Government Polytechnic College
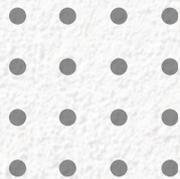## *Kalamassery*

Committee

1. Dr. Aiju Thomas, Principal
2. Sajikumar S, HOD in Automobile Engineering
3. Surya Sathyan, HOD in Chemical Engineering
4. Mary Sobha P G, HOD in Computer Engineering
5. Vandhana C, HOD in Electronics & Communication Engineering
6. Nijamol K N, HOD Science and Humanities
7. Sandeep T N, HOD in Civil Engineering
8. Smitha Joseph, HOD in Electrical and Electronics Engineering
9. Shijath T V HOD in Mechanical Engineering
10. Sreedevi S, Senior Superintendent

This document is prepared by

Dr. Aiju Thomas
Principal
Government Polytechnic college
Kalamasserry, Ernakulam – 683104
Ph: 9447388010, email: aiju.thomas@gmail.com
http://gptckalamassery.ac.in

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Preface

The Polytechnic education system in the state follows a 1:1 theory to skill ratio, which makes it very attractive to the industrial community nowadays. Its significance is particularly high in the modern world of Artificial Intelligence and Machine Learning, where a blend of theoretical knowledge and skills is essential. Making youth employable at a very early age, typically in their twenties, this system benefits from the high trainability and productivity of the younger generation.

In the early days, Diploma education was considered a terminal program. However, recent policy shifts, such as the advent of the New Education Policy and directives from AICTE, have made it more liberal to pursue qualification updating alongside employment. AICTE's approval process for 2024 has made it unconditional to start BTech programs for working professionals in contact or hybrid modes. This paradigm shift will benefit the industry by allowing better manpower retention and utilization. Qualification upgrading is also offered through advanced Diploma and BVoc programs. Many recruiters are now offering working professional qualification up gradation through reputed institutions like BITS Pilani.

Polytechnic Education is on the path of internationalization. The system pioneered Outcome-Based Education (OBE) following the guidelines of the Washington Accord. OBE was introduced into the system through curriculum revisions in 2016, making it the first time in the state among higher education institutions. The 2021 revision fully adopts OBE following National Board of Accreditation (NBA) guidelines. Considerable funding is allocated for the system to obtain program accreditations. Currently, 10 institutions have various Diploma programs accredited, with the count still increasing.

Another remarkable achievement by the system is the implementation of a new internship policy for the first time in the state in 2024, following AICTE guidelines. Students are now undergoing optional 6-month internships, forfeiting the credit requirements of Semester 6.

Pioneering the implementation of Industry on Campus (IoC), Mini Industrial Units (MIUs) attached to the institution, the Polytechnic system has set a benchmark for fruitful industry partnership programs, making it one of the first systems of its kind in the country.

Affordable education and excellent skilling opportunities make the Polytechnic Education system a preferred technical education platform with the highest student enrollment ratio in the state compared to other technical and higher education streams available.

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Chapter 1
About

Government Polytechnic College, Kalamassery is an institution of repute established with the aim of providing quality education to all sections of community in the skilled education arena. The campus spans over 45 acres of greenery along N.H 47 and is a prime location for ease of access to industry.

Government Polytechnic College, Kalamassery had its inception in the year 1951. The establishment of this college played a significant role in the transformation of an area that was once a thicket and largely ignored by the government and the general public. The decision to build the institution faced opposition, as the area was frequently referred to as a "God forsaken place". However, the Thiruvithamkore Vice-Chancellor, Sri. Rama Swamy Mudaliar, who visited the site for inspection, argued that it was not a "God forsaken place" but rather a "man forsaken place"". His assessment was later confirmed by the developments in the area. The Polytechnic college was founded on July 15, 1951, prior to the official formation of United Kerala. During the ceremony to lay the foundation stone, his Highness Ramavarma made a speech in which he emphasized that the college would have dual objectives: creating job opportunities for educated youth and ensuring that industrial sector never lacked skilled technicians.

The institution, which has a place of distinction in the history of technical education in Kerala. Initially, the institution offered courses in Fisheries technology, Automobile Engineering, Chemical technology and food technology, and classes were held in repurposed military barracks. The college was managed by the Travancore University before coming under the jurisdiction of Kerala Technical Education in 1957. In the same year, Civil, Electrical and Mechanical courses were also added. The new building was completed and began operation in 1960. Later, the institution started offering Computer Engineering in 1985 and Electronics & Production Technology in 1992. The first Principal, Sri. Varada Rao, served the institution for 19 years and laid the foundation for the college's future success.

Today it has the state - wide reputation for excellence in academics and successful student placements. Currently we offers 3-year diploma programs in seven branches of engineering, such as Civil Engineering, Mechanical Engineering, Chemical Engineering, Computer Engineering, Automobile Engineering, Electronics and Communication and Electrical and Electronics Engineering. Besides, there is also aa additional batch of Civil Engineering for hearing impaired.

With a rich history and a strong foundation, the college continues to evolve and adapt to meet the changing needs of the students and the workforce. The institution equips students with a comprehensive education, helping them to develop the knowledge and skills necessary to become responsible citizens and leaders in their chosen fields.

