INSTITUTIONALDEVELOPMENTPLAN(IDP 2022-2032) FOR HIGHER EDUCATIONAL INSTITUTIONS IN GOA

As part of the implementation of National Education Policy-2020

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1. Institutional Basic Information

1.1. Institutional Profile:

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NAAC Accreditation Status	1 st Cycle:		de:	2^{nd} Cy	cle	Grade:			
3	3 rd Cycle Grad		de:	4 th Cyc	cle	Grade:			
8	2020-21:	2019	9-20:	2018-19: 2		2017-18:			
UCG Recognition 2	2(f) Yes		No	12 B	Yes	No			
NBA accreditation	Yes√ No								
	Government /Aided: Government Self-Finance:								
	i. Constituent college of the State University								
Policy(NEP 2020), would your i	ii. Autonomous Degree Granting College by 2028								
institute prefer to be: i	iii. Part of Higher-educational institution (HEIs) cluster (2023-2027)								
1	NOTE								
	(a) Since we are Govt. Institution, as per UGC guidelines we can be								
	part of only Govt. HEI cluster								
	(b) Since the cluster formation is still in progress, the Institution								
	Development Plan (IDP-2023) is likely to be revised by the end of								
	the year.								
	(c) We do not intend to upload the full IDP on our college web-site or								
	any other government web-site; until the end of the year for the								
	above mentioned reasons.								

following sections

Goa College of Engineering

1.2 Institutional SWOC Analysis

Strengths:

- 1. Quality Education, with focus on Academic Excellence.
- 2. Legacy and Brand Value in Goa and at National level.
- 3. Strong Alumni Network.
- 4. GoodInfrastructure.
- 5. Human Resources: Highly qualified faculty and staff
- 6. Students from different parts of India J&K, NRI, NE
- 7. Only State Owned Engineering Institute in Goa

Weaknesses:

- 1. We have focused only on UG education, PG & Research programs have to be strengthened
- 2. Governing Council of the Institution must be given administrative and financial powers
- 3. Limited number of research and consultancy project proposals are submitted for funding.
- 4. Scope to strength career guidance, training and placement activities
- 5. Collaboration with professional bodies are to be strengthened
- 6. Student Technical club activities have to be upgraded

Opportunities:

- 1. More scope for Industry Linkages
- 2. Greater contribution in Social Entrepreneurship growth
- 3. More engagement in Emerging market for skill development.
- 4. Build technology capability for enhanced teaching and learning.
- 5. Increase scale of courses and departments.

Challenges:

- 1. National & International Exposure is required for students and faculty
- 2. Change in attitude towards knowledge acquisition and self-learning.
- 3. Technology Disruption like MOOC.
- 4. Focus on outcome-based learning to attract prospective students.
- 5. Campus classroom and lab infrastructure has to be continuously upgraded
- 6. Co-curricular and extra-curricular activities have to be given priority

2.

Institutional Development Plan (for at-least next 10 years)

2.1	Vision A technical institute with a focus on excellence in academics, research, industry collaboration and nurturing human values in students.				
2.2	Mission				
2.3	 Formulate & implement curriculum that ensures high academic standards. Provide infrastructure that meets academic & advanced research requirements. Collaborate with national, international institutions, laboratories and industries through student and faculty exchange programs and internships. Undertake consultancy projects that are relevant to the state & nation. Impart human values, awareness of environment and sustainable solutions in students and faculty. Nurture innovation, entrepreneurship, leadership & resource management skills. 				
2.4	The Vision of the Institution captures our Goals and Specific Objectives are part of our Mission statement. Executive Summary				
2.7	Executive Summary				
	 By strengthening the administrative process and governance procedures and benchmarking with top institutions, we hope to be among the top 100 colleges by the year 2028 (NIRF Ranking). Establishing a strong academic atmosphere and goo connect between student-to- faculty, great learning resources, a curriculum based on skills and attributes, and top-notch faculty resources (Ph.D.>80%). Promote and encourage student diversity by drawing applicants from all around 				
	 4. Providing cutting-edge ICT-based education, entrepreneurial capabilities, interpersonal skills, and improved student learning outcomes through internship which will improve graduates' employability. additionally, by enhancing communication with the industry. 				
	 Becoming an autonomous institution / degree granting cluster in next 4 years. Emphasis on skill based learning which would enable students to become entrepreneurs and industry ready professionals. 				
2.5	DEVELOPING MOTIVATED AND ENERGIZED FACULTY				
	i) <u>FACULTY DEVELOPMENT PLAN</u> Short Term (by 2025) 1. Promotion of R&D activities				

- 2. Domain specific knowledge development program
- 3. Presentation and Skill (Pedagogy) development programs
- 4. Faculties to attend at least two relevant FDPs per year

Mid Term (by 2027)

- 1. Faculty members shall have compulsory industry consultancy projects
- 2. Enhance leadership skills among faculty
- 3. Faculty members shall have sponsored research projects in collaboration with other research and development organizations.

