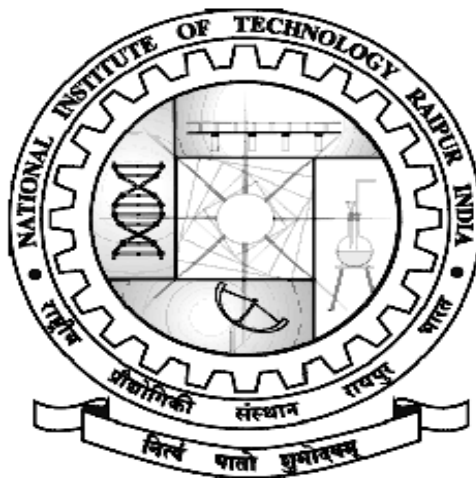


NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR

VISION DOCUMENT



G.E. Road, Raipur – 492010 (CG)

Phone: (0771) 2254200, Fax: (0771) 2254600

Website: www.nitr.ac.in



राष्ट्रीय प्रौद्योगिकी संस्थान – रायपुर

NATIONAL INSTITUTE OF TECHNOLOGY - RAIPUR

GENERAL

National Institute of Technology Raipur (Formerly Government Engineering College Raipur), situated in the capital of a newly incepted state of Chhattisgarh, has proven to be 'avant-grade' in the field of science and technology over past few decades in this region. With sweet memory of foundation ceremony by our President Hon'ble Dr. Rajendra Prasad on 14th September 1956, the institute started with two departments namely Metallurgical and Mining Engineering. Later the inauguration of the Institute building was done by our Prime Minister Hon'ble Pt. Jawahar Lal Nehru on 14th March 1963.

The status of Government Engineering College, Raipur had been elevated to National Institute of Technology by the Central Govt. with effect from 1st Dec. 2005.

This Institute had been working since last 50 years with a mission to support growth and promotion of industries and community of the region.

The institute offers under graduate Degree courses in Civil Engineering, Mechanical Engineering, Electrical Engineering, Mining Engineering, Chemical Engineering, Metallurgy Engineering, Electronics & Telecommunication Engineering, Information Technology, Computer Science & Engineering, Bio Technology, Bio Medical Engineering and Architecture. The institute also offer two years M. Tech. program in Civil Engineering, Mechanical Engineering, Chemical Engineering and Electrical Engineering. M. Tech. in Applied Geology and three year Post graduate course leading to the Degree of Master of Computer Applications (M.C.A.) are also offered by this Institute. Ph.D. programs are also offered in almost all disciplines.

The vision 2020 of NIT-Raipur is an attempt to document their future realistic goal of the Institute to emerge as a leading technical institute of the country and also to establish a unique identity for the development of high quality human & knowledge resource.

In the vision 2020 of the country, the aim is focused on energy, entrepreneurship and innovation. In light of India Vision 2020, NIT-Raipur as a premier technological institute has revisited its Mission and Vision through a series of brainstorming sessions in order to tune it to the goals set by India Vision 2020 and future needs of the country. The following vision, Mission and specific roadmap for 2020 has been set for the Institute. Vision and Mission statement has been developed to reflect our philosophy very clearly to the stakeholders.

VISION

To be a leader in technical and management education in India and to establish a unique identity for the development of high quality human and knowledge resource in diverse area of technology and management.

MISSION

To Re-engineer the engineering education and to mould young students into rational thinking engineers who are motivated by a passion for professional excellence driven by human values and proactively engaged in betterment of society.

OBJECTIVES:

- Creating an environment to make teaching more learning centric rather than curriculum centric.
- To attract and retain highly qualified, talented, motivated staff.
- To focus not only on quality education but on total quality management of NIT Raipur.
- To provide good academic support facilities (Lab, Library, Internet) on continuous basis.
- To develop industry institute interface for collaborative research, internship and fellowship for PG Programme.

The present document outlines roadmap to achieve Vision 2020 of the institute:-

1. UNDER GRADUATE EDUCATION

The institute is presently offering under graduate program in 12 disciplines. To maintain quality in such diversified area of education, commitment from the institute is necessary. The institute aims to improve the environment of education, so that it becomes learning centric.

Following action plan is suggested:-

- Compulsory review of under graduate academic studies is planned to be exercised every four years. It should include revision of curriculum, introduction of new courses, review of evaluation system etc. This review will be on the basis of the feedback received from recruiters, alumni, students, industry and other stakeholders. While carrying out the review exercise expert from leading institution and also from surrounding industry should be involved.
- Renovation of the existing laboratory is of immediate importance. State of the art laboratories needs to be established. More emphasis should be given to field training and laboratory teaching.
- To nurture the hidden creativity of students, every department is having professional student association. The activity of the association should be encouraged.
- Under graduate students will be taught business ethics and soft skill courses. Special body language training must be given to students for their growth in corporate world.
- NCC/NSS/Sports is made compulsory for all under graduate students by assigning credits.

