

**GOVERNMENT COLLEGE OF ENGINEERING, AURANGABAD**

**INSTITUTIONAL DEVELOPMENT PLAN**

**(2017-2027)**



## **Institutional Basic Information**

Name and address of the institution : Government College of Engineering, Railway Station Road, Aurangabad, Maharashtra, India, 431005

Year of establishment : 1960

AICTE approval : No. Western/1-2815712978/EOA/2016

Type of Institution : Government

Status of Institution : Autonomous Institution Status by UGC and affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Name and Designation of Head of the Institution : Dr. U. J. Kahalekar

Government College of Engineering was established in 1960. Institute runs 6 undergraduate full-time programmes, 7 post graduate full-time programmes, 4 undergraduate part-time programmes, 8 post graduate part-time programmes and 4 Ph.D programmes.

The institute has been granted autonomous status since 2006. The institute has received National Education Leadership Outstanding Engineering Institute (West) Award by Lokmat on 13 Feb 2014 and National Education Award 2014 by ABP Maza on 27 June 2014. Times of India

With this status GECA looks forward to excel in engineering education and research with its vision statement-

***In pursuit of global competitiveness, the institute is committed to excel in engineering education and research with concern for the environment and society.***

Engineering education is progressing through many revolutions. Considering availability of on-line educational platforms, educational reforms are inevitable. Research is basic component growth and progression. With visionary BoM, GECA is committed to excel in engineering education and research. All stake holders of institute, students, faculty and staff, alumni, industry, institute will come together for institute building and self-development.

The Institutional Strategic Plan has been formulated for overall development of institute in line with vision and mission of the institute. Ten years Institutional Development Plan has been prepared through brain storming sessions. The proposed IDP will be implemented in a systematic manner over the next decade for following six components.

- Academic Excellence
- Scholastic Development and Research & Development

- Faculty Development
- Student Development and Placement/ Entrepreneurial Competence
- Facility Development
- Administrative Reforms

Challenges are integral part of systems. To overcome challenges, flexibility in working is expected. Institute was granted Academic Autonomy in 2006. With this autonomy few challenges could be overcome. BoM, Academic Council were formed and few challenges were converted into strengths. Administrative reforms made paradigm shifts in governance; Academic Reforms shaped the processes leading to student friendly interface. Faculty development, facility development is focused. Research and Development is encouraged. Institute is strengthened in many aspects as follows, of course in spite of these supports and flexibility, few challenges still exist.

### **Strengths of the institute**

- Autonomous institute
- Qualified faculty studied in premier institutes like IIT and NIT
- One of the Premier Engineering institutes in Maharashtra
- Meritorious student input from all over Maharashtra
- Dedicated faculty and staff with good team spirit
- Transparency in governance
- Concerted efforts for faculty development
- Recognized Research Centers
- Funding from AICTE, TEQIP, DRDO, UGC etc. for research and development
- Use of IT tools for promoting technology enabled learning (TEL)
- Scope for industry – academia collaborations through research, internship, CEP etc.
- Close interaction with field through testing, consultancy and research
- Collaboration with various organizations for academic activities
- Active alumni networking for corpus, industry projects, placement etc.
- Well placed alumni in government and reputed private organizations
- Involvement of students and faculty in large number of social activities

### **Challenges**

- Deficiency of faculty at various positions
- Dependence on PWD for infrastructure, development and maintenance

### **Short term goals**

- Accreditation of all UG and PG programmes
- Undertake institutional reforms and effective governance
- Modernize existing laboratories and teaching-learning infrastructure
- Establish an Incubation center
- Increase employability of graduates through soft skill training.

