

## TECHNICAL EDUCATION

### **A. DTE. OF TRAINING & TECHNICAL EDUCATION**

#### **I. DIRECTION & ADMINISTRATION**

##### **1 Directorate and Community Polytechnic [Rs.80.00 Lakhs]**

##### **Aims and objectives**

The success of the plans and schemes envisaged for growth of technical education largely depends upon a sound mechanism, comprising of functions such as planning, executing, coordinating, controlling, monitoring and evaluation. This necessitates strengthening of the Directorate of Training and Technical Education, which is entrusted with the responsibility of efficiently managing various organs. Following are the major areas of concern for strengthening of the Directorate and Community Polytechnic Scheme.

- Complete automation
- Creation of posts for various branches of DTTE
- Starting of new community polytechnics and adding new courses as per the Delhi and NCT area needs
- Providing autonomy to one or more Polytechnics.

An outlay of Rs.80.00 lakh is approved for this scheme in Annual Plan 2008-09

##### **2. Strengthening of Board of Technical Education (Rs.170.00 Lakhs)**

The Board of Technical Education was established in 1961 with the objective of Conducting examinations for award of certificate/diploma in various Engineering, Non-engineering courses being conducted by the government and privately managed affiliated institutions. The existing staff structure of the Board is, quite inadequate to handle and cope with the work of examination, curriculum revision, affiliation and monitoring of the standards of education in the affiliated institutions etc.

Major areas of concern for BTE are as follows: -

- Autonomy for BTE
- Complete automation of BTE
- Creation of addition posts for BTE
- Revision of curriculum

Award of Distance education based certificates and diplomas.

An outlay of Rs.170.00 lakh is approved for this scheme in Annual Plan 2008-09

### **3. Reorganization & Restructuring and strengthening of existing facilities in Polytechnics (Rs. 230.00 Lakhs)**

#### **Aims and objectives**

- Up gradation of Polytechnics to Degree Colleges
- Improvement of infrastructure of the Institutes
- To improve the standard & quality of training in the polytechnics
- Creation of Posts from time to time.
- To revitalize and motivate the faculty system to enable them to tackle the challenges posed in the ever-growing field of technology
- Implementation of AICTE schemes from time to time
- Conversion of Polytechnics into community colleges with MES kind of certification structure.
- Developing Polytechnics into centre of excellence in collaboration with industries.
- Starting Production cum training facilities to bridge the gap between theory and practice.

An outlay of Rs.230.00 lakh is approved for this scheme in Annual Plan 2008-09

### **4. Replacement and modernization of machinery and equipment (Rs.320.00 Lakhs)**

#### **Aims and objectives**

Use of sophisticated and advanced control system in an increasing way demands that students are well conversant with their use.

- To replace the obsolete machinery and equipment which have outlived its life with the latest type,
- Networking of all institutes
- To provide additional modern/ sophisticated equipment due to advancement in technology.
- To equip the laboratories and workshop with support facilities matching with the equipment procured.
- Setting up of Communication Skills Labs.
- Setting up of World Class test houses
- Setting up of labs enabling students to get dual certification.

An outlay of Rs.320.00 lakh is approved for this scheme in Annual Plan 2008-09

## **5. Continuing Education Entrepreneurship Development and Interfacing with Industries (Rs.7.00 Lakhs)**

### **Aims and objectives**

Continuing Education Programmes

- Starting of part time diploma courses
- Starting additional courses
- Starting of Short term Courses
- Enabling students to get additional certification.

Training for staff from the Industry

### **Entrepreneurship Development Programme**

- Entrepreneurship Development Programme has been recognized as an effective human resource development tool. This programme is primarily meant for developing the first generation entrepreneurs, who on their own cannot become successful owners of enterprises.
- To inculcate entrepreneurship values and providing training inputs.
- To organize entrepreneurship resource camps.
- To introduce curriculum on entrepreneurship development as an elective subject.
- To organize short-term courses by inviting experts from organizations to provide necessary guidance to students.
- To set up their own industries.
- Arranging industrial visits for students.
- Industries contacting institutes for recruitment.
- Teachers deputed for QIP in industry.
- Inviting people from the field for guest lectures.
- Industrial/ in plant training of students.
- Exchange of staff
- Consultancy to be provided by institutions

## **Industry Institute Interaction**

- In order to increase the placement avenue for the students under DTTE it is proposed that a Job fair may be organized by calling various industries.

And this event will be organized once in every year such that maximum possible students can get direct employment through job fair

An outlay of Rs.7.00 lakh is approved for this scheme in Annual Plan 2008-09

## **6. Facilities to students of SC/ST/OBC/Minorities Communities (SCP) Rs.8.00 Lakh**

### **Aims and objectives**

This scheme has been initiated to provide increased facilities for SC/ST category students so that they can be motivated to pursue their studies without much of dependence on their parents. Some of the essential items are given to them free of cost to pursue their studies.

- Scientific Calculators
- Text books
- Stationary items

An outlay of Rs.8.00 lakh is approved for this scheme in Annual Plan 2008-09

## **7. Renovation/Addl. Alteration in the existing Institutional building (Rs. 200.00 Lakhs)**

### **Aims and objectives**

For maintaining the Govt. technical institutions functioning under this Directorate, additions, and alterations are required in various labs, workshops and class rooms & improvement of other facilities. Following works will be taken on priority basis under this scheme

- Maintenance of all buildings including staff quarters.
- Air-conditioning of Labs
- National / International standard conference rooms, seminar halls etc.
- To carry out all building and campus related works.

An outlay of Rs.200.00 lakh under capital side is approved for this scheme in Annual Plan 2008-09

## **8. Setting up of New Government Polytechnic (Rs.105.00 Lakh)**

### **Aims and objectives**

Construction works of Polytechnic at Dwarka is almost over and it is proposed to start the academic session from June-July 2008. And following institutes are proposed to be upgraded into Degree Colleges.

- Kasturba Polytechnic for Women
- Ambedkar Polytechnic

An outlay of Rs.105.00 lakh is approved for this scheme in Annual Plan 2008-09 (Rs 100.00 lakhs under Capital side and Rs. 5.00 lakhs under Revenue side)

## **9. Expansion of existing facilities of Bhai Parmanand Institutes of Business Studies (Rs. 60.00 Lakhs)**

### **Aims and objectives**

Bhai Parmanand Institute of Business Studies was set up to impart training in various diploma and post diploma programmes in the field of Modern Office Practice, Management, and Business Administration etc. MCA (full time) programme has already been introduced in the year 2000-01 in this Institute. Modernization of machinery and equipment, strengthening of existing facilities to students, industry-institute interaction, strengthening of library facilities etc. in respect of Bhai Parmanand Institute of Business Studies are to be achieved under this scheme.

An outlay of Rs.60.00 lakh is approved for this scheme in Annual Plan 2008-09

## **10. Expansion of existing facilities of Bhai Parmanand Institutes of Business Studies**

### **Aims and objectives**

Bhai Parmanand Institute of Business Studies was set up to impart training in various diploma and post diploma programmes in the field of Modern Office Practice, Management, and Business Administration etc. MCA (full time) programme has already been introduced in the year 2000-01 in this Institute. Modernization of machinery and equipment, strengthening of existing facilities to students, industry-institute interaction, strengthening of library facilities etc. in respect of Bhai Parmanand Institute of Business Studies are to be achieved under this scheme.

## **10. Staff development (Rs.40.00 Lakhs)**

### **Aims and objectives**

For the development of Institutes the motivation level of staff is to be kept high. Personality development programmes

- Timely implementation of AICTE scheme.
- Research and Travel Grant.
- Providing Computers, Professional society membership of any two bodies (one national and one International), sanction for purchase of Books / Magazines etc.
- Encouraging Faculty exchange by Deputation etc.
- Filling of vacant staff positions.
- Sponsorship for higher studies
- Institution of 'best teacher' award.

Sponsorship towards presentation of papers attending national and international conferences etc

An Outlay of Rs.40.00 lakh is approved for this scheme in Annual Plan 2008-09

## **11. EDUSAT Network (Rs. 40.00 Lakhs)**

### **Aims and objectives**

A classroom will be set up at each of the satellite Interactive terminal. Each classroom will have Learning Management Client software. The classroom through two-way VSAT installed at these remote terminals will receive the session being delivered from the teaching facility.