Long Term (by 2030)

- 1. Faculty members must be part of centre of excellence- multidisciplinary and interdisciplinary domain
- 2. International collaborations with Universities

ii) <u>ENHANCE FACULTY EXPERTISE</u>

Short Term

- 1. Depute Faculty members to industry, reputed academic institutes for acquiring latest technology and gather experiential learning.
- 2. Encourage faculty to complete PhD and undertake Postdoctoral research work

Mid Term

- 1. Tie up with industry for faculty training, collaborate with Academia for Faculty exchange programs and consultancy projects.
- 2. Policy formation for faculty to undertake post-doctoral studies and writing books
- 3. Specific targets for publication at National and International journal
- 4. Prepare and offer On-line courses for GEC students.

Long Term

1. International faculty exchange program for further up gradation of faculty expertise, including offering joint certificate programs for short term courses.

iii) ACTIVE PARTICIPATION IN SWAYAM, MOOC

Short Term

- 1. Faculty to be encouraged to undertake at least one Swayam course in relevant area once a year
- 2. Faculty shall be encouraged to develop own MOOCs and one Swayam course in relevant area once a year.
- 3. Enhancement of experiential based teaching learning process through ICT
- 4. Introduce Skill Development Certificate Courses in collaboration with Industry, Government agencies, Training Institutes such as CDAC etc. and International Universities.
- 5. Depute faculty for Industrial/Specialized training.

Mid Term

• Departments shall be encouraged to offer at least 5 Swayam course in relevant area once a year and integration into curriculum

Long Term

1. Offer the certificate courses to professionals and students in collaboration with

	in	dustry, academia and Government agencies
2.6	TEAC	HING, LEARNING AND EDUCATION TECHNOLOGY
		oa College of Engineering shall commission a Teaching, Learning and Education
		ology Cell (TLET Cell-GEC) to lend relevant technical support to the ongoing
		tional activities as well as the in-service education programs in the college. The
		n invitation shall undertake collaborative projects with the schools in the region for
		alum-based multimedia which are subsequently distributed to the beneficiaries by the Government. The functions of the TLET cell are:
		o provide audio-video resource support to the pre-and in-service training programs
		The Institute; and
		o develop a prototype educational dashboard and E- content in different subject
		reas for school education for an interdisciplinary approach.
	faciliti Conter	se Studio should be commissioned and equipped with recording and editing es of E- lessons. The cell shall be assigned the responsibility of producing E- nt in various subjects at different levels of technical education and skill education s in Engineering.
	art reco proces Comm semina departa equipn	udio should have a Production Control room, post-production room, and state of ording room. The objective is to increase the effectiveness of the teaching-learning s with the help of modern audio-visual equipment and Information and unication Technology (ICT). The Cell should consist of a processing laboratory, a ar room (On sharing basis with the existing seminar room in one of the ment), and a board room that are well-equipped with the state of art audio-visual nent. These facilities shall be used for Seminars, Conferences, Workshops, and I lectures by faculty members and professionals from institutions and industries.
	Object	ives: The students/Faculty/Staff will be able to:
	I.	Create digital, textual materials and virtual lab.
	II.	Use e-resources for learning curricular subjects
	III.	Interact with TLET devices confidently
	IV.	Practice safe, legal, and ethical means of using TLET
	V.	Develop digital literacy skills that will enable them to function as discerning
		students in an increasingly digital society
	VI.	Access various tools and applications for learning and skill development
	VII.	Operate a variety of hardware and software independently and troubleshoot common problems
	VIII.	Use the TLET facility with care, ensuring the safety of themselves, others, and
		the equipment

	 IX. Create a variety of digital products using appropriate tools and applications and saving, storing, and managing digital resources The pace of change brought about by new technologies has had a significant effect on the way people live, work, and play worldwide. New and emerging technologies
	challenge the traditional process of teaching and learning, and the way education is managed.
	Short-Term Plan: Implementation of outcome-based education. (In-practice) Mid-Term Plan: Content validation and enhancement of student progress
	Long-term plan: Multi-disciplinary teaching and developing MOOCs.
2.7	RESEARCH, DEVELOPMENT AND INNOVATION
	GEC to Setup Six Centers of Excellence
	Short Term up to 2024
	• Center of Excellence shall be research oriented and shall be for Multi-disciplinary studies.
	Each department shall have one Center of Excellence
	• Establishing an organizational structure with RDC role-based functions, developing HEI research policies, identifying research thrust areas, and forming associated cluster groups, frontline teams, and research consortiums.
	• To add enabling clauses to research policies that will facilitate the hiring of researchers, the purchase of research-related equipment, and financial management while giving the Principal Investigator(s) sufficient autonomy, as well as the dissemination of research findings to stakeholders and the general public.
	• To create a special purpose vehicle with the goal of promoting researchers and innovators and locating potential partners from business, academia, and research organizations for collaboration and productive alliances.
	Mid Term Up to 2028
	• To serve as a point of contact for researchers and pertinent research funding organizations, provide assistance with project proposal writing and submission, and monitor deadline adherence after grants have been approved.
	• To improve cooperation between various cells and centers working on intellectual property rights, innovation and entrepreneurship development, and university-industry interlinkage (IPR).
	 To create a database of internal experts who can offer industrial consulting and services by creating an institutional research information system that effectively uses information and communication technology (ICT) to share the status of
	ongoing/completed research projects/Programs, expertise & resources, etc.
	Setting and functioning of Centre of excellence across the departments