- Promote the spirit of entrepreneurship, industry and environmental awareness
- University approval to research center of CSE department
- Enhance liaison with industry through collaborative activities
- Promote R & D activities useful to society and industry

### **Long term goals**

- Joint industry-academia collaborations for research activities
- Self-reliance through financial autonomy
- Acquiring 150 Acres of land for Deemed University
- Achieve deemed university status
- Construction of new academic and administrative building
- Construction of Boys Hostel with 250 capacity and two storied parking place

All goals /plans are student centric. Student support systems will be enhanced with following mission

- Provide conducive environment for academic excellence in engineering education.
- Enhance research and development along with promotion to sponsored projects and industrial consultancy.
- Foster development of students by creating awareness for need of society, sustainable development and human values.

Strategic Plan explores the experience and strength developed for past 60 years to achieve the goals. In particular, the strategic plan proposes to improve the infrastructure of the institute, research facilities, machines, equipments, Software, Computing facility, faculty training and collaborations with industry facilities for students *etc.* The IDP is prepared for the duration 2017-2027. A summary of the proposed activities with the proposed timelines, budgetary provisions are given as follows

## Institutional Development Plan (2017-2027)

### Ten Years Institutional Developmental Plan:

| S.No | Activity   | 2017-2019                           | 2019-2021                                       | 2021-2023   | 2023-2025  | 2025-2027          |
|------|--|-------------------------------------|---|---|--|--------------------|
| 1    | Removal of Obsolete equipments, Repair and maintenance of existing not working | ↔                                   |   |   |  |                    |
| 2    | Increase in intake of UG Program   |                                     | Mechanical-60 to 120 students<br>↔              |   |  |                    |
| 3    | Starting of Integrated Five year Program                                       |                                     | Electronics-1<br>↔                              |   |  |                    |
| 4    | Starting of New PG Program   |                                     | Mechanical -1,<br>Electronics-1<br>↔            | Civil-1,<br>Mechanical -1<br>Electronics-1,<br>CSE-1, IT-1<br>↔ | Mechanical -1<br>Electronics-1<br>↔                                  |                    |
| 5    | Establishment of Research Centre/Laboratory/Incubation Centre                  | Electrical-1,<br>Electronics-1<br>↔ | Mechanical -1,<br>Electrical-1, IT-1<br>↔       | Applied<br>Mechanics-1,<br>CSE-1<br>↔                           | Civil-1,<br>Mechanical -1,<br>CSE-1, IT-1<br>↔                       |                    |
| 6    | Centre of Excellence   |                                     | Civil-1,<br>Mechanical -1,<br>Electrical-1<br>↔ | Mechanical -1,<br>Electrical-1,<br>Electronics-1<br>↔           | Applied<br>Mechanics-1,<br>Mechanical -1,<br>Electrical-1, IT-1<br>↔ | Mechanical -1<br>↔ |
| 7    | Acquisition of 150 acres of Land for proposed Deemed University status         | ↔                                   | ↔   |   |  |                    |
| 8    | Acquiring Deemed University status and Establishment of University             |                                     |   | ↔   | ↔  | ↔                  |

### Yearwise budget required for ten year IDP (In Lakhs)

| Activity   | 2017-18    | 2018-19        | 2019-20        | 2020-21        | 2021-22        | 2022-23   | 2023-24        | 2024-25        | 2025-26        | 2026-27        | Total          |
|--|------------|----------------|----------------|----------------|----------------|---|----------------|----------------|----------------|----------------|----------------|
| Buildings/Refurbishment/Repairs/Beautification/Canteen |            | 964            | 964            | 1370           | 1370           | 1704  |                |                |                |                | 6372           |
| Renovation of Existing Building                        |            | 500            | 500            |                |                |   |                |                |                |                | 1000           |
| Equipment/Computers/Softwares/Machinery/Books/E-       | 795.5      | 1007.5         | 4187.5         | 4252.5         | 3068.75        | 2603.75   | 3558.75        | 3673.75        | 4911.5         | 4841.5         | 32901          |
| Training of faculty/staff, MoU, Industrial Interaction | 182.5      | 182.5          | 182.5          | 182.5          | 182.5          | 182.5   | 182.5          | 182.5          | 182.5          | 182.5          | 1825           |
| New Post Creation                                      |            | 183.89         | 183.89         | 354.56         | 354.56         | 545.34  | 545.34         | 594.23         | 594.23         | 663.52         | 4019.56        |
| <b>Total</b>   | <b>978</b> | <b>2837.89</b> | <b>6017.89</b> | <b>6159.56</b> | <b>4975.81</b> | <b>5035.59</b>  | <b>4286.59</b> | <b>4450.48</b> | <b>5688.23</b> | <b>5687.52</b> | <b>46117.6</b> |
| Establishment of Deemed University                     |            |                |                |                |                | Block Grant of Rs. 50000 Lakhs will be spent for Establishment of Deemed University |                |                |                |                |                |