- Quality of Education
- Overcome shortage of Faculty
- Standardization in Teaching
- Video Conferencing
- Sharing of Resources
- Expert Lectures
- Higher Education / Short Term Courses for Staff
- To keep pace the changes following the advent of Technology
- Offering online learning material for students.
- Starting of Public lecture series on emerging technology.

An outlay of Rs.40.00 lakh is approved for this scheme in Annual Plan 2008-09

## **12. Setting up of IIIT Park (Rs.2110.00 Lakh)**

### **Aims and objectives**

The Indian Institute of Information Technology (IIIT) is to be set up with the aim of pooling the strength and resources of the best companies with facilitation and support of the government. The institute should be designed to play the role that Stanford University plays in the Silicon Valley. The main objective of the IIIT will be to produce IT professionals capable of facing the complex challenges of the future. In order to achieve this, the state government initiative to set up the institute with the help of leading IT companies to promote quality IT education. The IIIT will provide a four-year under-graduate program besides Masters and Doctorate in information technology. The education programs are designed by the IIIT and these schools will impart training in various modules of these programs. The prominent companies worldwide will be invited to set collaborate with the IIIT.

IIIT will be a new generation Graduate School focusing on ALL aspects of Information Technology (IT). Promoted by the Government of Delhi and the IT industry, IIIT will represent a model of Public-Private-Partnership that will set a new benchmark in the higher education system in India.

IIIT will attract very high quality students, and highly qualified faculty members. Together, they will pursue their research-based teaching in the unique campus in Delhi that will blend together cutting-edge research and teaching.

An outlay of Rs.2110.00 lakh is approved for this scheme in Annual Plan 2008-09(Rs. 2000.00 lakhs under Capital side and Rs. 110.00 lakhs under Revenue side)

## **13. Setting up of University of Science and Technology( Rs. 1440.00 Lakhs)**

### **Aims and objectives**

The university is expected fill the gap in international quality science and technical education at the post-graduate and research levels. The proposed UST of Delhi is conceived from the point of view of meeting this dire need to equip the national capital with a Knowledge Infrastructure in science and engineering to foster the growth of world class science and technology education, research and science and technology propelled innovations in an environment of integrated science and technology education and research.

- The scientific research and PG education in science in India has not kept pace with the rapid advancement of the country in the fast emerging knowledge age.
- The India Science Report 2005 indicates that in 2004, about a fourth of those qualified to the level of graduate and above had a background of science education.

- There are 39.2 million graduates in all (22.3% of whom are from the science stream), 9.3 million postgraduates (19.4% of whom are from the science stream), and 0.3 million doctorates (one-third from the science stream).
- Graduates who are unemployed, 22.3% have studied science. The share of postgraduates with science background in the total unemployed postgraduates is significantly higher (62.8%).

The science departments being a small presence in an engineering institution have little to contribute beyond teaching. The massive technical education infrastructure of the country thus remains largely devoid of a world class science education and research environment, which besides limiting the growth of applied sciences in an engineering institution also cripples engineering research and development, more so the engineering innovations which require a sound science base of modern engineering.

Delhi is the National Capital and a seat of learning and scholarship. It attracts high quality school leavers from all over India who aspire for quality education and research programmes in Science and Technology.

Science and Technology are the drivers of economic growth and Science Education forms the backbone of all S&T efforts in any country and Delhi owes it to the nation to provide world class education and research environment in which Science and Engineering could flourish and excel.

Delhi is blessed with the presence of the headquarters of CSIR, Min. of Science & Technology, AICTE, Dept. of Bio-technology, and Dept. of IT and has excellent research infrastructure in its research laboratories of NPL, CRRRI, SSPL (Min. of Defense), Nuclear Science Centre and other DRDO labs.

This gives Delhi an added advantage for qualitative as well as quantitative growth of technical education and research facilities.

There is high scope for growth of interdisciplinary centers of excellence in the areas of clean energy technologies, environment management, biotechnology, bio-informatics, medical engineering and infrastructure engineering, Information Technology, Network Security etc.

An outlay of Rs.1440.00 lakh is approved for this scheme in Annual Plan 2008-09 (Rs.1400.00 lakhs under Capital side and Rs. 40.00 lakhs under Revenue side)

#### **14. Setting up of Technical Education Fund (Rs.10.00 Lakh)**

##### **Aims and objectives**

1. In order to help the poor and needy for continuing their education.
2. Giving assistance to them such as books and other related material.
3. Funding of project expenses of students.
4. Encouraging students to become entrepreneurs and provide necessary funding for the same.
5. Provision of Research and Travel Grants for Faculty Members

An outlay of Rs.10.00 lakh is approved for this scheme in Annual Plan 2008-09

#### **15. Development of Collaborative arrangement with institutions of Repute (Rs.10.00 Lakhs)**

##### **Aims and objectives**

1. Student and Faculty Exchange programme in India and Abroad.
2. The institutes in collaboration with reputed institutions such as leading industrial houses, R & D organizations etc, shall involve in technology transfer.
3. The leading may be requested to support the institutes by sponsoring machinery & equipment, and setting up of Laboratories.
4. In the same manner as above students and faculty may be sponsored for R&D or application development projects as per requirement.
5. Core experts of their respective fields from the industry may be invited on regular basis as an expert faculty to provide latest training as per industry standards.
6. Creating of Chair Professors in Prominent Colleges.

An outlay of Rs.10.00 lakh is approved for this scheme in Annual Plan 2008-09

## **NEW SCHEME**

### **16. Development of Delhi Knowledge Hub (Rs.100.00 Lakhs )**

#### **Aims and objectives**

Society by name " Delhi Knowledge Development Foundation" will be setup for promotion of Technical Education as a whole some of the major objectives of the society will be. Society is proposed to setup for smooth operations for the newly projects and society will have autonomy and will enjoy full liberty in the implementation of the projects such as payment to the faculties for Edusat Programme, collection of funds from private institutes for setting up of Edusat Network. Following will the major activities of the society on its formation.

1. Management of Edusat Network (To be shifted from DCE to DTTE)
2. Provision of Research and Travel Grants for Faculty Members.
3. Development of Collaborative arrangement with institutions of Repute.
4. Setting up of Technical Education Fund.
5. Starting of common technical education facility that could be leased out to prospective technical education.

An outlay of Rs.100.00 lakh is approved for this scheme in Annual Plan 2008-09

### **17. Takniki Shiksha Sansthan Kalyan Samiti ( Rs. 10.00 Lakhs)**

#### **Aims and objectives**

A committee in all institutes is constituted having participation from local industrialist, Principal, student, senior staff, and other personalities to look after the day to day work of the respective institutes such as:

1. Minor Repair work of equipments
2. Repair of Building
3. Maintenance of Equipment
4. Introduction of new course
5. Miscellaneous works related to the respective institutes.

An amount of Rs1.2 Lacs is provided to all institutes under this scheme, and sanction powers lies with the principal after approval of the committee members.

An outlay of Rs.10.00 lakh is approved for this scheme in Annual Plan 2008-09

## **18. Technical Education Community Outreach Scheme (Rs.50.00 Lakhs )**

### **Aims and objectives**

A list of approximately 200 courses is prepared and these courses will be run in the field of basic needs to the community and in participation with NGO, funds to the tune of Rs21000 per month will be released to NGO for each course for 50 students (2 batches of 25 students per batch). Each course will be of 3 months duration. Some of the areas are as under:

1. Electrician
2. Computer Operator
3. Elderly Care
4. Nursing
5. House Hold Attendant
6. Electronic Equipment Repairer etc.

An outlay of Rs.50.00 lakh is approved for this scheme in Annual Plan 2008-09

## **19. Setting up of Pharmaceutical Sciences (Rs.70.00 Lakh)**

### **Aims and objectives**

The university is expected fill the gap in international quality science and technical education at the post-graduate and research levels. With the growing need of Pharma care for the country and to bring to cost to reach of poor man it would be extremely important to setup a dedicated university to encourage research of these products in the field of Allopathic, homeopathy, ayurvedic, Unani and other forms of medication. University will also facilitate to have affiliation with itself for encouraging private partnership and encouraging new institutions to be setup by Government and Self-financing.

