

XVI. Technical Education

1. Directorate of Technical Education

A well-planned system of technical education is a pre-requisite to sustain the rapid pace of development required in our country. Such a system will be called upon to translate the imperatives of modern manufacturing process, state-of-art technology, diversified technological changes and complex training requirements resulting from these changes, into the educational planning process.

The future goals and objectives of the technical education system are to produce manpower needed to meet these diversified requirements of the user system. Directorate of Training and Technical Education coordinates its training programme to match with the policy of Government of Delhi to encourage the development and establishment of non-polluting, higher value-added and service-oriented industries.

Following are the major thrust areas requiring attention:

- Removal of obsolescence and modernisation of laboratories and workshops.
- Frequent updation of curricula to include latest development in technologies.
- Introduction of programmes in emerging areas like Computer Engineering, Microprocessors, Manufacturing Technology, Printing and Packing, Plastic, Chemical, Environmental Engineering and Technology, Fashion Technology and Public Health.
- Initiation of Continuing Education programmes to train and retrain working technicians to acquire new trends and developments.
- Concentration on development of managerial and entrepreneurial skills and innovative abilities.
- Consolidation of existing facilities and optimize utilisation of available resources.
- Improvement of quality and standard of Technician Education.
- Interaction with Industry and the Community.

Plastic Engg./Tech. (3 Years)			30	30																
Printing Technology (3 Years)							50													
Production Engg. (3 Years)			45																	
Tool & Die Making (4 Years)									30											
Beauty Culture (2 Years)						44														
Garment Fab. Tech. (2 Years)		30																		
Interior Design (3 Years)						50														
Library Science (2 Years)						44														
Medical Lab Tech. (3 Years)						45					60	60								
TEST-2(ii) - Aptitude Test																				
Art for Drawing Teacher (3 Yr)										20										
Commercial Art (3 Years)						48														
Textile Design (3 Years)																				60
Fashion Design (2 years)				30																30
TEST - 3																				
Pharmacy (2 yrs)						20					60	60	60					60		60
TEST - 4																				
Modern Office Practice(3 Yrs.)																				
a) English						40		120							60					
b) Hindi						20		30												
AP - Ambedkar Polytechnic.				TR - Tool Room & Training Centre				MI - Marathwada Institute of Technology												
AB - Aryabhat Polytechnic				SU - Sarada Ukil School of Art																
GB - G.B. Pant Polytechnic				AI - Aditya Institute of Technology				MS - Maharaja Surajmal Institute of Pharmacy & Technology												
GN - Guru Nanak Polytechnic				BH - Baba Haridas College of Pharmacy & Technology				RT - Rao Tula Ram Polytechnic												
KP - Kasturba Polytechnic for Women																				
MP - Meerabai Polytechnic				CR - Chhotu Ram Rural Institute of Engineering & Technology				SB - Subramaniam Bharati College of Science & Technology												
PP - Pusa Polytechnic																				
BPI - Bhai Parmanand Institute of Business Studies				FA - Father Agnel Polytechnic				INW - International Polytechnic for Women												
				GT - Guru Tegh Bahadur Polytechnic																

The position regarding the approved outlay of 9th Five Year Plan 1997-2002, expenditure incurred during Annual Plan 1997-98 to 2000-01 and anticipated expenditure during 2001-02 alongwith 10th Plan & Annual Plan outlays 2002-03 under the Technical Education is as follows:-

Directorate of Technical Education

(Rs. In Lakhs)

S.no	Agency/ Department	9 th Plan App. Outlay 1997-02	Expenditu re 1997- 98 to 2000-01	RE 2001- 02	9 th Five Year Expenditure	10 th Five Year Plan Outlay 2002-07	Annau plan 2002-03 Outlays
1.	Dte. of Tech. Education	5800.00	4243.45	2078.00	5738.87	9300.00	2000.00
	Delhi College of Engg.	6700.00	5935.05	1200.00	6936.54	8500.00	1300.00
	N.S.I.T.	9000.00	6931.63	1400.00	8230.65	6500.00	1000.00
	College of Art	500.00	138.19	60.00	184.81	700.00	130.00
	Total	22000.00	17248.32	4738.00	21090.87	25000.00	4430.00

In the 10th Five Year Plan the main strategy is:

- 1) Capacity expansion to meet qualitative aspects.
- 2) Introduction of courses in state-of-art technology in polytechnics.
- 3) Gradual introduction of flexible programmes.
- 4) Establishment of additional Engineering Colleges.
- 5) Establishment of additional polytechnics for emerging areas of technology.
- 6) Upgradation of selected polytechnics to degree level institutions.
- 7) Regular curriculum revision and development of learning resources.
- 8) Modernisation and strengthening of existing institutions.
- 9) Promotion of industry-institute-interaction.
- 10) Strengthening of continuing education programmes and entrepreneurship development. (Introduction of management courses and Evening diploma courses in Existing polytechnics.)
- 11) Introduction of short-term non-formal programmes in existing polytechnics for optimum utilisation of the resources and internal revenue generation.
- 12) Monitoring and scientific evaluation of academic activities in the institutions.
- 13) Faculty development by way of short-term and long-term academic and industrial training programmes within the country as well as abroad.
- 14) It is also proposed to implementation of suitable schemes and provision of infrastructure in the Directorate(HQ) and in Technical institutions for future advancement in technologies which cannot be foreseen at this stage.

WORLD BANK ASSISTANCE

The Directorate of Training and Technical Education has geared itself to face the challenge posed by these complex requirements. The success of these programmes, needless to say, will only be possible with sound financial support and efficient management. With the financial assistance of World Bank to the tune of Rs.54.50 crores technician education in Delhi was strengthened and consolidated to achieve excellence in technical education. 230 polytechnics in the country have been covered under the World Bank Assistance in the first phase. Delhi was included in the 2nd phase of the project. The major components of the project were Capacity Expansion, Quality Improvement and Efficiency Improvement. Implementation of various schemes and programmes under various sub-components of the project has brought about qualitative and quantitative improvement in the system. The project commenced in December, 1991 and ended in October, 1999. The posts created under the project have been retained in the Plan in order to seek reimbursement from World Bank as per their guidelines. However, the Project posts have been transferred to Non-Plan after October 1999.