Chapter 2
Programs

Quality of Diploma in Engineering Programs

The college run the following AICTE approved Diploma Programs affiliated to State Board of Technical Education (SBTE)

1. **Automobile Engineering**
2. **Civil Engineering**
3. **Civil Engineering for Hearing Impaired**
4. **Chemical Engineering (NBA Accredited)**
5. **Computer Engineering (NBA accredited)**
6. **Electrical and Electronics Engineering (NBA accredited)**
7. **Electronics and Communication Engineering**
8. **Mechanical Engineering**
9. **Civil Engineering (Working Professional)**
10. **Mechanical Engineering (Working Professional)**
11. **Electrical and Electronics Engineering (Working Professional)**

The Diploma program follows stringent evaluation norms to ensure that quality manpower is made available to the industry, considering the safety norms of the engineering equipment/software they are handling. Evaluation is conducted based on continuous assessment as well as end-semester examinations. Additionally, students must meet a mandatory attendance requirement of 75% for promotion to the next semester.

In addition to attendance norms, every student must submit certified records of laboratories and workshops; failing to do so results in the student being dropped from the semester. In such cases, students must repeat the semester in the forthcoming chance.

Registration for any regular diploma program expires after 6 years. These stringent evaluation norms often result in a pass percentage for the program that is, typically less than 50%.

Admission norms and the curriculum

The Diploma in Engineering program spans three years with six semesters. An academic year begins on the first of June and ends on March 31. Semester examinations happen in November and April, with results published in June.

With an entry qualification of 10th grade, basic science courses such as Mathematics, Applied Physics, and Applied Chemistry, as well as humanities and social courses including Communication English, Sports and Yoga, and Communication in English Lab, are covered in the first and second semesters. Entrepreneurship and start-up are covered in the sixth semester.

Lateral Entry (LE) admission is provided to meritorious students from plus two and ITI backgrounds, allowing entry into the third semester of any Diploma program. Students must attend bridge courses to fulfill prerequisites. 10% of seats are reserved as supernumerary for LE admission, and any lapsed or dropped-out seats are also filled through LE.

An amendment to the curriculum in 2023 introduced an optional facility for students to undertake a 6-month internship during the sixth semester. While the internship fulfills 13.5 credit requirements of the sixth semester, students must earn the mandatory 8 credits by attending online classes and end semester regular evaluations for successful program completion. The 6-month internship aims to bridge the gap between industry and academia and enhance students' employability skills.

The curriculum follows All India Council for Technical Education (AICTE) mandates. The Polytechnic System of education is a forerunner in adopting Outcome-Based Education (OBE). OBE was first introduced in the 2016 revision, and the curriculum fully complies with OBE as per the 2021 revision. Two mandatory internships are included in the curriculum: a 3-week internship during the vacation after the second semester and a one-month internship after the fourth semester.

The latest internship policy, which was added to the curriculum in 2024, includes an optional six-month industrial internship in the sixth semester. Students attending this internship are exempted from regular sixth-semester classes and can instead attend 4 mandatory courses online. The internship accounts for 13.5 credits for the semester.

The students additionally need to acquire 60 activity points based on academic, non-academic, and societal participation.

Sl	Internship	Semester	Period	Period
1	Internship 1	After semester 2	April - May	3 weeks
2	Internship 2	After semester 4	April - May	1 month
3	Internship	During semester 4	January - June	6 months (optional)

Socio Economic Background of the Student community

Most students admitted to the Polytechnic education system come from financially deprived families. Statistics reveal a considerable number of students are deprived of parental care, or from broken families or with a single surviving parent or even orphans. The students face considerable financial strains for their survival. They are deprived of most of the essentials including laptops.

Students are attracted to the system due to the presence of numerous colleges in the Government sector, where admission is based on merit and follows reservation norms. State Government allocate considerable funds to keep tuition fees at a minimum. A vast majority of

students avail scholarships through e-grants, SC ST Scholarship, Minority scholarship, etc. With a meager tuition fee of approximately Rs. 5000/- per year, 80% of students avail some form of scholarship in Government colleges. Additionally, 50% of seats in Government colleges are filled satisfying reservation norms.

Any attempt to uplift the education system had a direct benefit to the community by way of eradicating poverty.

Chapter 3
SWOT Analysis

Strength

Campus Recruitments

Diploma Engineers are in engineering candidates are in good demand nowadays. The demand is ever-growing due to the following reasons:

- **High retention ratio:** Most of the students come from financially constrained families. These financial constraints deter students from taking the risk of switching companies unless it is highly advantageous.

- **Trainable young brain:** A diploma in engineering is a professional education that molds students into an efficient workforce at the earliest stage of their youth. Any professionalism inculcated during this age group is long-lasting and demonstrates a high level of ethics.

- **Well-balanced curriculum:** The diploma curriculum maintains a 1:1 balance between theoretical knowledge and practical skills, whereas engineering education typically follows a 3:2 ratio. This focus on skills competency aligns precisely with industry needs

Recruitment typically occurs in the following modes

1. National-level pooled placements: Placements for national-level companies are conducted at pre-assigned locations coordinated by placement officers of government institutions. This benefits student of polytechnic colleges located in rural and hill stations.
2. State-level pooled placements: State-level placements are also conducted on a pooled basis if candidate requirements are high.
3. Local placements: Manpower requirements of local companies are catered to at the institution level.

This pooled placement drives not only help companies recruit the best candidates for their requirements but also provide students from rural locations with the same benefits as those from urban and reputed institutions.

- **Strong public network & governance** — Kerala has a sizable, state-run polytechnic system with many government and aided polytechnics managed under the Directorate of Technical Education (DTE), giving institutional stability and regulation.
- **Good basic infrastructure**
- **Policy support & planned funding** — DTE documents and Higher Education Departmnet plans show on going budgetary planning and initiatives to improve quality and employability.