An outlay of Rs.70.00 lakh is approved for this scheme in Annual Plan 2008-09 (Rs.50.00 lakhs under Capital side and Rs.20.00 lakhs under Revenue side)

## **20. Eminent Faculty in reputed institutes (Rs. 40.00 Lakhs )**

### **Aims and objectives**

As there is acute shortage of the technical faculty at the higher level, so it is proposed to invite eminent professors of foreign universities or eminent institutions like IIT for entire period of six months for teaching one semester course and for the same the following pay and perks are proposed to be paid to them in the currency of their country.

1. 10% additional salary of their actual draw.
2. Air-fare of executive class to and fro.
3. Residential accommodation
4. Medical facilities as per actual
5. Lump sum grant of Rs.50,000/- for books, laptop etc.,

An outlay of Rs.40.00 lakh is approved for this scheme in Annual Plan 2008-09

## **21. Starting of public lecture series (Rs.10.00 Lakhs )**

### **Aims and objectives**

Start of public lecture series, to address the general public of which is deprived or knowledge about the emerging developments in Science and Technology. In today's world, where knowledge is power, it is lack of knowledge on emerging knowledge in Science and Technology that deprives the citizens in taking informed decisions in their day to day life. With a view to bridge the gap between those at the frontiers of Science and Technology and in interest of the common man, it is proposed to start a public lecture series of emerging developments in Science and Technology so that this emerging development of Science and Technology can be communicated to the common man in an easy manner. With a view to enforce that there is a strong need in the delivery on the public lecture, it is proposed that public lecture will be delivered on a fixed day of every week. Since it is proposed to call eminent persons for delivering talks of various topics, a reasonable honorarium of about Rs. 5,000/- to Rs. 10,000/- and conveyance allowance is to be paid to these eminent speakers. A committee of experts headed by a leading technical education specialist will coordinate the organization of public lecture series.

An outlay of Rs.10.00 lakh is approved for this scheme in Annual Plan 2008-09

## **22. Starting of production-cum-training facilities in institutions to bridge the gap between theory and practice (Rs. 80.00 Lakhs)**

### **Aims and objectives**

In our institutes lots of costly and latest equipments are placed but due to lack of knowledge and manpower they are not used properly. If some technical persons from eminent industries would give demonstration and training to the faculty/instructors it would be beneficial for the students. It is also proposed that these equipments may also be utilized for making useful products which can be promoted for sale.

An outlay of Rs.80.00 lakh is approved for this scheme in Annual Plan 2008-09

## **23. Networking of all institutes ( Rs. 50.00 Lakhs )**

### **Aims and objectives**

On the recommendation of the National Knowledge Commission, it is proposed to connect all the institutions in Delhi in order to share the resources of all the institutes and learn from their experiences, to meet the acute shortage of technical manpower across the state and the country as a whole. Following institutes such as IITs, JNU, Delhi University, Jamia Hamdard University, GGSIPU, DCE, NSIT and all institutes under DTTE will be connected through a lease line or VPN will be set up across the institutes to have an access to the library, journals main projects, other learning material etc. so that working across there leading institutes becomes facile.

It is also proposed to set up a central monitoring cell to coordinate all the activities and meet all the desired objectives.

As per the observations of the National Knowledge commission to start part-time diploma courses in Engineering Colleges and also to meet the acute shortage of technical manpower at the degree level institutes. It would be advisable to run diploma as well as degree programmes in all the institutions making optimum use of the entire infrastructure and also to overcome the shortage of institutions and also land especially in Delhi. As the qualification of the degree and diploma staff is same, it could be easily merged and the entire cadre could be controlled at the level of DTTE. This will also enable to share the faculty across all the institutes without any administrative jeopardy.

An outlay of Rs.50.00 lakh is approved for this scheme in Annual Plan 2008-09

## **24. Development of Material for E-learning (Rs.20.00 Lakh )**

### **Aims and objectives**

All the class room lectures of the highly experienced faculty will also be made available in digital format through the e-learning portal of the department. Lecture series of all the faculty especially under the EDUSAT Programme will be kept on the said portal for any time help and guidance for the students. This portal will also enable on-line discussion forum between the students and teachers or other invitees on day to day problems related to the subjects or project etc., synchronous arrangement can minimize the distance and maximize the resource utilization. This portal will also help to provide distance learning courses at certificate, diploma and degree levels for the outside students. This will also enable the teachers to learn from highly experienced teachers and add to their teaching and subsequently also increase their knowledge.

An outlay of Rs.20.00 lakh is approved for this scheme in Annual Plan 2008-09

## **B. DELHI COLLEGE OF ENGINEERING**

### **1. Construction of New for Delhi College of Engineering at Bawana Road ( Rs.550.00 Lakhs)**

#### **Aims and Objectives**

##### **The Buildings/Premises, which are under construction**

1. Lecture Theatre-cum-seminar Hall.
2. PG Hostel
3. Internal detail of hydraulic lab, material testing lab & concrete lab

The details of the academic expansion planning for the next 5 years and proposed built up areas are given below.

1. Construction & Development of Knowledge Park & setting up of EDUSAT studio & Local Area Networking
2. Enhance hostel capacity from 970 seats to 1500 seats (two boys hostels and one girls hostel).
3. Construction of Academic Blocks for the new departments- Information Technology, Biotechnology, Environmental Engineering and Polymer Science & Chemical Technology.
4. Academic Infrastructure for Centers of Excellence, Advance Centre of Bio-Informatics and Centre for Nano-Science & Technology, DCE School of Management, Centre for Advance Research and Development in Automotive Engineering, Centre for Innovation Management and Technology Incubation, Centre for Appropriate Technology, Centre for Techno Entrepreneurship and TIFAC CORE Centre in Optical Communication. Center for Appropriate Technology. Asian Centre for experimental mechanics. **THE FACULTY OF SYSTEM ENGINEERING** will comprise of 5 UG programs with intake 60 each, 5 PG programs with intake 18 and will also offer Ph.D programs in the area of **FACULTY OF SYSTEM ENGINEERING**.

#### **Other works:**

1. Raising of the height of the boundary wall.
2. Additions & Alterations.
3. Establishment.

- It is proposed to create 4 posts of various categories during Annual Plan 2008-09
- Boundary wall to be raised, LAN services, and security and surveillance have to be developed.

An outlay of Rs.550.00 lakh is approved for this scheme in Annual Plan 2008-09 (Rs.450.00 lakhs under Capital side and Rs.100.00 lakhs under Revenue side)

## **2. Modernization of Machinery, Equipments ( Rs.450.00 Lakhs)**

### **Aims and Objectives**

Great emphasis has been given on modernization and removal of obsolescence in the national policy on technical education. The college, being old, naturally has large number of equipments which are old and out-dated, and call for replacement by new and sophisticated machines and equipment, so that, the students could gain hands on experience on the modern machines and equipment that they have to deal with in their professional career. Secondly, the national policy on education calls for deployment of various educational technology tools including multimedia for more effective and efficient teaching-learning process. Such educational technology tools including multimedia need to be procured, in addition to microfilming and other modern systems of information retrieval from the library. Another very important aspect is training of technical supporting staff in handling such sophisticated equipment in workshops, laboratories, drawing offices etc. Provision, therefore, is also made for the expenditure involved in training technical supporting staff. To ensure mobility of personnel, it is proposed to hire the buses through private service operators on competitive basis for which provision of fund also proposed in the scheme. Accordingly, the following activities related with the development & modernization of existing laboratories and to set up new labs are proposed to be taken up by various Academic Departments during the Plan period 2008-09.

- A. COMPUTER ENGINEERING DEPARTMENT
- B. ELECTRONICS & COMMUNICATION ENGG. DEPTT.
- C. ELECTRICAL ENGG. DEPARTMENT
- D. CIVIL AND ENVIRONMENTAL ENGG. DEPARTMENT

The following equipments are proposed to be procured during the Annual plan 2008-09.

