

Governance Development Plan Document

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(Autonomous)

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Constituent College of Jawaharlal Nehru Technological University Hyderabad

Approved by AICTE, Accredited by NBA, Conferred Autonomous status by UGC, New Delhi

Governance Development Plan Document (Part A)

1. Introduction

This document is for the Governance of JNTUH College of Engineering Hyderabad, Telangana. The main goal of bringing out this document on Governance is to put on record the structure and practices for Governance that have resulted in efficient functioning in providing benefits and satisfaction to all stake holders and thus leading to overall quality enhancement. The institution governance is to strengthen its facilities to improve learning outcomes, employability of graduates and to uplift the standard of UG and PG education by way of infrastructural development, faculty and staff development, R & D activities and industry-institute interaction. Some indicative benefits are presented below.

- ▶ *Process documentation helps us to understand the issues related to Governance for effective implementation of academic procedures and administrative policies.*
- ▶ *Involvement of Governing Body and College Academic Committee in developing the document builds transparency, approval, and ownership.*
- ▶ *Good Governance practices provide streamlined paths and give suitable inputs for successful functioning of the organization.*
- ▶ *Provides the sharing of Governance information and knowledge of good practices.*

- ▶ *Augments scope for collaborative works with Industries, Organizations, State and National Governments for quality improvement and performance enhancement of the College.*
- ▶ *Ensures time bound procedures and modular formats for successfully meeting the agreed deadlines maintaining the academic standards and professional qualities*
- ▶ *Provides guidelines for existing College Committees and departments for successful implementation of good governance practices.*

2. Institution

The JNTUHCEH with a history of over 50 years in technical education offering B.Tech, M.Tech. and Ph. D. Programs in Seven disciplines of Engineering has achieved a top-tier status among Engineering Colleges in the Country. Recent Survey of Best Engineering Colleges in India by outlook Magazine has placed the college in the list of top 40 colleges in India. While rankings fluctuate, the college is widely perceived as a leading institute for the Undergraduate programs offered by it with the top 2000 rank holders of over 1.5 lakh students appearing for the state wide entrance Examination EAMCET making it to the admission into the various B.Tech. Programs offered by the college. The primary goal of the College over the next four years is to build upon the achievements to date and secure a position in the top ten Engineering Colleges in the country. The College has been sustaining and improving the quality of its UG programs. It now proposes to expand the scope, quality and multidisciplinary character of its PG and Ph. D programs while ensuring equity.

The College was established as Nagarjuna Sagar Engineering College in 1965. It was under the administrative control of the Department of Technical Education and was affiliated to Osmania University, Hyderabad. With the formation of Jawaharlal Nehru Technological University on 2nd October 1972, it became a constituent college of the University and was later renamed as JNTU College of Engineering, Hyderabad. From its inception in 1965 to 1984, the College was located at Masab Tank Campus. In 1984, the College was shifted to its permanent location at Kukatpally, Hyderabad. The college celebrated its Silver Jubilee in 1990. After the JNTU dividing into four Universities in 2008, it became constitute college to Jawaharlal Nehru Technological University Hyderabad. The College was conferred autonomous status by UGC, New Delhi in

2010-11 for a period of six years. All the UG Programmes and 10 PG programmes are accredited by NBA, New Delhi.

The activities of the college are basically supported by the budgetary allocation from the University funds. Specific grants from different funding agencies like UGC, MHRD, AICTE, DST are also sought from time to time for the development of the college. The College has purchased modern and sophisticated equipment from the research and development grants received from MHRD, AICTE, DST and TEQIP (A World Bank-aided Project).. The College has been sanctioned the First phase of TEQIP Project with a funding of Rs. 14.00 Crores and has been successfully completed in the year 2009. The College was selected as Lead Institute in TEQIP Phase-I. The second phase of the TEQIP Project for the duration of 2011-2016 has been sanctioned to the college with a funding of Rs. 12.50 Crores. This project is focusing towards the procurement of Laboratory Equipment, R&D activities, Industry Institute Interaction and Teachers Training. The funds received in the first phase were utilized effectively and received lot of appreciation from state and central agencies. The College has been sanctioned a Centre of Excellence in Disaster Management under TEQIP-II with funding of Rs. 5.00 Crores which is one out of 30 CoEs sanctioned by MHRD across India.

The infrastructure development in the past two decades in the college has been substantial. All the departments are having its independent buildings with full fledged infrastructure facilities and well equipped Laboratories. College library has a large collection of Text Books and Reference Books, Scientific and Technical Publications, photo copying, e-mail and faxing facilities as well as a Work Processing Centre. The college library consists of nearly 61,000 books, and about 126 Journals and 4000 on-line journals. It also subscribes to 50 Journals every year.

The Industrial Consultancy Services Unit of the college is very active in offering the expertise of the staff in various fields like Structural Engineering, Geotechnical Engineering, Surveying, Electrical Engineering and Mechanical Engineering. Almost all departments have Computers to carry out Computer Laboratories, Projects, Research and Development work. A 24x7 Centralized Computer Centre, having biometric entry, has been established which is open to students and staff rounds the clock on all days including holidays. Important software of all

the departments are housed in it and can be accessed by the students and staff. The college is having 100 Mbps broadband internet connectivity (both wired and wireless (Wi-Fi)) for entire campus.

The college presently has 5 hostel blocks. Two hostels are allocated for boys and three are allocated for girls. The college provides hostel facilities for about 820 boys and 725 girls. Other facilities in the campus include a bank, Post office; Hospital, Canteen, play fields along with a pavilion etc. are available. The college has NCC (National Cadet Corps) and NSS (National Service Scheme) units.

100% of our college students are getting employment through campus placements. In the Academic Year 2013-14, more than 60 companies have visited the campus for the placements.

The student branch of IEEE (Institute of Electrical and Electronics Engineers) is very active. The college also has ISTE (Indian Society for Technical Education) chapter. The Faculty Members of the College also guide Research Programmes, leading to M.S / M.Phil / Ph.D Degree offered by the University. Besides academic activities, the College is conducting extensive research activities and offering industrial consultancy services to various Government and Private organizations.

2.1 Collaboration with Industry:

The College has devised specific action plan to increase the Industry Institute Interaction for collaborative programs and research funding. This is expected to increase the number of industry oriented PG programs, joint research programs, joint publications and commercialization of R&D activity, patents and establishment of Innovation Centre. Industry specific **research projects** to be identified ó proactively using market needs and student/faculty competencies and their ability to solve industry specific engineering challenges. By the end of two years it is proposed that through interactions by way of monthly speaker series and Industrial Visits the problems of the Industry would be identified and MoU for joint research in 4 -5 key areas identifies shall be taken up.

2.2 Enhancement of R& D and Institutional Consultancy:

With a strategic goal to enhance the research competencies in the identified thrust areas and increase in Ph.D enrollment, the college proposes to enhance its collaborations with R& D Institutes, research funding and increase the publications in refereed national and International Journals.

Joint Supervision: To jointly supervise PG thesis work and Ph.D with all the MoU foreign Institutes. MoU has been entered with BTH, Sweden. Collaborations are being worked with other Universities, namely Cork Institute of Technology, Ireland, University of West Minster, London.

Joint Publications with networked Research and Academic Institutes. Several part time scholars of the college are working with co supervision from Industry and other academic Institutes/ Colleges. Interdisciplinary Research would be enhanced through these collaborations

As a part of Industry Institution interaction, the institute has been continuously interacting in transferring the expertise in the form of consultancy and revenue of around Rs. 1.50 Crores per annum.

2.3 Implementation of Institutional Reforms:

The Governing Body of the college is keen on implementing institutional reforms for enhancing the quality of the programs offered and accreditation of the courses. This is proposed to give autonomy of reasonable levels to the institute with suitable delegation of powers. The programs would gain recognition through accreditation. The vacancy position of the sanctioned strength is targeted to be decreased and faculty qualification upgradation.

2.4 Finishing School and Academic Support for Weak Students:

The College organizes Finishing School with an aim to provide the necessary employability skills to the students through its Training and Placement Cell. The College conducts Finishing School on regular basis by identifying the Skill gap both domain and Softskills. The academically weak students are identified by their performance in the semester examinations and pre-assessment test to

identify the needs of the students and design course content of the Finishing Schools and Remedial Classes. This is expected to increase the placement ratio and average salary increase of the students of both UG and P. G. The Remedial Coaching is expected to significantly improve the Transit rate of the students by over 98% a successful equity plan.

Objectives

- To bridge any gap between the subjects studied and the industry needs and provide industry ready graduates.
- To supplement the technical Skills with the necessary Soft Skills to succeed in securing employment and improve personality and code of ethics.
- To increase the employability percentage of the students.

Action Plan for Finishing School:

- Conduct pre-assessment test to analyse, technical Competency, behavioral Skills, Analytical Skills and capability to adjust to working environment.
- Offer Specialized Programmes with the experts from Industry of the relevant area to match their needs on part-time basis or during vacation.
- Increase the Learning Resources in the Training and Placement Cell.
- Visit Industries and conduct study tours.
- Organize Campus Placement in the areas where the Skills developed can be utilized thereby enhancing the percentage of campus placement.

