PERSPECTIVE AND STRATEGIC PLAN

SGGS Institute of Engineering & Technology

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Perspective/Strategic Plan for 2015-2020

The institute Strategic Plan for 2015-2020 is designed to systematically evolve the academic, research and development, administration and infrastructure development plans for the institute.

Long range Goals:

- Amongst top 50 in NIRF by 2020 and one of the best in the state
- Strive for centre of excellence in all disciplines of the institute
- Create conducive environment for top class education, research, development and extension
- Develop collaborative arrangements with premier institutions in India and abroad
- Become a world class role model institute to attract international faculty and students
- Intervene for sustainable development of the region and improvement in quality of life

Short range Goals:

- Amongst top 150 in NIRF by 2020 and best in the region
- To strive for quality teaching, research and extension services
- To achieve overall development of students and society
- To incorporate flexibility in curriculum design
- To adopt dynamic students evaluation system
- To introduce regional need based courses
- To make the system responsive for maintaining the time schedule
- To develop strong relations with industries, institutes and society
- To nurture industrial development based on regional resources
- To create, preserve and disseminate technical knowledge
- To promote competitive merit and excellence as the sole guiding criterion in overall development of students
- To uplift the society by addressing the local and regional technical needs

CORE Values:

- Transparency
- Equity
- Quality
- Integrity and commitment
- Professionalism

In addition to the broad range of activities that the institute carries out in pursuit of its mission, following activities with action point have been identified to be given special emphasis in the strategic plan.

1. **Promotion of mutually beneficial engagement with industry and society**

   - Proactive approach for industry interactions - Adjunct faculty from industry and academia
   - Encouragement to faculty for core industrial exposure
   - Focus approach on technology patenting and commercialization
   - Establishment of Technological Innovation and Entrepreneurship Cell (TIEC)
   - Eco system for startup and entrepreneurship through TIEC
   - Addressing the need base societal and research problems through curriculum development
   - Easy interface for the local community and school for the interaction and knowledge dissemination

2. **Expand educational opportunities and avenues**

   - Forecast industry requirements and societal educational aspirations
   - Initiate the institute open electives like Economics, Accountancy etc.
   - Initiate new specialized programmes based on faculty strength
   - Arrange skill development programs
   - Initiate foreign language courses like German, French, Spanish etc.
   - Initiate minor/higher learning certificate course based on credit earned by the students from other programme.
   - Start new Post graduate courses in the institute
   - Effective Implementation of choice based credit system
   - Effective implementation of credit transfer scheme

3. **Create quick response internal support systems**
   - Simplify systems and processes
   - Free up faculty/researcher/students time for education and research by time saver techniques for non-academic processes
   - Service response, online complaint systems
   - Parallel track – incentives and career growth, retraining existing staff
   - Service orientation – to enable education and research
   - Appropriate delegation at all levels to promote decision making and leadership
   - Enhance sports facilities with state of art badminton court, Squash court, swimming pool, Gymnasium etc.
   - Incubation Center with 10000 Sq. Ft. area for students startups
   - Project based learning in 40% courses by the year 2020
   - Starting social internships from 2019 – FY students to work in different NGOs for societal problem understanding and providing solutions during the course of study
   - Engage the students fruitfully during vacations in activities for employability enhancement such as Project internships, Skill based courses, Training for soft and communication skills, improved Aptitude, Computer Programming, special tools specific to the disciplines

4. **Enhance on campus life and experience**
   - Upgrade and face lifting of existing infrastructure and their surroundings to make the campus neat, clean and green
   - Priority for expansion of accommodation facilities for students, staff and faculty and family accommodation for the experienced research scholars/students
   - Enhance and revamp faculty advising system
   - Annual student satisfaction survey
   - Enhance students learning facilities with ultramodern, spacious, well ventilated classrooms, laboratories, sports and recreation
   - Establish teaching/learning Centre
   - Involve students, staff and faculty in campus planning including green and clean campus initiatives