1. **CONCRETE TECHNOLOGY/ EARTHQUAKE ENGINEERING LABORATORY:** DC response accelerometers 4 No., Exciter 200 N. , Structural vibration monitoring system & FEM tools software.
2. **TRANSPORTATION LAB:** Weighing Pads for Axle Load Survey, Muffle Furnace, Water Bath & compression testing machine.
3. **SURVEYING LABORATORY:** Reflector Less Total Station & Minor Instruments.
4. **GEOTECHNICAL LAB:** Field CBR system complete setup, Field vane-shear test apparatus, Large size 30 cm X 30 cm direct shear test, 3 Cell flexible wall permeameter complete, standard penetration test setup fully mechanized complete & digital micro processor control, 100 kN capacity, Triaxial testing system for testing samples up to 150 mm X 300 mm, complete setup (servo controlled)
5. **ENV. ENGG. LAB.** Particle Size analyzer, Advanced Microscope with camera & image analysis system, Complete Environmental monitoring system for stream monitoring, Automatic weather station, Bomb calorimeter, Stack Monitoring Kit, Refrigerated centrifuge, Magnetic Stirrers (2 No.) Distillation Units (2 No.) Portable Generator 1 kVA, Computers (10 No.).
6. **Hydraulic Engineering Lab.** Pressure Transducer, Current meter, Pitot tube with automatic record through computer & Automatic surface level recorder.

**A new GIS and Remote Sensing laboratory is also proposed to be established. It will be equipped with the equipments such as:** HP WorkStation (HPXW 9300), (ii) HP Workstation xw4300 Desktop, (iii) Digital Colour printing system A0 SIZE, (iv) Digital colour scanning system A0, (v) ARC GIS Software KIT Includes, (vi) ERDAS IMAGINE Professional, (vii) Leica SmartStation consisting of following – BASE STATION, Smart station Rover, Software.

**E. MECHANICAL & PRODUCTION ENGG. DEPARTMENT**

**F. APPLIED CHEMISTRY AND POLYMER TECHNOLOGY DEPARTMENT**

**G. APPLIED PHYSICS DEPARTMENT**

**E. INFORMATION TECHNOLOGY DEPARTMENT**

## **F. BIO-TECHNOLOGY DEPARTMENT**

## **G. OTHER ACADEMIC INFRASTRUCTURAL REQUIREMENT**

Besides development of the laboratories, it is equally important to develop the necessary infrastructure to place the equipments and to maintain them. The Project Office has been providing infrastructure and support in the form of (i) Providing internet connectivity to the various centres and departments, (ii) Providing local area network (Fiber Optics backbone as well as wireless (Wi-Fi) (iii) additions & alterations to the laboratories to make them suitable for setting experiments & installations of machines (iv) providing the facilities for clean-air rooms (v) providing fixed furniture & other related accessories (vi) modernization of the classrooms (vii) creating the facilities of Committee Room in every department to facilitate R&D activities. The provision to meet expenditure on such items has also been made in the scheme during the plan year.

### **Manpower requirement:**

It is proposed to create the 33 posts of various categories to meet the requirement of the manpower to operate the newly added sophisticated equipments/software and new proposed labs which are to be created by the academic departments during the plan period 2008-09.

An outlay of Rs.450.00 lakh is approved for this scheme in Annual Plan 2008-09.

### **3. Faculty Development: ( Rs.45.00 Lakhs)**

#### **Aims and Objectives**

A renewed emphasis is to be given to the faculty and technical staff development to meet the aspirations of the national educational policy. The AICTE pay scale has been provided to the teachers along with all the benefits related with career advance scheme by the Government of Delhi w.e.f. 1.1.1996. It provides for reimbursement of 75% of the books subject to a ceiling of Rs. 3000/- per annum per teacher. The same also provides for meeting expenses of attending national seminars for every teacher once in a year and also attending international seminars/conference for every teacher, once every three years. Additionally, the AICTE scales of pay provides for reimbursement of membership fee of the societies up-to the extent of 85% of the membership fee to every teacher for various professional international societies. This will continue during the 2008-09 also Under the scheme, seminars, conferences, expert lecturers, short terms courses and workshops are also organized by the institute for the development of students and faculty through out the year. This workshop will benefit all the teachers currently employed as well as the teachers who will be appointed in the institute during the year 2008-09

An outlay of Rs. 45.00 lakh is approved for this scheme in the Annual Plan 2007-08.

#### **4. Students Welfare (Rs.40 Lakhs)**

##### **Aims and Objectives**

It is proposed to establish student common rooms (both for male as well as female students) students recreation and health fitness center which will have facilities for first aid, television set, music system, indoor games like table tennis, carom, multi-gym, etc. Girls' Common Room has been proposed to be equipped with the following facilities.

1. A fully Air-conditioned room of size about 6x6 meter square and one or two rooms of size 3x4 square meter with attached bathroom and couple of toilets and proper ventilation.
2. R.O. water purifier system with proper drainage to provide a neat and clean space for drinking water,
3. Easy chairs, wall mounted bench, table tennis with balls and bats, carom boards with tables, a dressing table, hand driers and proper dust-bins with wrap up bags.

Further, computational facilities are needed to be developed in the Hostels during next 5-year plan by adding computer Hub in each Hostel with internet facility. Telephone facilities are to be strengthened for hostels.

A new PG Hostel building has been completed. It will be provided with Cot, Table, Chair, Curtains, Curtains Rods, Built in almirah shelves, Looking mirror, News paper stand, curtains with rods, Mattress & Pillows and Computer with Internet facility, Index Board, Book racks Almirah's, RO system, Public Address system, Number & Name Plates also are proposed to be provided in the existing Hostels during plan period. Besides Maintenance, replacement and repair of furniture's, Water Cooler & Aqua guard etc in all the hostel are to be carried out.

An outlay of Rs.40.00 lakh is approved for this scheme in Annual Plan 2008-09.

**5. “Centres of Advanced Studies, Research and Extension Services”  
(Rs. 200 Lakhs)**

**Aims and Objectives**

The creation of Centres of Advanced Studies and Research proposed below are primarily conceived from this objective. These centers shall primarily cater for: -

1. Research and Development in the specific areas of technology.
  2. Industrial liaison and consultancy services.
  3. Specialized short term and long-term courses for practicing Engineers and Teachers of Engineering Institutions.
  4. To support the existing Post-graduate Programmes and to launch new specialized Post-graduate Programmes in areas of relevance.
  5. To provide effective linkages with industry and professional bodies.
- 5(a). Centre of Advanced Studies & Research in Automotive Engineering and Bio-fuel Technology
- 5(b) Centre for Appropriate Technology
- 5(c) Center for advanced Environmental Engineering
- 5(d) Advanced Centre for Entrepreneurship Development
- 5(e) Centre for Innovation Management and Technological incubation
- 5(f) Centre of Relevance and Excellence in Fiber Optics and Optical Communication:

**Activities of center:**

- (1) To run courses related to Fiber Optics and Optical Communication courses at BE/M.Sc./M.E. level.
- (2) To run separate program at M.E. level in the area of Optical Communication.
- (3) To take-up advance research in the area of light wave propagation through optical fibers, optoelectronic devices and multiple access techniques in Optical Communication system.

- (4) To take up sponsored R & D projects from Government/industrial organization.
- (5) Establish collaboration with leading laboratories and scientists across the Globe with an objective to emerge a center of excellence in the field of Fiber Optics and Optical Communication.

The center will also get support from the Department of Science & Technology, Govt. of India and other leading telecom companies which will be 50% of the non-recurring expenditure for first three years.

5(g) Center for Information security and Intel planet lab

5(h) Advanced VLSI and embedded system design Center for conducting PG Programme and strengthening UG curriculum in the field of VLSI and embedded system design technology in Delhi College of Engineering

It is proposed to create 22 posts of various categories in centres during Annual Plan 2008-09

An Outlay of Rs.200.00 lakh is approved for this scheme in Annual Plan 2008-09.

## **6. Book Bank & Library Innovation (. Rs. 170.00 Lakhs)**

### **Aims and Objectives**

The library services are provided to student, staff & faculty member for updating their knowledge and supporting the research, and teaching learning activities. These services are provided through a central library and departmental libraries. The advancement of technology is at such a fast pace that the present library facility is just not sufficient and requires complete; modernization with innovations. Keeping this aspect into consideration, it is necessary that the knowledge base of the library is updated regularly by way of adding new literature in the form of text books, reference books, reports, proceedings, abstracts & indexes, encyclopedias, data books, standards (National & International) Journals & on-line databases. Some new section and services are also to be started to make the library services of ISO 9001 standard. Accordingly, New Services and Sections of Text book for teachers and students, CD Rom and on line accesses to engineering and scientific database are proposed to be started. The existing services and section viz book bank, reference section, additional reading section are to be strengthened. Automation of library services is to be completed and strengthened.

