# JAYA COLLEGE OF ENGINEERING
## Thiruninravur-602024
**(Affiliated to Anna University, Chennai)**



# Strategic Plan (2021-2026)



# July 2021

# TABLEOF CONTENTS

# i. List of Abbreviations

| AC | Admission Committee |
|---|---|
| AI | Artificial Intelligence |
| AICTE | All India Council for Technical Education |
| AR/VR | Augmented Reality/Virtual Reality |
| BFSI | Banking, Financial services and Insurance |
| ICAETS | International Council of Academies of Engineering and Technological Sciences |
| SSD | Student Skill Development |
| CBCS | Choice-Based Credit System |
| CII | Confederation of Indian Industry |
| CIIE | Centre for Innovation, Incubation and Entrepreneurship |
| COVID-19 | Coronavirus Disease |
| IQAC | Internal Quality Assurance Cell |
| CSIR | Council of Scientific & Industrial Research |
| DBT | Department of Biotechnology |
| DRI | Directorate of Research and Innovation |
| DST | Department of Science & Technology |
| FDP | Faculty Development Programme |
| FIST | Fund for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions |
| FSR | Faculty-Student Ratio |
| GA | Graduate Attributes |
| GoI | Government of India |
| HEI | Higher Education Institution |
| HMI | Human Machine Interface |
| IQAC | Internal Quality Assurance Cell |
| IPR | Intellectual Property Right |
| JEC | Jaya Engineering College |
| MHRD | Ministry of Human Resource Development |
| MoE | Ministry of Education |
| MOOC | Massive Open Online Course |
| MoU | Memorandum of Understanding |
| NAAC | National Assessment and Accreditation Council |
| NII | National Institute of Immunology |
| NIRF | National Institute Ranking Framework |
| NIT | National Institute of Technology |
| NKC | National Knowledge Commission |

| NRI | Non-Resident Indian |
|------|------|
| OBE | Outcome-based Education |
| PBL | Project Based Learning |
| PEO | Program Educational Objectives |
| PG | Post-Graduate |
| PLO | Program Learning Objectives |
| RAC | Research Advisory Committee |
| R&D | Research and Development |
| RSP | Related Study Programme |
| STEM | Science, Technology, Engineering and Management |
| STTP | Short Term Training Program |
| UG | Undergraduate |
| UGC | University Grants Commission |
| UN | United Nations |

## ii. PREFACE

The Jaya Engineering College (JEC) year of Establishment and Management profile has systematically emerged in last twenty six years as a hub for-quality education through its teaching-learning processes, competent faculty members, state-of-the-art infrastructure and committed efforts on research & innovation, having a tangible impact on rural societal development. During these years, the Jaya Engineering College has become as synonym for 'Quality Education'. The journey has been quite challenging yet very successful. Meanwhile, the JEC has developed its Strategic Plan for the duration of 2021-26. The majority of the goals envisioned in the plan will be achieving it.

We are very happy to put forward this Strategic Plan of the Jaya Engineering College for the period of 2021 - 26. It precisely articulates our aspirations to emerges the highly respected multidisciplinary and student centric engineering Institution.

We believe, with the support and dedicated efforts of all the stakeholders, in the next five years the JEC will achieve a greater level of excellence and distinction in the higher education arena at national and global level.

## iii. Overview of Strategic Plan (2021-2026) of Institution

The strategic plan 2021-2026 is currently in the process and details are given below.

The strategic plan 2021-2026 of JEC includes,

- Modern, flexible and interdisciplinary curriculum.
- Internationalization.
- Central library as modern information resource centre.
- Introduction of new programme.
- Healthy faculty student ratio.
- Enhancing employability and entrepreneurship.
- Diversity and inclusivity.
- Research, Innovation and Consultancy Activities.
- Impacting societal outcomes
- Generating alternate sources of revenue
- Centre of excellence
- Placement, Higher Studies and Entrepreneurship

During the plan period (2021-26), the JEC plans to strengthen all ongoing programs by way of enriching the curriculum, offering a variety of elective courses, modernizing the labs for experiential learning, adding high caliber faculty members and promoting the culture of research and innovation.