5. **Explore new avenues of fund raising**
   - Enhanced engagement with stake holders

- Fundraising through fees hike for non-subsidized master level courses (M Tech) and professional courses
- Increase research projects from industry, Government research organizations, centers of excellence
- Consultancy projects scheme
- Attract benefits from Corporate Social responsibility (CSR)
- Funding for construction/ development work from Government

6. **Linkages with international universities for horizon expanse**

- Develop appropriate arrangements for international relations – to coordinate the activities with international universities
- Enhance link with partner international universities
- Facilitate collaborative research with international universities
- Attract international faculty on contract appointments
- Start student exchange program with international universities
- Organize joint activities with international universities like conferences, workshops, credit courses, expert lectures etc.

7. **Advance Frontiers of knowledge**

- Encourage conduct of advanced research conferences at the institute
- Enable Ph.D. students exchange with partner international universities
- Encourage formation multidisciplinary research teams and centers
- Enhance facilities for Ph.D. students and post-doctoral researchers
- Proactive and flexible mechanism to attract quality faculty and researchers
- Establish proactive board of studies and academic council
- Additional courses in the areas of Artificial Intelligence, Data Science, Data and business analytics, Robotics, Big data, Machine learning, Deep learning etc. for all students

8. **Create future leaders and innovators**

- Confidence building measures to prepare students for facing new challenges
- Special training for post graduate and research scholars – teaching and entrepreneurship
- Enhancing the RISK taking abilities amongst students
- Enhance support for student participation in National/International technical competitions – including credit for learning by doing

- Create a cell for guidance on competitive examinations like UPSC/ MPSC etc.
- Supervised internship for students in industry for longer duration
- Students involvement in institute governance
- Organize the activities for the students by the students
- Enhance the involvement of student in organizing the activities like conferences, alumni meet etc.
- Enhanced opportunities for students to participate in industrial and societal projects

9. **Ensure gender equality**

- Provide modern, secured and comfortable accommodation for girl students, increase in accommodation for married Ph. D. Students – students with infants to be given priority in housing
- Focused outreach to present girl students, alumni, faculty members as a role model to school students and convey the exciting career opportunities provided by an engineering education
- Support for secured transport facilities (Buses) for girl students, women employees to the institute
- Support through mentoring groups

10. **Bring alumni engagement on board**

- Enable, facilitate seamless coordination between alumni association and Institute
- Initiative for supporting alumni need for continued learning and career improvement
- Lifelong learning module targeted for alumni
- Multiple interaction modes – interaction between alumni and students – mentoring, interaction between alumni and faculty
- Alumni inputs for curriculum development
- Alumni support for students placement and internship
- Alumni involvement in enhancing the invitation ecosystem at the institute
- Enhance institute responsiveness to alumni request
- Creation of an alumni centre at the institute to supports alumni visits, activities engagement
- Create and establish alumni chapters in India and abroad
- Build corpus fund for sustainable activities of alumni association

Strategic Plan 2015-2020: Effective Implementation

The Institute has made humble efforts in fulfilling the vision and achieving the goals through effective and planned implementation of the missions undertaken. During this challenging journey of thirty-four years of its existence, it has crossed many milestones of growth and development.

The Institute offers 10 undergraduate and 10 post-graduate programmes leading to the B. Tech. and M. Tech. degree respectively. The Institute is recognized research centre of Swami Ramanand Teerth Marathwada (SRTM) University, Nanded and offers research programs (Ph.D.) in all departments. The Institute is a recognized Quality Improvement Program (QIP) Centre of MHRD of Government of India which provides scholarships to full time 10 research scholars, every year. Institute also provides scholarships to full time Research Scholars through Visvesvaraya Ph.D scheme of ministry of Electronics and Information Technology, Government of India and Centre of Excellence of TEQIP, Maulana Azad Scholarships, National Doctoral scholarships etc.