Weakness

Though the Diploma in Engineering is a highly acclaimed program in terms of industrial demand, many factors raise concerns.

- **Quality of Placements:** Although Diploma Engineers are in high demand, the quality of placements for students remains a concern. The initial emoluments offered vary significantly:
  - **Cadence:** ₹1,30,000 per month (highest)
  - **Texas Instruments:** ₹80,000 per month
  - **Alpha Laval, Maruti Suzuki Ltd, etc.:** ₹50,000 per month
  - **L&T, MRF, software companies, etc.:** ₹25,000 to ₹30,000 per month
  - **Local companies:** ₹15,000 per month

  (Note: Only a few companies are mentioned for reference.)

  The volume of recruitments for higher packages is limited. Specifically, there was only one student recruited for Cadence and four for Texas Instruments. Skill competency remains a key issue impacting these opportunities.

- **Low Pass Percentage:** The state average success percentage of the program stands less than 50%. If you investigate the reason for the poor turn out, conventional teaching-learning process are to be blamed. The process nurture and evaluate only the cognitive domain where psycho-motor and affective domains are kept untouched.

- **Below par skill delivery:** Diploma in engineering education expects a 1:1 ratio of theory to practice ratio. Though the curriculum suggests that all theory that is taught is validated through practical. But skill education to the level expected by the curriculum is not delivered. The result is the creation of a considerable volume of students who are not meeting industrial requirements. An employability concern still holds the same as with other undergraduate courses.

- **Financial constraints:** Many of the students face severe financial hardship for their daily living. Access to personal technology essentials including laptops is beyond imagination. The students attend part-time jobs that are not related to their domain of study for a living. The majority attends catering houses, supermarkets, security agencies, for food delivery applications, etc. These jobs not only affect their studies, interactions with undesirable peers adversely influence their behaviour in the classrooms. This factor contributes to a considerable volume of dropouts.

- **Psychological Issues:** There are a considerable number of students who are facing medium to severe psychological strains due to factors that are beyond their control. The reason roots back to financial or parental, and lead to behavioural issues affecting their studies and is a significant reason for the higher number of dropouts.

- **Poor Language Skills:** Many of the students admitted to the program forms rural or from financially insecure parents. These students do not get any opportunity to enhance their language skills in the natural way,

- **Limited choice for the students to choose courses of their interest:** Students are admitted to diploma programs sometimes not on their choice, as demand for programs varies from year to year. Once students are admitted to a program, a Diploma in engineering offers limited opportunities for course diversification.
- **Interdisciplinary skill** sets are required nowadays for contemporary jobs. It is very important that recommendations
- **Limited opportunity** for interaction with the industry: AICTE model curriculum which forms the basis of forthcoming revision suggests considerable interaction with industry through internships, collaborative programs, training, and project work. But the non-availability of the required number of engineering industries to support the requirement possess a big challenge. Even the prevailing curriculum had courses like industrial training, project work, etc which need interaction with industries. These trainings are mostly offered by are private training centers as a paid internship to the students. These layer neither run any industry nor poses the required expertise to handle such training. The issue will be aggravated when the recommendations by the model curriculum to include the higher duration of internships. It is very important to bridge the gap between industries for improved quality of placements.
- **Employability gaps** Students sometimes lack up-to-date industry skills and soft skills, producing poor employer satisfaction and placement .
- **Curriculum industry mismatch:** Curricula lag fast-changing industry needs
- **Limited research and R&D exposure:** Diploma-level focus and limited industry-funded projects reduce opportunities for applied R&D experience for students.

Like any other learning institutions in the state, communication skills in the English language are still considered a major concern. Institution-level corrective measures are provided through finishing school programs. Fortunately, the students adapt to the industrial environment very quickly, and language skills are thus resolved.

Opportunities

Available options for qualification upgradations

 A recent strategic change in higher education policy is very favorable for diploma students, providing ample opportunities to upgrade their qualifications. AICTE now allows working professionals to acquire Diploma and BTech degrees through blended mode, giving diploma candidates the opportunity to pursue BTech while advancing their careers. Many recruiters on the list offer opportunities to pursue BTech with premium institutions like BITS in blended mode, as allowed by AICTE. With the implementation of the New Education Policy (NEP) in 2025, Diploma Education will be integrated into the mainstream like any other professional or non-professional education in the country.

Diploma holders can also opt for B.Tech courses through the Lateral Entry Scheme, allowing them to be admitted directly to the second year. AICTE-approved part-time B.Tech programs are also a good option for students.

With available facilities for consistent qualification upgrading while working, a Diploma in Engineering remains a preferred program for children of financially disadvantaged parents. The concerns point to reasons for under the employability of Diploma Engineers.

- **Stronger industry partnerships** — Growing collaboration between Polytechnic Colleges and industry (collaborative programs, internships, placements) can be expanded to update curriculum and improve job-readiness.
- **Skill-up skilling & short-term certification** — Integrating certificate programs (IoT, PLCs, CNC, AI basics) alongside diplomas to boost employability.
- **Leverage state digital/AI initiatives** — States support for AI/digital solutions and start up support offers possibilities to incubate student projects
- **Pathways to higher studies & lateral entry**.