2.5 Equity Action Plan

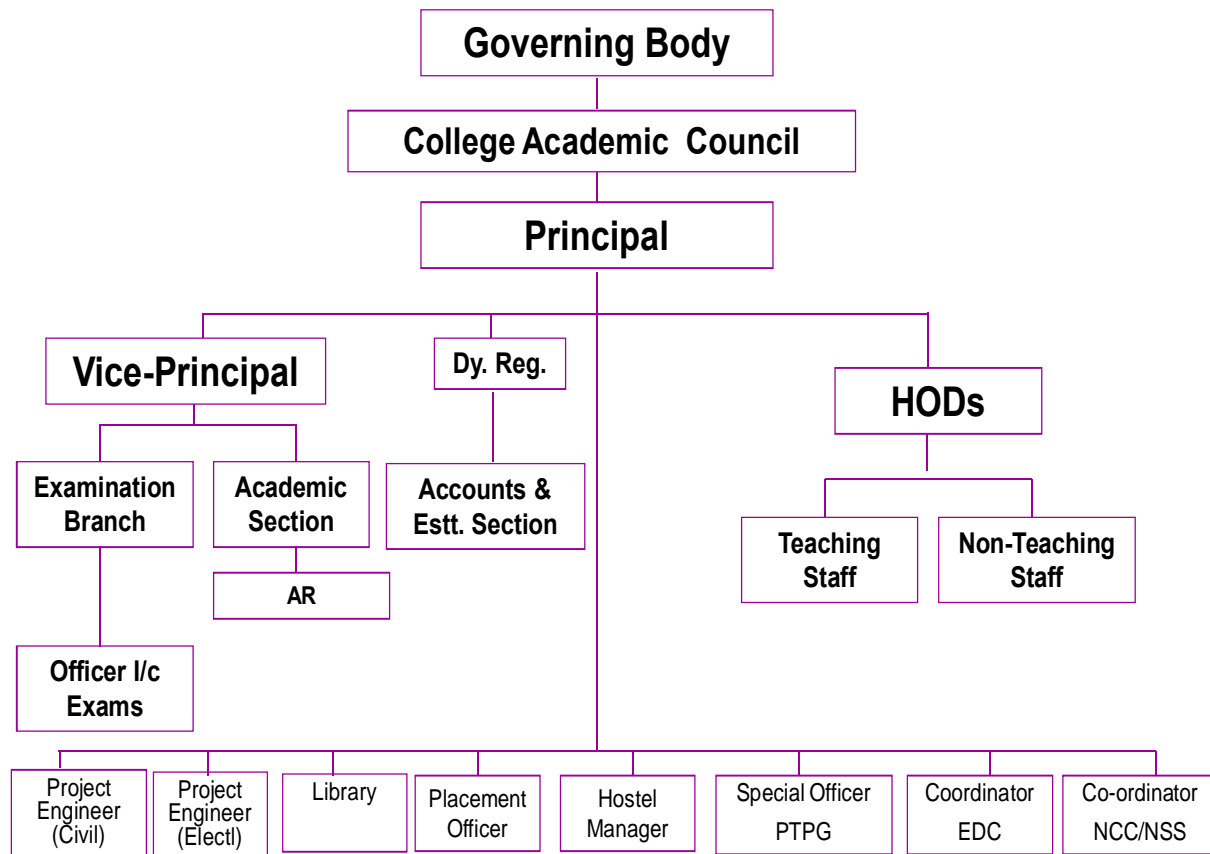
Objectives

- To supplement the regular classroom teaching with small group and practicum oriented sessions to enhance learning of those students who Cannot follow the course at the normal pace and mode of teaching.
- To provide access and equal opportunities to all sections of the community implementing equity plan.

Action Plan for Equity

- Conduct Remedial Coaching to all academically weak students
- Soft Skills Training specially focused to students from rural areas.
- Identify the students requiring academic support by the result analysis of the first year itself to induct them into the main stream. Presently the transition rate of SC/ ST/ OBC and other academically weak students is 78%. It is proposed to increase this to 92% by the end of the project.

Organizational Structure of the College



2.6 Governance Structure

Executive Bodies

- ✓ Principal
- ✓ Vice-Principal
- ✓ Head of the Departments
- ✓ Hostel Manager
- ✓ Office In-charge of Examinations
- ✓ EDC Coordinator
- ✓ Professor In-charge Library
- ✓ Administrative Officer
- ✓ Deputy Registrar
- ✓ TEQIP Coordinator
- ✓ NCC/NSS Officer
- ✓ Placement Coordinator
- ✓ Special officer PTPG
- ✓ Project Engineer (Elect./Civil)

Policy Suggestive Bodies

- ✓ College Academic Committee
- ✓ Academic Council
- ✓ Board of Studies
- ✓ General Body of all Teachers
- ✓ Teaching & Non-teaching Associations
- ✓ Student Bodies
- ✓ Library Committee
- ✓ Finance Committee
- ✓ Department Student Associations

Executive/Policy suggestive bodies	Role of Executive/policy suggestive bodies
Office In-charge of Examinations	Responsible for conducting of examinations and Evaluation .
Project Engineer (Elect./Civil)	To look after the maintenance of civil /electrical related works of the institution.
TEQIP Coordinator	To coordinate all the TEQIP related activities of the institute
Placement Coordinator	Responsible for conducting campus placements by interacting with industry personals
Academic Coordinator	To look after the academic activities like NBA accreditation NAAC, AICTE related works, preparation of UG/PG course structure and regulations.
Purchase/Procurement committee	To make purchase of goods, works and services as per Procurement guidelines
Industry institute advisory committee	Arranging Lectures by industrial experts, Collaborative projects, Tutoring by Industry experts. Faculty visits to industry. Memoranda of Understanding with industries. Initiating the process for providing Internships/Scholarships / fellowships and Awards to students and faculty
Student Bodies	To organize student activities like technical fests and conferences etc.,
Library Committee	Plan for digital library, books & LRø, Journals, software needed etc.,
Hostel Manager	Takes care of smooth functioning of the hostels with the support of Deputy wardens
Finance Committee	Financial Plan, Fund allocation, Audit etc.
Anti-sexual harassment committee	To sort out the issues related to sexual harassment
Grievances cell	To sort out the grievances of students, teaching and non-teaching staff

Monitory and evaluation committee	Monitoring of Targets for deliverables
Department Student Associations	To organize student activities like technical fests and conferences in the department
Teaching & Non-teaching Associations	To look after the all welfare measures of the teaching and non teaching staff.

2.7 Board of Governing Body

S. No.	Role	Name
1.	CHAIRMAN Formerly Director, NRSA.	Prof. B. L. Deekshatulu Distinguished Fellow, IDRBT
2.	MEMBER Industrialist	Mr. Ramesh Datla Managing Director, Elico Ltd.
3.	MEMBER Industrialist	Mr. Sarat Chandra Babu Executive Director C-DAC, Bangalore
4.	MEMBER Industrialist	Mr. S. Ravi Kumar Head-Hyderabad Development Centre, Infosys Technologies Limited
5.	MEMBER Industrialist	Mr. Y.Harish Chandra Prasad Chairman Malaxmi Infra Ventures (India) Pvt. Ltd.
6.	MEMBER Industrialist	Dr. Prahlada Vice-Chancellor, DIAT (DU)
7.	MEMBER Industrialist	Er. F. C. S. Peter Former Director General, National Academy of Construction
8.	MEMBER Academician	Prof. P. Jaya Prakash Rao Former Chairman, APSCHE
9.	MEMBER Academician Faculty of JNTUH	Prof. N. V. Ramana Rao Professor of Civil Engineering & Registrar, JNTUH
10.	MEMBER Academician Faculty of JNTUHCEH	Dr.M.V.Seshagiri Rao Professor of Civil Engineering JNTUH College of Engg. Hyderabad.
11.	MEMBER Academician (University Nominee)	Dr.A Damodaram Director, Academic & Planning, JNTUH
12.	MEMBER	Nominee of CTE

	(State Govt. Nominee)	
13.	MEMBER (UGC Nominee)	Prof. Afshar Alam Jamia Hamdarad University Hamdard Nagar- New Delhi-110 062
14.	MEMBER (AICTE Nominee)	Sri. Sh. Saroj Kumar Jena South Central Regional Office-AICTE, Hyderabad
15.	MEMBER SECRETARY Academician	Dr.N. Yadaiah Professor of EEE & Principal JNTUHCEH

2.8 Role of Governing Body

- ▶ The BoG is the custodian of the Institution, Chairman/Member can guide/support directly or indirectly in the areas of expertise or position
- ▶ Approval of Mission, Vision and Goals.
- ▶ Set short term and Long Term Goals
- ▶ Developing the Strategic plan for 5 or 10 Years
- ▶ Creating Research Environment
- ▶ Adapting Good Governance Practices
- ▶ Mentoring
- ▶ Academic partnerships
- ▶ Entrepreneurship
- ▶ Industry Interface
- ▶ Networking
- ▶ Budget Approval

College Academic Committee (CAC)

CAC reviews and approves the proposals related to academic activities, Academic Plan and Implementation of Institutional reforms. Principal is the Chairman of College Academic Committee and all the professors of the institution are the members of CAC.

2.9 Board of Studies

Functions of Board of Studies:

- Prescribing regulations and syllabus for various courses.
- Revising and updating the syllabus from time to time.
- Introducing new electives.

The College is revising the syllabi for the UG programmes for every 4 years and for PG programmes for every two years to meet the industry requirements and also including the day to day technology developments. The BoS consists from various prestigious organizations like IITs, NITs, IIITs, JNTUH, Industry / R&D, Alumni, Other Universities and Senior Faculty members of the Respective departments. The significance of recent BoS meeting is that, 5 Theory + 3 Laboratories structure has been implemented instead of 6 Theory + 2 Laboratories in each semester to improve the hands on practical knowledge.

2.10 Principal: Principal is the head of the institution responsible for the academic and administrative activities.

- ✓ Encourage the faculty to share responsibility both for making decisions and for implementing the results of those decisions.
- ✓ Providing appropriate opportunities for faculty to participate in Institutional affairs.
- ✓ Initiating operational policies within the college for discussion, approval, and implementation.
- ✓ Make effective use of all staffing resources and seek opportunities for collaboration and joint working with others beyond the Institute.
- ✓ Ensure a safe and healthy environment for both staff and students, and full compliance with health and safety requirements
- ✓ Ensure all activities are carried out to the highest possible standards and put in place the necessary evaluation and monitoring procedures to ensure both compliance and improvement

- ✓ Submits a budget based upon the plans of the Institute with justifications for the expenditures. Once the budget is approved, principal allocates the resources for all the departments .
- ✓ To establish links with external agencies, such as alumni, professional bodies, research councils and other funding agencies, for the benefit of the Institute's teaching and research.