To make library facilities automated, apart from the data entry & purchase of databases, the requisite up-to-date hardware & software shall also be required, which will consist of computer system, Library automation and office management

software systems, leased line, internet connection & other accessories. This shall also require the web page designing and constant updating for access through Internet & Intranet. For smooth running of library activities and modernization of its services, it is suggested to divide the collections and functions for management with in the central library pyramid.

The following initiatives will be taken during the plan :

1. Strengthening of Book Bank
2. Modernization, up gradation and Digitization of Library resources and services
  - A. Departmental Libraries
  - B. Furniture for library
  - C. Training courses and other activities on Knowledge Management and Knowledge Engineering
  - D. Reference Materials
  - E. Re-Engineering of library
  - F. Strengthening of Library Administration

It is proposed for 14 posts up-gradation and 32 posts to be create during the plan period 2008 - 09.

An Outlay of Rs. 200.00 lakh is approved for this scheme in Annual Plan 2008-09.

## **7. Part-time Degree Course (Rs.40 lakhs)**

### **Aims and Objectives**

At present there are about 480 students who are undergoing teaching instructions. Every year, nearly 1000 students compete for 120 seats (30 each in Civil Engg., Mechanical Engg., Electrical Engg. and Electronics Engg.). The B.Tech Programme has been made of 4 years duration from the year 1996-97.

The programme is presently run with the help of regular and part time faculty engaged from the outside as the sanctioned posts of 8 Asstt. Professors and 14 Lecturers are not enough to meet the requirements of 480 students admitted under the programme.

Keeping in view the demand of the students for admission in the course and minimum class size which is treated as standard one for a class room that is 60, it has been decided that intake in all the four disciplines viz Electronics & Communication Engineering, Mechanical Engineering, Civil Engineering and Electrical Engineering should be enhanced from the existing 30 to 60 making the total intake 240 each year from the session 2008-2009. Further it is proposed to create

additional faculty position for the increased intake in all the discipline accordingly the proposal for creation a post for the faculty commensurate with the increased intake shall be taken up with the AR Department during the plan year 2008-2009.

An outlay of Rs. 40.00 lakh is approved for this Scheme in Annual Plan 2008-09.

## **8. Modern Computer Centre / Networking Programme** **(Rs.160 Lakhs)**

### **Aims and Objectives**

With the importance of computer application in the various fields of industrial and commercial establishments, training of engineering students in computer software has become absolutely essential. Facilities for computer education and software development are to be provided in all engineering institutions as suggested by the national education policy, Government of India. With this objective, computer training has been made compulsory for all the Under-graduate and Post-graduate students. A new computer center building has been built and made functional. The center is catering the students, faculty and staff of the college. The entire new campus is networked by wide Area LAN, (Wi-Fi). E-infrastructure of the organization is proposed to be strengthened during the 2008-09.

### **Computer Centre**

The computer Centre is presently equipped with approximately 160 PIV computers, two servers, four SUMBLADE workstations and with all relevant software. It is networked with CAT five cables. 2 MBPS leased line connectivity is available in the Centre for internet access. To further strengthen the infrastructure of the Centre, it is proposed to procure six High End servers, Line printers and Cisco Firewall along with peripherals. Besides, computer Table/chair & fixtures are proposed to be provided.

**Integrated LAN Services:** For this, it is proposed to lay Fibre Optics backbone connecting all necessary premises and CAT-5 cabling inside the premises. WI-FI connectivity has to be further to cover all the area/building in the campus to enable the teachers to access Internet from any where in the campus.

**Academic Departments:** Personal Computers with internet connectivity & printers for faculty & Office, E-Class rooms (two) with recording facility, It is proposed to provide laptops to all the teachers as teaching aid during 2008-09.

### **Library**

#### **Creation of Electronic Resources**

Electronic resources are proposed to be created with the following major aims, objectives and benefits.

1. **Resources** :proposed additional Electronic resources to be subscribed are  
Databases, Books ( E-Books & Reference Resources) &. On line Journals
2. Membership
3. Digitizing the library resources
4. Hardware requirement
5. Software requirement

**Annual maintenance:** Annual maintenance of computers, servers softwares and other hardwares including electronic surveillance system will be required for efficient and smooth running of the library .

### **The E-Governance Project at DCE:**

The Govt. of Delhi has already introduced e-governance as its major strategy to provide efficient administration and to enhance public satisfaction.

- Assessing the operational performance
- Ensuring effective utilization of resources
- Developing appropriate bases for planning future goals
- Taking scientific decisions and
- Fostering academic and professional excellence.

In order to achieve the above broad objective, Delhi College of Engineering (DCE) envisages web-based application software comprising of the following categories of Management information Systems:

- Manpower Information Management Systems (MIMS)
- Students Academic Information Management Systems (SAIMS) – with Smart Card Interface (SCI)
- Students Hostel Information Management Systems (SHIMS) – with Smart Card Interface (SCI)
- Financial Information Management Systems (FIMS)
- Project and Consultancy Information Management Systems (PCIMS)
- Academic Departments and Centers Information Management System (ADCIMS)
- E-Learning Information Management System (ELIMS)
- Physical Resources Information Management System (PRIMS)
- Library Information Management Systems (LIMS)
- Document Management and Retrieval Systems (DMRS)

The scope of the project involves development of a comprehensive end-to-end solution leading to the integrated E-Governance software implementation in DCE. The work involves the development of the customized e-governance software, specifying the hardware and network needs, design and specifications on which the proposed e-governance software shall be installed and tested in the institute environment, database development, training of local manpower, trial runs over a defined period and satisfying the reliability, quality and security of the software developed and installed.

It is proposed to create 7 posts during Annual Plan 2008-09.

An outlay of Rs.160.00 lakh is approved for this Scheme in Annual Plan 2008-09.

## **9. Expansion of Existing Educational Facilities (Scholarship & Stipends)(Rs. 240 .00Lakhs)**

### **Aims and Objectives**

To meet the shortage of technical manpower in the emerging areas of technology, the following courses are either spilled over to XI Year Plan from the X Plan or started afresh during X Plan :

### **B.E. COURSES (Under Graduate Degree Programme)**

- i. Applied physics
- ii. COMPUTER ENGG.
- iii. PRODUCTION & INDUSTRIAL ENGG
- iv. ENVIRONMENTAL ENGG.
- v. POLYMER SCIENCE & CHEMICAL TECHNOLOGY
- vi. ELECTRONICS AND COMMUNICATION ENGG
- vii. ELECTRICAL ENGINEERING
- (viii) INFORMATION TECHNOLOGY
- (ix) BIO TECHNOLOGY

### **M.E. COURSES (Post-Graduate Degree Programme)**

1. M. Sc. APPLIED PHYSICS
2. ME (Software Engineering)
3. M.E. (MICROWAVES AND OPTICAL COMMUNICATION ENGINEERING)
4. M.E. INFORMATION TECHNOLOGY

**5. ME in** Bio-technology, Bio-informatics, Information Systems Management, VLSI Design & Embedded Systems, Software Engineering, Geo technical Engg., Disaster Management, Microwaves & Optical Communication, CAD & CIM, Industrial Management, Construction Technology & Infra-structure Management, Nano Technology, Transportation Engineering, Optomechatronics, Computational Mathematics, and Knowledge and Technology Management (intake 18 each)

The students admitted under M.E. programme are paid scholarship at the rate of Rs. 5000/- p.m. and contingency amount of Rs. 5000/- per annum from the session 2002-03. The duration of M.E. programme has also been increased from 1 & 1/2 years to 2 years from the year 2002-03. The provision for payment of scholarship and contingent amount to the student under ME full time program have been made in the scheme.

Establishment of DCE School of Management, as its constituent department Follow up action will be taken during the Annual Plan 2008-09.

### **Ph.D. PROGRAMMES**

The Ph.D programme has been found very useful for the students interested in research and development activities. The programme is proposed to be continued during 2007-2008 also. The duration of the Ph.D programmes has been increased from 3 years to 4 years and scholarship has been enhanced from RS. 5000/- per month to Rs. 6000/- p.m. for the students of Science stream whereas it has been enhanced from Rs. 6000/- to Rs. 7000/- p.m. for engg. stream students. Contingency amount has also been increased from Rs. 7500/- per annum to Rs. 10,000/- per annum. The total numbers of Ph.D scholars at any point of time are limited to 25 during the 10<sup>th</sup> five-year plan. The intake of the Ph.D program is also proposed to be enhanced from 25-50 during 2008-2009. It is also proposed to enhance the scholarship and contingency amount at par with the scholarship paid by CSIR/UGC to students awarded Junior Research Fellowship whichever is more to enable the institute to attract good student to join Ph.D programme in the Institute during the plan year 2008-2009.