Threats

- **Rapid technological change**: If curriculum and labs are not updated quickly, polytechnic risk   becoming obsolete.
- **Competition from private vocational players & up skilling platforms:** Private institutions, study abroad programs may draw students.
- **Policy & regulatory shifts:** Education policy changes could require rapid adaptation in course structures, affiliations, and funding.
- **Placement and perception issues:** Persistent weak placement outcomes can lower student interest and employer trust over time.

Chapter 5
Vision and Mission Statements

Vision

To become a center of excellence committed to moulding technologically competent and ethically motivated learners capable of contributing constructively to the sustainable development of the society.

Mission

- To ensure a viable academic ambience conducive to intellectual growth and skill acquisition.
- To effect a symbiotic relationship with the industry and the institute.
- To infuse a sense of personal integrity, self-reliance and civic responsibility.
- To inculcate entrepreneurship skills and leadership qualities in the learners through a culture of innovation and excellence.

Chapter 6
Achievements – last 10 years

1. **NBA Accreditation**
   Department of Computer Engineering, Department of Chemical Engineering and Department of Electrical and Electronics Engineering got NBA accreditation.
2. **Patents**
   Two patents were generated.
3. **Start ups**
   More than 10 Alumni startups
4. **Fully Functional Containing Education Cell**
   CEC is fully functional throughout the period. Almost 1000 enrollments in various courses annually.
5. **Fully functional Industry Institute Partnership Cell (IIPC)**
   Ongoing IIPC in sustainable mode.
6. **Fully functional Entrepreneurship Management Development Cell (EMD)**
   Ongoing EMD Cell in sustainable mode.
7. **Fully functional Bosh Rexroth Lab**
   Ongoing Bosh Rexroth Instrumentation Lab in sustainable mode.
8. **Blue star Refrigeration and Air-conditioning Lab**
   Established Blue star Refrigeration and Air-conditioning Lab under CSR initiative.
9. **Additional batch on Civil engineering for Hearing Impaired Students are in operational**
10. **100 % placements in all programs.**
11. **Strong Alumni Connect programs**

Chapter 7
Strategic Objectives and Outcomes

Objectives

1. **Academic Excellence:** Introduce contents beyond curriculum, digital learning, and faculty development programs.
2. **Skill Development** – Establish advanced labs, skill development centers, and short-term certification courses in emerging fields.
3. **Industry Collaboration** – Strengthen partnerships with industries for internships, and collaborative projects.
4. **Innovation & Entrepreneurship** – Promote start-up incubation, hackathons, and student-led projects.
5. **Infrastructure Development** – Upgrade classrooms, laboratories, libraries, and campus facilities with smart technology.
6. **Sustainability Initiatives** – Implement green campus practices including renewable energy, waste management, and water conservation.
7. **Community Engagement** – Conduct extension activities, skill training for local communities, and awareness programs.

Expected Outcomes

- Increased employability and entrepreneurial ventures among studen.
- Recognition as a leading polytechnic in academic excellence.
- Strong alumni and industry network for mentoring and placements.
- Contribution to regional and national development through technology-driven solutions.

Chapter 6
Academic Master Plan

Proposals at a glance

1. Academic autonomy leading to academic excellence.

2. 100% accreditation to academic excellence.

3. Skill Development – Establish advanced labs, skill development centers to run short-term certification courses in emerging fields.

4. Industry Collaboration – Strengthen partnerships with industries for internships, and collaborative projects.

5. Strengthening of Library and reprographics.

6. Introduction of new academic programs.

7. Enhancement of Academic Infrastructure.

8. Up gradation of hostel facilities in campus.

9. New sports pavilion and facilities.

10. Enhancing in campus security and surveillance.

1. Academic autonomy leading to academic excellence

With 75 years of existence as one of the oldest and most prominent institutions in the country, Government Polytechnic College must continue to evolve as an institution of excellence, as envisaged in its vision statement. This can be achieved only if academic autonomy is granted to the institution. Vision 2031 emphasizes the need for the institution to become autonomous. The key benefits leading to academic excellence through autonomy are listed below.

1. **Curriculum relevance & faster updating** — GPC Kalamassery being autonomous institutes can design and update syllabus and electives quickly to reflect new technologies and local industry needs, improving employability of our students.

2. **Flexible teaching & assessment** — The institution will be able to adopt continuous evaluation, project-based assessment, internships and outcome-based education models rather than a single end-semester exam. This improves skill mastery and practical learning.
3. **Stronger industry collaboration & placements** — Autonomy simplifies partnership for sponsored labs, short-term certification programs and joint projects with industry, making it easier to run add-on skill courses that attract industry hiring.
4. **Academic innovation & elective courses** — The college can introduce niche diploma specializations, certifications, and value-added courses aligned to industrial clusters and start-up ecosystem.
5. **Improved governance & reputation** — Autonomy signals maturity and quality to students, employers and funding bodies; it can help attract better faculty and research/industry grants.

