

VNR Vignana Jyothi Institute of Engineering and Technology



Strategic Plan 2017-22

Autonomous Institute – NAAC ‘A’ and NBA Accredited

Bachupally, Nizampet (S.O.), Hyderabad – 90

S. No.	Content	Page. No.
1	Preamble	1
2	VJ Philosophy	2
3	Institute Vision	2
4	Institute mission	2
5	Quality policy	2
6	Core values	3
7	Objectives	4
7.1	Achieving Academic excellence by curriculum orientation towards advanced frontiers of knowledge and fostering experiential learning through ICT	4-6
7.2	Exploration of Knowledge through Innovation and Research providing inclusiveness to societal needs	7-10
7.3	Exponent for Development of a Rounded Personality with Global Vision & Social responsibility	11-13
7.4	Relentlessly pursue institutional effectiveness through quality assurance systems	14-16
8	Stake Holders Feedback and way forward	

PREAMBLE

Knowledge is recognized as the main feature for economic growth and development of global economy, coupled with information and communication revolution. Technical education plays a vital role by creating skillful engineers, enhancing industry productivity and improving the quality of social life. Technology impact created novel methods for classroom teaching and learning process. Many intellectual, social and practical problems require Inter-disciplinary approaches. It is necessary to empower the teachers to stay abreast of current and future trends in both the academic and research frontiers. Curriculum orientation synergizing between academics and research, reengineers the student strengths to think out of the box and exploring the new horizons.

Vallurupalli Nageswara Rao Vignana Jyothi Institute of Engineering and Technology (VNR VJIET) is a unique institution that from its inception has charted distinct pathways to academic excellence. It has become and remains one of the most distinguished and preeminent institutions of higher education in the State. Its complexity, diversity, and comprehensiveness are a fountain head of creativity and innovation.

VNR VJIET, as a modern world class academic institute, has a strong inclination towards sustainable development through research and expansion of innovative technologies. In an era of global progression propelled by technology, research at academic institutes will foster economic growth and helps in attaining self-reliance in technology and innovation. VNRVJIET is committed to fundamental long term research and innovation in leading edge technologies, performs a diverse and expanded set of activities like,

- Producing high quality engineers with the required skills and knowledge at different levels (undergraduate, postgraduate).
- Exploring new horizons through fundamental research.
- Continuous improvement of knowledge repository and domain expertise.
- Encouraging new ideas and proposals through research awards and remuneration.
- Becoming a source for innovation, addressing societal needs and developing new products leading to revenue generation.

Institutions with state of art research and academics contribute to national prosperity and security. The strategic plan of VNR VJIET is prepared in this context providing a sense of direction and outlining measurable goals. The Strategy Document emphasizes on accomplishing the objectives and bringing out a good quality policy along with core values.

VJ PHILOSOPHY

It is the Philosophy of Vignana Jyothi that Education is a Process of ‘**PRESENCING**’ that leads, both individually and collectively, to one’s deepest capacity to sense and shape the future. Based on a synthesis of direct experience, leading edge thinking and ancient wisdom, it taps into ‘**SERENDIPITY**’ and deeper levels of ‘**LEARNING**’ for discovering new possibilities.

INSTITUTE VISSION

To be a world class University providing value-based education, conducting interdisciplinary research in cutting edge technologies leading to sustainable socio-economic development of the nation.

INSTITUTE MISSION

- To produce technically competent and socially responsible engineers, managers and entrepreneurs, who will be future ready.
- To involve students and faculty in innovative research projects linked with industry, academic and research institutions in India and abroad.
- To use modern pedagogy for improving the teaching-learning process.

QUALITY POLICY

- Impart up-to-date knowledge in the students’ chosen fields to make them quality engineers.
- Make the students experience the applications on quality equipment and tools.
- Provide quality environment and services to all stakeholders.
- Provide systems, resources and opportunities for continuous improvement.
- Maintain global standards in education, training and Services.

CORE VALUES

Value Based Education

Create a strong learning environment with values and ethics that enhances academic attainment, and develops students' social and relationship skills that last throughout their lives.

Equity and Inclusiveness

Providing all students with the knowledge and skills to participate fully and to collaborate, compete and connect to the society, such that the personal or socio-economic circumstances, are not obstacles to success in education.