2.11 Vice-Principal: All the academic activities are carried out under the control of the Vice-principal.

- ✓ Responsible for conduct of Examinations.
- ✓ Evaluation and declaring Examination results.
- ✓ Responsible for conducting BoS meetings.
- ✓ Responsible for implementation of academic regulations.

2.12 Head of the Departments: The Department Head is responsible for monitoring all operations and activities within the department.

- ✓ Administers the day to day operations of the department, organizes and conducts department meetings, appoints department committees, prepares reports.
- ✓ Responsible for enhancing communications within the department and other departments.
- ✓ Guides faculty to fulfil the expectations of the College.
- ✓ Conducts the various review processes within the department by writing necessary reports, helping candidates compile self-evaluation, overseeing the peer observation process, and conducting departmental meetings.
- ✓ Supervises departmental faculty and clerical and technical staff.
- ✓ The Department Head encourages innovative teaching and curricular development to achieve college vision and mission.

- ✓ Submits a budget based upon the plans of the department, with justifications for the expenditures. Once the budget is approved, the department Head allocates the resources within the department in as equitable a manner as possible.
- ✓ In conjunction with the appropriate faculty and staff, the Department Head ascertains the physical needs of the department and submits requests for special funding when appropriate.

3. Institute vision and mission

VISION

To be recognized as one of the top 10 institutes in the country offering Quality technical education, sustaining and improving its repute of Quality UG programmes, expanding and enhancing need based and quality PG and research programmes with global outlook, synergizing teaching and research for societal relevance.

MISSION

To identify technological advancements and build the right level of skills at the right time contributing to the industrial and national growth

To identify and keep abreast with the state of the art technology maintaining its legacy of striving for excellence in higher education.

To promote world class research of local relevance to society

With a research community of professors, research fellows and research centers, expand the scale, quality and multidisciplinary character of its research activities.

With a global outlook strive for collaborations to network with International Universities and National Institutes of Research and Higher Learning.

Strategic Goals

1. Scaling up of Postgraduate education and Research.
2. Sustain and improve the Quality and Relevance of Programs offered.
3. Promote Research aligned with the National Research Priorities enhancing Knowledge and Innovations
4. Improve Industry Institute Interaction and relations with Community and Society.
5. Improve Faculty Teaching and Research Competency
6. Devise Equity Action Plan to help socially and academically weak Students and Staff.
7. Employ Implementation activities and Procedures to comply with Environment Management standards.
8. Devise Disclosure Management Framework for all the activities during the period.

The Vision and the Mission statements were rigorously discussed by the Principal and the Heads of the various departments based on the initial SWOT analysis. Finally, the proposal for the mission statements and the Quality improvement has been formulated and the final draft was prepared with appropriate strategic planning. This was approved by the Governing Body of College, and based on which, the rest of the strategic plan for the next four years was set.

4. Strategic Planning

The College has been engaged in a complete strategic planning exercise. The process consisted of multiple brainstorming sessions as well as formal feedback exercises to capture insights, suggestions and recommendations from various stake holders viz. Faculty, Students, Industry, and Parents. These exercises that spanned over three weeks involved majority of the faculty (98 persons), smaller working sessions with Heads of the Departments and Senior staff (30 persons), sessions with representatives of the students (120 persons), sessions with representatives of the non-teaching staff (50 persons) and interviews/E-mail input with alumni. The redefined mission and vision statements, SWOT analysis and the strategic directions of the institution for the next 4 years are a direct outcome of this extensive collective reflection process. These outcomes are also reviewed and the proposals are

approved by the Governing Body. The outcome of this process is re-circulated to the responding groups and their feedback is incorporated in the SWOT analysis presented here. The Summary of the inputs collected from different groups of Stakeholders is as follows:

4.1 Student Group:

Almost all the students expressed that the Brand Name of JNTUH CEH is major strength of the college. They also expressed satisfaction on the proactive curriculum and employability opportunities. It was however felt that special training for soft skills and short term skill development courses would add more value to the programs both in securing long term and short term jobs. They were looking for a more lively campus strengthening interactions and networking among various disciplines.

4.2 Faculty Group:

The Faculty found that the major strength of the institute lies in attracting the best and brightest students and the autonomous status of the institute providing flexibility in curriculum design and delivery. They however expressed concern over the depletion of skilled manpower in the laboratories to support conduct of the experiments and insufficient funding to modernize and provide hands-on for the newly introduced courses. The facilities for conduct of research and fellowships to expedite research work was desired by almost all the faculty. The synergy of research outcomes and teaching learning processes is made as the future vision of the college.

4.3 Industry Input:

The industries which employed the students of the college felt that the students were easily adaptable, had good grasp of the technical concepts. They however felt that additional training of soft skills and behavioral skills will make them more industry ready.

4.4 Parents Inputs:

The parents are proud of the brand name of the college and look forward for more prosperous careers for their wards.

The Strategic planning has brought out clearly the weaknesses and opportunities. Methods are explored to convert the available opportunities to the advantage of the College using its strengths. Action Plan are devised to eliminate weaknesses and where not possible the weaknesses are minimized through programs such as remedial coaching, FDP and equity plan. When a weakness could not be eliminated, we tried to meet the Goals taking these weaknesses as constraints. The college being a government funded institute faces challenges in terms of modernization of the laboratories to the fast changing technologies. The budget for infrastructural Improvement for Teaching, training and learning requirement and FDP is therefore high when compared to other components. Similarly the college provides access and equal opportunities to all sections of the community and hence a separate budget is proposed for implementing equity plan.

4.5 GAP ANALYSIS:

From being an institute reputed for its UG programs to become recognized globally as a comprehensive institute offering quality and innovative UG, PG, Ph. D. programs the college has conducted SWOT Analysis.

5. SWOT Analysis

5.1 STRENGTHS

- **The Brand name JNTUH** and the reputation compared to other state university colleges. It has been graded as the top college in AP as per survey 2010 of outlook magazine.
- **Diversity** of academic Background of Faculty members ó Each discipline has at least four Specializations. There are 6 B.Tech. Specializations and 14 M.Tech. Specializations.
- **Highly Qualified and Competent Faculty**- More than 62% Ph.Ds.
- **Good Campus Placement** ó More than 90% of UG graduates placed with average salary of 3.5 lakhs per annum.
- **Quality** and adaptiveness of the **Curriculum**. Revised on regular basis once in two year.
- **Autonomous College:** The institute enjoys complete academic autonomy and has been establishing new PG programs and incorporating academic reforms.

- **Proven record of successful completion of projects** The institute has received sponsored research projects from UGC, MHRD, AICTE and TEQIP and has been identified as lead institute in TEQIP Phase-I.
- **Accreditation:** All UG programs of Engineering departments, viz., Civil, Mechanical, Electronics and Communications, Electrical and Electronics, Computer Science and Metallurgy have been accredited by NBA since 2005.
- **Research potential:** Centres of excellence in identified thrust areas viz., in CAD and CAE, e-learning, Energy studies and Transportation are established to advance research. Department of Chemistry and Centre for Energy Studies have received recognition of their research work by the way of patents
- **Industrial consultancy:** Generating a revenue of over rupees one crore per annum.
- **International networking:** Networking with International universities to offer specialized programs the courses are offered with credit transfer.
- **Industry collaborations:** Industry based PG programs are offered.

5.2 WEAKNESSES

- **Limited Array of Courses:** Many of the disciplines of engineering now offer traditional PG specializations. Need based and industry oriented PG programs are to be started. Inadequate match between education received by graduates and job requirements.
- **Limited full time Research Scholars:** Due to plenty of job opportunities outside, unable to attract the research scholars on full time basis. There is also a need to create interest among engineers for pursuing either research degree programs or teaching careers.
- **Limited funding for infrastructure up gradation:** With increased number of PG courses, the increase in resources like specialized labs there is insufficient match with the fast changing technological advancement.
- **Limited Industry Institute Interaction:** Need to strengthen to collaborative PG programs, consultancy and internships and joint Research activity.
- **FDP is self driven:** No formal mechanism for faculty up gradation to meet the demands of curriculum changes and specializations offered and pedagogy.
- **Absence of skill up gradation programs of supporting staff:** With changing technologies and the modernization of equipment, skill up-gradation of technical staff has

become a necessity.

- **Limited library for research:** The library is good for instructional purposes. There is a need for more online databases, external resources, Interlibrary loans, and other means of drawing on the resources of large libraries.
- **Insufficient funding for:**
 - Supporting Travel allowance for presenting Technical papers within or outside country.
 - Supporting UG & PG Projects which motivate students towards interdisciplinary and live projects.
 - Supporting Under Graduate Research
 - Attracting more qualified and experience contract faculty.

The weaknesses identified are mitigated by the strategic goals identified for the next four years.

5.3 OPPORTUNITIES

- **Strategic Location:** Being located in Hyderabad, with various public and private sector industries, state and central government R&D establishments and defence laboratories, possible exposure of faculty and students to the latest state of the art technologies in science and engineering.
- **Demand for Ph. D and PG Programs:** With the govt. Policy of increasing access to engineering education, there is huge demand for qualified graduates for teaching and research.
- **Global Networking:** Many foreign universities and Industries are willing to collaborate to offer specialized programs. Partnerships with institutions of international repute for offering university courses in various disciplines of engineering and faculty exchange are underway. Some of the institutes where collaborations are being worked out are BTH, Sweden, Cork Institute of Technology, Ireland and University of Westminster, London.
- **Strategic Alliances:** More tie-ups and partnerships with local employers possible with those in the private, non-profit, and public sectors ó so that our students are more appealing to them.