Pathway to Autonomy

1. **Curriculum & pedagogy:** Create a *Board of Studies* with industry members to redesign diploma curriculum, embed project/internship credits, and add elective certification programs aligned to employability.
2. **Assessment reform:** Adopt continuous internal assessment, practical/project evaluation, end-semester exam with strict adherence to NBA accreditation norms.
3. **Industry & placement cell upgrade:** Formalize industry partnerships, internship os apprenticeship pathways, and short up skilling programs for students for enhanced quality of placements.
4. **Quality assurance:** Strengthen Internal Quality Assurance Cell (IQAC), perform annual academic audits, and strict adherence to NBA norms.
5. **Resource planning:** Prepare a detailed financial model (additional administrative costs, exam conduct, and course development) and identify state funding, corporate CSR, and continuing education revenue streams for self-sustainability

2. 100% accreditation to academic excellence

Vision 2031 proposes that all programs be accredited by the NBA. Currently, the following programs are accredited up to **June 2026** and are due for reaccreditation in the **2025–26 academic year**:

1. Chemical Engineering
2. Computer Engineering
3. Electrical and Electronics Engineering

Proposed for accreditation during 2025-26

1. Automobile Engineering
2. Electronics and Communication Engineering
3. Civil Engineering.

Proposed for accreditation during 2026-27

1. Mechanical Engineering

3. Skill Development – Establish advanced labs, skill development centers to run short-term certification courses in emerging fields.

Need for Skill Development Initiatives

To keep pace with rapid technological advancements and evolving industry requirements, Government Polytechnic College, Kalamassery must strengthen its role in skill development. Establishing **advanced laboratories** and **dedicated skill development centers** will enable the institution to offer **short-term certification courses in emerging fields** such as Artificial Intelligence, Internet of Things (IoT), Electric Vehicles, Renewable Energy, Robotics, and Advanced Manufacturing. Additional skilling can help self sufficiency of departments.

Such initiatives will:

- Equip students with **industry-ready skills** beyond the regular curriculum.
- Provide **reskilling and up-skilling opportunities** for faculty, professionals, and unemployed youth.
- Enhance the institution's reputation as a **center of excellence in applied technology and innovation**.
- Strengthen industry - academia partnerships by aligning training programs with **current and future workforce demands**.

Proposed Skill initiatives

The following center of excellence in skilling are proposes as part of Vision 2031

Sl	Center Name	Proposed year of Establishment	Department	Approximate cost of establishment	Mode
1	Center of Excellence in Prototyping and Non Destructive Testing	2025-26	IIPC and Mechanical Engineering	Rs. 1 crore	Government funded /PPP
2	Center of Excellence in Electric Mobility & EV Technologies	2026-27	IIPC and Automobile Department	Rs. 50L	Alumni /PPP
3	Museum of Vintage cars	2025-26	Automobile Department	Rs. 50L	Alumni /PPP
4	Reinstate Center for Engineering Education Program (IMPACT)	2025-26	Electronics and Communication Engineering Department	Rs. 5L	Generated revenue
5	Centre of excellence in Plant Lipids	2027-28	EMD and Chemical Engineering	Proposal is to be prepared	PPP
6	Center of Excellence in Energy Auditing & Management	2026-27	EMD and Electrical and Electronics Engineering	Proposal is to be prepared	PPP
7	Center of Excellence in Block chain & Web 3.0 Technologies	2027-28	EMD and Computer Engineering	Proposal is to be prepared	PPP
8	Center of Excellence in Sustainable Construction & Green Building Technology	2027-28	IIPC and Civil engineering	Proposal is to be prepared	PPP

IIPC - Industry institute Partnership Cell
EMD – Entrepreneurship and Management development Cell
PPP – Public Private Partnership

4. Industry Collaboration – Strengthen partnerships with industries for internships, and collaborative projects.

Campus Industrial Park at Government Polytechnic College, Kalamassery

As part of Vision 2031, Government Polytechnic College, Kalamassery proposes the establishment of a **Campus Industrial Park** under the **Public–Private Partnership (PPP) model**, in accordance with the prevailing Government Orders on land utilization by educational institutions. The college will provide suitable land within the campus for the development of the Industrial Park, while industries and private partners will invest in infrastructure, advanced laboratories, training facilities, and incubation centers.

The Industrial Park will function as a **collaborative platform** for industries, start-ups, faculty, and students, enabling skill development, applied research, and innovation. Industry partners will establish **skill development centers, sponsored laboratories, and Centers of Excellence**, while the institution will ensure academic support, student engagement, and coordination with Industries.

1. Vision & Objectives

- Foster **industry - academia collaboration** by bringing industries onto the campus.
- Provide **real-time exposure** for students to industrial practices.
- Act as an **incubation and innovation hub** for start-ups and MSMEs.
- Generate **consultancy, training, and revenue** for the institution.

2. Proposed Components of the Industrial Park

1. **Skill Development & Training Centers**

- Industry-led certification courses in AI, EVs, Automation, Civil Tech, Renewable Energy, etc.
- Joint training programs recognized by industries.

2. **Industry Labs & Centers of Excellence**

- Each department can host industry-sponsored labs .
- Collaborative R&D projects.

3. **Incubation & Startup Zone**

- Space for student/faculty start-ups.
- Support through Kerala Start-up Mission (KSUM) & MSME funding.

4. **Testing & Consultancy Facilities**

- Civil: Material testing labs for PWD/contractors.
- Electrical: Energy auditing and renewable projects.
- Computer: Cybersecurity, software testing.
- Revenue-generating consultancy for local industries.

5. **Prototype & Fabrication Units**

- 3D printing, CNC, and electronics prototyping labs.
- Joint student–industry product development.

3. Implementation Strategy

1. **Stakeholder Engagement**

- Partner with **industries, research bodies, and government agencies** (KINFRA, KSIDC, KSUM, CII).
- Sign **MoUs** with companies for labs, internships, and sponsorships.

2. **Infrastructure Development**

- Identify land on campus for Industrial Park.
- Create modular units that can be leased to industries/start-ups.
- Develop common facilities: conference halls, co-working spaces, testing labs.

