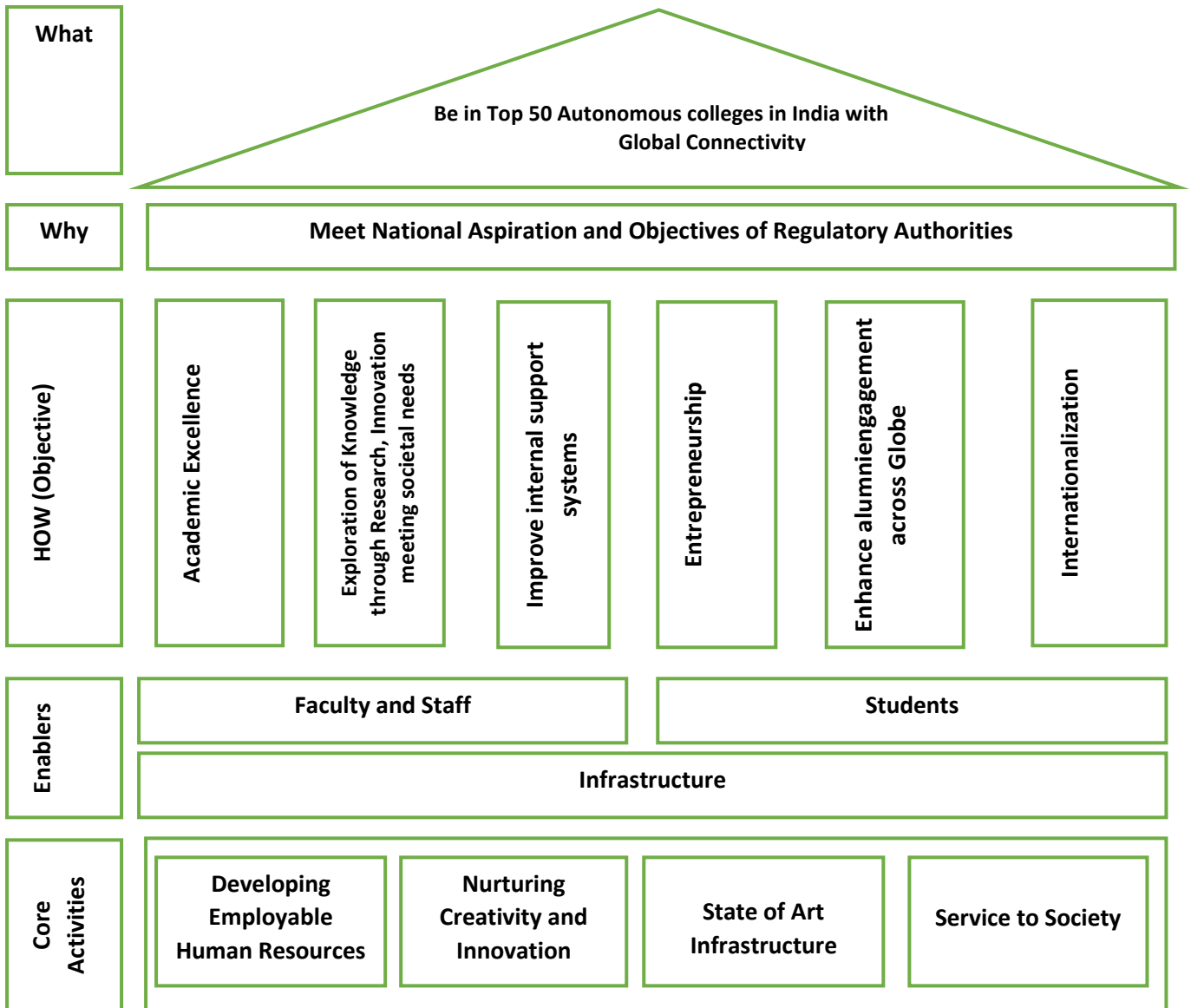


# Strategic Plan 2017-2022



## **Goal 1: Academic Excellence**

Values-based Education creates a strong learning environment that enhances academic achievement and develops students' social and relationship skills that last throughout their lives. The positive outcomes are achieved through teaching-learning methods blended with ethical values and cross domain research in cutting edge technologies. This leads to the all-round personality development of the students. It also provides social capacity to students, equipping them with social and relationship skills, intelligence and attitude to succeed at every aspect of their lives. A high quality of academic excellence can provide value-added experience for the students.