ACHIEVEMENTS DURING NINTH FIVE YEAR PLAN :

1. Following Diploma and Post Diploma courses have been introduced in the existing polytechnics:

Diploma Courses

- i) Chemical Engineering in Guru Nanak Dev Co-Educational Polytechnic.
- ii) Plastic Technology in Guru Nanak Dev Co-Educational Polytechnic.
- iii) Fashion Designing in Kasturba Polytechnic.
- iv) Public Health and Environmental Engineering in Kasturba Polytechnic.

Post-Diploma Courses: Introduced from Feb, 1998.

- i) Industrial Engineering in Guru Nanak Dev Co-Educational Polytechnic.
- ii) Industrial Engineering in Arya Bhat Polytechnic.

- iii) Petro-Chemical Engineering in Guru Nanak Dev Co-Educational Polytechnic.
2. Following Polytechnic Buildings were constructed and polytechnics shifted to their own campus during 1997-98.
 - i) Kasturba Polytechnic for women at Pitampura.
 - ii) Guru Nanak Dev Co-Educational Polytechnic at Rohini.
 3. Hostel Block of 60 capacity constructed in College of Pharmacy campus.
 4. Extension block of Aryabhat Polytechnic constructed at G.T. Karnal Road.
 5. Construction work of Directorate of Training & Technical Education (Hqs) and Board of Technical Education building has been completed and office shifted in September, 1999.
 6. Construction work of 46 residential staff quarters in the campus of Kasturba Polytechnic for women at Pitampura has been completed and the quarters have been allotted.
 7. Sanitation work for three new Polytechnic campuses, namely, Guru Nanak Dev Co-Educational Polytechnic, Ambedkar Polytechnic and Kasturba Polytechnic has been awarded to private agencies. Approval of the Competent Authority to award the work in respect of Aryabhat Polytechnic, Meerabai Polytechnic, Directorate of Training & Technical Education (Hqs) and Board of Technical Education office has been obtained. The proposal is at final stage.
 8. 224 temporary posts created during the last three years were converted into permanent posts.
 9. Various additional teaching & non teaching posts in Polytechnics were created as per norms of AICTE.
 10. Construction of Multipurpose hall (auditorium) in College of Pharmacy campus is in progress.
 11. Work related to provision of permanent fixtures in labs, workshops, lecture theatres, canteen, library in Guru Nanak Dev polytechnic at Rohini has been completed.

12. Career advancement scheme implemented in Polytechnics and in College of Pharmacy. Under this scheme about 60 teachers were granted benefits of senior/selection grade scale as per AICTE guidelines.
13. Short term training programmes for 954 faculty members were arranged during the period 01.04.97 to 15.07.2001 and 5 staff members were sponsored for foreign fellowship training programme and many staff members were sponsored for higher education to complete M.Tech./ Ph.D. programmes.
14. S.F.C. has cleared the proposal for construction of Co-Educational Polytechnic at Jaffarpur. Expenditure Sanction of Rs. 612.96 lakhs has also been issued in June 2001.
15. S.F.C. has also cleared the proposal at the cost of Rs. 450.11 lakhs for making payment to DDA for allotment of land at Geeta Colony for establishment of Engineering College.
16. One Engineering college for Women has also been established (M.I.T.).
17. Intake capacity of various courses in the Diploma level Institutions has been increased from 2882 to 3111 during the 9th Plan Period.

SCHEMES PROPOSED TO BE IMPLEMENTED DURING 10TH FIVE YEAR PLAN AND IN THE ANNUAL PLAN 2002-2003 ARE AS UNDER:

- 1. Strengthening of the Directorate**
(Rs. 200.00 lakhs for 10th Plan 2002-07)
(Rs. 50.00 lakhs for A.P. 2002-03)

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.

Whereas in sixties, there were only four polytechnics under this Directorate with a limited intake, today it has to control 8 Diploma level institutions and 5 degree level

colleges with a considerable increase in the number of disciplines offered and students admitted. However, the staff structure at the Directorate (Headquarters) has not been correspondingly revised. It is, therefore, essential that Directorate (Hqrs.) be strengthened to manage the institutes.

Directorate of Training and Technical Education, Delhi is headed by the Principal Secretary who is a senior IAS officer and an Ex-Officio Pr. Secretary of the Department dealing with entire Technical Education Programmes in the NCT of Delhi, besides craftsman training and Apprenticeship Programme. To assist the Principal Secretary, there is one Joint Secretary(T&TE) who is senior P.C.S. officer and an Ex-Officio Joint Secretary of the Department. With the increase of number of institutes, student strength and number of staff in polytechnics based on AICTE norms, the workload of Administration Branch, Academic Branch & Planning Branch of Directorate has been considerably increased. It is, therefore, proposed to create one Legal Cell to deal effectively all the court cases and maintain co-ordination with Government Counsel. It is also proposed to create one internal audit cell for timely submission of all audit paras and to provide guidance to the institutions in audit matters. In the Directorate (Hqrs.) there is also need for one Librarian and one Library Attendant for the present Library set up in the Directorate (Hqrs.).

Further, a number of institutions are located in different parts of Delhi in the diagonally opposite directions from Jaffarpur Village (West Delhi) to Vivek Vihar (East Delhi). Thus it is difficult to effectively supervise the functioning of far-flung institutes. It is, therefore, proposed to set up at least two regional offices one in West Delhi and the other in South Delhi, preferably in Jaffarpur & in G.B. Pant polytechnic, Okhla Campus. Following posts are proposed to be created for this scheme in the 10th five year plan:-

S.No.	Name of the post	Number	Pay Scale
1.	Deputy Director	2	12000-18000
2.	Assistant Legal Officer	1	6500-10500
3.	Legal Assistant	1	5000-8000
4.	Audit Officer	1	6500-10500
6.	Office Supdt.	2	6500-10500

7.	Librarian	1	5000-8000
8.	Library Attendant	1	3050-4590
Total		9	

It is essential to take up the work of modernisation of office by introducing complete Computer Information System.