Sustainability

Envisioning environmental, socio-economic requirements, cultivates the knowledge and skills necessary to reach a sustainable future.

Compliance with Requirements

Ensures every activity and procedures are in compliance with the established guidelines and specifications set by the governing authorities and the statutory bodies.

Righteousness

Maintain integrity in deliverables and engage in transparent and well established procedures for continuous assessment and evaluation.

OBJECTIVE 1

Achieving Academic excellence by curriculum orientation and fostering experiential learning through ICT

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

VNR VJIEET provides an environment that encourages and celebrates academic excellence, individual initiative and responsibility as students make progress toward their educational goals. It outlines the commitment to academic performance expected of all students and the consequences for unacceptable academic performance.

The major goal of this function has been decouple “**Excellence**” – achieved through the disciplined pursuit of effective educational practices from “**Prestige**” which is to provide **high quality education** to students to become **successful professionals** in their respective fields by nurturing the **careers of excellence** and **leadership** in Science & Technology.

- Build excellence in the educational system to meet the knowledge challenges of the 21st century and increase competitive advantage in fields of knowledge.
- Design curriculum relating to the latest scientific and technological knowledge and incorporating the anticipated future developments.
- Increase Interdisciplinary interactions among faculty and students and outside world on the upcoming technologies and the changing needs of the society.

Strategies:

1. Structured Induction procedure

Excellence in Engineering Education from students' perspective is that students learn in the class rooms and on their own by listening, visualizing, experimenting, experiencing,

and going through practical training. The philosophy of education is to work with “END IN MIND”. Hence the teaching learning process of VNR VJiet is structured as ‘Career Vision Approach’ - a student visualizing the career opportunities and the approach for successful transition towards the set goals. TED videos for realizing the applications in the chosen field, inspirational talks by successful entrepreneurs and lecture series on career opportunities are scheduled during the freshman days. Matrixing with senior students is part of this program to expose the first year students to the projects and practices in the institute and be part of the roll on projects as per their individual interests.

2. Curriculum design and revision(multidisciplinary education)

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

The curriculum is redesigned to incorporate the industry needs and the socio-dimensional subjects that would enhance the student self-learning and employability skills.

3. Pedagogy and Delivery Modes

The day to day classroom delivery is through modern pedagogy evenly balancing the traditional methodology. The classrooms are equipped with the required infrastructure to facilitate the new modes of delivery.

The faculty are trained on the ICT methodologies and continuous apprise of the same is provided through conduct and participation in faculty development programmes, workshops and seminars. An exclusive teaching/ learning center and a writing support

center is in place to support faculty teaching, student learning and communication. E-learning / online learning will be encouraged in addition to the traditional class room teaching-learning practice.

Metrics / Measures

Key Result Areas	Measures
Curriculum revision	Interdisciplinary courses as Open electives
	Courses reflecting societal / Industry needs
	Courses focusing on Skill development and Employability
	Stake Holders feedback
	Benchmark with Premier Institutes
	Continuous assessment and evaluation to measure outcomes
Learner Centric Curriculum delivery	Academic Plan as per OBE & Academic calendar
	Quality projects
	ICT utilization / Pedagogy Tools
	Online Self learning Resources
	Industry exposure through Internships
	Workshops/FDPs on Pedagogy/Technology
	Learning Management System
Smart Classrooms	Multimedia and support equipment
	E-Learning Facilities.
	Un-interrupted delivery mechanism
Laboratories	Periodic maintenance and up gradation
	Virtual Industry
	Lab Management System
	Resources over and above the curriculum

OBJECTIVE 2

Exploration of Knowledge through Innovation and Research providing inclusiveness to societal needs

In an era of increasing academic engagement that includes several disciplines under one subject, it is imperative to understand the nuances of multidisciplinary research to engage with academia. The concept of globalization and liberalization, have given rise to problems and challenges across various disciplines. Multidisciplinary research is indispensable to tackle complex problems and it can serve as a bridge between fundamental and applied research.

The Institute addresses and enhances students' imagination, initiative and practical skills and equips them to innovate and confidently cross the threshold of challenges.