- **Technology Enabled Learning:** Availability of Flexible learning and adoption of new Information and Communication Technologies to increase the learnability and accessibility.
- **e-Content:** Availability of standardized e-learning content to enable quick FDP.
- **Collaborations:** In the scenario of globalization and as the city of Hyderabad is accessible to entire world, there is a large scope for entering into Collaborations with various Indian and foreign universities and other R&D establishments for various exchange programs and R&D activities.

5.4 THREATS:

- With the proposals of new deemed and **foreign universities** and centrally funded institutes such as IIT coming up, the infrastructure and programs may attract talented students and Faculty.
- Due to more employable opportunities and **attractive pay packages** from IT and other industries, quality of students entering the PG and research programs is in threat.
- Immediate replacement of faculty and staff as and when they retire is not possible due to long recruitment cycles, which hamper the routine activities and further developmental activities of the institute.

6. Governance Purpose

Technical and engineering education, is critical to realize the Indian dream of becoming a competitive player in the global knowledge economy. To achieve calibrated improvement in quality of technical education at UG and PG levels by building on existing strengths and exploiting the emerging opportunities.

The institution governance is to strengthen its facilities to improve learning outcomes, employability of graduates and to uplift the standard of UG and PG education through the support from Govt. of India, Govt. of Telengana and other Statutory agencies, by way of infrastructural development, faculty and staff development, R & D activities and industry-institute interaction.

The Beneficiaries

The main beneficiaries are the students, faculty, staff, institution, the society and industry. Some of the benefits for each of the stakeholders are described in brief as follows:

Students

- É *Improved employability*
- É *Increased industry-institute interaction*
- É *Better adaptability to industry needs*
- É *Better academic ambience*
- É *Scope for research activities*
- É *Support to financially and academically weaker students*

Faculty

- É *Better opportunity for enhancement of knowledge and management capacity Quality Improvement*
- É *Industrial exposure*
- É *Consultancy, testing and R & D opportunities Increased Opportunities for professional growth*

Institution

- É *Motivated, creative and qualified faculty*
- É *Sustained efforts to accomplish the Vision*
- É *Better adaptability to global needs*

- É *Recognition at National and International level*
- É *Academic Autonomy*
- É *Enhanced IRG*

Society

- É *Opportunity for better education Skill development opportunities*
- É *Better accessibility to technical environment Easy availability of technical support*
- É *Industry*
- É *Availability of high quality human resource satisfying their pre-requisites Result oriented sponsored R & D projects*
- É *Technology transfer*
- É *Exposure to the academic environment and expertise*

7. Primary accountabilities

- *To approve the mission and strategic vision of the institution*
- *To enable the institution to achieve and develop their mission and primary objectives for learning, teaching and research through strategic planning*
- *To ensure the establishment and monitoring of proper, effective and efficient systems of control and accountability*
- *To monitor institutional performance and quality assurance arrangements*
- *To put in place suitable arrangements for monitoring*

8. Openness and transparency in the operation

- *Publishing an annual report on institutional performance.*
- *Providing as much information as possible to students, faculty, public and potential employers on all aspects of institutional activity related to academic performance, finance and management.*
- *Ensuring that all reported information, including that conveyed in marketing campaigns, is truthful*
- *Conducting proceedings of governing bodies in an open manner as much as possible that is permissible by statutes*

- *Student admission information to ensure public trust and confidence*
- *Maintaining a register of interests of members of its governing body Ensuring that vacancies are widely publicized both within and outside the institution.*

9. Effectiveness and performance review of governing body

- Review Effectiveness
- Regularly Monitor their own effectiveness and the performance of the institution against the planned strategies and operational targets..
- Reflect on the performance of the Institution in terms of the long-term strategic objectives and its short term indicators of performance/success.
- Benchmark Institutional performance with other comparable institutions.

10.Key Attributes of Governing Body

- ✓ *Keen sense of their role, responsibilities, ethics and duties.*
- ✓ *Skills, experience and competencies.*
- ✓ *Co –opt independent members.*
- ✓ *Appointments and Description of the role and capabilities desirable in new members.*
- ✓ *Commitment for the institutional development.*
- ✓ *Transparent conduct of proceedings.*
- ✓ *Maintain and make publicly available a register of interest of all the member of the GB.*
- ✓ *Rules for conduct of meetings.*
- ✓ *Constitute subcommittee for finance procurement etc.*
- ✓ *Decide on Remuneration for Lay or independent Members.*
- ✓ *Clarity of responsibilities.*
 - *Chair.*
 - *Head of the institution*
 - *Administrator*
 - *Members*

Chair is responsible for the leadership of the governing body and ultimately to the stakeholder for its effectiveness.

For the governing to be effective, there must be a constructive and challenging working relationship between the chair and the executive Head of the institution.

*The **Head of the institution** is responsible for the executive management of the institution and its day to day direction and leadership*

*The **Administrator** to the governing body has a key role to play in the operation and conduct of the governing body and in ensuring that appropriate procedures are followed.*

11. Regulatory Compliance

The Governing body ensures compliance with the statutes, ordinances and provisions regulating the institution, including regulations by statutory bodies, such as the AICTE and UGC, as well as regulations laid out by the State government and affiliating university and takes all final decisions on matters of fundamental concern to the institution.

Not for profit purpose of education institutions.

- Statutory basis on which public funding is provided to the institution and for the effective use of funding.
- Have in place sound systems for management, risk management and internal control.

ROAD MAP JNTUHCEH (PART B)
JNTUH COLLEGE OF ENGINEERING HYDERABAD
(AUTONOMOUS)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

KUKATPALLY, HYDERABAD – 500 085 Telangana State

STATUS & ROAD MAP
(2015 – 2020)

1.0 ANTECEDENTS ~

Under a broad policy framework of providing competent technological education required for the industrial growth of the country in general, and Andhra Pradesh State in particular, the Jawaharlal Nehru Technological University (JNTU) was established on 2nd October, 1972, at Hyderabad, by an Act of State Legislature. Aply named after the ardent lover of Science and Technology, Pandit Jawaharlal Nehru, the First Prime Minister of India, the University was established with the noble objectives of strengthening and enhancing the levels and standards of Technological Education, and making it relevant to the rural, urban and industrial development of the country. JNTU, Hyderabad, is the First Technological University in India, and completed 36 years of successful existence by 2008.

2.0 JNTUH ESTABLISHMENT in 2008 ~

JNTU experienced an exponential all-round academic growth in all these years, resulting in 6 Constituent Colleges, 1 Fine Arts College and 10 other Academic Units, by 2007. JNTU has been divided into 4 different Universities by the Government of Andhra Pradesh, vide A.P. Govt. Ordinance No.13, Aug.18, 2008, and A.P. Govt. Act. No.30, Sept.24, 2008. The University at the central campus of Kukatpally, Hyderabad, has been designated as **JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD (JNTUH)** at Hyderabad. After the bifurcation of the Andhra Pradesh State (June 2014), the JNTUH became the premier technological university under Telangana State. JNTUH is situated in a sprawling 90 Acre Campus at Kukatpally, Hyderabad. It has 4 Constituent Engineering Colleges, one at Hyderabad and the others at Jagityal, Manthani and Sultanpur, and 11 other Academic Units at Hyderabad Campus.

3.0 JNTUH College of Engineering, Hyderabad (1965 - 2008 - 2015 ...) ~

College of Engineering, Hyderabad (CEH) was originally established as Nagarjuna Sagar Engineering College, in 1965. It became a constituent college of JNTU from 1972 onwards. After JNTU got divided into 4 Universities (2008), CEH became a constituent college of Jawaharlal Nehru Technological University Hyderabad, and is popularly known as **JNTUH-CEH**.

- JNTU was accorded **NAAC - A Grade** in the year 2004, and Re-accreditation of this status after the formation of JNTUH in the new Telangana State, is due (after the stipulated completion of the years of existence under 'new University' name).
- The college was conferred '**Autonomous Status**' by **UGC, New Delhi** in 2010-11 for a period of six years. All the UG and PG Programmes of the College are well recognized and accredited by NBA, New Delhi.
- JNTUH-CEH offers B.Tech. Programmes in 7 disciplines at UG Level; M.Tech. Programs in 19 disciplines, M.Sc. in 4 disciplines, M.C.A., M.B.A. at PG Level; in addition to the offer of M.S., M.Phil., Ph.D. Programmes in various disciplines of Engineering, Technology, Science and Management.
- The 7 Major Departments of Engineering/Technology include Civil Engg., Mechanical Engg., Electrical & Electronics Engg., Electronics & Communication Engg., Computer Science, Metallurgical Engg and Chemical engineering Branch. Chemical Engineering branch is commenced with effect from 2014-15 year onwards.
- JNTUH-CEH has 3 potential Centres for Excellence in its campus - Centre of Transportation Engg., Centre of Energy Studies, Centre for Excellence in VLSI and Embedded Systems Design, and Centre for Excellence in Disaster Management.
- CEH has an exclusive 'Entrepreneurship Development Cell' apart from conventional Training and Placement (T&P) Cell, NCC and NSS Units.
- JNTUH-CEH takes pride in the commencement of 5 Year Integrated Dual Degree Programme (IDP) at the College with effect from 2009-10 onwards, for the first time in the state. IDP is being offered now in five branches of engineering - Civil, Mechanical, EEE, ECE and CSE, leading the award of B.Tech. + M.Tech./MBA degrees in chosen specialization. Two batches of students have successfully gone through, their candidature being happily accepted by Industries and Organizations.
- The College has individual Board of Studies (BoS) Committees for each department, and conducts regular monitoring, modification and restructuring of UG and PG Course Structures and Curricula periodically (every 3 years), taking active inputs from IITs, Industries and R&D Organizations, and with critical focusing on lab. oriented courses, design based experiments, and problem solving approach. In fact, the syllabi, course structure and credit offers of all programmes are becoming benchmarks for various other institutions and engineering colleges in different states.