The 61 posts teaching and laboratory are proposed to be created during the Annual Plan 2008-09 for consolidation and expansion of educational facilities under the above scheme.

An outlay of Rs.240.00 lakh is approved for this Scheme in Annual Plan 2008-09.

## **10. Coaching Classes for SC/ST Weaker Students (Rs.5.00 lakh)**

### **Aims and Objectives**

There is need for separate intensive coaching for students belonging to SC/ST and other weaker sections of the society. Such classes are quite regularly arranged in the college, normally before or after office hours on working days and approximately 700 students get benefited from this coaching. The programme has been proved to be very beneficial for the students during the last one decade. The expenditure proposed under this scheme is meant for providing remuneration to the teachers engaged for taking coaching classes, stationery, books and other miscellaneous items. It is proposed to continue the scheme during the 2008-09 Plan period.

An outlay of Rs.5.00 lakhs is approved for this scheme in Annual Plan 2008-09.

## **11. General and Hostel Administration (Rs.170.00 lakh)**

### **Aims and Objectives**

The existing administrative structure was designed long time ago to cater to the needs of the college when it had only three-degree level courses with an annual intake of 180. The college presently caters 1 UG level programmes and 11 Post Graduate level programmes. The intake under UG programme has gone upto 670 whereas under PG programme it has raised at the level of 162. The existing position of officers and staff in administration and accounts therefore also needs to be increased in proportion to the increase in number of faculty technical staff and students.

During the 2008-09, efforts will be made not only to get the recommended administrative position approved from the government but also to get their recruitment rules framed and post filled within the five-year plan period. Besides, it is also proposed to take up the matter for creation of additional position of Chief Administrative officer, Joint Chief Admn. Officer, Administrative Officer, Security Cum House Keeping Officer and Assistant Security Cum House Keeping Officer, Hostel Supdt. Asstt. Hostel Supdt & Hostel Assistant, Care Taker. Security & Sanitation Services shall be given to private service providers during the Annual Plan.

### **Care Taking Unit**

Care taking unit of this institute is required to be strengthened to provide better monitoring of work related with security and upkeep of the non-consumable stores procured by the institute as care taking unit takes care of the stores procured for

general uses of the departments as well as also supervise the repair & maintenance of fixed furniture and stores related to students committee, rooms in the campus.

## **Guest House**

The college has a beautiful guesthouse, which has 8 rooms, 4 rooms at the ground floor and 4 rooms at the first floor for visitors coming to the institute. Besides it has a dining Hall, Common Room, Kitchen for providing necessary amenities to the guests. Due to non-availability of manpower it is not being managed properly, a person hired from the security agency is helping in the work. In order to look after the activity, 4 posts of Caretaker and 4 posts of Guest House Attendants, (One each in 3 shifts of 8 hrs and one shall be in reserve) 1 post of cook are proposed to be created. so that they could take care of the accounts of the Guest House charges, maintain inventory of stores & kitchen and also maintain the office records.

## **Solid Waste Management**

The aim of this program is to provide a clean and hygienic campus to the residents by efficient handling of waste using Eco friendly principles. The key issues to be addressed under this program are:

1. Stop unhygienic land filling
2. Use of the two-channel system of recycling by the residents.
3. Encourage community participation and inculcate a feeling of ownership.
4. Use of waste material to build infrastructural facilities within the campus.

The initial infrastructure cost of the project is approximately 2.5 lacks. In addition, recurring equipments approximately 2 lakhs shall also will be required by the institute for payment to NGO who will operate the project. Accordingly, the provision for the same has been made in the scheme.

The 29 posts of various categories are proposed to be created during 2008-09:

An outlay of Rs.170.00 lakhs is approved for this scheme in Annual Plan 2008-09.

## **12. Examination Cell (Rs.10.00 lakh)**

### **Aims and Objectives**

The University of Delhi introduced the mode of Combined Entrance Examination (CEE) for admission to B.E. courses for the candidates passing Board Examination from schools located in Delhi and the CEE for the first time was conducted on 2.6.1990. The college had provided massive support in organizing this big task. Again, the University of Delhi introduced Entrance Examination for admission to B.E. (Tech.) Part-time Degree Course and the college was asked to conduct this Entrance Examination taking the complete responsibility. Both these entrance examinations were conducted successfully. In addition, the University of Delhi has handed over the semester examination work to the college in a big way and the college is executing this work for the last several years. Lastly, the Faculty of Technology, University of Delhi, has passed a flexible type of examination reform for the B.E. courses, which takes into its stride continual evaluation of a student throughout the semester in accordance with the guidelines of the national Educational Policy of the government. Adequate space has now been provided for proper functioning of the examination cell at the new campus of the college. Being convinced regarding the dire need of an Examination Cell in the college.

It is proposed to create 4 posts of various categories for the Cell during Annual Plan 2008-09.

An outlay of Rs.10.00 lakh is approved for this Scheme in Annual Plan 2008-09.

## **13. Setting up of Knowledge Park: ( Rs.125.00 Lakhs)**

### **Aims and Objectives**

The objective of this Knowledge Park is primarily to promote partnership with new technology entrepreneurs and start-up companies. As apart of the scheme, limited modular space will be provided to new entrepreneur or technology based organizations for a limited period of time for setting up an office or a workstation or a prototyping laboratory within the campus. With a view to

- (i) Promoting interactions with, and technology/expertise resourcing from, the members of academic staff and research scholars of the Departments and Centres of the Institute, and
- (ii) Incubating novel technology and business ideas into viable commercial products or services.

The expenditure required on developing Knowledge Park will include construction of World Class Building Infrastructure & Development of Facilities, purchase of machine / equipments etc.

An outlay of Rs.125.00 lakhs is approved for this scheme in Annual Plan 2008-09.

#### **14. Establishment of Technical Education EDUSAT NETWORK and DCE EDUSAT STUDIO cum Classroom.(Rs. 100.00 Lakhs)**

##### **Aims and Objectives**

**Delhi College of Engineering has planned to set up teaching hub (studio), which will be connected to engineering colleges and technical institutes in and around National Capital Territory of Delhi.** The teaching hub will be up-linked to EDUSAT which in turn will beam lectures by eminent academicians on subjects which have direct relevance to the courses / curriculum at UG and PG levels of Science and Engineering. The facility at Delhi College of Engineering will also provide connection for online transmission of expert lectures, seminars, tutorial updates and faculty orientation programmes.

The HUB is proposed to have facility to connect more classrooms of DCE and / or other similar studios within the area of the scope of EDUSAT spot, so that four parallel sessions can be beamed simultaneously. The remote user will have a choice among the four streams.

Two numbers of classrooms (each of 100 students capacity) along with 6 nos. of ancillary rooms have been identified. Some preliminary works have already been carried out. If, necessary, the requirement of additional space may be taken care of in the II Phase of construction.

**The proposed Teaching Hub will have following over all System Specifications:**

##### **➤ SYSTEM DESIGN REQUIREMENTS**

###### **❖ NOC [Hub station] Traffic:**

- Outbound - Four multicast streams of 1 mbps per stream. Total outbound capacity of 4 mbps user traffic.
- Inbound – Four inbound video streams of 384 kbps per stream plus four shared 64 kbps data channels and 64 kbps voice channels.
- NOC sized to support between 50 to 100 remote stations.
- Non-redundant NOC equipment configuration.

❖ **SIT Traffic:**

- Capable of receiving (forward link) the 4 simultaneous outbound streams from the NOC.
- Capable of transmitting (return link) one 384 kbps video stream as well as simultaneously accessing the 64 kbps shared data channel and 64 kbps voice channel.

➤ **LEARNING MANAGEMENT SYSTEM REQUIREMENTS**

**A. LIVE ONLINE LECTURE AND QUESTION/ANSWER SESSIONS THROUGH:**

1. Two way video and audio (video-conferencing)
2. One way video and One-Way audio
3. Two-way audio
4. Ability to interface handycam or PTZ camera to establish video link with teacher end.
5. Teaching end can initiate video call with student via GUI
6. Student end video streamed as pip with teacher end video.
7. Can select one video input from multiple inputs provided to video capture card or any other means.