Added to the academic activity, a novel concept of creating **Virtual Industries** in the laboratories provides valuable exposure, experience and opportunities to students and faculty. An exclusive research facility RCC (Research and Consultancy Center) promotes multi-dimensional research in cutting-edge technologies by vitalizing research culture, and effective utilization of the available competencies. Problem-specific and inventive research to address regional and national needs is taken up. The Institute's determination to remain a major research institution is therefore in itself a commitment to high quality teaching & learning embedded into research by providing:

- Synergies between Research & Education Activities
- Research Based Learning from micro to macro levels involving processes and products.
- Enhancing collaborative research with academic institutes, industry and R&D organizations.
- Reengineering Entrepreneurship.

Strategies:

1. Wide spectrum of Cross Domain Knowledge Centres

VNR VJIET operates **cross domain knowledge centers** aiming to expose students to real work environments. These centers with their built in ability to switch entire

technology platforms according to evolving needs, mirror actual industries, providing **Experiential learning through Virtual Industry Laboratories**. The purpose of virtual industry laboratories is to continuously enhance the inquisitiveness, practical skills, imagination, initiative, and team spirit of both **UG** and **PG** students to readily deploy their learning and provide solutions in real life situations. Providing opportunities to all students to do their full time project work in these **high-end laboratories** is **unique** to the Institute.

2. Centers of Excellence and Special interest groups

The **Centers of Excellence** in Disaster Mitigation, Renewable Energy Systems, Machine Vision, Data Science, Networks and Cyber Security, Robotics, Joining Technologies, Education Technology, Nano Technology are established across the departments in the institute. The objective of these centers is to initiate focused advanced research and establish strategic partnership between institute and industry. The centers of excellence are strengthened to execute industry consultation and testing. The faculty and students involvement in these centers keep them abreast of the developments in the field grooming them towards addressing the real world problems.

Special interest groups in specific domain are formed to have a focused approach towards the developments in the respective area. The scheduled meetings of these groups discuss on the updates in the technology and explore the project proposals that can be applied for funding or execute in-house involving the students, creating awareness to the latest technology and also fulfilling the needs of the society. These discussions also yield in quality publications.

3. Excitement of Innovation & Entrepreneurship

The Institute aims to create an ecosystem for deeper collaboration with industry in several modes, including consultancy, sponsored research projects, technology transfer and continuing education. An exclusive facility **Weekend projects lab** is created to transform classroom learning to a project based experience. The idea to innovate is encouraged through the **Big Idea Competition** and the best idea is rewarded. Infrastructure and seed money is provided to implant the ideas at **VJ HUB**, a facility created for the stakeholders for incubation. Young technocrats get opportunities to exploit their full potential by setting up their own ventures thus becoming "job

generators" rather than "job seekers". VNRVJIET provides a platform to business Start-ups to develop their ideas into commercially viable products.

Advanced training and mentoring to the students is given through **Entrepreneurship Development Cell** to realize the idea into application/ product at institute. Initial awareness on entrepreneurship is facilitated by conducting awareness camps, guest lectures, seminars, workshops, business plans and skill development programmes. The **Industry Institute Interaction** Cell proactively builds partnerships with industry in areas of strengths of the Institute. Collaboration with the industry is built through well-structured student internships and appointment of industry professionals as Adjunct Faculty. A significant quantum of research will originate from problems identified as a result of the faculty's engagement with industry.

Metrics / Measures

Key Result Areas	Measures
Research Publications	Numbers of papers published in reputed National and international journals
	Numbers of papers presented in reputed National and international conferences
	Faculty as reviewers for reputed journals
Research centers	Faculty recognized as guides by external institutions
	Number of Ph.D scholars guided
	Membership in Professional bodies
	Fund raising through Project Proposals.
Frontiers of knowledge	Operational Centers of Excellence
	Conferences/seminars/workshops conducted.
	Special interest groups
	MOUs with higher learning institutes in India & Abroad.
Patents and copyrights	Appointment of search and Patent attorney
	Number of International Patents
	Number of Indian Patents
	Books and Monograms, Copy rights

Key Result Areas	Measures
Industry Collaboration	Laboratories as Virtual Industry
	Student Internships
	Knowledge exchange through seminars and workshops
	Advisory role in curriculum design
	Consultancy and Testing to industry
	Sponsored and funded collaborative research
	MOUs with Premier industries
Innovation and Entrepreneurship	IDEA competition- pre incubation activity
	Exclusive incubation facility
	Proactive participation of Students and Faculty
	Focus on Product development
Resources & Infrastructure	Exclusive facility for R&D
	Licensed Technologies