- Apart from regular and specialized labs for each department, the College also has a 24 x 7 Computer Lab. and a Computer-aided Multimedia English Language Communication Skills Lab. with sophisticated softwares and utility programs.
- CEH has an active Training & Placement (T&P) Cell, which carefully monitors the needs of students; 100% placements have been achieved continually for the past 5 years through campus selections.
- Consultancy Activities are quite rigorous, and CEH has successfully provided consultancy services in different spheres, which were well-received.
- Apart from the Central Library access, CEH also has a good College Library, having nearly 61,000 books, about 50 journal subscriptions per year, and 6000 back volumes and 4000 online journals.
- Excellent internet facilities (wi-fi enabled) are available throughout the campus, for all departments and staff quarters, with 100 MBPS speeds on a 1 : 1 basis.
- College has 5 hostel blocks (2 for boys, 3 for girls), catering to the needs of about 820 boys and 725 girls.
- CEH has an active ISTE Section, IEEE Student Branch and has conducted a number of programmes and events inviting participation from different parts of the country.
- Each department of the college has a good number of doctorates, securing research projects and guiding scholars for their Ph.D. Programmes in different disciplines of engineering. Employees of nearby Industries and R&D Organizations are also encouraged to carry out M.S. (by research) Programmes, in tune with their conventional research works.
- The academic atmosphere in campus is quite vibrant, and can indirectly be gauged by the number of programmes ... workshops/ symposia/ student fests/ FDPs/ Orientation Courses/ Refresher Courses/ STCs/ Conferences at National and International Level ... that are regularly conducted throughout the year, and the active participation of students, scholars and faculty from various institutions and organizations.
- Being 'sensitive' to ... (i) the demands of unprecedented expansions in technological sectors, (ii) the concerns of quality in engineering education, (iii) the competence and compatibility of UG/PG students to industries and research organizations, (iv) the current man-power needs of the society, CEH has been striving hard to impart quality education leading to meaningful and purposeful academic ambience and career placements.

- Regular feedbacks and criticisms are continually invited, received from the alumni groups, employees, industry personnel, and parents, which are in turn analyzed and pro-active actions are recommended and implemented, much to the appreciations of the stake holders.
- CEH also takes pride in making all the required financial allocations for the development of labs, setting up of new experiments, procurements of modernized equipment, hardware/software, through periodical budget estimates and needs, thanks to the immediate fund availability and sanction from the JNTUH University.

Based on its well-defined procedures and norms, proven academic performances and industry placements, stake holders' appreciations, JNTUH-CEH has been popularly identified as the 'Lead Institute' with iconic status in the Telangana State, and has been providing guidance at various levels to the other constituent and affiliated colleges in the state.

4.0 JNTUH-CEH - STATEMENTS OF PURPOSE, VISION and MISSION for ROAD-MAP 2015-2020 ~

The Vision and Mission Statements of JNTUH-CEH follow the successful previous Vision-Mission Statements of the unified JNTU and the present JNTUH, and are coherent with the requirements and priorities for the development of technological education in the state. The features of Vision and Values are consistent with the traditional development, industry needs, research and placement aspirations, technological growth and ambitions of the University.

The Mission and the College Identity Parameters underline the commitment of CEH to produce innovative and compatible engineers and researchers, and to make the JNTUH-CEH a Student-centric, Education-centric, Quality-centric and Research-centric Technological Institution, maintaining academic excellence, professional standards and humanitarian values.

4.1 STATEMENT OF PURPOSE ~

JNTUH-CEH has a phenomenal existence and wishes to play a continuous pivotal role in fostering technological education and research in identified areas of engineering, technology, sciences and management, by providing state of the art programmes leading to UG, PG and Ph.D. Degrees, and by maintaining right blends for Industry-University Interactions, compatibilities, and career placements.

4.2 VISION - 2020

JNTUH-CEH aims to be recognized as an Institution of Higher Learning in Technological Education and Research, with Global Accreditation and International Compatibility, that can provide quality teaching, learning environment and progressive research in diversified fields, infusing competence and commitment with academic freedom and professional integrity in the pursuit of knowledge, and addressing societal needs.

4.3 MISSION - 2020

To be identified as a Leading Technological University College, that is dedicated to provide a competitive learning environment for excellence in teaching and research programmes, and committed to produce highly creative and innovative engineers and scientists with a professional outlook, who can successfully address the national and global problems, and to earn recognition as a Premier Institute of Technological Education and Research.

4.4 VALUES ~

JNTUH-CEH is committed to its Statements of Vision and Mission, with a defined set of Goals and Objectives, that ensure value based professional education in diversified areas, addressing the national interests and global concerns, ensuring - Equal Opportunity, Quality and Integrity, Transparency and Accountability, acknowledging the Traditional Outreach, Societal Needs and Healthy Criticisms. Resourcefulness, Mutual Respect for Accomplishments, Humanitarian Approach, Engagement of Faculty in Community Service shall be assured in all its actions and commitments.

5.0 OBJECTIVES ~

- To establish a strong academic base for sustaining the growth and advancement of technological education in the State of Telangana.
- To provide a motivating, enabling and competing environment for higher education in engineering/ sciences/ technology/ management, with relevant technical and professional skills in conventional and accelerated time formats.

- To supplement the conventional teaching methods with design based methodologies, problem solving approach, on-line course contents, video/web conferences, e-books and other e-learning practices, ensuring global acceptability.
- To create a scintillating and stimulating atmosphere for advancement of research, and knowledge acquirement in identified thrust areas and interdisciplinary fields, based on individual aspirations and proficiency.
- To implement a comprehensive curriculum as per international norms, that emphasizes creativity, innovativeness, industry compatibility, application specific projects and research orientation.
- To create a performance oriented platform for regular and integrated dual-degree programs in engineering/ sciences/ management, with enhanced standards ensuring adaptability to changing technologies.
- To meet the growing demands of Academic Institutes, Industry Units and Organizations, for qualified and competent manpower.
- To establish Research Labs. with state of the art equipment, licensed software and hardware components, and develop Centres For Excellence in Thrust Areas to promote College-Industry-R&D Organization Interaction.
- To create a smoothly functioning administrative set up, ensuring transparency, accountability, resourcefulness and e-governance.

6.0 GOALS ~

- Establishment of an educational base with sufficient infrastructure and development facilities, that can attract meritorious students to carry out UG/ PG/ Ph.D. Programs in conventional disciplines as well as inter-disciplinary areas.
- Aligning resources and providing challenging avenues for exceptional students who are highly motivated and who have a desire to work on research oriented problems in a focused manner, in addition to addressing the needs of average and needy students.
- Creation of multiple opportunities for all inquisitive and aspiring students, adding flexibility and keenness to acquire specialized knowledge and professional skills, to take up careers in research, teaching and industry.
- Providing strong career/professional advancement features, with UG, PG, Ph.D. qualifications in continuity, within an optimized time format through Integrated Dual Degree Programs.
- Establishing meaningful professional links with other Higher Institutes of Learning, R&D Organizations and Industries, and allow a continual infuse of frontier technologies in the engineering curriculum.

- Attaining academic excellence and professional standards to take the lead role, and to attain the status of a National University for Technology and Science in the State of Telangana.

7.0 MAJOR INITIATIVES ~

Over the past 50 years, being under the umbrella of JNTU/JNTUH, the CEH has produced highly professional and competitive engineers by infusing greater quality and content in the curricula and enriching the students with relevant professional skills compatible with the rapidly changing technological world and industrial aspirations. The stage has thus been effectively set for JNTUH-CEH to make the College/University accentuated with pride and performance coupled with academic excellence and research competence, to absorb the effects of globalization and adopt to international standards.

In particular, a scheme with multi-pronged strategies having an assigned set of initiatives is envisaged for JNTUH-CEH in the forthcoming years in different academic spheres and research domains ...

7.1 STRATEGIC SPHERES ...

The Academic Roadmap for JNTUH-CEH is categorized into a 3-Tier structure comprising of three specific zones – Academic Excellence, Research Competence and Infrastructural Sufficiency. A motivated action plan has been proposed with strategic themes spread over the next 5 years.

A) STRATEGIC THEMES - ACADEMICS ~

The prime targeted zone of action points to academic domain, with the following themes ...

- Design and Implementation of focused curricula as per international norms (Washington Accord) in different disciplines of engineering, technology, science and management, with continuous evaluation for quality output.

- Augmentation of Integrated Dual Degree Programmes of interdisciplinary nature, leading to UG+PG as well as PG+Ph.D. degrees, in an accelerated format for aspiring students based on capability and competence levels.
- Strong commitment to technological education at UG, PG and Ph.D. levels, through innovative teaching-learning practices, application oriented problem solving approach, choice based modular structures.
- Establishment of full-fledged departments with committed faculty having right blend of qualifications, dedication and research potentials, and enriching their knowledge levels through FDP, QIP and Career Advancement initiatives.
- Expansion of the Entrepreneurship Development Cell Activities with an identified outreach and promoting incubation centres to act as meaningful interfaces between the College and Industrial World.
- Identifying at least one Centre for Excellence in each branch/discipline, obtaining adequate resources through funding agencies like UGC, AICTE, DST, TEQIP etc., and providing support grants from College/University side, for sustainment and expansion.
- Specifying research targets to each individual faculty member, to secure and progress with a minimum of one R&D Project.
- Continuous participation and inculcation of social responsibilities, societal accountabilities and professional values in all students and staff, to accept accountable positions in the society and enact leadership roles in different domains.
- Promotion of College/University-Industry linkages and augmentation of student internships with multiple placement opportunities.
- Establishment of MoUs and MoAs with likeminded institutions, research organizations and universities on a global scale for a meaningful exchange of scholars and faculty, and implementation of joint research projects.
- Achievement of the ratings of a National Technological Institution with Global Recognition, International Standards and Accreditation.