	Long Term up to 2032
	• To employ retired but still engaged teachers and scientists for research capacity- building for bright, youthful minds and encouraging global researcher mobility establishments and R&D labs.
	• To provide as a focal point for developing and conceptualizing research questions and themes by planning workshops and training sessions, as well as assuring the honesty and moral behaviour whenever a bioethical committee clearance is necessary in research activity.
	• Well setup and fully functioning Centre of excellence
2.8	Industry-Academic Partnership
	Improving the Institute-Institute and Industry-Institute linkages
	Short Term
	• Institute should improvise collaboration with nearby colleges and delivers Guest lecturers in common area of interest per department.
	• Institute should improvise collaboration with nearby industries of their interest and signs MOU for technical exposure offering Field Visits, Guest Lectures, and Industrial Projects.
	• Institute should improve the Field visits in every semester and start from second year onwards.
	Increase the number of technical talks by Experts from Industry in a year.Each department should identify their specialized area.
	• Improvise in signing MOUs with state/central/foreign universities pertaining to identified specialized area.
	Mid Term
	• Departments finds Interdisciplinary area (like Mechatronics, Energy conservation, IoT based, communications, etc) to organize at least 3-4 short term training programmes.
	 Institute has to improve the rapport with reputed Industries involving them in course - related beyond syllabus activities. At least two activities per year in latest emerging technologies.
	• AICTE INAE Distinguished visiting Professorship Scheme can be applied for Institute industry collaboration to appoint Adjunct Faculty so as to use the expertise
	in academia.
	• Institute collaborates with industries and finds ways and means such as CSR (Corporate Social Responsibilities) schemes for sponsoring portable type of lab
	instruments/ equipment's.
	 At least one Sponsored lab per in 3 years' time. Research policy to be consolidated facilitate guiding process, cutting- edge research

•	and monitory assistance to carry out research To send students/ Faculties /PhD Research Scholars at selected state/central/ foreign universities/ institutes to facilitate knowledge updation, training teachers with latest tools used in industry, etc where at least one faculty, one Research Scholar and two students to be deputed of each department.
Loi	ng Term
•	Institute should collaborate with more technical institutes of the state and conducts at least 10 FDP programmes Institute collaborates with other technical institutes at national and/or international levels and conducts at least 5 FDP / conferences /symposiums Institute along with the departments should improve to identify the consultancy domains and start working on creating the infrastructure needed in collaboration with industry or/and other premier institutes such as IISC, IIT, NIT, IIMs etc. Infrastructure created through Industry based laboratories to be used for Testing,
	Consultancy, Workshops, etc.
	At least one CoE (Centre of Excellence) to be established in collaboration with reputed industry/institutes based on specialization.
2.9 INS	STITUTION'S PLACEMENT PLAN FOR STUDENTS
1.	Full-fledged placement cell. Full time Placement Officer along with 2 support staff with MIS system. The team needs to contact various companies across all sectors and invite them to consider GEC for their campus hiring process.
•	Interaction between industry leaders and students, which will motivate the students to take up internships and conduct industrial relevant projects as part of his/her academic programs.
•	Placement students club to be established with senior students who are placed and juniors.
•	Internship culture to be convert to full time job offers. Extend internship to 6 months.
•	Guidance for higher studies and entrepreneurship.
•	Dedicated faculty to handle placement related activities.
2. •	MoU with fortune 500 companies This should include clauses to consider students for their internship programs and to conduct quality workshops at GEC. Inviting experts to suggest improvements in Placement Processand establish one industry linked lab in each department.
3.	Attract high quality students. Interaction with alumni, mentorship. Expert talks for students.