The JEC is very serious in effectively implementing and monitoring the progress of the Five-Year Strategic Plan. The plan will be implemented and closely monitored by a core team that will meet once in a months and review the progress. The Institutional Strategic plan (2021-2026) core team will facilitate the proper implementation of the strategic plan.

# Strategic Plan (2021-2026) of the JEC

## 1. Introduction

### 1.1 General

Prof. A.Kanagaraj, M.A., M.Phil- Chairman and Secretary Smt. K.Vijaya Kumari, M.A., B.Ed. have started this Institution (Jaya Engineering College) in 1995.

**Vision, Mission, and Quality Policy**

**Vision**

To nurture innovative future leaders in technology, entrepreneurship and management who create wealth for our nation and develop a fulfilling global society.

**Mission**

To create a model educational institution contributing to innovation, entrepreneurship & technology management for our country.

**Quality Policy**
`
> "We, at Jaya Engineering College, shall strive hard continuously, to achieve academic excellence in Science, Engineering, Technology, Management, and Research and to produce the most competent Scientists, Engineers, Entrepreneurs, Managers, and Researchers thorough, objective and innovative teaching methods by dedicated and duty conscious faculty, continuous and consistent updating of facilities, welfare and quality improvement of the faculty and a system of continuous Process improvement".

**Table1.Programmes offered UG, PG**

| S.NO. | Programmes Offered | Year of Establishment |
|---|---|---|
| **UnderGraduates Programme** | | |
| 1. | B.E-Aeronautical Engineering | 2006 |
| 2. | B.E- Civil Engineering | 2001 |
| 3. | B.E-Computer Science and Engineering | 1995 |
| 4. | B.E - Electrical and Electronics Engineering | 1999 |
| 5. | B.E - Electronics and Communication Engineering | 1995 |
| 6. | B.E – Electronics and Instrumentation Engineering | 2002 |
| 7. | B.Tech.- Information Technology | 1998 |
| 8. | B.E. – Mechanical Engineering | 2002 |
| 9. | B.Tech – Textile Technology | 1995 |
| **PostGraduates Programme** | | |
| 9. | M.E - Computer Science and Engineering | 2004 |
| 10. | M.E – Applied Electronics | 2005 |
| 11. | M.E – CAD/CAM | 2010 |
| 12. | M.Tech (Textile Technology) | 2003 |
| 13. | MCA - Master of Computer Application | 1997 |
| 14. | MBA- Master of Business Administration | 1997 |

## 2. Life Cycle of Strategic Plan: 2021-2026

Strategic plan is an important tool for JEC and it ensures the following.

- Frame work for effectiveness and sense of direction
- Goals and measurable targets
- Guiding day-to-day actions
- Evaluating progress and changing approaches when moving forward

**Life Cycle of Strategies Plan for the Institutions**

The plan is developed to establish uproots that provide firm foundation for the constant up-gradation of the JEC, as well as to energies the drive of experimentation and innovation, keeping the focus on Institution vision and mission. The strategic plan sets out a framework of priorities for the JEC.

## 3. SWOC Analysis

The more commonly used practice in strategic planning is to do SWOT/SWOC analysis: Strengths, Weaknesses, Opportunities and Treat/Challenges. It is a simple analysis system designed to check the strategic position of a particular system in its field of operation, and because of its methodological simplicity.

SWOC analysis is divided into two parts: the internal environment where strengths and weaknesses are identified, and the analysis of the external environment, where opportunities and challenges are determined.

**Divisions of SWOC analysis**

The salient points emerging out of the SWOC analysis of the university are listed below:

## Strengths

- Excellent local and regional reputation with well- established national recognition.
- Young, dynamic and dedicated faculty members aligned with institutional goals.
- Learner centric approach.
- Focus on synergy between teaching and all-round development of the student

- Meritorious students with geographical diversity.
- Continuous up-gradation of curriculum.
- Transparent management policies, with well-defined procedures.
- Well-disciplined conducive academic environment.
- Active linkages with nearby institutions, industries and research organizations.
- Continuous emphasis on faculty and staff development.

## Weaknesses

- Relatively less exposure to global experience amongst faculty and students.
- Less number of specialized laboratories for state-of-the-art research.
- Limited sponsored research and consultancy activities.

