboration, and support for international grant identification, proposal writing, logistics and making connections/networking etc.

**15. Industry Institute Linkage - MoU's with industry -Institute linkage for apprenticeship/internship/research entrepreneurship/ employment**

Yes the MoU's are available with industry -Institute linkage for apprenticeship/internship/research entrepreneurship/ employment.

**Table.19 Details of MOU with industry -Institute linkage for apprenticeship / internship / research entrepreneurship / employment.**

<b>Sr. No.</b>	<b>Name of Industry</b>
1	KPIT Technologies
2	3DPLM
3	ATS Infotech Pvt. Ltd.
4	IBM India Private Ltd.
5	MITCON Consultancy & Engineering Services Ltd
6	Pure Water Foundation

7	Power Electronics
8	Infosys Ltd
9	Synechron
10	Zensar Techonologies Ltd.
11	Varad Automation and Robotic Pvt. ltd.
12	V R Coatings Pvt. Ltd.
13	Output Consulting Services
14	Western Heat & Forge Pvt. Ltd.
15	Yansons Eng. Pvt. Ltd.
16	Dribblelogics
17	Aarush Enterprises
18	Octane Engineers
19	Showtime Events & Marheting
20	Bhagyalaxmi Group of Companies
21	Kedar Engineering
22	Finepac Structure Pvt. Ltd.
23	Garware-Wall Ropes Pvt. ltd.
24	Amadeus Ind. Pvt. Ltd
25	Suaam Techmechs Pvt. Ltd.

26	D. K. Groups of Industries
27	GKN Sinter Metals
28	PSI & CS Pvt. Ltd.
29	FINE ARC industries
30	Tool Edge Engineering
31	Shree Balaji Bio-Chem Industries
32	Himalaya Udyog
33	Grap Fire Industries
34	Ecomak Systems
35	Ishwar Forge Pvt. Ltd.
36	Superb Interiors Pvt. Ltd.
37	Tefcon Bearing Pvt. Ltd
38	Capricorn Motors Pvt. Ltd.
39	Metallika Pvt. Ltd.
40	Pune Fin Tube Pvt. Ltd.
41	Geissel India Pvt. Ltd.
42	Ravian Engineering Pvt. Ltd.
43	Spinach Engineering Pvt. Ltd.

**MOUs of PCCOE**

<b>Sr. No.</b>	<b>Name of the Organisation</b>
1	Capgemini (COE)
2	Capgemini (MBSE)
3	Federation of Indian chamber of Commerce and Industries
4	TalentSprint
5	Birlasoft
6	KoneCranes
7	Varad Automation and Robotic Pvt. ltd.
8	V R Coatings Pvt. Ltd.
9	Output Consulting Services
10	Western Heat & Forge Pvt. Ltd.
11	Yansons Eng. Pvt. Ltd.
12	Dribble Logics
13	Aarush Enterprises
14	Octane Engineers
15	Showtime Events & Marketing
16	Bhagyalaxmi Group of Companies
17	Kedar Engineering



18	Finepac Structure Pvt. Ltd.
19	Garware-Wall Ropes Pvt. ltd.
20	Amadeus Ind. Pvt. Ltd
21	Suaam Techmechs Pvt. Ltd.
22	D. K. Groups of Industries
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33	Tefcon Bearing Pvt. Ltd
34	Capricorn Motors Pvt. Ltd.
35	Metallika Pvt. Ltd.
36	Pune Fin Tube Pvt. Ltd.

37	Geissel India Pvt. Ltd.
38	Ravian Engineering Pvt. Ltd.
39	Spinach Engineering Pvt. Ltd.
40	3DPLM
41	KPIT Technologies
42	Sapience Industry software
43	Imperial Institute of Excellence(Classes for Gate)
44	Pure Water Foundation
45	Mantra Cad Cam Solution
46	ATS Infotech Pvt. Ltd.
47	CIPET(Central Institute Plastic Engineering and Technology)
48	Zensar Technologies Ltd.
49	MITCON Consultancy & Engineering Services Ltd
50	IBM India Private Ltd.
51	BOAT(WR)
52	Power Electronics
53	Infosys Ltd
54	Cranes Software International Limited
55	Synechron

56	TIFAC(Technology Information forecasting and Assessment council)
57	B&R Industry Automation
58	M/s. Skyfi Labs Pvt Ltd
59	M/s. Software Academy For Civil Engineers (SACE)
60	M/s. Bentley Institutes, Prabha Consultancy, Pune
61	Environment Conservation Association (ECA) trust to spread awareness regarding Environmental Challenges and Conservation.
62	Pune Construction Engineering Research Foundation (PCERF)
63	Ultratech Cement Limited
64	CADD Centre
65	B.G. Shirke Construction Technology Pvt. Ltd
66	Builders Association of India
67	Pantech Solutions
68	Indian Blockchain institute Snappers Future Tech. Pvt. Ltd.
69	Palo Alto Networks
70	M/S ATS Infotech Pvt. Ltd. Microsoft-AEP (Authorised Education Partner)
71	ICT Academy
72	Secure Era
73	AWS Academy
74	IIT Bombay Spoken Tutorial Project

75	Center for Police Research, Pashan, Pune.
76	Oracle academy
77	Lila Punawala Foundation