### **Strategies:**

#### **1. Curriculum Design and Revision (Multi Disciplinary Education)**

Curricula of all the programmes developed and adopted at GEC covers multiple facets like providing engineering knowledge, desirable attributes, professional ethics and relevant technical and non-technical skills. Along with these skills it also encapsulates societal aspirations. To promote higher order thinking through analyzing, evaluating concepts, processes, procedures and principles in education, the course outcomes are designed in line with the revised Bloom's Taxonomy. The courses are developed to meet the stated PEOs, POs and PSOs of the program. The Choice Based Credit System adopted in the institute has given scope to the students to learn cross domain subjects/ technologies and take up inter-disciplinary project work. The curriculum is redesigned to incorporate the industry needs and the sociodimensional subjects that would enhance the student self-learning and employability skills.

#### **The salient features of R20 Curriculum**

Induction program has been made a part of this Curriculum and considered as Zero Semester.

- Five professional elective courses are offered with 3 credits each.
- Three open elective courses are offered with 3 credits each.
- One/Two courses are offered as project based courses.
- Introduced integrated courses and industry related courses in all disciplines.
- Offered MOOCs courses as mandatory courses in the curriculum with two credits.
- Universal Human Values-1 is included with zero credits in zero semester and Universal Human Values-2 with three credits courses are offered.
- Logic building and basic coding principles, programming for corporate, problems solving enhancement and linguistic competency building are offered as four single credit courses to enhance the Industrial skills of students.
- Introduced Socially Relevant Project in the curriculum with one credit.
- Mini project is included in the curriculum with two credits.
- Industrial training/Practical training/Internship with two credits offered in the curriculum
- Sports and Games / Cultural and NSS /Fine Arts / Yoga are offered as non credit mandatory courses
- Constitution of India and Environmental studies as Mandatory Non-credit course is introduced.
- Virtual lab experiments are included in some of the labs in all disciplines

- Courses related to Emerging areas are included in the curriculum.
- Courses with 20 credits are proposed to facilitate the award of Honors degree /Minor degree to the students.

## 2. Pedagogy and Delivery Modes

The day to day classroom delivery is through modern pedagogy evenly balancing the traditional methodology. The classrooms are equipped with the required infrastructure to facilitate the new modes of delivery. The faculty are trained on the ICT methodologies and continuous apprise of the same is provided through conduct and participation in faculty development programmes, workshops and seminars. An exclusive teaching/ learning center is in place to support faculty teaching, student learning and communication. E-learning / online learning will be encouraged in addition to the traditional class room teaching-learning practice. Faculties and students are encouraged for MOOC-SWAYAM-NPTEL Certification.

### Metrics / Measures

Key Result Areas	Measures	Deployment
Curriculum Enrichment	Industrial Certificate Courses	Deployed
	Courses focusing on Skill development and Employability	Deployed
	Value Added Courses	Deployed
Learner Centric Curriculum delivery	Academic Plan as per OBE & Academic calendar	Deployed
	Quality projects	Deployed
	ICT utilization / Pedagogy Tools	Deployed
	Online Self learning Resources	Deployed
	Industry exposure through Internships	Deployed
	Workshops/FDPs on Pedagogy/Technology	Deployed
Smart Classrooms	Learning Management System	Deployed
	Multimedia and support equipment	Deployed
Laboratories	E-Learning Facilities.	Deployed
	Periodic maintenance and up gradation	Deployed
	Virtual Laboratory	Deployed
	Additional Design and open ended experiments	Deployed

## **Goal 2: Exploration of Knowledge through Innovation Meeting Societal Needs**

The Institute addresses and enhances students' imagination, initiative and practical skills and equips them to innovate and confidently cross the threshold of challenges. Added to the academic activity additional open ended experiments, Micro/ Mini Projects, Industrial based projects, Product based projects are encouraged. The innovative ideas of students are transformed into reality by:

- Project Based learning from micro to macro levels involving processes and products.
- Enhancing collaborative projects with academic institutes, industry.