It is also proposed to privatise the sanitation and security services at the Directorate (HQ), as also Board of Technical Education, Aryabhat Polytechnic and Meerabai Polytechnic. Approval for the same has already been obtained.

(Rs. In Lakhs)

Approved Outlay 2002-2007			Approved outlay 2001-2002		
R	C	T	R	C	T
200.00			50.00	0.00	50.00

2. **Strengthening of Board of Technical Education.**

(Rs. 250.00 lakhs for 10th Plan 2002-07)

(Rs. 55.00 lakhs for A.P. 2002-03)

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 Board of Tech. Education carries out functions such as:-

- Approval of courses and curriculum..
- Making arrangements for conduct of examinations.
- Awarding Diploma/Certificates for various courses.
- Affiliating Institutes for conduct of courses.
- Monitoring of training and standards of education in this institutions.

- Laying down norms for admission to courses of study.

Integration of evaluation with the process of teaching and learning with a view to diagnose the weakness and deficiencies in education needs immediate attention. This requires analysis of results, regular monitoring and evaluation of institution with a view to ensure that they are imparting education as per prescribed norms. This has gained added importance due to addition of many privately managed affiliated institutions and many more still waiting and clamoring for affiliation with Board of Technical Education. Further, in view of the fact that All India Council for Technical Education has prescribed certain norms for technical institutions, Board of Technical Education is expected to play a crucial role in qualitative improvement of technical education. This is possible only when Board of Technical Education can ensure that the institutions adhere to the prescribed norms in terms of infrastructural facilities and a sound management system. Even for the conduct of examination, the present system is under heavy strain as previously the Board was to conduct examination on Annual Pattern for a few Engineering and Non-engineering courses but now with the introduction of complete carry over system on semester pattern with six year as upper limit for passing three years diploma course the process of computation of results has become very complex.

Board of Technical Education, Delhi is at present conducting examination for 11 Government Institutions, 9 privately managed affiliated institutions and 2 autonomous institutions. The examinations are conducted for award of certificate/diploma for 45 courses of varied nature for about 12,000 candidates. Question papers for about 550 subjects are to be set and printed every six months.

The existing staff structure of the Board is, therefore, 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.

For modernisation of BTE office, it is proposed to purchase one FAX machine with a dedicated telephone line, internet connection as well as latest software and computer system to ensure that results of all examinations are declared within three or

four week. It is, therefore, essential to strengthen the computer section of Board by creating one post of Programmer and two additional posts of Data Entry Operators and one Store Keeper in the scale of Rs.4000-6000. During 2002-2003 following posts are proposed to be created/upgraded in the Board of Technical Education :-

A. Creation of new posts:-

1.	Programmer	1	Rs.8000-13500/-
2.	Accounts Officer	1	Rs.7500-12000/-
3.	Legal Assistant	1	Rs.5000-8000/-
4.	Assistant/Head Clerk	1	Rs.5000-8000/-
5.	Data Entry Operator	1	Rs.4500-7000/-

Total **5**

B. Upgradation by revision of the pay scale of the existing post of Controller, Board of Technical Education in the pay scale of Rs.12000-16500 to that of Head of Department in polytechnics in the pay scale of Rs.12000-18000.

Provision of Rs.55.00 lakhs has been approved in the Annual Plan 2002-2003.

(Rs. In Lakhs)

Approved Outlay 2002-2007			Approved outlay 2002-2003		
R	C	T	R	C	T
250.00	0.00	250.00	55.00	--	55.00

2. Replacement and Modernisation of Machinery and Equipment

(Rs. 350.00 lakhs for 10th Plan 2002-07)

(Rs. 100.00 lakhs for A.P. 2002-03)

One of the high priority areas of Technician Education is removal of obsolescence and modernisation in the current and futuristic advancement in science and technology. Most of the equipment has outlived its utility and needs replacement. Some equipment has become outdated due to the advent of new processes and technologies and requires substitution. For modernisation, there is need to undertake technology forecasting and

technology assessment studies and establish laboratories with equipment pertaining to emerging technologies. Modernisation of laboratories and workshops is also undertaken as a consequence of changes in curricula taking place from time to time to cope with the upcoming technologies. The widespread use of computers in various fields has necessitated setting up of computer laboratories in each institution to provide training in the use of computer for various applications. Use of sophisticated and advanced control system in an increasing way demands that students are well conversant with their use. Thus the objectives of the scheme would be:

1. To replace the obsolete machinery and equipment which have outlived its life with the latest type, and
2. To provide additional modern/ sophisticated equipment due to advancement in technology.
3. To equip the laboratories and workshop with support facilities matching with the equipment procured.

To achieve the above objectives and provide physical facilities, modern equipment and machinery to the tune of Rs.200.00 lakhs will be procured by the institutions under the Directorate during 2002-2003.

(Rs. In Lakhs)

**Approved Outlay
2002-2007**

R	C	T
350.00	--	350.00

**Approved outlay
2002-2003**

R	C	T
100.00	--	100.00

4. Strengthening of Library Facilities and Audio Visual Aids

(Rs. 50.00 lakhs for 10th Plan 2002-07)

(Rs. 10.00 lakhs for A.P. 2002-03)

The concept of library as a place for storing and issuing of books is outdated. A wide variety of learning resources comprising graphic records in the form of books,

periodicals, films, slides, microfilms etc. has brought a radical change in the concept of library. Now it has become a workshop where an individual can interact with the media to be successful in his pursuit of knowledge. It is, therefore, imperative to extend all possible means to ensure proper environment, accessibility and exposure of graphic tools to the user. The institutions must give priority to library development side by side with laboratory development. The greatest constraint in this regard is lack of necessary funds. The polytechnics, at present, have a very limited stock of books and journals. There is a need for large number of reference books, technical encyclopaedias, technical dictionaries, directories, handbooks, yearbooks and similar sources for consultation. The organisational set up of library also needs improvement. The staff provided at present is quite inadequate to manage the multi-faceted activities of the library.