Board of Management of the institute is the highest policy making and planning body. The roadmap is prepared by them and the finer details are planned, designed and implemented by various agencies/ committees/ groups internally and/ or externally. In continuation with, the adopted vision, mission and goals, our main emphasis are in the following aspects of student-centric institutional growth and development:

- Academic reforms, restructuring and continuous improvement in academics
- Infrastructure development: Building, Laboratories, Library, Internet facilities
- Extension activities/ Consultancy/ IRG/Entrepreneurial/incubation and start-up activities
- Networking with premier institutions/ organizations/ industries
- Interaction with Alumni and domain experts
- All round personality development and growth of students
- Capacity building of faculty trough higher education, trainings etc.
- Support systems and overall ambiance

To meet the ever-changing global and national challenges of engineering industry, technical education institutes are at their toes. We are also no exception to it and continuously working to keep pace with new requirements. Govt. of India and Govt. of Maharashtra direct major reforms as implementation of Technical Education Quality Improvement Programme (TEQIP) in 2003 and 2009 and institutional autonomous status in 2004. The senate regularly reviews the undergraduate and

postgraduate courses, contents and overall academic requirements and reforms. The institute during this period has added two undergraduate programme and three postgraduate programmes. Currently enrolled Ph. D. students are around 200. The newly introduced undergraduate programmes are Electrical Engineering and Mechanical Engineering. Many sponsored projects and technology development projects from different Government bodies and external funding agencies are actively promoted and executed. SGGS institute has continued to grow its patent portfolio by pursuing a policy of active patenting and commercialization, with a goal of increasing the number of patents filed per year. Several industry expert talks have been conducted for the UG/PG students and for research scholars to bridge the gap between industry and academic curricula. Adjunct faculty from reputed industries are also appointed to enable sharing of their expertise with the students and research scholars. Many national conferences and seminars and few of international level are organized in which a large number of candidates participated across the country. The Institute succeeded in implementing a credit transfer scheme for third year B. Tech students with other institutes of repute to enhance growth in all aspects. The Institute has continued in improving the quality of its course offerings by internship programs, for undergraduate, master's and research students, to provide a strong foundation in the discipline of study.

The existing curricula are revised continuously considering inputs from all stakeholders and AICTE guidelines. Improvements in modular, flexible and interdisciplinary approach are continuously done during this period by introducing more departmental electives, Institute level electives, performing projects and undergoing training in industry. Because of the above features, a slow learner can also move in his/her own pace to complete the degree. The institute has introduced open electives in the diverse fields such as basics of Economics, and Accountancy, Industrial Relations and Management etc. during recent years. During last two-three years, the institute has created a platform for the students to expand their capabilities to meet global requirements by conducting skill development programs and certified foreign language courses like German, French and Spanish. Institute is keen to implement Outcome based education in its spirit and understand that OBE is key to success. Implementation already has begun through Examination reforms, Project based learning, Bloom's Taxonomy.

Government of Maharashtra and Central Government, and AICTE have provided a funding for infrastructure development like hostels, departmental buildings etc. Several new infrastructure facilities and up gradation of existing facility were carried out recently:

- New Boys hostel
- New buildings for Information Technology, Computer Science and Engineering, Chemical Engineering and Mechanical Engineering
- Auditorium, Mini-Auditorium Hall
- Renovation of seminar halls with ultramodern facilities
- Renovation of PG classrooms
- Up gradation of existing Gymnasium and outdoor sports facility
- Construction of new entrance gate
- Campus beautification and landscaping

Faculty have contributed in a big way for laboratory development through various funding agencies like AICTE, DST, BARC, BRNS, NRB, DRDO etc. other than the funding obtained under two phases of TEQIP and from Government of Maharashtra. Four of the institute's departments have FIST sponsored laboratories. Faculty research abilities have led to the establishment of a "Centre of Excellence" in the areas of Signal and Image Processing (SIP) and Metal Forming. Central Computing Facility is developed by the Institute in the administrative building aiming to provide an open source computing platform for the students, staff and faculty of the Institute. It has got 152 desktop machines and three servers with the state of the art configuration to cater the need of software development and programming. Institute also provides well equipped ultramodern, spacious, well ventilated classrooms and laboratories.