**B. Video Conferencing Capability**

- ❖ Learning Management System – Asynchronous Component, Virtual Institute, User Registration Module with Personal Web-page and Learning Preferences, Online Collaboration Module

**TEACHING END WITH AUDIO-VIDEO AIDS**

There will be two types of teaching facilities in the network, which will include studio (with students- live class room) based teaching facility and virtual classroom based teaching facility.

**a. PROPOSED TEACHING FACILITY CONFIGURATION.**

The teaching facility will have an instructor area with full function Instructor's Desk, LMS Server, Recording Machines, PTZ Cameras, wireless microphone, Audio Mixers, Video Switchers, Video Mixer, Video Distribution Amplifiers, VGA-PAL Converter.

## **Bill of Materials:**

**NOC (Network Operating Center)** will comprise of Ku Band HUB, Virtual Classroom Studio End Installation charges, HUB Installation & Remote Terminals. It will involve expenditure of Rs.84,46,100/-.

ISRO will provide the item viz: Ku Band SIT, Student SIT,& LMS Client. It will cost Rs. 2, 29,200/-

The following additional equipments will be required for operation of Studio cum class room and editing. These are: 1) PTZ Cameras 2) Video mixer and switcher 3) Video Editor 4) Storage equipments 5) Professional CD writers etc. 6) On-line UPS (20kVA)

A classroom with 100 seating capacity and area of 2500 sq ft is identified to convert it in to Studio. The works which are proposed to be taken up are: Air conditioning (Low Noise), False ceiling with Acoustic absorbent tiles, Acoustic Wall Paneling, Acoustic absorbing Flooring, Networking of all the seat, Construction of control room by acoustic partitioning, Construction of NOC room and Providing studio lighting.

In order to carry out the action and gave manpower will be required. It is therefore proposed to create 13 posts during year 2007-08.

An outlay of Rs.100.00 lakh is approved for this Scheme in Annual Plan 2008-09.

## **C. NETAJI SUBHASH INSTITUTE OF TECHNOLOGY**

### **Aims & Objectives**

**Netaji Subhas Institute of Technology is a premier, hi-tech institution of Delhi Government. It is affiliated to Delhi University & provides Hi-tech courses in the emerging areas of technology at UG, PG & Ph.D level .**

The objectives of the Institute are:

- i. To provide for excellence in instruction at the Undergraduate and Postgraduate levels and undertaking and sponsor research in such branches of Engineering and Technology, Applied Sciences and Management Science as the Institute may think fit, and for the advancement of learning and dissemination of knowledge in such branches according to the provision thereof in the Rules and Regulations of the Institute with primary emphasis on emerging Technology;
- ii. To set up a Science and Technology Park;

- iii. To organize and undertake extramural teaching and extension services;
- iv. To undertake industrial and R & D consultancies;
- v. To lend support in identifying and starting small scale industry in and around the Institute through Entrepreneurship Programmes;
- vi. To undertake Technology Transfer programmes;
- vii. To develop suitable programmes for effectively utilizing the built-in infrastructure facilities in the Institute;
- viii. To establish linkage between the Institute, Industries, R & D Organisations and other Universities/Institutes of higher technical education for teaching and research programmes in India/Abroad;
- ix. To enrich mental, spiritual, cultural, and physical potentialities of the students;
- x. To enthuse a sense of values worthy of the Democratic norms of India.

**Besides, the Institute envisages to integrate the following activities also:**

- (i) Integration of Science and Technology Entrepreneurs' Park with the overall objectives of the Institute; and
- (ii) Institutional categorization of R & D activities through advanced Labs/Centres at three levels, viz. (a) Mission; (b) Thrust; and (c) Blue sky (Open ended research).

Besides the Science & Technology Entrepreneurs' Park, the academic activities would be located in the Divisions and the Schools as given below:

#### **a) Divisions**

1. Electronics & Communication Engineering, 2. Computer Engineering, 3. Instrumentation and Control Engineering, 4. Manufacturing Processes and Automation Engineering, 5. Information Technology, 6. Bio-Technology

#### **b) Schools**

Applied Sciences, 2. Humanities and Social Sciences, 3. Management and Entrepreneurship

## Courses offered and Intake

Presently, 500 students are being admitted every year in undergraduate and 69 at PG level( Full Time + Part Time ) programmes.

UNDER GRDUATE COURSES (B.E.)	Intake
1) Electronics and Communication Engineering	120
2) Computer Engineering	120
3) Information Technology	60
4) Instrumentation and Control Engineering	120
5) Manufacturing Processes and Automation Engineering	60
6) Bio-Technology	20
<b>TOTAL</b>	<b>500</b>

POST GRADUATE COURSES (M.TECH.)	Full Time	Part Time
1) M.Tech in Signal Processing	18	5
2) M.Tech in Information Systems	18	5
3) M.Tech in Process Control	18	5
<b>TOTAL</b>	<b>54</b>	<b>15</b>

## DOCTORAL (Ph.D.)

In the emerging areas of technology and basic sciences. Scholarships under TRF & JRF schemes are available to deserving candidate.

## Proposed Activities

- I. M.Tech Programmes
  - (i) M.Tech in Mechatronic Systems
  - (ii) M.Tech in Industrial Electronics & Automation
  - (iii) M.Tech. in Bio-Medical Engineering
  - (iv) M.Tech in Bioformatics Engg.,
  - (v) M.Tech in Production and Automation Engg.

## II. Opening of Advanced Centers at each division of NSIT

The following advance centers are planned to be open

1. Centre for Virtual Reality and Multimedia Technology (VRMT) in the division of Computer Engineering,
2. Centre for Virtual Instrumentation and Control Technology (VICT) in the Division of Instrumental and Control Engg.,
3. Centre for Rapid Prototyping and Product Design (CRPPD) in the Division of Manufacturing Processes and Automation Engg.,

4. Centre for Application of Information Technology in Financial Systems (CAITFS) in the Division of Information Technology.

1. **Library, Faculty, Development & Student Welfare, Renovation work/ Addition/Alteration and Rent & taxes) (Rs. 950.00 Lakhs)**

### **Aims & Objectives**

Salary of the employee (for the plan post), Security, Horticulture charges, hiring of office labours, office expenses, part time professional charges, other charges etc. are booked under this head.

In view of the new programmes at PG level and increase in seats at UG level the existing position of faculty & staff against the already sanctioned posts will be strengthened.

### **LIBRARY & BOOK BANK**

The required budget may be made available to the Library for said purposes.

- E.Books & E.Journals
- Books & Journals (Print)
- Bibliographic Database
- Software(Upgradation and New)
- Printing and Binding

### **FACULTY DEVELOPMENT & STUDENTS WELFARE**

This Institute is in the process of establishing collaboration, for research and development activities with other Institute, Universities, R & D organisations in India as well as abroad. This is in pursuance of the objectives No.3 (viii) of the Institute as set out in the Memorandum of Association which reads as follows: -

VIII "To establish linkages between the Institute , Industries, R & D organizations and other Universities/ Institute of higher technical education for teaching and research programmes in India and abroad. "

### **MINOR ADDITIONS / ALTERATIONS**

To make provisions for the works which are not directly covered in the EFC.

Details : To make minor additions and alteration in the infrastructure of the Institute as needed from time to time.

## **PROPERTY TAX, LEASE RENT , R&M**

To meet out the mandatory/statutory tax requirements for functioning of the Institute and Misc. R & M works.

Details: - **Ground rent to DDA, Water Charges to DDA, Property tax to MCD and Misc. R & M works**

An Outlay of Rs.950.00 lakh for is approved for this scheme in Annual Plan 2008-09.

## **2. PROCUREMENT OF MACHINERY & EQUIPMENTS (Rs. 200.00 Lakhs)**

### **Aims & Objectives**

To keep pace with the expanding academic activities, it is proposed to establish a chain of advanced laboratories in addition to modernizing the existing one. New branches of academic programmes in Post Graduate streams are to be started shortly.

An Outlay of Rs.200.00 lakh is approved for this scheme in Annual Plan 2008-09.

## **3. AWARDS / SCHOLARSHIP / RESEARCH ASSOCIATESHIPS (Rs. 200.00 Lakhs)**

### **Aims & Objectives**

The Scheme for merit/merit-cum-means scholarships is proposed to be introduced for students. Certain awards are also proposed to be extended to deserving students. Associate -ships according to U.G.C norms are also proposed to be awarded.