3. **Governance & Management**

- Establish a **Campus Industrial Park Cell (CIPC)** with representation from faculty, industry, alumni, and government.
- Self-sustaining model: revenue from training, consultancy, and leased spaces.

4. **Phased Rollout**

- **Phase 1 (Years 1–2):** Establish industry-sponsored labs and skill centers.
- **Phase 2 (Years 3–4):** Launch incubation/start-up hub and consultancy services.
- **Phase 3 (Years 5+):** Expand into a full-fledged Industrial Park with multiple industry partners.

4. Expected Outcomes

- Optimal utilization of resources.
- Enhanced **employability** of students through real-time industry exposure.
- Strong **industry - academia partnerships**.
- A steady stream of **student start-ups and innovations**.
- Additional **revenue generation** for the institution.
- Recognition as a **model for polytechnic** education in the country under **Vision 2031.**

5. Strengthening of Library and reprographics

The library of Government Polytechnic College, Kalamassery has been a vital academic resource since the inception of the institution. It supports students, faculty, and researchers by providing access to books, journals, and reference materials. However, with rapid advancements in technology and changes in academic requirements, there is an urgent need to **modernize and strengthen the library** to meet the aspirations of Vision 2031.

2. Current Challenges

- **Limited Digital Resources**: Predominantly print-based collections with inadequate access to e-books, online journals, and databases.
- **Insufficient Infrastructure**: Reading spaces, seating capacity, and computer terminals are inadequate compared to the student strength.
- **Obsolete Collections**: Many textbooks and reference materials are outdated, lacking coverage of emerging technologies and modern practices.
- **Restricted Accessibility**: Limited opening hours and absence of remote access facilities reduce the utility of the library.

3. Need for Strengthening the Library

Strengthening the library is essential to:

- Provide **updated learning resources** in line with curriculum revision, NBA accreditation, and industry standards.
- Support **outcome-based education** and research through access to e-journals, online databases, and digital libraries.
- Enhance **student-centric learning** by creating collaborative learning spaces, discussion rooms, and digital corners.

- Ensure **equitable access** for all students, including those from disadvantaged backgrounds, through digital and remote facilities.
- Reinforce the library's role as a **knowledge hub** and innovation center within the campus.

4. Proposed Interventions

1. **Modern Infrastructure**

- Separate library block with Wi-Fi-enabled reading zones, and discussion rooms.
- Provision of computer terminals, digital kiosks.

2. **Digital Library Development**

- Subscription to e-journals (IEEE, Springer, Elsevier, ASCE, etc.) and e-books.
- Integration with national digital repositories (NDLI, NPTEL, SWAYAM).
- Remote access through a cloud-based Library Management System.

3. **Collection Upgradation**

- Regular procurement of latest textbooks, reference books, and competitive exam materials.
- Focus on emerging areas like AI, Data Science, Renewable Energy, Sustainable Construction, and Industry 4.0.

4. **Automation & Smart Services**

- Implementation of RFID-enabled issue/return systems.
- Deployment of an Integrated Library Management System (ILMS).

5. **Skill & Knowledge Support**

- Organizing library orientation, digital literacy workshops, and research support sessions.
- Providing access to plagiarism detection and citation management tools.

5. Expected Outcomes

- Enhanced student learning experience and academic performance.
- Improved faculty research and publication support.
- Strengthened NBA accreditation and Vision 2031 goals.
- Increased employability through access to latest knowledge resources.
- Establishment of the library as a **modern knowledge hub** of the institution.

6. Introduction of new academic programs

The institution seeks to move beyond conventional teaching–learning practices and recognizes the need to regularly upgrade as well as introduce contemporary programs. Autonomy provides reasonable flexibility in revising existing programs; however, launching new programs relevant to technological advancements is equally essential. By doing so, the institution aims to remain at the forefront of polytechnic education in India and emerge as a hub of excellence.

By 2031, the institution envisages starting three additional contemporary programs.The following academic infrastructure up gradation is needed as part of Vision 2031.

7. Enhancement of Academic Infrastructure

The growing student intake and the introduction of new programs demand modern classrooms, well-equipped laboratories, and flexible learning spaces. Digital learning platforms, smart classrooms, and simulation labs have become indispensable for skill-based education. To remain relevant and industry-aligned, GPC Kalamassery must continuously upgrade its academic infrastructure with advanced teaching aids and research facilities.

8. Up gradation of hostel facilities in campus

The existing Periyar Hostel on the campus has been found to have structural issues, and a report has been sought from the PWD. As a result, the hostel intake has been reduced, even though the demand for accommodation remains very high. Moreover, the contemporary programs proposed in this document will require adequate residential facilities, as such programs are expected to attract students from diverse regions. Therefore, thorough maintenance or reconstruction of the hostel facility has become an urgent necessity.

9. New sports pavilion and facilities

Government Polytechnic College Kalamassery has the privilege of owning a spacious ground within its campus, a facility that is increasingly rare to find within the city limits. Over the years, this ground has not only catered to the sporting and recreational needs of students but has also been widely utilized by the local community. The facility is frequently rented out to professional sports clubs and corporate organizations, thereby contributing to generate revenue, the institution's outreach and community engagement.

Upgrading this ground with modern amenities—such as synthetic tracks, improved seating arrangements, proper lighting, and multipurpose courts—will significantly enhance its utility.