## Opportunities

- Increase in the number of educational aspirants.
- Global growth in demand of professionals
- Catering to the need of the industry by customized programme and services to generate alternate sources of revenue.
- Encouraging policies of state and central governments for establishing CoE /IoE.
- Developing inter disciplinary programmes.

- Foreign institutes are looking towards India for academic and research collaborations.
- Establishing new as well as strengthening existing national and international linkages.
- Recognition of faculty members as fellows of national and international academic and professional societies/bodies.
- Strengthening Research and Innovation by mobilizing funds through different funding agencies.
- Establishing a global presence through a large pool ofalumni in diverse industries and institutions.
- Outcome based Education.
- Internationalization of various activities.

## Challenges

- Establishment of educational institutions of repute in the vicinity providing local, regional and global competition.
- Attracting and retaining experienced faculty members and developing a wide spectrum of expertise a cross the disciplines.
- To establish a strong provider of consulting and training services
- Rapid changes in all the disciplines and correspondingly changing expectations from industry and society.
  - Getting more avenues of placement of Students in economies at national and global level.
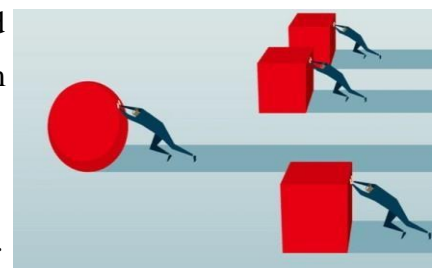
# 4. Strategic Goals

Keeping in mind the integrated themes developed in the previous section, the following strategic goals are developed by JEC:

Goal-1:  Become a medium-sized national Institution.

Goal-2:  Promote research and innovation.

Goal-3:  Develop faculty to meet emerging academic and employability challenges

Goal-4:  Provide high quality infrastructure and facilities.

# 5. Strategies, Targets and Implementation Plan



**Goal-1:  Become a medium-sized National Institution**

Strategy-1. Launch new programmes in the institutes

Strategy-2.  Increase the number of students in different programmes.

Strategy-3.  Achieve A++ grade in the First cycle of NAAC accreditation.

Strategy-4.  Improve ranking in National Institutional Ranking Framework (NIRF), Ministry of HRD, Government of India.

**Goal-2:  Promote research and innovation in the constituent institutes**

Strategy-1.  Increase scholarships for doctoral students through funding.

Strategy-2.  Establish various center of excellence in the institutes.

Strategy-3. Increase seed money grants for minor research projects.

Strategy-4.  Increase external research funding.

**Goal-3: Recruit and develop faculty members to meet the emerging academicand employability challenges**

Strategy-1. Selection of faculties with Ph. D qualification.

Strategy-2. Recruit faculty who have done their post-graduation/doctoral studies from a foreign/ reputed institution.

Strategy-3. Conduct two-week FDP training programmes for all faculty.

Strategy-4. Ensure that most faculty have developed mental experience.

**Goal-4: Provide high quality infrastructure and facilities.**

Strategy-1. Develop the central library with reputed journal.

Strategy-2. Modernize different laboratories in various departments.

Strategy-3. Implement requisite ICT infrastructure.

## STEP-By-STEP IMPLEMENTATION:

Strategic plan will be implemented at two levels: the department level and the institute level. The goals set shall be implemented in the Institution by the top leadership of the Institution. They will mobilize resources – human and financial– to achieve the goals and will be closely involved in Implementation of the JEC – Strategic plan 2021-2026.