The objectives of a good library should be:

- to provide text and non-text material in the form of text books, reference books, journals, films, transparencies and other audio-visual material.
- to provide adequate teaching resource material to teaching staff.
- to anticipate demand and acquire books/materials in subjects likely to be introduced.
- to assist the readers to get the relevant information and to interpret the reading materials to them.
- to establish links with other libraries in the area for exchange of information.

The library should be able to provide following services:

- to provide list of additions
- to provide reference services
- to provide news briefs
- to provide retrospective bibliography
- to provide selective dissemination of information
- to provide reprographic facility.

The libraries and learning resource centres of all the institutions will be reinforced by providing technical journals (Indian and Foreign) books in Science, Engineering and

Technology and other facility such as audio visual aids, educational films, video cassettes, CDs, computer aided programmes, CAD/CAM packages produced by Technical Teacher's Training Institutes, UGC, ISTE and other educational research centres and from other proprietary item manufacturers.

In view of the facts stated above it is proposed to create one post of Senior Librarian in the scale of Rs. 1640-2900/(pre-revised) in each polytechnic and an additional post of Librarian and Library Attendant in each polytechnic.

It is also approved to computerise the libraries of the polytechnics which necessitates provision of additional infrastructure in terms of computers and peripherals.

Provision of Rs.10.00 lakhs is proposed for this scheme during the year 2002-2003.

Approved Provision for 10th Five Year Plan 2002-2007			Approved provision for Annual Plan 2002-2003			(Rs. in Lakhs)		
						R	C	T
50.00	-	50.00	10.00	--	10.00			

5. Strengthening and Consolidation of Hostel & Existing Facilities in Polytechnics.

(Rs. 150.00 lakhs for 10th Plan 2002-07)

(Rs. 25.00 lakhs for A.P. 2002-03)

Institutions in Delhi provide for 15% seats for outside students. In addition to this, a considerable number of students nominated by various states and foreign nationals also seek admission. There is an increasing demand for hostel facilities by local students because the workload of studies in technical institutions is very taxing and students can devote full attention with residential facilities. They get more opportunities for mutual interaction and, thus, can discuss their difficulties

Programme of Action for Implementation of National Policy on Education has also indicated that every technical institution should provide for hostel facilities to the extent of 100% for girl students and at least upto 50% for boy students. The hostels should be equipped with furniture and all other basic amenities should be available for proper living and comforts. The inmates should have facilities for mess and recreation. Presently only G.B. Pant Polytechnic, Meera Bai Polytechnic and Kasturba Polytechnic have their own hostel buildings. Pusa Polytechnic students are sharing the hostel facilities of ITI Pusa hostel. The accommodation and amenities in all these institutions are far from adequate. In the existing hostels about 300 students can be accommodated. In the 10th Plan strengthening of existing hostels and expansion of facilities will be taken up. Presently the hostel at Kasturba Polytechnic is accommodating around 50 girl students of Kasturba Polytechnic and Guru Nanak Dev Polytechnic. For the proper maintenance of hostel and care of hostellers, two more posts of hostel attendant are to be created in each hostel.

The Scheme also envisages consolidation of existing facilities and optimal use of resources for getting maximum returns on the investments made on technical education in previous plans. Considering the high investment that goes into the setting up of a new technical institution, it will be desirable to fully utilize the space and equipment in the existing institutions rather than allowing proliferation of new institutions in conventional courses of study. Land, especially in a metropolis, is a costly component. So, greater consideration must be attached to optimum utilization of available space in the existing institutions. Vertical expansion can be had by providing additional floors in institutions having limited land but institutions having larger premises can create additional space by constructing extension blocks. Efforts will be made to expand the facilities for training in laboratories and workshops so that bigger batch of students can be accommodated. Additional tools and equipment will be made available to supplement the existing facilities. Similarly, it is proposed to make up the inadequacies of staff by creating additional posts. The staff structure in Polytechnics has recently been revised under the recommendations of Madan Committee.

During 8th & 9th Five Years Plan period number of disciplines has increased in the existing polytechnics. The student strength has also been increased Teaching posts as per

AICTE norms have also been created in the polytechnics. However, the requisite number of Technical Supporting staff required to manage labs and workshop and ministerial staff in the existing polytechnics has not been created so far. Further there is need to modernise the working of office and computerise the academic cell. It is, therefore, proposed to strengthen the existing infrastructure in the polytechnics. E-mail and internet service has already been provided to all the polytechnics. Department has already conceptualised a proposal for computerisation of students data and pay roll of the staff. The infrastructure for increased interaction with the higher learning institutions and industry is also proposed to be provided in each polytechnic in a phased manner. Thus, to strengthen industry-institute-interaction and interaction with higher technical institutes like IIT etc., additional buses are proposed to be purchased for Pusa Polytechnic, Arya Bhat and G.B.Pant polytechnic. It is also proposed to construct a multi-purpose hall in Meerabai Polytechnic with a view to providing facilities for cultural and extra curricular activities to the girl students. Additional requirement to cover the shortages of technical supporting staff and ministerial staff for each institution has been worked out tentatively as under:-

G.B. Pant Polytechnic:

1.	Assistant Programmer	1	5500-9000
2.	Data Entry Operator Gr. B	2	4500-7000
3.	Head Clerk/ Assistant	1	5000-8000
4.	Lab. Technician/ WSI	6	5000-8000
5.	Lab Attendant	6	3050-4590
6.	U.D.C.	1	4000-6000
7.	Driver/ Dispatch rider	1	3050-4590
8.	L.D.C.	1	3050-4590
9.	Sweeper	3	2550-3200
10.	Asstt. Storekeeper	1	4000-6000
11.	Chowkidar	3	2550-3200