B) STRATEGIC THEMES - RESEARCH DOMAINS ~

JNTUH-CEH assigns equal amount of importance and attachment to R&D in all disciplines as well ...

- Conducting periodical selections for Research Scholars in identified fields and thrust areas, for carrying out their Ph.D. works, paving way for the intensification of the R&D culture, not alone in the College Campus, but also in the linked Institutes/Organizations.
- Providing career opportunities and professional advancement for working Engineers and Scientists in the R&D Organizations, JNTUH-CEH has been offering Part-Time (Evening Mode) M.Tech., and Ph.D. Programmes and M.S. Courses through Research Mode, thereby taking care of the human resource development and growth in technological fields at State and National Levels.
- JNTUH-CEH continues to provide unrestricted channel connections with Research Institutes and Industrial Sectors, for the continuous upgradation of knowledge base, enrichment of the Research Centres for Excellence.
- CEH ensures budgetary allocations and sanction of sufficient grants for refurbishment and maintenance of Research Labs. with state of the art equipment, software tools and hardware supplements for the execution of student projects, R&D works of scholars/faculty.
- Specifically identifying Research Groups in each branch/discipline under emerging areas to lay the foundations and secure grants/projects from UGC, AICTE, DST etc.
- CEH has already established 24x7 computer labs.; the College envisages to provide a similar access to all Research Labs./Centres to all UG students, with academic guidance and faculty supervision, for sustained R&D in interdisciplinary domains.
- JNTUH-CEH and JNTUH have specific action plans for the conduct of National /International Conferences /Symposia in each department/ branch on a periodic basis, to enable the students and staff meet the eminent experts and get exposed to the latest trends and techniques in different sectors like Medical Image Processing, Robotics and Machine Intelligence, Bio-Informatics, Embedded Systems and VLSI Design, Wireless Communications, Nano Electronics, Cloud Computing, Network and Information Security, High Rise Structures, Disaster Management, International Business, etc.
- CEH envisions the Establishment of Chairs of Eminence in all its Research Labs./Centres and invite distinguished Professors, Scientists and Technocrats for nurturing research activities and promoting intellectual R&D project executions.

- Establishing the JNTUH-CEH as a Premier Academic and Research Institute of Excellence, with International Standards and Global Acceptance.

C) STRATEGIC THEMES - INFRASTRUCTURAL ~

CEH has a strong Engineering Cell support from JNTUH, with well perceived action plans for the growth of all departmental buildings, labs., common service needs, power requirements, water supply and drainage needs. With the priorities in Academic Sector and strategic Research Areas identified, JNTUH-CEH has pipelined plans to implement supportive structural designs and testing measures for the augmentation of the infrastructural facilities that can cover the requirements of the next decade, which include ...

- At least one Centre for Excellence with a linked Research Projects Lab., Seminar Hall, e-Class Room, for each branch of engg./ science/ technology, in addition to the existing facilities.
- Seeking fund allocations from Research Schemes and providing matching grants from University/ State Govt. for full-fledged structuring, establishment and maintenance of each of the above Centres.
- Establishment of New Hostels, with provisions for single rooms for all PG Students, Final Year UG Students, Foreign Students and Research Scholars, and additional campus quarters for all teaching and non-teaching staff, to promote in-house culture and make the College Campus a fully residential one.
- Provision of easy wireless access to all campus residents - staff and students, for continual dissemination of information and knowledge, and promoting on-line connectivity for various conferences/ seminars, exams. and events.
- Establishment of Video/ Tele-Conferencing facilities, Webinar environments, interactive LCD Screens for discussion rooms, Edusat Receptions, Wifi enabling, 24x7 free Internet Service Provision ... are some of the already existing features which will be fully augmented to take care of the entire student population and service requirements.
- JNTUH-CEH has a good College Library, which is well supported by the University Central Library having net connectivity and ISP. However, with the on-set of expansions in terms of UG/PG academic programmes, Integrated Dual Degree Courses and R&D activities, the Digital Library facilities shall have to be thoroughly augmented - with more hard copy/ on-line Journal

Subscriptions, more user licenses to provide easy e-Book Access, enhanced soft copy/ hard copy support of all essential Text Books, Hand Books, Reference Books, Scientific Magazines and Back Volumes of identified Technical Journals of interest.

8.0 APPROACH TO EXCELLENCE - ACADEMICS & RESEARCH ~

a) JNTUH-CEH continues to provide quality based UG education in ALL Branches of engineering, with - innovative practices, measurable performance parameters and proven levels of excellence, through ...

- Need based structured design for curricula and courses with periodic modernizations and flexibility in options.
- Introduction of Integrated Dual Degree Programmes and Twinning Programmes in time-saving formats, with foundations based on common broad-based UG Programmes.
- Enhancement of e-Learning Approach coupled with Design Oriented Teaching, Learning by Doing Methods and Problem Solving Strategies.
- Accounting for coherent professional development and fostering aspirations for academic excellence.
- Promoting UG research in identified areas and enabling students to handle turn-key projects, with necessary fund allocations.
- Encouraging Industry Training in emerging fields, with internships and financial assistance and to facilitate learning by experience.
- Imparting value based education for - improving accountability to society, and infusing the role of virtues and harmony in studentship.

b) JNTUH-CEH conducts conventional and innovative PG Programmes of relevance in all thrust areas, to augment the quality and competence of the technological human resources, and to provide better inputs for Teaching/ Industry/ R&D sectors ...

- Masters Programmes are planned in all branches of engineering/ science/ management, with all specializations in demand, in regular (day-time), accelerated (dual-degree) and part-time (evening) modes.

- All Departments have AICTE approved PG Programmes and industry-coherent collaborative self-financed Masters Programmes, in tune with the available faculty expertise.
 - Project Specific Labs. are established, and industry oriented projects, organizational internships, and R&D tasks are assigned top priority.
 - Full access is provided for Masters students in Centres for Excellence and Research Labs., to work in unison with Faculty for achieving the R&D targets, and augmenting the research base.
 - Extension of C-U-I (College-University-Industry) Linkages for continual in-flow of advanced technologies and processes leading to Computer Aided Design and Manufacturing Utilities, Modeling, System on Chip (SoC) realizations, Application Specific Processors/ Integrated Circuits (ASICs), Development of Prototypes an Engineering Models, Consultancy Activity Expansions, Training and Developmental Programmes.
- c) Trusted Administrative Support ... CEH has the complete confidence and support from its parental university - JNTUH, in terms of administration, procedures and finances, for ensuring proper pathways, relevant power facilities and infrastructural requirements, to
- Build, Refurbish and Maintain infrastructural facilities to implement advanced technologies, teaching-learning processes, research projects with relevant outreach mechanisms and societal contacts.
 - Allocate funds, and make provisions for refinement and implementation of approved plans in a modular fashion to meet all the academic needs, professional initiatives and developmental activities, in tune with the expectations, vision and mission of CEH.
 - Synchronize the Project Lab./ Research Lab. Developments in coherence with the PG Programmes and Research Fields of interest.
 - Sanction matching grants for the establishment of One Centre for Excellence in each branch of engineering or each discipline of science & technology.
 - Facilitate periodical faculty and staff recruitments (as per Government approvals) to cater to the needs of all academic programmes, professional activities and research works.
 - Channelise the administrative sanction processes between academics and governing body, eliminating the bureaucratic bottle-necks and time consuming methods.

- Offer incentives and financial support for students/ faculty with proven excellence and research orientation, and encourage them for post-doctoral fellowships in foreign universities.
 - CEH plans to enhance the existing automation levels in office administration and incorporate e-Governance features in all transactions, for better transparency and accountability.
- d) Proficient *Governing Body* ... which provides guidance and advice, monitoring and evaluation, to excel in the execution of UG, Masters and Doctoral Programmes and R&D Projects ...
- All PG Programmes are scheduled with an eye on the in-house research and application specific orientation.
 - CEH Departmental Research Committees, under the aegis of the exclusive R&D Cell of JNTUH, monitor the scholars' progress and project performances.
 - Full-time Scholars take part in relevant research works of the Department, and Part-time Scholars provide interactive links between the faculty and industry, for carrying out the need based projects and innovative technological developments.
 - Common platform sharing by Young and Senior Researchers, whose mingling has given rise to an exciting environment, leading to clarity and completeness in discussions and improved publication levels in the international arena.
 - Faculty members maintain continuous channel connections with eminent professors and expert scientists, for sharing of knowledge and transfer of technologies.
 - Reliable broadband connectivity and net access with a good ISP are very much in existence; the campus will be further augmented with wireless connectivity and wi-fi enablement, allowing ubiquitous learning and conferencing procedures.
 - Faculty and staff requirements are all met with, and convenient room-space has been provided, for improving the efficiency and work culture, that can enhance the quality research output.
 - Explore Research Grant sanctions for in-house R&D Projects from Government Agencies (UGC, AICTE, DST etc.) and Industries/ Organizations.
 - Identifying Domain Expertise within the Faculty and promoting Research Culture with necessary incentives for – Establishment of Centre for Excellence, International Conference Participation /Organization and IPR oriented R&D.

- Implement Faculty Development/ Exchange Programmes with Higher Institutes of Learning and Institutions abroad, for joint research works and academic programmes.