# 6.  Monitoring and Alignment:Structure and System

Monitoring of strategic plan implementation is done at institute levels. he plans will be implemented and closely monitored by a core team Principal, HoDs and IQAC that will meet once in months and review the progress.
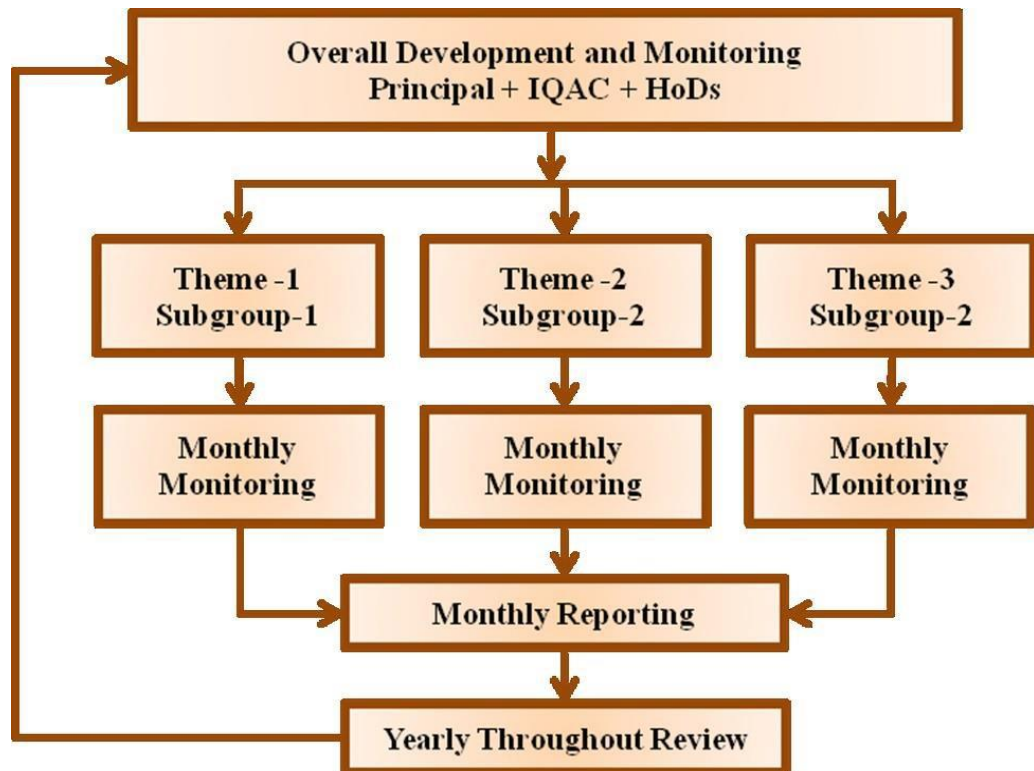


**Closed-loop monitoring of strategic plan of the JEC**

# JAYA ENGINEERING COLLEGE
## THIRUNINRAVUR, CHENNAI-602024

| S.No | Key Progress Area (KPA) | Academic Years 2021-2022 | 2022-2023 | 2023-2024 | 2024-2025 | 2025-2026 |
|------|------------------------|--------------------------|-----------|-----------|-----------|-----------|
| | | Progressive Enhancement Targets (PET) - Year-Wise | | | | |
| | **1.INFRASTRUCTURE** | | | | | |
| | 1.Class room with LCD Projector(Window curtain) | 60% of Classes | 75% of Classes | 90% of Classes | 100% of Classes | 100% of Classes |
| | 2.Modernization lab | 25% | 45% | 65% | 85% | New Lab |
| | 3.Industry Institute Interaction Cell and Entrepreneurship Development Cell | Initiate | 2 Programmes/year | 4 Programmes/year | 3 Programmes/year | 6 Programmes/year |
| | 4.CMS & LMS | Initiate | 25% | 50% | 100% | 100% |
| | 5.Quarters for Staff | 5 Nos. | 15 Nos. | 25 Nos. | 30 Nos. | 35 Nos. |
| | 6. One Seminar hall for Each/Dept (A/c to Seminar hall- 1/dept) | All Departments | All Departments | All Departments | All Departments | All Departments |