Meera Bai Polytechnic:

1.	Office Supdt.	1	6500-10500
2.	Assistant Programmer	1	5500-9000

3.	Data Entry Operator Grade B 2		4500-7000
4.	Lab Technician/ WSI	4	5000-8000
5.	Lab Attendant	4	3050-4590
6.	U.D.C.	1	4000-6000
7.	L.D.C.	1	3050-4590
8.	Daftary	1	2750-4400
9.	Asstt. Storekeeper	1	4000-6000

Pusa Polytechnic:

1.	Programmer	1	8000-13500
2.	Assistant Programmer	1	5500-9000
3.	Data Entry Operator Gr. B	2	4500-7000
4.	Asstt. Store Keeper	1	4500-7000
5.	Lab Technician/ WSI	4	5000-8000
6.	Lab Attendant	4	3050-4590
7.	Head Clerk/ Assistant	1	5000-8000
8.	U.D.C.	1	4000-6000
9.	L.D.C.	2	3050-4590
10.	Sweeper	4	2550-3200
11.	Chowkidar	3	2550-3200
12.	Cleaner	4	2550-3200
13.	Driver/ Dispatch rider	1	3050-4590

Arya Bhat Polytechnic:

1.	Assistant Programmer	1	5500-9000
2.	Data Entry Operator Gr. B	2	4500-7000
3.	Head Clerk	2	4500-7000
4.	Lab Technician/ WSI	4	5000-8000
5.	Lab Attendant	4	3050-8000
6.	L.D.C.	1	3050-4590
7.	Sweeper	4	2550-3200
8.	Driver	1	3050-4590
9.	Chowkidar	2	2550-3200

Bhai Parmanand Institute of Business Studies:

1.	Asstt. Programmer	1	5500-9000
2.	Data Entry Operator Gr. B	2	4500-7000
3.	Asstt. Storekeeper Gr. B	1	4000-6000
4.	Lab Technician/ WSI	6	5000-8000
5.	Lab Attendant	6	3050-4590
6.	Head Clerk/ Assistant	1	5000-8000
7.	U.D.C.	2	4000-6000
8.	Driver	1	3050-4590
9.	L.D.C.	2	3050-4590
10.	Cleaner	6	2550-3200

Ambedkar Memorial & Kasturba Polytechnics (each)

1.	Librarian	2	5000-8000
2.	Workshop Technician	6	5000-8000
3.	Assistant Programmer	1	5500-9000
4.	Data Entry Operator, Gr. B	2	4500-7000
5.	Head Clerk/ Sr. Steno	1	4500-7000
6.	Cleaners (Lab/ Workshop)	4	2550-3200
7.	Mali	1	2550-3200
8.	Peons	2	2550-3200
9.	Duplicating Machine Operator	1	3050-4590
10.	Lab Attendant	6	3050-4590
11.	Asstt. Storekeeper	2	4000-6000

Finance Department has already approved for creation of 26 posts for Ambedkar polytechnic and 23 posts of Kasturba polytechnic. The process to fill up these posts on regular basis has been initiated after issue of orders for creation of these posts with the approval of competent authority.

The work of privatisation of security and sanitation services at Ambedkar polytechnic, Guru Nanak Dev Polytechnic and Kasturba polytechnic has already been accomplished. Two more polytechnics i.e. Arya Bhat polytechnic and Meera Bai Polytechnic as well as the Dte. (HQ) and B.T.E. are also going to be covered under privatisation of security and sanitation services during the year 2001-02 since the proposal for the same has been approved by the Finance Department and the tenders have been invited for the same. Department would also explore the possibility of awarding the work of security and cleanliness to private agencies for remaining polytechnics also such as Pusa polytechnic, G.B.Pant Polytechnic and Bhai Parmanand Institute of Business Studies. In case the proposal for privatisation of sanitation and security of these three institutions is approved, the proposal for creation of additional posts of sweeper and chowkidar shall be dropped.

Other Physical Facilities

1. Replacement of condemned furniture and purchase of essential furniture required in the hostel for the mess, kitchen, dining hall as well as visitors room. Utensils etc. are also required to be added in the kitchen and the mess.
2. Recreation facilities for the inmates.

Financial Outlays:

(Rs. In Lakhs)						
Approved provision for 10 th Five Year Plan 2002-07			Approved provision for Annual Plan 2002-2003			
R	C	T	R	C	T	
75.00	75.00	150.00	25.00	25.00	50.00	

6. Continuing Education & Entrepreneurship Development Programme

(Rs. 50.00 lakhs for 10th Plan 2002-07)

(Rs. 12.00 lakhs for A.P. 2002-03)

Continuing Education Programmes

The National Policy of Education & Programme of Action formulated by Government of India, M/o H.R.D. envisages continuing Education and distance learning.

Presently evening diploma & post-diploma courses are running in G.B. Pant & Arya Bhat polytechnic, in order to provide vertical mobility for I.T.I. Pass students. Evening courses are running in Bhai Parmanand Institute of Business Studies. Taking into consideration the demand and utility for evening courses it is proposed to introduce diploma courses in civil, electrical, mechanical, electronics, computer engineering in Pusa, Ambedkar, Guru Nanak Dev and Kasturba Polytechnic in a phased manner during the 10th Plan period.

During 2002-2003, it is proposed to introduce evening Diploma Courses in civil, electrical & computer engineering in Pusa Polytechnic. Teaching faculty would be engaged on part-time bases. It is also proposed to enhance the rates of part time lecturers and in-charge of evening diploma courses also to offset the inflation.