9.0 JNTUH-CEH ... an ANALYSIS ~

CEH has all the abilities and competence to meet the threshold of the academic potentials and bench marked parameters of excellence of reputed national institutions. The mantle of good will, standards, accomplishment strategies, acknowledged student performance characteristics and academic initiatives have been successfully passed on to CEH from JNTUH. After the strategic division of the JNTU and Telangana State formation, the JNTUH-CEH has been continuing all the earlier good practices with renewed verve and zeal in further improving the quality of studentship, scholarship and professionalism among the students and staff, much to the appreciation of the citizens of the country.

JNTUH-CEH conducts the SWOT (Strengths, Weaknesses, Opportunities and Threats) Analysis to reassess its position as one of the Best Technological University Colleges in the Country, to play a pivotal role in improving the standards of technological education in the state as well as the country. It has a good reservoir of inherent **strengths**, common **weaknesses** on par, ample **opportunities** and associated **threats**.

Some of the significant features involving 'inherent strengths' include ...

9.1 INHERENT STRENGTHS ~

Identity ...

- Identification as the Top-Tier Technological University College with National Recognition.
- All the Departments of JNTUH-CEH have been NBA accredited, and the University College takes pride in conducting many innovative PG Programmes and Dual Degree Programmes.

Location ...

- JNTUH-CEH is located right in Hyderabad, the State Capital, which is centrally located within the country with easy access, and bus/train/air connections from every nook and corner of the

country. The city has tremendous historical importance and has aptly been designated as A1 Status City. It has good geographical location, and provides pleasant standards of living at reasonable costs for all the people.

Student Strength ...

- JNTUH-CEH has been considered as the Best Technological University College in the State, and has been the first choice for engineering/ technological education for top rankers and cream of the 10+2 level students.
- All students of JNTUH-CEH have proven successes at their Intermediate levels, as well as in their UG engineering education. They are usually mature and motivated; their choice of branches of study has not been random, but a carefully chosen one. They understand and appreciate the educational opportunities and support facilities provided.
- It is a fact that the pride of CEH has been the performance of its students. They acclimatize themselves with the hardships and requirements of the technological education in a gleeful manner, and prove their performance at various podiums, much to the happiness of their parents and faculty. The academic excellence, technical skills and scholarships of the students have been time and again appreciated by the global industries and universities abroad.
- It has been an unwritten law that all the students of CEH Campus get excellent project internships and multiple placement opportunities; 100% placements have been the continuous feature for the campus.

Effective Teaching ...

- The top most priority of JNTUH-CEH has been Effective Teaching and Good Teaching-Learning Practices. All the faculty are well qualified and continually counsel and discuss with the students for bringing out the best academic performances. Apart from making the conventional teachings more interactive, the teachers spend considerable amount of their times in - learning and adopting new technologies, implementing innovative learning practices, monitoring learning by doing processes, advocating problem solving approaches and guiding the students for successful project executions and career placements/advancements.
- Faculty retention rate is 100%, which has been acknowledged and appreciated by all the visiting committees. Further, CEH encourages continual participation of all staff in FDP/ QIP/ TEQIP Programmes and National/ International Conferences with adequate financial support. Many faculty members have successfully completed their Ph.D. Programmes under QIP with various IITs/ IISc, and have become Investigators of R&D Projects from various nodal agencies. Quite a good number of faculty have visited different countries for Conference Paper Presentations and Technical Discussions.

Learning Environment ...

- CEH students have full access to the Fully Automated University Central Library spread over 3 floors with more than 45,000 sq.ft. space, with net connectivity and on-line journal access. Digital

Library concepts have been fully implemented with user licences, INFLIBNET and Audio-visual facilities, e-Books and e-learning materials. The Library has more than one lakh books and also caters to the needs of SC/ST students through book-banking services.

- JNTUH-CEH has a centralized computer lab. facility with 24x7 availability, and access has been provided to all students and scholars on biometric entry basis, for use of all licensed softwares and tools.

Labs. and Supporting Environment ...

- All departments and centres have well established lab. facilities for carrying out the conventional experiments, as well as innovative projects. The labs. have been thoroughly modernized with the state of the art equipments and software tools for providing the needed support on conducting non-listed practicals also. Conventional labs. are supported with networking and computation facilities for carrying out PG Projects and R&D works.
- Each department has a Special Projects Lab. or a Research Lab. attached to it to cater to the needs of UG/ PG/ Research Students without any timing restrictions.

Demonstrable Results ...

- The Academic Performance levels of students of all branches of engg., science and technology are exceptionally high, and the industry readiness of the students and their competence levels are very much appreciated nation wide and globally also. Employers consistently express their satisfaction on the job performance of JNTUH-CEH graduates; and alumni feedback reveals the satisfactory performance growth on all-round levels.

Continuous Evaluation ...

- The progress and performance of the students as well as faculty are continuously assessed and evaluated throughout the Semester/Year. The performance feedbacks are effectively processed for further developments, quality improvement, accountability and decision makings.

Research Competence ...

- JNTUH-CEH has been identified as one of the promising technological institutes with research orientation; most faculty members systematically continue their R&D activities with specific agendas and targets. Full-time research scholars, admitted on an annual periodicity, as well as non-resident scholars work enthusiastically with the faculty for their - Ph.D./ M.Phil./ M.S. by Research – Programmes.

Extensive Outreach ...

- Through the academic wings as well as through the efforts of individual faculty and non-teaching staff members, the institution has been offering a variety of community development programmes

and entrepreneurship oriented training classes for likeminded groups to understand and tackle societal problems. In particular, special orientation sessions have been conducted for women, diploma holders and local folk, who have responded warmly to these efforts and provided proactive feedback.

Well Managed College, Varsity and Work-force ...

- With adequate measures for scheduling, planning, accountability, access and equity, JNTUH and JNTUH-CEH are employing effective strategies for providing a transparent administration with qualified staff and committed officers. The administrative work force is a stable and capable group with streamlined procedures and salary payments, which strictly follow the government norms. The hierarchy is well established, and the decision making mechanism is well principled. The staff are well oriented with automation procedures and use of ICT. Equal opportunities are provided to all deserving candidates, as per the government guidelines, and competitive spirit is encouraged in all spheres of works. On the whole, JNTUH-CEH has been identified as a Well Managed University College in the state with experienced task force, and is in general run like a well oiled machine on a streamlined progressive path.

10.0 JNTUH-CEH - Networking with Institutes ~

- While the erstwhile JNTU was the 1st Technological University in India (1972), the mantle has been passed on to JNTUH Hyderabad, which is continuing on the progress path in a successful manner, disseminating the knowledge with professionalism in different disciplines of higher education to every deserving student in the state. With its dedicated academic features in engineering education, significant research contributions, appreciated commitments and proven leadership qualities, JNTUH-CEH is being identified as one of the top-tier University Engineering Colleges in the country.
- Acknowledging the role of JNTUH-CEH, several Industries, Research Organizations, International Universities and other Institutes of repute are approaching JNTUH/CEH for establishing knowledge sharing platforms to provide competent human resources for carrying out meaningful projects in the ever-growing technological world. The University College is thus attaining a professional glory, retaining its earned seat of pride of excellence in technological education in the country.
- JNTUH-CEH has been identified as the most successful Lead Institute in the implementation of the TEQIP Programme (Technical Education Quality Improvement Programme) in India (TEQIP-1 with World Bank Assistance) with top performance ratings, and has established several Innovative Practices for infusion of quality and excellence in academics, lab. establishments and research. Having gained a deserving entry in TEQIP-II Programme, the University has prepared a comprehensive Action Plan for implementation of the World Bank Assistance in identified thrust areas and retain the top category notch as a Lead Institute in the Second Phase Activities also.

- With renewed vigor, JNTUH-CEH is augmenting its coveted lead role and cherished accomplishments into diversified areas, by establishing MoUs and MoAs with many likeminded institutes, and intends to produce qualified professionals with leadership qualities through its commitment for higher standards of performance and ideologies for result oriented work culture.

10.1 Some of the fruitful International Understandings and Networking Assignments Of JNTUH-CEH include MoUs with ...

- 1) Bleking Institute of Technology, Sweden (for conducting Twinning Programmes leading to M.Tech./M.Sc. Degrees in Telecommunications, Signal Processing, Software Engineering, and Students/Faculty Exchange Programmes),
- 2) University of Westminster, LONDON, U.K. (Collaborative Masters Programmes in CSE, ECE)
- 3) University of North Umbria, Newcastle, U.K. (Collaborative Masters Programmes in CSE, Bio-Technology)
- 4) Blekinge Institute of Technology, SWEDEN (Integrated Double Degree Masters Programmes in CSE, ECE)

10.2 In addition, JNTUH has been practicing extended interactions with National Level Institutions and Organizations, with established networking and pipelined contacts, which include MoUs/MoAs with ..