2. POSTGRADUATE EDUCATION

In order to achieve the vision, the post graduate education should be re-engineered to provide quality manpower in the emerging areas of technology.

- Each department should undertake a promotional plan for faculty members to travel to neighboring institutions and deliver lecture there to motivate the students for doing M.Tech. in different disciplines at NIT Raipur.
- Institute is offering four engineering post graduate programs. One post graduate program in Computer Application and one post graduate program in Applied Geology. New post graduate program in following disciplines will be started:
 - **M.Tech.:** Structural engineering, Industrial Engineering and Management, Mechanical design, Nanotechnology, Microelectronics & VLSI Design, Communication System and Networks, Computer Science and Engineering, Information Technology, Biotechnology and Biomedical Engineering.
 - M.B.A. Program
 - M.Sc. Program in physical & chemical science

3. RESEARCH

NIT Raipur is an institute of national importance. The institute has to contribute in the advancement of knowledge in emerging areas. Research culture needs to be fostered in the minds of faculty and young students. Following are the identified thrust areas for research for the next decade:-

S.No.	Name of the Discipline	Thrust Areas for Research
1	APPLIED GEOLOGY	Nodal Centre for Natural Resources
		Environmental Impact assessment
		Remote Sensing & G.I.S.
		Exploration Geology
2	ARCHITECTURE	Sustainable Architecture
		Energy efficient Architecture
		Intelligent Architecture
		System Building
3	BIO MEDICAL ENGG.	Technology for eradication of Diseases.
		Indigenous Bio-Medical Technology
		Bio Sensors
		Gene Therapy
4	BIO TECHNOLOGY	Transdermal Drug Delivery
		Bio Nanotechnology
		Environmental Biotechnology
		Design & Simulation of Novel Reactors
		Nonrenewable Energy
		Down Stream Processing
		Proteomics & Genomics
Bio-informatics		
5	CHEMICAL ENGINEERING	Molecular Biology
		Behavior and structure of polymers and ceramics
		Design of Membranes
		Novel Reactors Design & Modeling
		Supercritical Fluid Extraction
6	CHEMISTRY	Coal Chemicals
		Engineering Chemistry
		Nuclear Chemistry

		Nanotechnology
		Chromatography HPLC
		Material Testing
7	CIVIL ENGINEERING	Remote sensing application
		Development of Building materials
		Earthquake resistant structures
		Cost effective construction of infrastructure
		Disaster Management
		Mass housing
		Technology in Urban Development
8	COMPUTER APPLICATION & TECHNOLOGY	Computer Networks
		Algorithms
		Data Mining & Data Warehousing
		Image Processing
		Parallel Programming
		System analysis & Simulation
		Management Information System
		Computer Application in Operational Research
9	ELECTRICAL ENGINEERING	Optimization of Transmission Losses
		Superconductivity
		Power distribution systems
		Power Electronics
10	ELECTRONICS & TELECOMMUNICATION ENGG.	Signal Processing and Computer Vision
		Communication Systems and Networks
		Microelectronics & VLSI Design
		Electronics and Embedded System
11	INFORMATION TECHNOLOGY	Computer Switching & Networks
		Services over Internet Protocol
		Information System
		Data Mining & Data Warehousing
		Multimedia Technologies
		Network Securities
12	MATHEMATICS	Modeling and simulation
13	MECHANICAL ENGG.	CAD-CAM & Robotics
		Bio-Fuel
		Technology for Agro-based and Forest-based industries
		Nanotechnology
14	METALLURGY	Material Science
15	MINING ENGINEERING	Mine Environment
		CAD/CAM Studies
16	PHYSICS	Applied physics
		Nanotechnology
		Solid State Electronics
		Material Science
		Dynamic Properties Using Electrical Analogy
		Semiconductor Devices
		Integrated Circuits
		Biophysics
17	INTERDISCIPLINARY TECHNOLOGY	Smart sensors and intelligent processing
		Simulation Studies

		Environment Sciences, Engg. And Planning
		Technology for small scale industry
		Robotics
		Energy Conservation and management
		Alternative Energy sources (Using Solar Radiations)
18	MANAGEMENT	Rural and Forest Management
		Technology Management
		Environmental Management
		Systems Management
		Supply Chain Management

4. INSTITUTE SOCIAL RESPONSIBILITY

As an institute of national importance, institute realizes its responsibility towards the society. In order to satisfy the needs of the society, a center will be established which will focus on following broad areas:-

- Arranging faculty development program for faculty members of surrounding institutes and also faculty of this institute.
- Entrepreneurship awareness and innovation.
- Social awareness about local and national problems and to find possible technological solutions.
- Skill development for rural and persons from backward society of Chhattisgarh.