	Institute branding at school level.
	Display success stories.
	Provide contacts of alumni.
	4. Infrastructure developments
	• Auditorium with a 1000 seating capacity.
	• Computer center with computing facility of 200 computers.
	• Centre of Excellence (CoE) to be established in different domains.
	• Workshops for placement coordinators with at least two workshops every year.
	• Up gradation of canteen, hostels and Guest house with dining facility.
	• Rainwater harvesting facilities, enhancing solar energy based power generation.
	5. Recommendation system from departments
	 Faculties can recommend specialized students to industry needs.
	 Invite industry personnel to college campus to display success stories.
	 Promote industry projects for students, student involvement in solving industry
	problems.
	• Identify curriculum gaps between syllabus and industry requirements.
	TIME LINE
	2 year plan:
	• Full-fledged placement cell – dedicated support staff with MIS system,
	Recommendation system from departments
	5 year plan:
	• Full-fledged placement cell – full time Placement officer,
	MoU with fortune 500 companies
	Infrastructure developments
	10 year plan:
	Infrastructure developments
	Attract high quality students.
2.10	ACHIEVING THE TARGET FOR ACCREDITATION
	Improvement in NIRF rankings 10 years down the line
	1. Developing conducive environment for research, teaching and learning
	□ Roadmap till 2024
	o Full-fledged ERP suite-based evaluation module that can help in surveys of all kinds
	o Developing an institute level R&D cell for hand holding faculty and students for
	applying for grants, submitting research proposals, facilitating IPR, organizing
	conferences, workshops, seminars and expert talks and publication of proceedings.
	o Funding and permission for faculty to participate in national and international
	conferences, seminars, workshops as per institute norms through separate budgetary

head.
o Funding for student clubs to participate in national and international competitions.
o Internship opportunities for students and faculties in industry and research labs.
o Implementation of MOOC, E-learning, flipped classroom and "Think-Pair-Share"
concepts in multimedia and smart board equipped classroom
o Training of students in line with Nation's 'Skill India' initiative".
o Mandatory Courses on 'Innovation' and 'Entrepreneurship'
Roadmap till 2028
o Establishment of State-of-the-art research labs in every department. Creating
awareness and promotion of the facilities among students, industry and society. (At
least 1 lab per department)
o Research Project: At least 1 funded project to be targeted per department with
government funding agencies and 1 with industrial partner.
o Guidelines for research publications: 10% publications in Tier-I journal, 25% in Tier-
2 journals and 30% in International conferences. (Over a period of 5 years).
o International Exposure: - Memorandum of Understanding with international
universities and institutes. (At least 2 institutes over the period of 5 years). Promotion
of student and Faculty exchange programs.
o Inclusion of Skill based courses at Undergraduate level, one in each semester. In
addition to conventional laboratory courses, a ONE credit 'Skill based Course' finds
its place at all semesters of all UG programs on campus, towards enhancing
Employability and Entrepreneurial venturous
Roadmap till 2032
o Establishment of State-of-the-art research labs in every department. Creating
awareness and promotion of the facilities among students, industry and society. (At
least 3 labs per department)
o Creating posts for faculty in specialized domains. Facilitate recruitment of industry experts.
o Guidelines for research publications: 20% publications in Tier-I journal, 40% in Tier-
2 journals and 50% in international conferences. (Over a period of 10 years).
o International Exposure: - Memorandum of Understanding with international
universities and institutes. (At least 5 institutes over the period of 10 years).
Promotion of student and Faculty exchange programs.
2. Developing modern infrastructure for future ready laboratory and research.
Roadmap till 2024
o Establishment of state-of-the-art maker lab open to all individuals from society for
rapid prototyping with support to take the product to market.
o Training of support staff on regular basis on high end equipment's.
□ Roadmap till 2028
o Establishment of Full-fledged Incubation Center: 24x7 Access with backup power
and high speed internet with VC facility.

0	Virtual Labs in every department that enables the user to perform experiments
	remotely as an on-demand
0	Establishment of State-of-the-art research labs in every department. Creating
	awareness and promotion of the facilities among students, industry and society. (At
	least 1 lab per department)
0	At least 5 patent filed from each department
	Roadmap till 2032
0	Establishment of State-of-the-art research labs in every department. Creating
	awareness and promotion of the facilities among students, industry and society. (At
	least 3 labs per department)
0	Guidelines for research publications: 20% publications in Tier-I journal, 40% in Tier-
	2 journals and 50% in international conferences. (Over a period of 10 years).
0	At least 10 patent filed from each department
0	One Center of Excellence in each department
3	Special facilities for research scholars, industry professionals, start-up
5.	incubation
	Roadmap till 2024
0	Regular industry outreach programs
0	Spreading awareness about entrepreneurship and enterprise building
0	Infrastructure for PhD students in every department – Special Lab
	Roadmap till 2028
0	Configurable workflows to create collaboration, broaden the network of institutes &
	MOUs with industry, research organizations
0	Conduct regular Faculty Development Programmes (FDP) to update knowledge and
	to promote skills of the faculty, industry personnel and students. Sponsored
	workshops / FDPs are organized with the financial support from CSIR, ISTE, DRDO,
	AICTE, DST etc.
0	Research and Development (R&D) activities and Skill Development Courses in
	partnership with industry and Government to be organized for the students, Industry
	personnel and the faculty members.
0	Establishment of Full-fledged Incubation Center: 24x7 Access with backup power
	and high speed internet with VC facility
	Roadmap till 2032
0	Centre of Excellence:- Establishment of Centre of Excellence as a shared facility or
	an entity that provides leadership, practices, research, support and training for a
	particular area in every department
4.	Outreach to parents, society, industry and government
	Roadmap till 2024
0	Regular organization of Institute Open Day: Bringing school students to this campus
	and facilitating them to access the college resources. School students come to know

about the systems followed in colleges. Students are given valuable exposure by using the new and different resources beyond the reach of many public schools. Motivating them to take up engineering course