For students, it will provide a professional environment to pursue sports and physical fitness, complementing their academic development. For the wider public, it will serve as a valuable community asset, reinforcing the institution's role as a hub for both education and social well-being. Thus, the enhancement of this facility will yield benefits that extend far beyond the campus, strengthening the bond between the college and the society it serves.

10. Enhancing in campus security and surveillance.

Safeguarding instituions reputation requires not only academic excellence but also a safe and secure learning environment. In the wake of a recent drug-related case, it has become evident that enhancing campus security and surveillance is both urgent and essential.

1. Ensuring student safety and well-being

The primary responsibility of any educational institution is to ensure the safety of its students. Strengthening surveillance systems and campus security will deter anti-social activities and provide a safe atmosphere conducive to learning.

2. Protecting the Institution's Reputation

As a reputed institution, even isolated incidents can damage the credibility of the college. A robust security system demonstrates the institution's commitment to discipline, safety, and zero tolerance towards substance abuse.

3. Preventing Recurrence of Unlawful Activities

Drug abuse and related activities pose severe risks to the academic environment. Installing CCTV cameras, access control systems, and regular monitoring can prevent the recurrence of such incidents, while ensuring accountability.

4. Building confidence among parents and stakeholders

Parents entrust their children to the institution with the expectation of a safe and nurturing environment. Enhanced security measures will reassure parents, industry partners, and the wider community of the college's proactive stance against unlawful practices.

5. Supporting Counselling and Rehabilitation Efforts

Security measures, when combined with awareness campaigns, counseling services, and peer-support initiatives, can play a preventive role. Surveillance ensures early detection, while rehabilitation measures address the root cause of the problem.

6. Aligning with Government and Social Responsibility

As a government institution, GPC Kalamassery has a duty to uphold state and national policies on drug-free campuses. Enhancing security aligns with broader social responsibility and reinforces the college's role as a model institution.

Chapter 9
Infrastructure Master Plan

Summary of Proposals

Sl.	Infrastructure details	Approximate cost	Mode
1	Asset Maintenance of Main building	Rs. 4 Crore	Govt. Funding
2	Asset Maintenance/ reconstruction of Periyar Hostel Building	Rs. 11 Crore	Govt. Funding
3	New Administrative cum Library Complex	Rs. 11 Crore	Govt. Funding
4	Asset Maintenance of Pamaba Building	Rs. 6 Crore	Govt. Funding
5	Maintaining and upgrading infrastructure facilities of Automobile department.	Rs. 6 Crore	Govt. Funding
6	Construction of new academic block for Mechanical Engineering Department.	Rs. 11 Crore	Govt. Funding
7	Phase 2 construction of Civil Engineering block.	Rs. 6 Crore	Govt. Funding (pending for approval)
8	Completion of Auditorium.	Rs. 11 Crore	Govt. Funding (pending for approval)
9	Asset Maintenance of Electrical engineering laboratory block	Rs. 2 Crore	Govt. Funding
10	Asset Maintenance of Workshop buildings	Rs. 10 Crore	Govt. Funding
11	Construction of new academic block for Electrical and Electronics Engineering Department.	Rs. 11 Crore	Govt. Funding
12	New canteen building.	Rs. 3 Crore	Govt. Funding
13	Up gradation of sports facility	Rs. 10 Crore	Govt. Funding
14	Setting up campus industrial park	Utilizing land	Collaborative program/PPP

1. ## Asset maintenance of Main Building

Being 75 years old, main academic block need frequent maintenance. Asset maintenance is required to maintain the heritage of the infrastructure

Sl.	Infrastructure details	Approximate cost	Mode
1	Asset Maintenance of Main building	Rs. 4 Crore	Govt. Funding

2. ## Asset maintenance/ reconstruction of Periyar Hostel

The existing Periyar Hostel on the campus has been found to have structural issues, and a report has been sought from the PWD. Therefore, thorough maintenance or reconstruction of the hostel facility has become an urgent necessity.

Sl.	Infrastructure details	Approximate cost	Mode
2	Asset Maintenance/ reconstruction of Periyar Hostel Building	Rs. 11 Crore	Govt. Funding

3. ## Construction of Administrative cum library Complex

The existing library, located in the main block, is currently inadequate to meet the needs of the growing student intake and the expanding scope of academic programs. The limited space and facilities restrict its ability to provide a conducive learning environment. To address this, it is proposed to construct a new, dedicated library block equipped with modern infrastructure and advanced digital facilities. The new library will not only provide adequate seating and resource capacity but will also integrate e-learning platforms, digital repositories, and collaborative study spaces, thereby transforming it into a knowledge hub for both students and faculty.

In addition, the administrative space currently functioning in the main block is insufficient to cater to the present requirements as well as the proposed upgradations outlined in this vision document. Combining the library and administrative functions within a single, purpose-built facility will not only optimize the

Sl.	Infrastructure details	Approximate cost	Mode
3	New Administrative cum Library Complex	Rs. 11 Crore	Govt. Funding

4. ## Asset maintenance of Pamaba Building

The existing Pamba Building currently houses the GFID, Continuing Education Cell, IIPC, IoC, EMD, Placement Cell, and several other key units. However, the building requires urgent attention and comprehensive maintenance under the Asset Maintenance scheme to ensure its continued safe and efficient functioning

Sl.	Infrastructure details	Approximate cost	Mode
4	Asset Maintenance of Pamaba Building	Rs. 6 Crore	Govt. Funding

5. Asset maintenance and enhancement of infrastructure facilities of Automobile Block

The existing Automobile Department building is in urgent need of maintenance. In addition, the current infrastructure is inadequate to support the functioning of the department, particularly in view of the enhanced student intake. At present, only two classrooms are available in the block, resulting in a shortage of one classroom. Furthermore, essential facilities such as dedicated faculty rooms, HOD room and drawing halls are also lacking.