OBJECTIVE 3

Exponent for Development of a Rounded Personality with Global Vision & Social responsibility

The holistic approach to education captures the creativity, interdisciplinary, complexity, and adaptability required for the profession to grow and truly serve global needs. Values-based Education creates a strong learning environment that enhances academic achievement and develops students' social and relationship skills that last throughout their lives. The positive outcomes are achieved through teaching-learning methods blended with ethical values and cross domain research in cutting edge technologies. This leads to the all-round personality development of the students. It also provides social capacity to students, equipping them with social and relationship skills, intelligences and attitudes to succeed at every aspect of their lives. Participation of students in Co-Curricular Activities(CCA) and Extra Curricular Activities (ECA) helps to enhance all rounded personality to strongly face the turbulent road of the future. Experiences and appreciations gained through these activities assist students during internships. It helps to hone the talents of students and gives them an opportunity to develop specialised skills. Academic performance goes up as they learn to balance the CCA / ECA with academic pursuits. They also better understand time management.

- Build self-confidence and enable the student to excel in their academic pursuits.
- Provide training towards Skill development and encourage participation in Internships.
- Prepare towards Inclusiveness and socially responsible.

Strategies:

1. Career Guidance, Mentoring, Training and Placement

The unique initiative of the institute, **Mentoring and Training** plays a key role in identifying the student strengths and weaknesses and provide training to enhance their skill set in the selected domain. The structured mentoring program emphasizes on the social-emotional learning and cognitive development molding into a well-rounded, successful and competitive citizens of tomorrow. The outcome of **SWOC analysis** tabulates the strengths and weakness of the students, thereby enabling to provide career counseling and focused training.

Remedial classes are arranged to enhance academic skills of slow learners.

The student induction during the freshman year starts with familiarizing the campus and facilities available for the dreams come true.

Matrixing with senior students gives insights to the opportunities available in the institute to grow both academically and personally. During this interaction the newly joined will get to know, the senior experiences and exposure to academic projects, involvement in research and funded projects, participation in Professional society activities and other student clubs. Networking with Alumni is created to offer career guidance, role model and professional opportunities. The Career Vision Approach enables them to visualize the advancements in the chosen career and the approaches to be taken up to sharpen the saw and keep themselves updated.

2. Student support and Progression

At VNRVJIET students are encouraged and supported in setting targets for themselves. The institute strives towards widening opportunities throughout and beyond the student lifecycle. Exposure to the cutting edge technologies and the advancements is provided through the **certification courses** offered on-campus. Embedding flexible learning through **MOOCs** is facilitated in the campus. Training and skill development courses, MOUs with reputed organizations and industries engage students in **internships** and further leading to employment. Peer-led learning is promoted to help build students' expectations and confidence.

3. Extra-Curricular and Co-Curricular Activities

The institute integrates Co-Curricular and Extra-curricular Activities into student life to create a "**rounded personality**". A good ECA/CCA system is institutionalized establishing various cultural committees, student chapters, Coliseum (Student Activity Center) is exclusively built and allocated for this purpose. Well-equipped sport complex with adequate play areas and a National Service Scheme (NSS) Unit, is also available in the campus. Students are encouraged to participate in inter collegiate, Inter University, state level and national level competitions. Every year a national level cultural fest is organized and students are sponsored to participate in cultural events organized off-campus.

METRICS / MEASURES:

Key Result Areas	Measures
Mentoring	Exclusive MTP record
	Scheduled interactions & counseling
Training and Career Guidance	Value added programmes(Soft skills & Domain expertise)
	Dedicated training for recruitment
	Interdisciplinary Exposure & training
	Certificate courses
	Alumni interactions
	Modernization of infrastructure
MOUs	MOUs and relationship management
	Internships planning and execution
	Industry experts as resource personal
ECA / CCA	Exclusive space – Student Activity Center
	Participation in outside world competitions
	Hosting National level fests / competitions
	Professional societies activities
	Projects Expo – Open House
	State-of-art infrastructure (indoor / outdoor)
	Dedicated coaches / trainers
	Participation in Tournaments
	Rewards and recognitions to achievers
Community Service and Extension activities	More Student registrations
	Village adoption
	Educational tuitions / support to village students
	Blood donation and health awareness camps
	Execution of projects with Societal impact

OBJECTIVE 4

Relentlessly pursue institutional effectiveness through quality assurance systems.