- 1) M/s Wipro Technologies Ltd., India (Mission 10 X Programme),
- 2) Survey of India, Hyderabad (for the conduct of M.Tech.-Geomatics, and M.Sc.-Geospatial Science & Technology)
- 3) A.P. Aviation Academy, Hyderabad (for M.Sc. Programmes in Aviation related areas),
- 4) Military College of EME, Secunderabad (for M.Tech. Programmes in Computer Technology areas),
- 5) Centre for Development of Advanced Computing (C-DAC), India (for joint R&D Projects in IT related areas),
- 6) Veda Institute of Technology, Hyderabad (for M.S. in VLSI Engg. Related areas),
- 7) International Academy of Computer Graphics (IACG), Hyderabad (for BMM/M.Sc. Programmes in Multimedia Related areas),
- 8) Indian Society for Tech. Edn., New Delhi,
- 9) National Academy Of Construction – NAC, Hyderabad (For PG Diplomas In Building Tech., Highway Tech., Constuction Project Mgmt., Facility Mgmt.),
- 10) M/s General Electric Energy, HTC, Hyderabad (for PG Programmes in Energy related areas),
- 11) Central Institute of Tool Design, Hyderabad (for M.Tech.-Mechatronics Programme),
- 12) M/s Tata Consultancy Services (for Workshops, Student Internships, FDP Programmes),
- 13) M/s Infosys Technologies Ltd., Bangalore (for Joint Programmes leading Quality Improvement and Internships for Students in IT related areas),
- 14) Indian Institute of Chemical Technology, Hyderabad (for M.S./Ph.D. Programmes),

- 15) Acharya Nagarjuna University, Guntur (for Joint M.Sc. Programme),
- 16) Synopsis Univ. Program/Seer Akademi (on Focussed Areas of VLSI/Embedded Systems)
- 17) Texas Instruments (TI) Embedded Processing Center – established in 2010 at ECE Dept. of JNTUHCEH – a prestigious MoU leading to many Academic Programmes in DSP/ASP/MSP areas, and to conduct an interdisciplinary Masters Programme in Embedded Systems.

10.3 Further, JNTUH-CEH Faculty Members continue to have fruitful technical deliberations and project discussions with their counterparts at various Higher Institutes of Learning, R&D Centres, Public Sector Organizations etc., which include ...

IIT Kharagpur, IIT Delhi, IIT Chennai, IIT Mumbai, IIT Hyderabad, DRDO Labs, National Remote Sensing Centre (NRSC), BHEL, IIIT Hyderabad, BITS-Pilani Hyderabad Campus, IICT, University of Hyderabad, General Electric, TCS and other IT based Industry Groups, AP Aviation, CITD, APSRTC etc.

11.0 JNTUH - OUTREACH ZONES ~

- JNTUH-CEH has extremely active parallel wings, comprising of Alumni Association, Entrepreneurship Development Cell, National Social Service Group, Training & Placement Cell, which enthusiastically take care of the societal responsibilities of the University College, inclusive of community development programmes, social service activities, extra- and co- curricular activities etc.
- Several Workshops, Symposia, Seminars, Events and College Fests have been organized (and are in the pipe-line too) for students, faculty non-teaching staff, family members, entrepreneurs with traditional experiences in different trades (non-qualified), and other likeminded groups, creating the general awareness of various technical, professional, cultural developments, highlighting the specific community problems, health-related issues, green-house effects, house construction activities, PC utilities and IT related topics.
- JNTUH-CEH has been identified as the key institute in playing a pivotal role in the region, for establishing the Professional Society Partnerships (in IEEE Branches, ISTE Chapters, IE Centres etc.), and undertaking Development Programmes and Student Conferences/ Workshops in a big way to enthuse all students and staff for a pro-active role in their career build-up and all-round growth.

- Special classes and lab. Sessions are being held and shall continue to be held to inculcate adequate technical skills, and improve the communication skills/ soft skills of the students – not alone from CEH, but also from various regional colleges. The college intends to augment the Learning By Doing Practices for all students, in all aspects of academics, and prepare them in a manner compatible to industry needs and corporate sectors.

12.0 VISION - 2020 :: STRATEGIES ~

With the rich academic strength, research potential and professional competence gained through the governance of erstwhile JNTU-CEH and the present JNTUH-CEH, the University College has a strategic set of themes and road map for a comprehensive and cogent VISION – 2020 for the future, where JNTUH-CEH aspires to be recognized as a Temple of Learning for Technological Education and Research in India, known for its quality, professionalism, teaching and research. To attain such a coveted status, the University College has to establish several milestones in its path of success; and action plans are being implemented through (and some more are in the pipeline for) ...

- Setting up of standards for higher education in engineering, technology, science and management with right priorities and societal commitments.
- Modernizing the Teaching-Learning Processes with interactive sessions and on-line academic contents, effectively supplemented with teleconferencing, webinars, satellite based lessons and e-journal access.
- Making the engineering education student centric as well as teacher centric, offering modular courses in interdisciplinary areas/specializations, implementing continuous evaluation through on-line examinations.
- Curriculum restructuring to provide scope for parallel experimentation with non-listed exercises, software/hardware co-designs, simulation and synthesis procedures.
- Implementation of choice based credit system with multiple options in identified groups/fields, as per international norms and accreditation standards.
- Maintaining University Credibility with assured Academic Excellence and Research Competence through regular assessments, industry internships, execution of application specific projects of multidisciplinary nature, professional society partnerships and conduct of co-/extra- curricular activities.
- Procuring state of the art equipments for all departments and ensuring 24x7 access in all labs. with biometric access.

- Ensuring availability of Advanced Licensed Software with high end systems, front-end/back-end tools for Image/Signal Processing Exercises, Computer Aided Design and System Modeling.
- Establishing Incubation Centres and Centres for Excellence in Emerging Areas, and encouraging prototype fabrication and product testing, System on Chip and ASIC Developments, adaptation of cutting-edge technological processes for promoting industry-department interactions.
- Enabling the entire JNTUH campus to have broad-band connectivity with wired and wireless accesses and providing 24x7 free access for all the campus students, faculty and staff.
- Maintaining social responsibilities, cultural linkages and regional practices and engaging all faculty and students in community development programmes and technology transfer issues to the rural and semi-urban folk.
- Continuing technical relationships with other established Institutes/Organizations for Higher Learning for collaborative research, and coordinating efforts for transfer of cutting-edge technologies in a cost effective way.
- Mobilizing resources and grants, identifying financial priorities, maintaining undisturbed and unrestricted channels between academic circles – research domains –organizational goals, and planning for allocation of funds and budgetary provisions for sustained growth in all sectors.
- Conducting periodic reviews, quality control checks and incorporating internal/external assessment measures for performance monitoring, career advancements and futuristic planning.
- Establishing a firm R&D base in all constituent academic units of JNTUH, through continuous upgradations, advancements and accomplishments [JNTUH has already acquired various R&D Projects worth Rs.2.66 Crore in different areas of Engg., Science and Technology. A strong research base is thus being ensured for continuous contacts and interactions with all reputed agencies – UGC, AICTE, DST, DAE, DRDO etc.]
- JRF/ SRF/ UGC Fellowships are being encouraged on a ‘priority basis’, and scholars are being provided with financial incentives in terms of subsidized tuition fee.

13.0 VISION - 2020 :: Systems & Procedures ~

To be in conformity with the third decade requirements of 21st Century, JNTUH-CEH envisages the establishments of ...

- e-Class Rooms and Virtual Class Rooms
- online disposal of all matters pertaining to students/staff/administration
- Institute information access through website
- 1:1 broadband connectivity and GB internet access with secure information through Net/ Web.
- Availability of e-Journals, e-Books and on-line exercises/on-line submissions.
- Complete student information availability through e-media.
- Fully transparent Online Registration/Counselling/Admission Procedures.
- 24 x 7 access to all systems, labs., libraries and R&D Centers.
- 100% Industry compatible course structure and curriculum designs, with special focus on inter-disciplinary areas.
- Industry linked live projects, sponsored works and Industry Attachment Programmes.
- Modular and Transferrable Credit oriented Course, with need based Curricula.
- Certifications and International Accreditations to all UG/PG Programmes, with an eye on GATS Acceptance, WTO Policies and Washington Accord.
- In-house Research on Application Specific Projects and Global Assignments.
- Fully Autonomous Status to All Academic Units to schedule, plan, programme and conduct courses of their choice.
- Career Development Plans for Faculty, linked with Incentives and Awards.
- Modern, Rugged yet Flexible Infrastructural Facilities, in tune with the present day requirements.
- Establishment of Industry Chairs in each Department/Branch of Engineering and Science, and ensuring implementation of projects in all identified areas of specializations.
- Thorough Feedback Mechanism for the ready and meaningful evaluation of the Courses, Faculty and Administrators.
- A multi-fold improvement in all student amenities; enabling hostels with GB level wi-fi access.
- Special Incentives to meritorious students.
- Enhanced collaborations with National/International Universities, Industries and R&D Organizations.
- Acknowledged Chairs for Placement, Training and Consultancy/Extension Activities.
- Target oriented improvements to ensure adequate soft skills for students.
- Personality Improvement and Image Building Activities.
- Improve the institutional governance with full accountability and transparency.
- Answer to the need for 'Reforms in Technological Education' with 'Access to Technologies'.
- Allow extended campus access to all Educational Testing Services like, TOEFL, GRE, GMAT, CAT, GATE, NET, SLET etc. ensuring year round availability and universal acceptability.
- Encourage Student/ Faculty Exchange Programmes with all like-minded Institutions, and enhance the present exchange potentials.

14.0 Epilogue ~

Quality based technological education is a definite requirement and is vital for the progress of the country. Knowledge Initiative, Knowledge Resources, Knowledge Sharing and Knowledge Transfer are the foundation parameters for building a Knowledge Society with International Outlook. Marked changes (or perhaps deteriorations) in the standards and quality of technical education, which were experienced at various levels in the previous decades must be carefully studied, and remedial measures in tune with the present needs and future requirements must be successfully attempted. The gaps in standards, quality and assurance between national level and global level must be bridged; flexible and relevant courses with highest possible standards and benchmarks must be offered to all (at affordable cost), so that their Degrees will command respect in any country, and the Universities/Colleges can get proper recognition and appreciations.

The challenges are many, but avenues are also equally plenty. Effective implementation of strategies, creative use of ICTs, result/demand oriented R&D sectors, and collaborated efforts to achieve self-sufficiency and global acceptance – are the orders of the decade to ensure a balanced and sustained growth in technological educational sector, that can make JNTUH-CEH – a Premier Technological Institution of India, and a Knowledge Centered Research Institution.

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