### **Metrics / Measures**

<b>Key Result Areas</b>	<b>Measures</b>	<b>Deployment</b>
Research Publications	Numbers of papers published in reputed National and international journals	Deployed
	Numbers of papers presented in reputed National and international conferences	Deployed
	Faculty as reviewers for reputed journals	Deployed
Frontiers of knowledge	Operational Centers of Excellence	Deployed
	Conferences/seminars/workshops conducted.	Deployed
	MOUs with higher learning institutes in India & broad.	Partially Deployed
Patents and copyrights	IPR Workshops	Deployed
	Number of Indian Patents	In Progress
	Books and Monograms, Copy rights	In Progress

## **Goal 3: Improve Internal Support Systems**

The Institute has installed a modern and comprehensive Enterprise Resource Planning (ERP) system after streamlining all processes with the aim of improving efficiency and transparency of operations. The number of technical staff in the departments will be increased, including senior staff with higher qualifications. The Institute will provide additional administrative staff to departments to manage routine work such as, arranging admissions and examinations, maintenance, recording minutes of meetings, as well as specialized activities such as publishing newsletters, maintaining website and engaging with industry and alumni.

The Institute will enhance the purchase section to provide greater support for facilitating purchases in a timely manner. A conference/FDP/STTP course support cell will be set up to help arrange conferences/FDPs/STTPs. The Institute will provide adequate staff and online systems to enable maintenance of the estate and buildings at a higher standard.

## **Action Points**

- Simplify systems and processes with a modern ERP system.
- Appoint and empower departmental managers to support and co-ordinate purchase, maintenance and administration in the Department.
- Conduct annual satisfaction survey.
- Service orientation and training for staff, service response and online complaint systems.
- Establish improved faculty orientation and mentorship programme for new faculty members.
- Create a conference organizing support cell as per the requirement of NMEICT- MHRD, NPTEL -SWAYAM.

## **Metrics/Targets**

- Reduction in average processing times.
- Continuous improvement on satisfaction survey scores.
- Tracking and reduction in complaint redressal times.

## **Goal 4: Entrepreneurship**

The Institute aims to create an ecosystem for deeper collaboration with industry in several modes, including consultancy, sponsored research projects, technology transfer and continuing education. Measures are taken to transform classroom learning to a project based experience. The idea to innovate is encouraged through the GEC FEST and the best idea is rewarded. Infrastructure is provided to implant the ideas. Young technocrats get opportunities to exploit their full potential by setting up their own ventures thus becoming "job generators" rather than "job seekers". Strategy to provide a platform to business Start- ups to develop the innovative ideas into commercially viable products.

Training and mentoring to the students is given through Entrepreneurship Development Cell to realize the idea into application/ product at institute. Initial awareness on entrepreneurship is facilitated by conducting awareness camps, guest lectures, seminars, workshops, and skill development programmes.

The Industry Institute Interaction Cell proactively builds partnerships with industry in areas of strengths of the Institute. Collaboration with the industry is built through well-structured student internships and appointment of industry professionals as Visiting Faculty. A significant quantum of research will originate from problems identified as a result of the faculty's engagement with industry.

## Metrics / Measures

Key Result Areas	Measures	Deployment
Industry Collaboration	Industry Supported Labs	Partially deployed
	Student Internships	Made Compulsory
	Knowledge exchange through seminars and workshops	Deployed
	Faculty as Corporate Trainer	To be Initiated
	Consultancy and Testing to industry	Initiated
	Sponsored and funded collaborative research	Initiated
	MOUs with Premier industries	Partially deployed
Innovation and Entrepreneurship	Exclusive incubation facility	Partially deployed
	Proactive participation of Students and Faculty	In Progress
	Focus on Product development	In Progress
Resources & Infrastructure	Exclusive facility for R&D	In Progress
	Licensed Technologies	Planned