- Establishment of Students Club for Societal Development and Policies: Spreading awareness about literacy, sanitation, hygiene, civic sense etc., solving societal problems with consultation with stakeholders, Cybercrime awareness. Adopt one village/per department a year as part of the NSS. Motivate students to join armed forces through initial training in National Cadet Corps (NCC) – Army, Navy and Airforce.
- Institutional Membership of Goa Chamber of Commerce and Industry(GCCI) : GCCI can serve as a channel between industry and institute that focuses on helping to increase efficiency and competitiveness among students and staff
- o Engineering Clinic: Training the students in various day to day appliances like Mobile Testing and Repair, Servicing of fan and tube light, Repair of laptop etc. where engineering concepts are involved.

□ Roadmap till 2028

- o Establishment of Assistive Technology Lab (ATL): Encouraging the students to develop aids for visually challenged, deaf and dumb people, differently abled people, Autism students
- Regular industry outreach programmes : Developing rapport with various agencies/business/Industrial concerns like Konkan Railway, TCS, Crompton & Grieves, Visteon, Zuari Agro, Cipla, Doordarshan, Prasar Bharti, Air, ACGL etc for placement, training and overall growth of the students

□ Roadmap till 2032

o Empanelment of faculty as resource persons in various government and nongovernment organizations, reviewers for national and international journals and as an expert for effective implementation of various government schemes

5. Developing the special facilities for differently abled persons

□ Roadmap till 2024

- o Physical facilities including Rails, Ramps and Lifts for all buildings
- o Provision of walking aids and electric Wheelchairs in every building
- o Special facilities for blind students

□ Roadmap till 2028

- o Specially designed toilets for specially abled students
- o Assistive Technology Lab (ATL): Encouraging the students to develop aids for visually challenged, deaf and dumb people, differently abled people, Autism students
- □ Roadmap till 2032
- Prepare a fully conducive environment for learning and recreation for differently abled students, faculty and staff

	Plan for holistic development of the students /discipline
	Roadmap till 2024
0	Engineering day celebration. The college shall celebrate Engineer's Day on 15th
	September every year and organize several academic activities such as poster
	presentation, paper presentation etc
0	Language laboratory is equipped with modern IT facilities to improve soft skills of
	the students which are necessary for their placement
0	Provide e-services for various certificates, such as Bonafide, TC, and Course
	Completion.
0	Motivation and support for students for appearing competitive exams and summer
	internship in industries, research Institute in India and abroad
0	Establishing Campus Energy Group: - Campus Energy group contributes to and helps
	drive significant progress toward reducing our campus greenhouse gas emissions
	Roadmap till 2028
0	The following value added courses shall beconducted to have an edge in career
	opportunity: - Foreign Language class, Linux Red Hat Certification Program,
	Robotics, IoT, Drones, AI/ML, Deep Learning
0	With a view to promote curriculum and extra-curriculum activities the Institute can
	set up clubs operating like FOSS Club, Robotic Club, Environment Club and Sports
	Club which go in a long way to boost the innovative and creative mind frame of our
	students
	Roadmap till 2032
0	Target national and state level awards for students in extracurricular activities.
7.	Developing and upgrading library facilities (Physical and E resources)
	Roadmap till 2024
0	Photocopying and scanning facility
0	Establishment of Digital Services Operations Team (DSOT) for digital services and
	e-platforms.
0	Inter Library Loan :- Inter library loan is a service through which library materials
	not owned by the NCBS library may be requested from other libraries.
0	Extension of additional technical facilities such as open source platforms, software
	engineering codes and practices, plagiarism and grammar checks
	Roadmap till 2028
0	Facilitate External Users / Visitors to use library resources
0	Ergonomic design of Library :- Workstation design: chairs, work surfaces, and
	accessories, Environment: space planning, use of colors, lighting, acoustics, air
	quality, thermal factors, etc
8.	Developing infrastructure for indoor and outdoor sports
	Roadmap till 2024
0	Appointment of fulltime Sports In charge with requisite qualification.
0	Funding for participation in national and international competitions.