An outlay of Rs.200.00 lakh is approved for this scheme in Annual Plan 2008-09.

## **4. CENTRES FOR ELECTRONICS DESIGN & TECHNOLOGY (CEDT) (Rs. 100.00 Lakh)**

### **Aims & Objectives**

The CEDT was started in August 2003, to offer workspace that allows the faculty and students of the institute to carry out research and developmental activities tuned to the needs of the industry. The aim of the centre is to develop

necessary expertise in the areas of telematics, instrumentation and control systems, power electronics, space electronics , communication systems, electronics packaging and production systems and industrial product design.

An Outlay of Rs.100.00 lakh is approved for this scheme in Annual Plan 2008-09.

## **5. SCIENCE AND TECHNOLOGY ENTREPRENEURSHIP PARK (STEP) (Rs. 5.00 Lakh)**

### **Aims & Objectives**

**To concentrate on the following thrust areas:**

- Microprocessor Applications
- Computer Applications
- Digital Instrumentation
- Elect-Medical Instrumentation

Here, we are planning to create an element of trust and confidence among academic and research institutions and industrial Enterprises. The STEP is expected to bring about a sort of interaction and interfacing between Education/Research Institutions on the one hand and industrial Units on the other. The basis concept is that STEP would assist in translating research and development output from the institute into industrial production, effect changes in industrial processing. It will also encourage fresh graduates to become engineer-entrepreneurs. Step may also stimulate the existing industrial to adopt the latest scientific and technology know how which will enhance both quantity and quality of the products.

An Outlay of Rs.5.00 lakh is approved for this scheme in Annual Plan 2008-09.

## **6. CONTINUING EDUCATION PROGRAMME (CEP) (Rs. 5.00 Lakhs)**

### **Aims & Objectives**

**To conduct various short-term courses in the area :-**

Electronics, Computer & Automation primarily for the benefit of technical teachers, scientists & working engineers , to make them abreast with latest development in the field of Science & Technology. The participants coming from different parts of the country may be benefited by these courses. This may also be useful for increasing the Industry-Institute interaction.

The program may also be useful in updating knowledge of practicing engineers, managers and executives working in different industries, contributing to the field of Electronics, Computers, Instrumentation, Communication, Information Technology and Integration of academic curriculum with requirement of industry.

An Outlay of Rs.5.00 lakh is approved for this scheme in Annual Plan 2008-09

**7. CONSTRUCTION OF NEW COMPLEX FOR NSIT AT DWARKA (Rs. 1100.00 Lakhs)**

**Aims & Objectives**

The following works are to be carried out in the year 2008-09.

<b>S. No.</b>	<b>Name of Work</b>
1.	Construction of 03 Nos. Boys Hostel
2.	Construction of Sports Complex – Stepped Seating Arrangement.
3.	Construction of Proposed Auditorium at NSIT.
4.	Construction of Drains, Channels and Other related works.
5.	Construction of Guest House at NSIT Complex (Including Electrical works)
6.	Construction of Work Shop Buildings at NSIT.

An Outlay of Rs.1100.00 lakh is approved for this scheme in Annual Plan 2008-09

**8. COACHING FACILITIES TO SC/ST/WEAKER STUDENTS/TRAINING PROGRAMME (Rs.5.00 Lakh)**

**Aims & Objectives**

To help candidates of SC/ST and other backward classes in improving their theoretical and practical skills in order to improve their employability, and in some cases to inculcate the importance of entrepreneurship so that they can develop means for improving their livelihoods as well as quality of life.

An Outlay of Rs.5.00 lakh is approved for this scheme in Annual Plan 2008-09

**9. INSTITUTE NETWORKING SCHEME (INTERNET / INFRANET (Rs. 105.00 Lakh)**

**Aims & Objectives**

Institute networking scheme requires budget to meet broadly three types of system requirements.

- i. Maintenance and expansion of existing networking equipment:-we have developed campus wide computer networking infrastructure comparable to any IIT and leading institutions in the world by spending about 1 crore only on active equipment. There are matching installations for UPS and air conditioners at 8 different locations with the campus. In the next phase this infrastructure has to be extended up-to Hostel as well.
- ii. Internet Access Tariff:-. INS has acquired two leased circuit, one of 2 Mbps FOC and another of 128 Kbps through Radio Link which serves the purpose of 100%up time even if one link physically gets disturbed. Existing Bandwidth is not adequate at all and proposal to upgrade them in to 8 Mbps and 2 Mbps is under process waiting approval from the competent authority.
- iii. Networking Application Servers and their maintenance:- institute procured servers along with networking equipment in the year 1998 and made it operational since 1999 . But during last three years despite of sincere efforts, institute could not upgrade it in time and now servers have become obsolete and non-functional. At present some adhoc arrangement has been made. Institute has to procure matching applications server to meet the latest requirement of IT related world class activities that includes video conferencing, e-governance, security threats etc. In addition to necessary internet applications.

An Outlay of Rs.105.00 lakh is approved for this scheme in Annual Plan 2008-09.

## **10. Science & Technology Park (Rs.10.00 Lakhs)**

### **Aims & Objectives**

The key objective of the Science & Technology Park at NSIT will be to establish Delhi as a Hub of knowledge economy, specially in the area of High Technology & supporting the industries in and around Delhi(NCR). A Special Purpose Company (SPC) will be created to manage the Science & Technology Park with the objective of focusing on high-end collaborative research with industries.

The expression of interest for DPR has also been prepared by NASSCOM. After the launch of DPR, the expression of interest from various stakeholders will be invited. The exact financial requirement for this project will be known only after opening of expression of interest.

An outlay of Rs.10.00 lakh is approved for this scheme in Annual Plan 2008-09.

## **11. Center for Nano Technology (Rs.10.00 lakh)**

### **Aims & Objectives**

The Nanotechnology has become a buzzword among the scientists and engineers during the last 10 years and it is expected to have a substantial effect on science and economics in the near future. It is different from previous industrial or scientific revolution. Both public and private funding in this area is rapidly growing. It is the technology of next generation materials, devices and structures at 1 to 100 nanometer scale, which is billionth of a meter. Advances in nanotechnology, have afforded the ability to work at the atomic and molecular levels to create structures and machines with fundamentally novel characteristics and applications. Nanotechnology is tremendously growing research area and holds the greatest implications in various fields of manufacturing, automation, electronics, instrumentation, material science, Bio-technology etc. Nanotechnology demands multi-disciplinary inputs from scientists and engineers and recognition is needed with regard to the important role of education, in maximizing the future wealth creation possibilities. The necessary advanced skills in this novel technology can only be developed through intensive multidisciplinary postgraduate and doctorate level programmes in Nanotechnology. The education and training of young science and engineering graduates in the area of Nanotechnology is essential in order to ensure a flow of specialized and talented engineers into industry. Several of the educational institutes in india and abroad have started U.G. and P.G. level programme in Nano technology and related areas.

Proposal for Nanotechnology Laboratories (Nano-manufacturing, Nano materials and Nano-metrology Labs) was submitted by Division of Manufacturing Process and Automation Engineering (MPAE) in the 11<sup>th</sup> Five Year plan. A separate building for the division of Nanotechnology will be constructed. The annual plan for the year 2008-09 for the Division of Nanotechnology is as follows:

### **Required Infrastructure :**

- Nano Metrology Laboratory
- Nano Manufacturing Laboratory
- Construction of Building

(For each Lab. separate clean, vibration free, AC rooms with UPS facility will be required)

### **Nano Metrology Laboratory:**

A core lab. In Nano metrology is required to be developed for academic and R & D activities in Nano scale measurement, scanning or topography of the Nano structured materials and various phenomena while Nano Manufacturing. Nano Metrology Lab. will be a centralized facility of the NSIT i.e. All the departments of NSIT will have access to this Lab. This Lab. will enable us to scientifically understand

various phenomena and manufacturing processes at nanoscale. The equipments / items to be purchased in year 2008-09 .

**Nano Manufacturing Laboratory:**

Nano-manufacturing Laboratory is required to be developed for academic and R & D activities in the field of Nano- Manufacturing. The Nano-Manufacturing Technology has begun to be studied intensively in foreign as well as in Indian educational institutions. The equipments /items to be purchased in year 2008-09.

An outlay of Rs.10.00 lakh is approved for this scheme in Annual Plan 2008-09.