5. INSTITUTE INFRASTRUCTURE

More than 200 acres of land has been allocated at Rakhi Bharenga village for NIT Raipur. Developing and maintaining a planned infrastructure is a key element for the success of any institute. Therefore, new campus will be developed consisting of academic blocks and residential blocks. The campus will have planned layout having all modern amenities and state of the art laboratories. This will be developed catering the needs of next 50 years. The new campus will have following minimum infrastructure:-

- Separate hostel for boys & girls. Boys hostel having a capacity of 2400 students and girls hostel with capacity of 1600.
- 336 Faculty quarters.
- Separate residential quarter for Director, Registrar, Dy. Registrar and Deans.
- 370 quarters for non teaching/supporting staff.
- An auditorium with a capacity of 1000 seats.
- Administrative block consisting of Director office with attached conference hall, office of the Registrar, office of seven Deans, estate office and other establishment offices.
- Central library with global data bank.
- Student activity center having a multipurpose hall, reading room, indoor game facility, music room etc.
- Sport center with swimming pool and gymnasium.

- High speed Wi-Fi Internet connectivity in the campus.
- Uninterrupted power supply.
- Food courts with 24 x 7 services.
- Community facilities including shopping center, bank, post office, ATM booth, children play areas, public parks etc.

6. CARRIER DEVELOPMENT CELL:

Institute strongly feels its responsibility in placing all the students for summer training and also for their career. To be successful in their career students needs to be trained properly during their studies. For this, a carrier development cell will be established. The cell will consist of one officer of the rank of Professor, 02 officers of the rank of Asstt. Professors and supporting staff. The center will offer career counseling, personality development and soft skill development training. It will also provide guidance to students to help them to choose correct career option.

7. STUDENT ACTIVITY CENTER:

It is planned to develop student activity center in the new campus to cater the needs of increasing student strength. It is planned to develop sports complex to provide facilities for all kinds of indoor and outdoor games. The student counseling service will also be part of this. The counseling will help depressed students to feel motivated towards their studies and career.

8. GOVERNANCE

Effective and transparent governing system is essential for growth of the institute. The institute is committed to provide complete transparency in all its admission and academic process for effective and transparent governance, Management Information System (MIS) is already procured for three functional areas namely academic, training and placement and hostel management. Institute will procure, customize and implement MIS in all functional areas of the institute to ensure effective and transparent governance.

To speed up the decision making and to save money, meetings of the various decision making committees like building and works committee, finance committee and board of governance meeting will be arranged through video conferencing mode. An e-grievance cell will be constituted to address the grievance of the stakeholder.

9. HUMAN RESOURCE RECRUITMENT & DEVELOPMENT

NIT Raipur is presently facing acute shortage of human resource. Recently 266 positions of faculty has been approved by MHRD. Institute will make hard and sincere efforts to fill up all the vacancies in faculty and non faculty positions within three years. The institute also needs technically trained manpower for the laboratories. The institute will also take care of professional

development of faculty and non faculty members of the institute. Institute proposes following action plan:-

- Sincere efforts to fill up vacancies in faculty & non faculty positions.
- Provisions will be made for appointing visiting faculty and distinguished honorary faculty.
- Industry experts will be invited to deliver talk and have interactions with faculty and students.
- Faculty members will be sponsored for qualification improvement and skill improvement wherever necessary.
- Efforts will be made to open QIP center at NIT, Raipur for higher studies.
- Supporting technical and administrative staff will be periodically sponsored for continual training in new technology and modern working methods.

10. RESOURCE GENERATION

In the next decade, institute wishes to develop expertise and competencies to offer consultancy services to the industry. The expertise available in the institute will be given publicity so as to attract needy industries. For this, institute shall also strengthen alumni relations and will explore the possibilities of research and consultancies. Periodic round table meetings with senior alumni will be done to achieve the target.

CONCLUSION

This vision document is prepared after carrying out SWOT analysis by various stakeholders and also by arranging brainstorming sessions. Some of the steps have already been taken to achieve the desired goal. To achieve Vision- 2020, implementation plan in phased manner will be chalked out. The progress will periodically be reviewed in order to take suitable corrective actions, if necessary. It is believed that with this vision document and with sincere efforts of all stakeholders, substantial growth of NIT-Raipur will be observed by the end of the decade.