### **Goal 5: Alumni Engagement across the Globe**

Alumni have been key stake holders in the Institute's evolution and growth. Alumni achievements have been a source of pride for the Institute and have contributed significantly in society. Plan for active alumni chapters in various cities in India and several initiatives from the alumni to support some of the Institute goals. Donations from the alumni will result in creation of new infrastructure (convention centre, innovation centre) and support towards student facilities and counseling. The Faculty Alumni Network (FAN) will help the Institute in identifying and attracting young researchers and academics to faculty positions at the Institute. The Institute has Distinguished Alumnus. The Institute conducts several events to engage with alumni within India and around the world. A dedicated committee manages alumni interactions, supported by a new entity. The Institute will make efforts to enhance the engagement with all alumni. The focus will be on a two way interaction.

The Institute is committed to lifelong involvement with all students who will continue to be part of GEC family even after they graduate. The Institute will build its engagement on adding value and support to the alumni in their careers and professions with specialised training, lectures, access to the latest research and help with net working. The Institute will welcome alumni visits to the hostels and departments and will provide opportunities for alumni to interface with students and faculty and participate in the research and educational activities at the Institute.

## Action Points

- Create an Alumni Centre at the Institute to support alumni visits, activities and engagement.
- Initiatives for supporting alumni needs for continued learning and career improvement. Lifelong Learning Modules targeted for Alumni.
- Multiple interaction modes such as, interaction between alumni and students (Disha), mentoring, interaction between alumni and faculty, alumni inputs for curriculum development, alumni support for student placements and internships, alumni involvement in Board of Studies, Department Advisory Committees and in enhancing the innovation ecosystem.
- Alumni Chapters at international destinations.

## Metrics/Targets

- Number of alumni visitors to Alumni Centre and the Institute: 500 per year.
- Number of meets/networking events for alumni: 3-4 per year.

Key Areas	Deployment
Alumni Centre at the Institute	Deployed
Supporting alumni needs for continued learning and career improvement	To be Initiated
Multiple interaction modes	Deployed
Alumni Chapters	To be Initiated

## **Goal 6: Internationalization**

Globalization weighs heavily in the post-modern society based on knowledge. The wider economic, social and cultural globalization theories emphasize that the current setting for education, teaching and learning is globalized. The scenario of higher education internationally is dynamic and changing exponentially. The international academic institutions are welcoming Indian students with the doors wide open, pressing Indian institutions for drawing a concrete strategic plan to survive with good student enrolment. It also offers an opportunity to institutions for collaborative programmes benefiting both partners involved. The international education system appreciates Indians and thus, the Indian institutes may attract good professors of foreign and Indian origin.

Technical higher education is increasing global enterprise; hence Indian institutions should embrace internationalisation that could provide them with new opportunities. The country's rationale for internationalisation would be to enhance its soft power, improve standards of domestic provision, and produce graduates with international competencies and skills. This can best be achieved by having more innovative partnerships. Given the historical advantage in higher education (particularly among emerging market economies) the widespread use of English language and low-

cost living, India can potentially become a global hub for higher education. We need to provide greater autonomy to our Centres of Excellence to enter into a collaborative partnership with the best universities abroad.

### **Action Points**

- MOUs with Foreign Universities to give the faculty and students international exposure to augment the knowledge base.
- Academicians of Foreign Universities as Mentor.
- Double degrees with obligatory abroad period.
- MIT- MOOC Courses.
- Center of Excellence in collaboration with foreign laboratories to enhance research activity.

### **Metrics/Targets**

- Number of Students Pursuing their higher education in reputed International Universities.
- Number of interactive sessions with Foreign Experts to students and Faculty.
- Number of Conferences organized with Foreign Experts as resource persons.

<b>Key Areas</b>	<b>Deployment</b>
MOUs with Foreign Universities	In Progress
Academicians of Foreign Universities as Mentor	To be Initiated
Double degrees	To be Initiated
MIT- MOOC Courses	To be Initiated
Center of Excellence in collaboration with foreign laboratories	To be Initiated