Entrepreneurship Development Programme

Entrepreneurship Development Programme has been recognised as an effective human resource development tool. This programme is primarily meant for developing these first generation entrepreneurs, who on their own cannot become successful owners of enterprises. EDPs can motivate new comers for taking up self employment and entrepreneurial career institutions. Students mostly opt for wage employment career which contribute to unemployment. Institutionalising EDPs in the institutions can divert 10% of the students towards self-employment. Directorate of Training and Technical Education proposes to set up Entrepreneurship Development Cell in technical institution. The function of EDP will be :

- To inculcate entrepreneurship values and providing training inputs.
- To organise entrepreneurship resource camps.
- To introduce curriculum on entrepreneurship development as an elective subject.
- To organise short-term courses by inviting experts from organisations to provide necessary guidance to students.
- To set up their own industries.

Provision of Rs.50.00 Lakhs has been approved for implementation of this scheme during 10th Five Year Plan and Rs.12.00 lakhs during 2002-2003.

Approved provision for 10 th Five Year Plan 2002-07			Approved Provision for Annual Plan 2002-2003		
R	C	T	R	C	T
50.00	--	50.00	12.00	--	12.00

7. Establishment of Maintenance Cell in Institutions

(Rs. 50.00 lakhs in 10th Plan 2002-07)

(Rs.12.00 lakhs in Annual Plan 2002-03)

In the existing polytechnics in Delhi, there are over 100 laboratories and workshops related to physics, chemistry, civil, electrical, mechanical, electronics, computer, instrumentation and control etc. Every year sufficient amount of expenditure has to be incurred. The reasons for the establishment of this maintenance system are (a) lack of skilled manpower, (b) paucity of appropriate tools and equipment for repair facilities in the local/ nearby (c) non-availability of repair facilities in the local/nearby areas, (d) cumbersome financial procedure for undertaking repairs of equipment.

With the introduction of specialised courses in the polytechnics, a number of specialised laboratories equipped with modern and sophisticated equipment will come up in the coming years. These additionalities are required to be properly installed at various

locations in the buildings. In the absence of a separate unit within the system it will not be possible to maintain these laboratories and workshops in good condition and this in turn would create a severe hindrance in the learning process of the students apart from low utilization of equipment.

Presently the maintenance of civil works is handled by the P.W.D. for which separate annual funds are allocated. The procedure followed consists of awarding of work by PWD for annual repairs of buildings to contractors. There is no provision for day-to-day maintenance of the civil works with the result that the immediate repairs have also to wait till the time when annual repairs are undertaken. Also, the provision of funds made available for repairs and maintenance of buildings is too meager. There is therefore a need to set up a unit for maintenance of buildings and equipment for attending to day-to-day repairs as well as for undertaking essential preventive maintenance.

Such a step will substantially increase the utilisation factor of the available equipment. This activity will also improve the skills of the students due to the availability of essential repair equipment in the laboratories and workshops. The buildings or any other civil work wanting repairs will be attended to immediately resulting in increased useful life as well as cleanliness of the campus. The unit will also undertake repair of furniture. Activities of the unit would be :-

- (i) To assess the requirements for tools spares and consumables needed for the repair and maintenance of lab and workshop machinery.
- (ii) To carry out day to day repair and maintenance of buildings, labs and workshops.
- (iii) Shifting and installation of equipment.
- (iv) Procure raw material, tools etc required for repair and maintenance.
- (v) Engage labor/ technicians on daily wage basis, if required for specialised jobs.
- (vi) Set up procedure and schedule for repairs of specialised equipment by the central units.

In the 8th & 9th Five year plan maintenance cells have been created in Pusa Polytechnic, G.B. Pant Polytechnic, Meera Bai Polytechnic, Aryabhat Polytechnic, G.N.D. Polytechnic and in Bhai Parmanand Institute. During 10th Plan maintenance cell is proposed to be created in the remaining institutions namely Kasturba Polytechnic and Ambedkar Polytechnic. Posts have been created in GND Polytechnic in the month of July 98. During 2002-03 following posts are to be created in Kasturba Polytechnic and Ambedkar Polytechnic:-

Following staff are proposed to be created under the scheme :

1.	Maintenance Engineer	2	Rs.6500-10500
2.	Electrician	2	Rs.4000-6000
3.	Plumber cum fitter	2	Rs.4000-6000
4.	Massons	2	Rs.4000-6000

Provision of Rs.50.00 lakhs has been approved during 10th Plan and Rs.12.00 lakhs for the Annual Plan 2002-2003.

(Rs. in Lakhs)

Approved provision for 10 th Five Year Plan 2002-2007			Approved Provision for Annual Plan 2002-2003		
R	C	T	R	C	T
50.00	0.00	50.00	12.00	0.00	12.00

8. Re-organisation and Re-structuring the Set-up of the Institutes
(Rs. 15.00 lakhs for 10th Plan 2002-07)
(Rs. 5.00 lakhs for A.P. 2002-03)

All India Council for Technical Education has specifically accepted the recommendations of Madan Committee regarding revised staffing pattern of Polytechnics. Ministry of Human Resource Development, Govt. of India has accorded approval for implementation of revised structure for Delhi polytechnics Ministry of Human Resource

Development, Govt. of India directed that these recommendations will be implemented in phased manner 40:40:20 in three years. Subsequently additional posts as per recommendations of Madan Committee had been created and the process to fill these posts has already been initiated. It is also proposed to implement other recommendations of AICTE (Dogra Committee's recommendations etc.) during the Plan period.

The object of the scheme is:

- 1) To improve the standard & quality of training in the polytechnics
- 2) To revitalise and motivate the faculty system to enable them to tackle the challenges posed in the evergrowing field of technology.

Career Advancement avenues as per recommendations of Dogra Committee have been provided to faculty members. Grant of benefits of career advancement to Lecturers is an ongoing process since all the Lecturers who fulfil the requisite conditions are to be granted senior scale of Rs.10000-15200 and selection grade of Rs.12000-18000. Moreover as recommended by Dogra Committee, AICTE pay scales are to be granted w.e.f. 1.1.86.