□ Roadmap till 2028
o Construction of multi-purpose indoor stadiums / gymnasium and its maintenance
o Construction of Pucca Basket Ball, Volley Ball, Badminton, Tennis Courts
o Facilitate coaching from National and International reputed coaches and deputation to
other places for training.
□ Roadmap till 2032
o Construction of Swimming Pool, Athletic Track and Cricket Pitch
o Target national and state level medal for students in sports.
9. Infrastructure development for environmentally sustainable campus
I. Design - Electricity, Heating & Cooling, Landscape, Water
Roadmap till 2024
o Energy STAR appliances: - Choosing energy efficient Energy Star appliances for all
our projects across campus. Upgradation to Energy-efficient HVAC system and controls.
o Healthier materials and finishes When designing our buildings, both inside and
outside, we incorporate sustainable materials whenever possible.
• Enhancing solar energy based power generation
□ Roadmap till 2028
o Daylight Harvesting: - Locating buildings and offices with ample access to daylight, such as using glazed interior partition walls saves energy.
o Energy-efficient lighting and controls: - Using advance lighting sensors and controls,
such as automatically turning off lights in unoccupied areas, we save energy with
very little effect on work areas. All light sources should be upgraded to LED fixtures
and Fans to BLDC.
o Storm water management using green infrastructure
□ Roadmap till 2032
o Green Buildings: - Planning of new infrastructure for Sustainable Siting, Energy
Efficiency, Water efficiency, Building Materials, Healthy Indoor Environmental
Quality. Design and construction of new buildings as per ECBC code for energy
efficiency.
 Rainwater harvesting Using 100 % of the campus water requirement through rain
water harvesting (50% in next 5 years, remaining till 10 years)
II. Energy - Sources, Greenhouse Gas Reduction, Resiliency
□ Roadmap till 2024
 o Establishing Campus Energy Group: - Campus Energy group contributes to and helps
drive significant progress toward reducing our campus greenhouse gas emissions
 Preparation of Energy Master Plan with target of annual energy savings and annual
CO2 reductions for implementation
o Energy conservation initiatives, Sustainable Practices, Campus Biodigester
(landscape), Recycling, Smaller waste carts
o Recycling Programs, Stop using disposable items, encourage cycling, Alternative

	Transportation, Composting Projects.
	o Promotion of Sustainability Classes and Events, Reduction of Paper Usage,
	Recycling, Water Usage Awareness, Organic Farming, e-waste management
	o Institute can promote organic farming in the campus along with eco gardens through
	involvement of students, staff and society in spare open spaces.
	Roadmap till 2028
	o Installing of Biomass Generation plant, Solar Energy for hot water requirements in
	residential areas in campus
	o The College can make the campus smart and green campus by providing solar panels,
	solar lighting system to meet the entire campus electrical energy demand of around
	1MW. Mini biogas production for small scale cooking purposes in the hostels (1-5
	years)
	□ Roadmap till 2032
	o Entire power demand of campus to be met through Renewable sources
2.11	Incubation and Start-up
	- Convince the management about adopting the NISP.
	– Promote Faculty / Staff for entrepreneurship with clear guidelines framed as per NISP
	– Set up 'Incubation cum Technology Commercialization Unit'
	- Establish Institution's Innovation Council (IIC) as per the guidelines of
	– MHRD's Innovation Cell and allocate appropriate budget for its activities
	- Initiate University / Academic related changes as per NISP
	– Start an entrepreneurship program
	Short term- 2023
	Create a startup policy for the college based on the NATIONAL INNOVATION AND
	STARTUP POLICY and convince the management to adopt it.
	Medium term 2026
	Governance matters
	1. 'Incubation cum Technology Commercialization Unit' should be set up as a separate
	entity preferably registered under Section 8 of Company Act 2013 or 'Society' registered
	under Society Registration Act with independent governance structure. Such an entity
	shall oversee the fund allocation and utilization under the project.
	2. The institute needs to establish Institution's Innovation Council (IIC) as per the
	guidelines of HRD's Innovation Cell and allocate appropriate budget for its activities.
	IIC should guide the institutions in conducting various activities related to innovation,
	start up and entrepreneurship development.
	Financial matters:
	1. A minimum of 1% fund of the total annual budget of institution needs to be allocated
	for funding and supporting innovation and start-ups related activities through creation
	of separate 'Innovation fund'.
	2. To support technology incubators, institutes need to be allowed to approach private
	2. To support technology incubators, institutes need to be allowed to approach private

and corporate sectors to generate funds, under Corporate Social Responsibility as per Section 135 of the Company Act 2013.

- 3. Financial outlay for all the points listed under Faculty / Staff and Governance matters.
- 4. In return of the services and facilities, institute may take 2% to 9.5% equity/ stake in the start-up/ company, based on brand used, faculty contribution, support provided and use of institute's IPR.