VNR VJIET continuously reviews, develops and aligns its culture, people, structure, work processes and technologies, with its Vision, Mission, Objectives and Quality Policies. To support the key strategy areas of academics, research, innovation and globalization it is required to maximize the utilization and effectiveness of human and financial resources, and facilities. Continuous monitoring of the key success indicators and publishing these results to the constituent committees, enables to review and improve the alignment of support functions, processes and resource allocation strategies across the institute.

Quality in Education can be defined as the development of intellectual skills and knowledge that will equip graduates to contribute to society through productive and satisfying engineering careers as innovators, decision makers and leaders in the global economy.

To achieve the esteemed goal of producing well qualified and trained technocrats an institution has to work efficiently and effectively. The institution strives towards imparting technical competence to the student by creating a healthy environment for their personality development and finally enabling them to achieve higher grades in their respective fields. This is through:

- Transparency and Leadership
- Quality assurance and Accreditations
- Outflow management and growth plans

Strategies:

1. Good Governance:

The participatory governance, in the institute creates a sound, ethical and sustainable environment, acceptable to the institution as a whole and the other key stake holders. It oversees the implementation of policies and procedures year-over-year by designing, developing and deploying short summaries of progress. The overlapping interests of the stake holders are addressed to support a more effective delivery of education to meet the nation needs. Scheduled interactions of the key area implementers, such as

academics, research, innovation and globalization, enable to discuss the current progress and the potential measures for enhancement. Forecast & estimation of capital, revenue income and expenditures are closely monitored to meet the requirements as per the schedules.

2. Resources and Infrastructure

Critical talent identification and retention of the faculty is addressed continuously, to improve the outcomes in the learner centric environment. Opportunities for faculty professional development, collaboration, and networking are provided for upgrading the competence and reflecting in the deliverables.

The frontier of science and technology are doubling by leaps and bounds. The faculty to be constantly in touch with the same, update themselves through enhancing their qualifications, attending various quality improvement programs like workshops, seminars, conference, summer and winter school.

The fresh engineers from technical institution need to be offered training in industries to give them first hand practical exposure. General recasting of curricula, with industry oriented programs is taken up as Certificate Courses on a continuous basis, to establish a close link between an educational program and social needs.

IT infrastructure and library resources are upgraded along with the curriculum updates and the research needs. Aesthetic and smart classrooms and tutorial rooms adequate for the growing strength of the institute are equipped with teaching & learning tools and maintained by a dedicated team. Forecasting the needs in line with the approvals from the statutory bodies enriches the activities in the institute. The growth expansion plans are reviewed twice in an year and the budgetary planning is done monitoring the expenses and predicting internal revenue generation.

Research and development activity is very much essential to survive in this competitive world. Adequate financial provision is present to carry out research activities in the institution. Access to scientific Journals and other modern library facilities are made available. Qualified, experienced research oriented and motivated faculty are recruited to carry out research and development activities.

3. Quality Assurance Systems:

Being growth oriented and to have a good reputation, the quality assurance systems set in the institute, bench marking the reputed organizations provide metrics for continuous monitoring and implementation of standard procedures designed in line with the Vision and Mission. Internal audits are taken up by the quality policy steering committee, remedial measures, if any are suggested and implemented.

METRICS / MEASURES:

Key Result Areas	Measures
Governance	Accreditations and Assessments
	Guiding and approving policy matters
	Institutional Strategic development plan
	Partnership incentive plans
	Growth retention through career advancement.
Quality Assurance	Customize and implement best practices
	Internal audit committee for regulatory compliance
	Systems, checks and balances – Remedial measures
	Training need analysis and implementation
	Continuous progress assessment
Budget	Budget formulation and approvals
	Planned expenditure management
	Scheduled audits and checks
Resources	Advertisements and merit based recruitments
	Sponsorship for higher education
	Faculty and Staff deputation for competence development
	Sponsorship for participation in seminars / workshops and conferences.
	Subject experts for syllabus reviews and advisory roles
	Gradient increase in IT resources and Bandwidth
	Remote access to the e-resources of the library
	Exclusive budget & approvals for knowledge repository satisfying the stakeholder needs.
	Extended hours and increased usage of library resources.