Institute has continued the up gradation of the institutional Library which is situated in a separate two storied block of 1200 sq. m. surrounded by lush green area. Currently, it has an ample stock of books and bound volumes of National and International journals along with E-journals- IEEE ASSP, Springer, Science Direct, etc, which facilitates research in our institute. It is a most lively place on the campus providing a comfortable and friendly environment that enables learning and advancement of knowledge, and promotes innovation. Besides this, it has Book Bank facility, reading room, e-library, recorded lectures of faculty of the institute etc. The Central Library of the institute offers membership to Industries/ Institutions/ individual/ corporate houses and Organizations in public and private sector on request. In addition to this, Institute provides earn and learn facility for the students of economically weaker section, where they can work in the library and can also earn through it. The Institute subscribes multiple copies of national, regional, and local news-papers and magazines. Library is kept open on all days including Saturday and Sunday excluding public holidays.

The Institute provides 100 percent accommodation for girls and around 50 percent accommodation for boys except localized students. Also, the accommodation facility is provided by the Institute to Director, few faculty, research scholars and staff. The institute supports secured transport facilities for all students and employees from Institute to Nanded city and vice-versa.

Despite being placed in a remote location and away from industrial clusters, few departments do reasonably good consultancy work. Institute has started the concept of innovation laboratory, which provides the platform and facility to implement the concepts and idea. TIEC (Technology Innovation and Entrepreneurship Centre) was an initiative taken by the Institute for identifying entrepreneurial traits in the students and building their capacity for entrepreneurship and encouraging technology start-up on the campus. TIEC administers business incubator that provides support to Technology based entrepreneurs.

In addition to strengthen close collaboration with foreign universities, institute has active linkages with academic/research organizations in Malaysia, and USA. The office of International Relations was created to focus on building alliances with peer universities globally. The research scholars and post graduate students of the institute are working joint research projects at theses international universities. The institute has extensive facilities for both basic and applied research. Recently active step has been taken by the Institute in signing MoU with UTP, Malaisya, CREST Institute, The City University of New York, New York, USA, Civil Engineering Department, SJSU, San Jose, USA, VJTI Mumbai, CoE Pune, SP College of Engineering, Mumbai etc.

To strengthen the industry academia relationship the institute has taken the imitative for signing MoUs with the departmental core industries. This initiative apart from the internship, industrial visits, projects in industry has helped us to start the industry supported laboratories like "Center for VLSI Design and Verification" supported by Mentor Graphics Pvt. Ltd, India, Emersion- Process Automation and Safety System (E-PASS) laboratory sponsored by Emersion Automation Solutions, Mumbai.

Institute has its registered alumni association called SGGS Engineers alumni association (SEAA) along with an office of Alumni Affairs to enable networking with alumni as a first step. Institute encourages in organizing the alumni meets in the different cities in India and other countries like USA, UAE etc. to enhance the networking among the ambassadors of the institute and to disseminate happenings in the campus and solicit the support of alumni. This has helped to start the chapters of SEAA in various cities of the India and abroad. This networking was used to generate resources which paved the way for batch-based contributions.

The Institute aims to create a talent pool that would provide future leaders and innovators at undergraduate and postgraduate levels. In addition to research facility and innovation laboratory, the UPSC chapter has been started by the institute for extending the required facility and guidance for making them competent to appear for the administrative services. Special programmes have been conducted for Ph.D. students to prepare them for a teaching career, a research career or a career in entrepreneurship, depending on their interest. The institute has taken initiative in conducting several continuing education programmes for undergraduate, post-graduate students, research scholars and teachers of the Institute and other technical Institutions.