| Department Wise list of Equipment/Machineries/Computers/Softwares/Furniture/Books/e-Journals for Ten Years Institutional Developmental Plan |              |              |               |               |               |                |                |                |                |               |               |              |
|---|--------------|--------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|---------------|---------------|--------------|
| S.No.   | Dept         | 2017-18      | 2018-19       | 2019-20       | 2020-21       | 2021-22        | 2022-23        | 2023-24        | 2024-25        | 2025-26       | 2026-27       | Total        |
| 1   | Civil        | 90           | 210           | 150           | 180           | 200            | 220            | 220            | 220            | 220           | 220           | 1930         |
| 2   | AM           | 25           | 25            | 25            |               |                |                |                | 150            | 150           | 100           | 475          |
| 3   | Mechanical   | 172          | 230           | 3135          | 3135          | 1950           | 1950           | 2925           | 2925           | 4250          | 4250          | 24922        |
| 4   | Electrical   | 50           | 50            | 100           | 100           | 100            | 100            | 50             | 50             |               |               | 600          |
| 5   | Electronics  | 25           | 75            | 200           | 50            | 50             | 50             | 50             | 50             | 50            | 50            | 650          |
| 6   | CSE&MCA      | 75           | 75            | 150           | 145           | 205            | 200            | 155            | 150            | 150           | 135           | 1440         |
| 7   | IT           | 40           | 20            | 25            | 40            | 40             | 25             | 115            | 95             | 75            | 70            | 545          |
| 8   | Library      | 250          | 275           | 325           | 525           | 470            |                |                |                |               |               | 1845         |
| 9   | Workshop     | 26           | 26            | 60            | 60            | 40             | 40             | 25             | 20             |               |               | 297          |
| 10  | App. Chemist | 7.5          | 7.5           | 7.5           | 7.5           | 7.5            | 7.5            | 7.5            | 7.5            | 7.5           | 7.5           | 75           |
| 11  | App. Physics | 3.5          | 3.5           | 6             | 6             | 6.25           | 6.25           | 6.25           | 6.25           | 9             | 9             | 62           |
| 12  | Mathematics  | 23.5         | 3.5           | 4             | 4             |                |                |                |                |               |               | 35           |
| 13  | Gymkhana     |              |               |               |               |                |                |                |                |               |               | 0            |
| 14  | COE Cell     | 8            | 7             |               |               |                | 5              | 5              |                |               |               | 25           |
|   | <b>Total</b> | <b>795.5</b> | <b>1007.5</b> | <b>4187.5</b> | <b>4252.5</b> | <b>3068.75</b> | <b>2603.75</b> | <b>3558.75</b> | <b>3673.75</b> | <b>4911.5</b> | <b>4841.5</b> | <b>32901</b> |

The targets of the six identified components of the Strategic Plan and achievements are presented in the following sections.

### Academic Excellence

The institute plans to create a better ambience for academics by providing greater flexibility to improve performance of the students and faculty members while continually strengthening the academic facilities.