Following 127 additional teaching posts in polytechnics as per AICTE norms have been created and most of the posts have been filled up. A little number of posts remained unfilled will be filled up during the 10th Five year plan.

	Head of Department (12000-18000)	Lecturers (8000-13500)	Foreman Instructors (8000-13500)
1. G.B.Pant Polytechnic	1	38	4
2. Pusa Polytechnic	1	32	4
3. Arya Bhat Polytechnic	1	20	2
4. Meera Bai Polytechnic	1	21	2
	----- 4	----- 111	----- 12

Similar recommendations have also been proposed for Bhai Parmanand Institute of Business Studies for implementation during the plan period. 10 posts created under Madan Committee for Bhai Parmanand Institute of Business Studies during 1997-98 under Ist phase and as per norms additional 6 posts have been created during 2001-2002.

Provision of Rs.15.00 lakhs has been approved for the 10th plan and Rs.5.00 lakhs for the Annual Plan 2002-2003:

(Rs. in lakhs)						
Approved provision for 10 th Five Year Plan 2002-2007			Approved provision for Annual Plan 2002-2003			
R	C	T	R	C	T	
15.00	--	15.00	5.00	--	5.00	

9. Strengthening of Facilities for the Students of SC/ST)

(Rs. 25.00 lakhs for 10th Plan 2002-07)

(Rs. 5.00 lakhs for A.P. 2002-03)

There is a great need for specifically oriented educational effort for reducing disabilities of SC & ST students which cannot be removed only by the provisions for reservation. It has to be recognised that the majority of these students, often, suffer from the after-effects of childhood inadequacies and lack of confidence in realising their academic potentials. These factors often work against their adjustment in the stream of higher education professional work and their performance vis-à-vis others. So some programmes for enhancing the competence of SC/ST students have to be initiated and appropriate steps need to be taken to fully integrate these young people with the others.

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. During the 9th Plan suitable provision was made to arrange extra coaching after normal working hours to these students to make up the deficiencies, if any, experienced by them. The same provision is to be carried during 10th Plan period. In addition to this, these students will be provided with text books and other costlier learning aids required during studies.

To organise special coaching programme separate part-time staff will be required who will be recommended as per norms.

Around 2000 students belonging to SC/ST and other weaker sections would be given special coaching beyond/ before regular classes so as to remove their difficulties by engaging part-time faculty. They would also be extended the facility of text books, tool kits, calculators etc. during the course of their studies so as to ward off their financial hardships.

Financial outlays:-

(Rs. in lakhs)

Approved provision for 10 th Five Year Plan 2002-2007			Approved provision for Annual Plan 2002-2003		
R	C	T	R	C	T
25.00	---	25.00	5.00	-	5.00

The proposed outlay for this scheme during the 10th Five Year Plan is Rs.25.00 lakhs and Rs.5.00 lakhs for Annual Plan 2002-2003.

10. **Strengthening of Facilities to Students**

(Rs. 25.00 lakhs for 10th Plan 2002-07)

(Rs. 5.00 lakhs for A.P. 2002-03)

The Technical Education system should not confine itself to producing only technical knowledge and skill in the student but should also strive towards physical, intellectual and aesthetic development of his personality. He should inculcate besides scientific and technical temper democratic, moral and spiritual values. Efforts should be made to create interest of students in hobbies, games and sports and promote habits for health care, mental application, management of time and conservation of physical, mental and emotional energy. Institutions must provide congenial environment and good working conditions in which students live and study. The students should not get a feeling that they have to agitate for securing facilities of drinking water, cycle sheds, timely supply of

text-books, well cooked meals in hostels, etc. Other legitimate facilities like inexpensive canteen, well managed cooperative store, recreation centre, sports facilities, medical facilities etc. should also be available in the institutions. The students should be encouraged to involve themselves in some useful activities like joining hobby clubs, arranging technical exhibitions, organising quiz competitions and seminars. Under the scheme strengthening of these facilities will be undertaken by providing good common room, renovation of canteen, purchase of water coolers, establishment of a medical room with provision of a visiting doctor, construction of a cycle/ scooter shed and provision of courts and playground.

The objectives of the scheme would be :

1. To provide adequate facilities to the students community
2. To maintain proper congenial atmosphere in the institute.

Physical facilities in the form of required items identified by Head of the Institutions in consultations with students union conforming to the objectives of the scheme shall be provided to institutions in a phased manner depending on the priorities. Approved outlay for 10th Five year plan is Rs.25.00 lakhs which includes Rs.5.00 lakhs for Annual Plan 2002-2003.

Rs. in lakhs

Approved provision for 10 th Five year Plan 2002-2007			Approved provision for Annual Plan 2002-2003		
R	C	T	R	C	T
25.00	-	25.00	5.00	-	5.00

11. Stepping up of Interaction between Institute and Industries

(Rs. 20.00 lakhs for 10th Plan 2002-07)

(Rs. 4.00 lakhs for A.P. 2002-03)

Interaction between engineering institutions and industry is one important objective as laid down in the New Policy on Education, 1986 of Govt. of India. At present the technical institutions and industry work in isolation and the linkage is not so strong as

it should be. An ideal situation would be that where a technical institution is attached to an industry in the same way as a medical college is attached to a hospital. However, close interaction between institutions and industry can be effectively brought about. A meaningful collaboration can be beneficial both for the institutions and the industry.

The following activities to some extent are being undertaken where some sort of interaction between industry and institute exists:

1. Arranging industrial visits for students.
2. Industries contacting institutes for recruitment.
3. Teachers deputed for QIP in industry.
4. Inviting people from the field for guest lectures.
5. Industrial/ in plant training of students.