# JAYA ENGINEERING COLLEGE
## THIRUNINRAVUR, CHENNAI-602024

| 2.TEACHING-LEARNING(CURRICULUM) | | | | | | |
|---|---|---|---|---|---|---|
| 2 | 1.Self Learning Material | YES | YES | YES | YES | YES |
| | 2. Subscription to Online resources | YES | YES | YES | YES | YES |
| | 3.NIRF Ranking | Initiate | Top 70 within TN state | Top 60 within SF TN state | Top 50 within SF TN state | Top 30 within SF TN state |
| | 4.ISO | Setup 100% | Fully | Enhance & Improve | Enhance & Improve | Enhance & Improve |
| | 5.Professional Society tie-up | 1/ Department | 1/ Department | 1/ Department | 1/ Department | 1/ Department |
| | 6.Branding (Ranking) | 2 magazines | 2 new magazines | 2 new magazines | 2 new magazines | 2 new magazines |
| | 7.Innovative Teaching & Learning | 3 Online Course /Department | 5 Online Course / Department | 5 Online Course / Department | 5 Online Course / Department | 5 Online Course / Department |
| | 8.Outcome based education (OBE) | Initiate | Implementation | Enhance & Improve | Enhance & Improve | Enhance & Improve |
| | 9.NBA | Plan to Initiate | All Department | All Department | All Department | All Department |
| | 10.NAAC | Plan to Initiate | Annual Quality Assurance Report /Semester | Annual Quality Assurance Report /Semester | Annual Quality Assurance Report /Semester | Annual Quality Assurance Report /Semester |
| | 11.No. of Course with Question Bank | 2 per Department | 5 per Department | 5 per Department | 5 per Department | 5 per Department |
| | 12.Industrial Collaborated Courses | 1 per Department | 1 per Department | 1 per Department | 1 per Department | 1 per Department |

# JAYA ENGINEERING COLLEGE
## THIRUNINRAVUR, CHENNAI-602024

| | 3.STUDENTS RELATED | | | | | |
|---|---|---|---|---|---|---|
| 3 | 1.Admission (UG) | 65% | 75% | 85% | 90% | 95% |
| | 2.Placement (UG) | 70% | 75% | 80% | 82% | 85% |
| | 3.Admission (PG) | 80% | 90% | 90% | 95% | 95% |
| | 4.Lateral Entry Admission | 35% | 45% | 47% | 50% | 50% |
| | 5.Fee Concession | 15% | 27% | 39% | 40% | 42% |
| | 6.Avg Cut-off | 120 | 125 | 130 | 135 | 140 |
| | 7.GATE - Appeared | 50 Students | 65 Students | 70 Students | 85 Students | 90 Students |
| | 8.GATE - Qualified | 20% | 30% | 32% | 35% | 37% |
| | 9.TANCET - Appeared | 25Students | 30Students | 40 Students | 50 Students | 70Students |
| | 10.TANCET - Qualified | 20% | 25% | 27% | 30% | 35% |
| | 11.IELTS / TOEFL /GRE | Introduce | 15 students | 20 students | 30 students | 50 students |
| | 12.Entrepreneur Development | Introduce | 5 Activities | 10 Activities | 15 Activities | 20 Activities |
| | 13.Best Student - Awards | 1/Dept(Course) | 1/Dept(Course) | 1/Dept(Course) | 1/Dept(Course) | 1/Dept(Course) |
| | 14.Top academic Students' Scholarship (Class-Wise) | 2 per Class/Dept | 2 per Class / Dept | 2 per Class / Dept | 2 per Class / Dept | 2 per Class / Dept |

# JAYA ENGINEERING COLLEGE
## THIRUNINRAVUR, CHENNAI-602024

| 4.FACULTY RELATED | | | | | | |
|---|---|---|---|---|---|---|
| | 1.Pass % (UG) | 85 | 85 | >=85 | >=90 | >=95 |
| | 2.Pass % (PG) | 90 | >=95 | >=95 | 100 | 100 |
| | 3.Faculty Avg. Experience | 6 | 6 | 7 | 7 | 8 |
| | 4.Student-Faculty Ratio | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
| 4 | 5.Attrition Rate | 20% | 15% | 12% | 10% | < 10% |
| | 6. Publication per Dept (With IM. Factor) | 25% | 50% | 70% | 75% | 80% |
| | 7.Ph.D. | 20% | 25% | 35% | 40% | 50% |
| | 8.Workshop / FDP Attended - External | 1/Faculty | 2/Faculty | 2/Faculty | 2/Faculty | 2/Faculty |
| | 9.Workshop / FDP Attended - Internal | 1 | 2 | 2 | 2 | 2 |
| | 10.Industrial Training | 1 / Dept | 2 / Dept | 2 / Dept | 2 / Dept | 2 / Dept |
| | 11.Faculty from Industry | 3/dept | 3/dept | 5/dept | 5/dept | 5/dept |