University / Academic matters:

- 5. The institute needs to allow students / faculty /staff to start up while studying / working.
- 6. Students need to be allowed to use their address in the institute to register their company.
- 7. Students need to be allowed to sit for the examination, even if their attendance is less than the minimum permissible percentage.
- 8. Students need to be allowed to take a semester/year break; Student entrepreneurs may be allowed to earn academic credits for their efforts while creating an enterprise.

Medium term 2029

Faculty / Staff matters

- 9. The institute needs to allow faculty / staff to take off for a semester / year (or even more depending upon the decision of review committee constituted by the institute) as sabbatical/ unpaid leave/ casual leave/ earned leave for working on startups and come back.
- 10. The institution is expected to consider allowing use of its resource to faculty / staff /students wishing to establish a start up as a fulltime
- 11. The seniority and other academic benefits during such period may be preserved for such staff or faculty.
- 12. Participation in startup related activities needs to be considered as a legitimate activity of faculty in addition to teaching, R&D projects, industrial consultancy and management duties and must be considered while evaluating the annual performance of the faculty.

Long term 2032

- 13. Start an entrepreneurship program alongside the traditional engineering streams. This may require an independent civil infrastructure along with human resource pooled in from faculty members and alumni.
- 14. If the startup policy is implemented as mentioned in the short and midterm plan, then a thriving culture of innovation and research can be expected within ten years.
- 15.IPR ownership management and technology licensing leading to creation of robust innovation based ventures may be expected

2.12 ALUMNI ENGAGEMENT/ ACTIVITIES PLAN Short Term Up to 2024: 1.Start engaging alumni with the faculty throughteaching and evaluation of students 2. Invite the alumni for formal as well as informal college events

	3. Make the alumni feel that they are extremely important for institution growth
	4. Sensitize the alumni about the contributions they can make in curriculum
	development, teaching – learning and laboratory tie ups
	5. Each department shall have one faculty of Associate Professor level as Alumni coordinator
	6. College shall have full-fledged alumni networking Cell in place by 2025
	Mid Term up to 2028:
	1. Improve the alumni participation in college activities and funding
	 Each department shall plan for one sponsored laboratory set up with the Alumni participation
	Long Term up to 2032:
	1. Each department shall have at least one sponsored laboratory set up through alumni network
	2. An annual event of Alumni meet shall be organized on grand scale by College through Alumni Network Cell.
. 10	
2.13	BASIC INFRASTRUCTURE DEVELOPMENT PLAN
	 GEC has a large land area, approximately 250 acres, however, compound wall is only on a limited portion; the boundary wall has to be installed over a period of next 10 years and all land records must be regularized on priority. New Administrative Block will be designed and constructed. Hostel facilities for students are available but internal infrastructure such as water, indoor games, recreation room, mess, rest-room facilities, gym will be improved substantial. The infrastructure of every department for class-room teaching and laboratories will be substantially augmented. In next 10 years the intake of the departments will be twice that of the present level. Road infrastructure will be planned and implemented, Sufficient space for parking of 2 W and 4 W vehicles of faculty, staff and students will be planned and implemented Rain-water harvesting activity will be taken up on priority in order to improve the green cover of the institution. CCTV cameras will be installed at strategic location to monitor the safety of students, faculty, staff and the infrastructure facility. Security will be increased. Solar energy based power generation will be 50% or more than the total power
	consumption of the institution in next 5 years. 10. Faculty quarters have to be upgraded
	11. Incubation Centre, Training and Placement Office have to be upgraded both in terms of space and internal infrastructure
	12. E-resource center and E-learning has to be given priority and necessary equipment's

2.14	SKILL DEVELOPMENT OF NON-TEACHING STAFF
	Short Term
	1. Transfer the existing Non- teaching staff to respective departments as per the
	higher acquired qualifications.
	2. All MTS to be trained and retrained with basic computer literacy as well as office
	related work training with proper tests conducted at the end of the training.
	3. All office staff LDC, UDC should be assigned work on a rotational basis so that
	they get knowledge of all office work.
	4. Short term certificate courses to be introduced for skill development of staff.
	Mid Term
	1. Non-teaching staff should be encouraged for further studies.
	2. A Department review committee may be constituted to review the performance
	of non-teaching staff and appropriate higher positions may be recommended.
	Long Term
	1. New recruitment of staff may be held having appropriate qualification and
	knowledge required for respective departments.
2.15	ANY OTHER INITIATIVES FOR THE STUDENT'S AND INSTITUTIONAL
	GROWTH
	I: Organizing International Conference
	Short Term
	1. Preferably hold one International Conference per year on department-wise
	rotation basis (include slot in academic calendar).
	2. Collaborate with International Institutes/Publishers for Copyright/Proceedings.
	Mid Term
	 Create linkages with experts from Academia and Industry including Alumni working abroad.
	2. Allocate funds for holding the event, apply for Sponsorship, associate with
	publisher.
	Long Term
	Regular hosting of International Conferences on a department-wise rotation basis.
	II: Competing for a research project at National and International level
	Short Term
	1. Each department to preferably apply for at least one central/state research grant per year.
	2. Faculty to submit proposals and apply for such grants
	Mid Term : Show deliverables in terms of publications, dissertation/thesis, product
	development.
	Long Term :Show deliverables in terms of patents.
	III: Refresher courses to be conducted

Short Term

- 1. Each department to preferably organize at least one refresher course in emerging area/education technology per semester.
- 2. Faculty to plan and organize.