- Updation of curriculum of all UG programs as per CBCS pattern
- Academic audit of curriculum and question papers by IITs/NITs for enhancement of its relevance and effectiveness
- Implementation of 5S-level-2 in all laboratories
- Procurement of equipment for up gradation of laboratories
- Collaborations to be established/enhanced with Auto cluster, Electronic cluster and industrial associations
- Co-teaching by adjunct faculty from industries
- Implementation and monitoring of modified student feed-back system
- Honors and minors certifications

### Scholastic Research and Development

Institute plans to improve the research facilities for enhancing the number of research scholars to achieve the targets set for raising the quantum of research output and improving its quality,

- Register for National Digital Library coordinated by IIT Kharagpur and upload at least 05 projects/articles
- Register and coordinate at least two GIAN courses
- Each department to apply for at least one sponsored research project from agencies like DST, BRNS, DRDO, UGC, AICTE
- Establish collaborations with international universities for joint research projects, student exchange, faculty exchange, joint publications

- Increase the number of faculty with Ph.D. qualification to 80%
- Generate at least 5 lakhs of IRG through testing and consultancy in CSE/IT departments

### **Faculty Development**

This institute recognizes human resources as the most important among the assets needed to realize its objectives. The human resource strategy of this plan is aimed at enhancing the strength of the human resources while giving it focus and improving its quality.

- All CAS promotions at institute level to be completed
- Reduce faculty vacancy positions
- Faculty performance appraisal system to be designed and implemented
- Teams of faculty members to visit at least five reputed international universities
- Funding for research and development

### **Student Development and Placement/ Entrepreneurial Competence**

The Institute has provided a platform for students to take up co-curricular and extra-curricular activities for all-round development. Overall development of the student is viewed as a prerequisite for employment.

- Identification of local industry, potential industry, employer industry
- Organizing meetings of industries to understand the industry expectation from graduates and postgraduates.
- Identify areas of collaboration
- Identification of weakness of students in cognitive and non cognitive domain by using standard tools
- Organizing training such as communication skills, presentation, ethics, negotiations skills, interview techniques etc
- Workshops/ seminars on different opportunities available in terms of job and higher studies Student Development and placement/entrepreneurial competence
- Organization of soft-skill training program , financial management
- Encouraged to participate in national level project competition/design competition conducted by IITs/NITs/INAE
- Encouraged for project in collaboration with industry

### **Facility Development**

This institute plans to upgrade all buildings/ construct new buildings and their surroundings and to create the necessary capacity in the hostels to provide accommodation to all students and research scholars.

- Landscape development
- Power of Rs. 50,000 to Principal for civil minor repair works
- Hostel and mess improvement
- Construction of new Academic and administrative building, Boys Hostel with 250 capacity and two storied parking place

## **Administrative Reforms**

A smooth entry-to-exit online process through MIS is available in this institute to handle student's academic progress. This has minimized the administrative overhead for faculty members. With the academic reforms, there is need to create additional posts. Presently the civil and electrical maintenance works and new works are carried out by PWD. It is necessary to establish the unit for these works and requisite supporting staff shall be appointed.

- Modifications in administrative setup as per requirement

## **Targets achieved**

The achievements of this institute are listed below

- Implementation of CBCS / Updation curriculum of all UG and PG programs as per CBCS pattern
- Implementation of 5S-level-2 in all laboratories
- Student Development and placement
- NDF and QIP research centre for Civil Engineering, Electrical Engineering and Electronics & Telecommunication Engineering
- 06 Sponsored Research Projects
- 14 Seed Money Projects with Total Funding of 21.29 Lakh
- 03 Funded Projects
- Intellectual Property Right
  - Patents - 06 Filed, 10 Granted
  - Copy Rights - 07 Granted,
  - Designs - 13 Granted,
  - Trademarks - 04 Granted
- Question papers audit
- Academic audit of all programs
- Procurement of additional equipments for up gradation of laboratories
- Co-teaching by adjunct faculty from industries
- Implemented modified student feed-back system
- Implemented 360<sup>0</sup> faculty performance appraisal system
- All students to undergo at least one soft-skill training program
- Participation project teams with industry to carry-out project work
- Landscape development
- Hostel and mess improvement
- MIS implementation
- Signed MoUs with industries, institutes and organizations
- Honors Certification and Minor Certification is offered

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