Students organize various extracurricular activities through their various clubs and the departmental groups. Apart from these activities students play a very vital role in organizing the mega events like Pragya, R-Megadon, Utsav, Zenith etc. Institute provides excellent infrastructural facilities for various indoor and outdoor sports like turf wicket for cricket, clay court for tennis, basketball court, volleyball court, table tennis board, 'kabaddi' ground, kho-kho ground, gymnasium. Students inputs in the governance of the Institute have increased via meetings of student representatives with the Deans and the members of Board of Governors and their representation in senate.

To provide quick response from internal support system, the institute has successfully implemented major steps such as online complain and feedback portal, online payment facility, SGGS online portal etc. Institute organizes a farewell function; parents' meet and departure document function for final year students. In this programme the certificates and awards are given to the outgoing students. Outsourcing of labor facility is adopted by the institute to maintain and upgrade existing infrastructure and surrounding to keep campus neat, clean and green.

The stakeholders of the Institute are becoming a more diverse group. In addition to, the stakeholders like parents, students, faculty, staff, alumni, industries, the participation of Government through funding agencies, international universities, and other international/national educational organizations are taking place. The intellectual property rights issue is another factor that may compel the Institute to make use of its knowledge resources in specific ways.

Strategic Plan 2015-2020: Monitoring

Monitoring of the activities in the Institute is carried out regularly by conducting various meetings, discussions, feedback sessions and audits. These include

- Departmental meetings with students, staff and faculty on continuous basis
- Meetings with students council once in a month during semester
- Meeting with departmental students association and students clubs once in a month during semester
- Meetings with hostel committees once in a month
- Meeting with site section, procurement sections, Hostel section, Electrical Maintenance cell, account section, academic section, examination section, establishment section, sports section, library etc. as per the requirement
- Parent meetings once in a year
- Alumni meets once in a year, Chapters of Alumni Association at Nashik, Pune, Nagpur, Mumbai, Banglore
- Research Symposium twice in a year
- Feedback from students, alumni and Industry online, during visits of alumni-industry persons, alumni meet
- Review meetings for funded projects and schemes
- Regular weekly meetings HoDs and Deans on every wednesday
- Meetings of industrial advisory panel as per the requirement
- Meetings of board of studies as per the requirements
- Senate/academic council meetings four times a year, Once in a quarter
- Meetings of Building and Construction Committee four times a year, Once in a quarter
- Meetings of finance committee four times a year, Once in a quarter
- BoM meetings four times a year, Once in a quarter

Based on the outcomes of the meetings, potential issues were identified and corrective measures have been taken by the Institute in regular manner to march towards its goals and missions. The corrective measures are taken by considering following points:

- Monitor and evaluate the performance of the institute activities and identify variance, if any, from the plan and suggest remedial measures, as required
- Provide information to Deans, HODs, faculty and staff members on the extent to which the activity is meeting the desired objectives
- Collect regular feedback from faculty, students and staff on the status of the progress of the institute and create a clearer basis for decision-making
- Collect status report from all Deans
- Strengthening the performance, information generation and dissemination for improving Institutional level management and education practices
- Advice towards quality improvement and auditing the institutional performance in achieving its goals
- Establishment of Centers of excellence in the areas of Robotics, Artificial Intelligence (Machine and Deep learning), Cyber security with industrial support
- Faculty and staff development for Project based learning
- Flip Classroom

Strategic plan process

1. Identification of current status of the institute through surveys/questionnaire
2. Short term goal – Amongst top 150 in NIRF by 2020
3. Long Term Goal – Amongst top 50 in NIRF
4. Use of world class methods of delivery of courses like
    a. Engineering exploration – Learning factory, Project based learning
    b. World class education requires world class facilities, Faculties and students, methods, practice.