# JAYA ENGINEERING COLLEGE
## THIRUNINRAVUR, CHENNAI-602024

| 5.CO-CURRICULAR (STUDENTS) | | | | | | |
|---|---|---|---|---|---|---|
| 5 | 1.Publication (PG) - Journal/Conference | 20% | 45% | 55% | 65% | 85% |
| | 2.Projects (UG&PG) | 3/dept | 4/dept | 4/dept | 4/dept | 5/dept |
| | 3.Workshop / Seminar Attended | 1/Year | 1/Year | 1/Year | 1/Year | 1/Year |
| | 4.Industrial Visit | 2/Year | 2/Year | 2/Year | 2/Year | 2/Year |
| | 5.In-Plant Training | 2 | 2 | 2 | 2 | 2 |
| | 6.Internship | 6 Weeks | 6 Weeks | 6 Weeks | 6 Weeks | 6 Weeks |
| | 7.Club to Strengthen English | Introduce | 1 Activity | 2 Activities | 2 Activities | 2 Activities |
| | 8.Value Added Course(s) | 1/Dept | 2 / Dept (1 from Internal Staff) | 2 / Dept (1 from Internal Staff) | 2 / Dept (1 from Internal Staff) | 2 / Dept (1 from Internal Staff) |
| | 9.Placement Training | 15 Days / Year | 15 Days / Year | 15 Days / Year | 15 Days / Year | 15 Days / Year |
| | 10. Personality Development class | 2 Activities/ Year | 2 Activities/ Year | 2 Activities/ Year | 2 Activities/ Year | 2 Activities/ Year |

# JAYA ENGINEERING COLLEGE
## THIRUNINRAVUR, CHENNAI-602024

| 6.EXTRA CURRICULAR (SUPPLEMENTARY PROCESS) | | | | | | |
|---|---|---|---|---|---|---|
| 6 | 1.Sports | Athletic | volley ball | Judo | Basket ball | cricket |
| | 2.Tournaments @ Level | College Level | College Level | College Level | Zonal Level | Zonal Level |
| | 3.Alumni Association | Introduce 1/Year | 2/Year + Local Chapter | 2/Year + 2 Local Chapter | 2/Year + Decade meet | 2/Year + 2 Local Chapter |
| | 4.Association | Introduce 1/Year | 2/Year | 3/Year | 3/Year | 3/Year |
| | 5.NSS/RRC/YRC | Introduce 3/Semester | 3/Semester | 3/Semester | 3/Semester | 3/Semester |
| | 6.IAS, IES (UPSC) & Banking exam | 10 Students | 20 Students | 30 Students | 35 Students | 45 Students |
| | 7.Foreign Language Training | 1 Language | 1Language | 1 Language | 1 Language | 1Language |
| | 8.Vocational / NSDC Training | 1/dept | 1/dept | 1/dept | 1/dept | 1/dept |
| | 9.Village adoption/ISR/CSR | 1 | 1 | 1 | 1 | 1 |

| 7.RESEARCH AND DEVELOPMENT STRATEGY | | | | | |
|---|---|---|---|---|---|
| 1.Research FDP/Workshop | 2 Nos. | 2 Nos. | 2 Nos. | 2 Nos. | 2 Nos. |
| 2.Ph.D. completion | 1 | 2 | 2 | 3 | 3 |
| 3.Ph.D. registration | Plan to Initiate | 4 | 5 | 6 | 7 |
| 4.Funded Project - applied (10 - 15 lakhs) | 2 Nos. | 3 Nos. | 5 Nos. | 10 Nos. | 15 Nos. |
| 5.Funded seminar/workshop conducted | 1 | 2 | 3 | 4 | 5 |
| 6.Internatioanl Conference | 1 | 1 | 1 | 1 | 1 |
| 7.Funded Student Project | 3/dept | 4/dept | 4/dept | 4/dept | 4/dept |
| 8.MoU with industry | 2 Nos. | 3 Nos. | 3 Nos. | 3 Nos. | 3 Nos. |
| 9.MoU with IIT, NIT and reputed institutions | 1 No | 2 No | 2 No | 2 No | 2 No |
| 10.Consultancy | 1 /dept | 2 /dept | 3 /dept | 4 /dept | 5 /dept |
| 11.Patent applied (TOTAL) | 2 | 5 | 10 | 20 | 25 |
| 12.Technology Incubator | 1 | 1 | 1 | 1 | 1 |