Sl.	Infrastructure details	Approximate cost	Mode
5	Maintaining and upgrading infrastructure facilities of Automobile department.	Rs. 6 Crore	Govt. Funding

6. Construction of New Mechanical Engineering Block

The existing Mechanical Engineering Department is currently functioning in the main building with limited facilities. To meet the requirements of accreditation processes and to support the enhanced student intake, the development of dedicated infrastructure has become essential. A separate block equipped with classrooms, a seminar hall, faculty rooms, an HOD office, and a drawing hall is required to ensure the department's effective functioning and academic growth.

Relocating the Mechanical Engineering Department to a new block will also create an opportunity to repurpose the vacated space in the main building. This space can be effectively utilized by the Chemical Engineering Department, thereby addressing its pressing infrastructure requirements and ensuring optimal utilization of available resources.

Sl.	Infrastructure details	Approximate cost	Mode
6	Construction of new academic block for Mechanical Engineering Department.	Rs. 11 Crore	Govt. Funding

7. Construction of Phase 2 of Civil Engineering Block

The construction of the second phase of the Civil Engineering block is still pending sanction. A detailed proposal for this phase has already been prepared and is currently in the approval pipeline. Completion of this phase is essential to provide adequate classrooms, laboratories, and faculty facilities.

Sl.	Infrastructure details	Approximate cost	Mode
7	Phase 2 construction of Civil Engineering block.	Rs. 6 Crore	Govt. Funding (pending for approval)

8. Completion of Auditorium complex

The construction of the auditorium complex is currently halfway completed, with nearly ₹6 crore already expended. However, the completion of the facility has been significantly delayed due to a shortage of funds. The unfinished structure is at risk of deterioration, resulting in potential wastage of the substantial investment already made. To safeguard the existing expenditure and to provide a fully functional auditorium for academic, cultural, and institutional activities, it is imperative that the project be completed at the earliest. A detailed proposal for the completion of the auditorium complex is already in the pipeline and awaits approval and funding.

Sl.	Infrastructure details	Approximate cost	Mode
8	Completion of Auditorium.	Rs. 11 Crore	Govt. Funding (pending for approval)

9. Asset Maintenance of Electrical Engineering Laboratory block.

The Electrical Engineering laboratory requires urgent maintenance to ensure the safety of equipment and students.

Sl.	Infrastructure details	Approximate cost	Mode
9	Asset Maintenance of Electrical engineering laboratory block	Rs. 2 Crore	Govt. Funding

10. Construction of New Electrical Engineering Block

The existing Electrical and Electronics Engineering Department is currently functioning in the main building with limited facilities. To meet the requirements of accreditation processes and to support the enhanced student intake, the development of dedicated infrastructure has become essential. A separate block equipped with classrooms, a seminar hall, faculty rooms, an HOD office, and a drawing hall is required to ensure the department's effective functioning and academic growth.

Relocating the Electrical and Electronics Engineering Department to a new block will also create an opportunity to repurpose the vacated space in the main building. This space can be effectively utilized by the Chemical Engineering Department, thereby addressing its pressing infrastructure requirements and ensuring optimal utilization of available resources.

Sl.	Infrastructure details	Approximate cost	Mode
6	Construction of new academic block for Electrical and Electronics Engineering Department.	Rs. 11 Crore	Govt. Funding

11. Asset Maintenance of Workshop facilities.

The workshop facilities are currently functioning in heritage buildings, which require urgent restoration and maintenance.

Sl.	Infrastructure details	Approximate cost	Mode
11	Asset Maintenance of Workshop buildings	Rs. 10 Crore	Govt. Funding

12. Setting up new canteen facility.

The existing canteen/cafeteria facility on campus is insufficient to meet the needs of the current student population. To provide an adequate dining space, the construction of new cafeteria facility is essential.

Sl.	Infrastructure details	Approximate cost	Mode
12	New canteen building.	Rs. 3 Crore	Govt. Funding

13. Up gradation of sports facilities.

Upgrading this ground with modern amenities—such as synthetic tracks, improved seating arrangements, proper lighting, and multipurpose courts—will significantly enhance its utility. For

students, it will provide a professional environment to pursue sports and physical fitness, complementing their academic development.

Sl.	Infrastructure details	Approximate cost	Mode
13	Up gradation of sports facility	Rs. 10 Crore	Govt. Funding

14. Setting up Campus Industrial Park.

The Industrial Park will function as a collaborative platform for industries, start-ups, faculty, and students, enabling skill development, applied research, and innovation. Industry partners will establish skill development centers, sponsored laboratories, and Centers of Excellence, while the institution will ensure academic support, student engagement, and coordination with Industries.

Sl.	Infrastructure details	Approximate cost	Mode
14	Setting up campus industrial park	Utilizing land	Collaborative program/PPP

Chapter 9
Conclusion

This Vision Document reflects our institutional commitment to excellence in technical education and holistic student development. With the combined efforts of faculty, students, alumni, industry, and community stakeholders, Government Polytechnic College, Kalamssery shall continue its journey towards becoming an institution of excellence with national repute.

17.09.2025
Kalamassery

Government Polytechnic College

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