Mid Term

- 1. Each department to preferably organize at least one refresher course in emerging area/education technology per semester.
- 2. Faculty to plan and organize.

Long Term

- 1. Each department to preferably organize at least one refresher course in emerging area/education technology per semester.
- 2. Faculty to plan and organize.

IV: PG program

Short Term

- 1. Revamp existing PG programs and introduce new PG programs as per contemporary demand. Faculty to plan and organize.
- 2. Curriculum Revision with change in nomenclature of existing programs with fine tuning to industry requirements

Mid Term

- 1. New Part time programs for working professionals and industry persons in offline/hybrid mode. Faculty to plan and organize.
- 2. Management PG program to be introduced

Long Term

3. Inter-disciplinary PG programs in place with independent PG Faculty coordinators

V: Inter-disciplinary PG programs in place with independent PG Faculty coordinators

Short Term

1. Set up Center for Multi-Disciplinary Studies

2. Explore possibility of multi-disciplinary projects at UG and PG levels.

3. Create task-force committee with Chairperson and faculty members from each department for setting up CMS.

Mid Term

- 1. Identify space for labs, other amenities.
- 2. Submit requirements for lab infrastructure including equipment.

Long Term

Set up centre for Multi-Disciplinary studies with independent faculty coordinator

VI: Equipment/Improvement of Labs

Short Term

- 1. Review and upgrade laboratory infrastructure as per need.
- 2. Renovate labs to improve ambience
- 3. Modernize by procuring technology, tools and equipment used in the industry.

Mid Term

- 1. Introduce new experiments in every lab with hands-on training relevant to industry needs
- 2. Associate and engage with Industry partners/experts to develop labs.

Long Term

Set up industry sponsored labs to provide training in modern tools usage.

VII: Mentorship

Short Term

- Academic progress of student to be monitored by assign Faculty Mentor on a regular basis.
- Need to appoint qualified full-time counsellor for college.
- Conduct workshops for stress management, career guidance, motivational sessions.
- Students will be given guidance on pursuing higher educations, will be motivated to take up GATE, pursuing master's degree in various universities in USA, Canada, Europe, Singapore, Australia.

Mid Term

• Set up 'Wellness Center' with Meditation Hall, Yoga Classes, Music and Recreation Facilities.

Long Term

Recreation facilities Centre

VIII: Interdisciplinary education system, especially, commerce, finance, and

<u>management</u>

Short Term

- Humanities Department may suggest courses in Management, IPR, Economics, Taxation etc.
- Course in financial literacy for engineers
- Conduct STTP, workshops for students, teaching and non-teaching staff by inviting experts

Mid Term

• Introduce new electives, courses in existing syllabus, Collaborate with Commerce/Management Institutes for joint programs, projects.

Long Term

• Planning of starting Management PG program for Engineering Graduates

IX: Midterm review methodology and Periodic feedback methodology

Short Term

eye oj E	ngineering
1.	Department to conduct Academic Audit on a continual basis
2.	Internal Quality Assurance Cell to be set up for Institute level Academic Audit.
3.	IQAC team to conduct reviews at regular interval
4.	Department to take feedback on continual basis
5.	AICTE 360 feedback to be implemented or feedback to be linked to MIS
Mid T	`erm : IQAC team to conduct reviews at regular intervals
Long	Term : IQAC team to conduct reviews at regular intervals
X: Str	ong MIS and Autonomy
Short	Term
	o integrate all student related information including academic progress, exam ation/fee, result, feedback, etc
Acade	mic autonomy is indispensable for academic and exam reforms.
Mid T	erm
Updat	aion of MIS as per new requirements
Long	Term
Updat	aion of MIS as per new requirements
XI• M	iscellaneous
	tallation/Development of Digital Library
	ximizing the use of data and communicating the results of the academic review
	cess.
3. Pro	proting relationships with the high schools designed to improve college paredness
•	Idertake regular visits to schools to create awareness about Engineering Education.
	ganize 'Open Day', by inviting school students to visit GEC labs and interact with
	culty.
	lanning of student outreach programs in schools to attract quality students to
	ineering
-	Develop open dialogue and collaboration across academic departments
	Develop mechanisms to award credit for experiential learning, including credit for
	siness training and continuing education
	Well-equipped (multimedia)classrooms
7. V	wen-equipped (mutumedia)classioonis

Goa College of Engineering