The interaction between industry and institute can not take place until and unless concrete efforts are made in that direction. The existing interaction needs to be enhanced and extended to widen its perimeter. Various collaborative activities that can be initiated and constraints visualized are identified as under:

1. Exchange of staff: Executives and engineers from industry can be invited to work as guest faculty in the institutions. They can deliver lectures on specialised topics and can associate with the faculty of the institute for accomplishing certain research projects assigned to the students. They can undertake certain projects in the institute. Similarly staff from the institute can spend some time during vacations or for further period in the industry to work in collaboration with the staff there, so that knowledge could be shared to achieve certain tasks.
2. Consultancy offered by institutions: Under this activity the institutions can provide consultancy to the industry with the expertise available in the institutions. The institutions can help solve the problems encountered by the industry. The faculty can advise regarding manpower requirement, quality control, process control, layout etc. and can undertake research projects. An effective partnership between

the faculty of institution and industry can provide an environment which will promote innovations. Faculty has creative ideas and knowledge reservoirs whereas industry has resources and means to put ideas in to practical shapes.

1. **Practical Training for students and staff**: It is important that theoretical knowledge is supplemented by practical experience. The Students must be exposed to real life situations and the industrial culture. Students must be able to correlate theoretical knowledge with practical applications. At present this is being done through short stints of practical training in industry during vacations. This training is hardly adequate and more time should be devoted. The curriculum should provide sufficient time and weightage for practical training. There should at least be one semester reserved for such training. The industry will have to be liberal in allowing the students to receive training for long periods. The industry can involve students in solving its problem, and assigning them certain functions to be carried out in the industry. Such training if not properly monitored or supervised will loose the effectiveness and would not serve the desired purpose. So it is essential that some staff members are also associated with it. During the plan period 2002-2003 industrial training of staff members would also be arranged and they would be given fellowship for attending industrial training on the pattern followed in other states like Madhya Pradesh, Kerela etc.
 2. **Training for Technical Personnel** : The institutes can devise and conduct short term training programmes and continuing education programmes for technical personnel of industry to enhance their knowledge and thus improve career prospects.
 3. **Feed back on curriculum and training needs** : Industry can give valuable feed back to the institution regarding the shortcomings and gaps noticed in the students during their performance in the industry. The students lacking in certain theoretical or practical aspects of study at the institute can be reflected in the feedback given to the institutes so that suitable modifications can be incorporated in the curriculum.
-

Separate cell at the Directorate of Training and Technical Education shall be created for manpower planning and forecasting the need of trainees.

Administrative hurdles and rules and regulations regarding acceptance of consultancy fees will be sorted out. For accepting production work a system of estimates, evaluation of cost and proper accounting will have to be evolved.

In order to implement this scheme effectively, it is essential to purchase one van under the scheme for co-ordination with industries and along with creation of one post of Driver.

For the 10th Five year plan an outlay of Rs.20.00 lakhs has been approved and for the Annual Plan 2002-2003, an outlay of Rs.4.00 lakhs is being approved.

Financial outlays:-						(Rs. in lakhs)
Approved outlay of 10 th Five year plan 2002-2007			Approved outlay of Annual Plan 2002-2003			
R	C	T	R	C	T	
20.00	--	20.00	4.00	--	4.00	

12. Faculty Development Programme

(Rs. 20.00 lakhs for 10th Plan 2002-07)

(Rs. 7.00 lakhs for A.P. 2002-03)

Performance Improvement and Development of Staff through incentive and motivation are basic needs of an educational system. There is a continuous need of training and retraining of teachers to develop, professional, personal, abilities and resourcefulness the training needs which may be in the area of academic development, personal development. Pedagogical development, conceptual development, diversing changing values, learning styles shall be accomplished by deputing the staff judiciously to various training programmes like induction training, in-service training, conference,

seminars, workshops. The staff will be sponsored for industrial training as well as for higher studies.

Training profiles of all the teachers will be maintained indicating the area of specialization, subjects of study, practical training received and other related information. The teachers on the basis of their profile will be identified for sponsorship to various training programmes. In addition to short-term training programmes and practical training, teachers will be encouraged to acquire higher qualifications through long-term continuing education programmes. The quality improvement programme which is presently applicable to degree institutions is proposed to be extended to Polytechnic teachers who are deputed to pursue higher studies.

Teachers who will be required to undergo long term programmes for improving their qualifications will have to be provided training reserves so that teaching work in the institutions does not suffer. Leave and training reserve to the extent of 10% of the total sanctioned staff will have to be provided in each institution.

In addition to the above it is proposed to sponsor the teachers to various short duration and long duration training programme/workshops or seminars. It is also proposed to encourage professional development of teachers through incentives and motivation by instituting state level awards for the outstanding teachers, who are dedicated and motivated and deserves recognition and encouragement and best Polytechnic in Delhi. Teachers of Polytechnics would also be sponsored for Foreign Fellowship Training Programmes.

An instrument of assessment will be prepared based on the activities under taken by the teachers in respect of activities like:-

<u>Class room instruction:</u>	Including Planning, Presentation, students participation etc.
<u>Laboratory Instruction:</u>	Including organising Laboratory work, guidance during conduct and writing of Laboratory reports etc.

Guiding student Project: Student Assessment Development of learning Resources including Curriculum planning.

Self development: through Consultancy, interaction programme and Extension service, Planning & Administration student service, like Management of Hostels, organisation of co-curricular activities, Professional ethics and attitudes.

The instruments of assessment will be evaluated by a duly constituted professional committee which will make recommendations in respect of best teachers, 2nd best teachers and 3rd best teacher award.

Details of Award would be as follows:-

Best Teacher

1. A cash Award of Rs.10,000/-
2. Brass/Copper Medallion
3. Certificates

2nd Best Teacher

1. A Cash Award of Rs.5,000/-
2. Brass/Copper Medallion
3. Certificates

3rd Best Teacher

1. A Cash Award of Rs2,500/-
2. Brass/Copper Medallion
3. Certificates

Likely expenditure per annum would be around Rs.25,000/-

An outlay of Rs.20.00 Lakhs is approved for 10th Plan and Rs.7.00 Lakhs for Annual Plan 2002-2003.

Approved Provision for 10 th Five Year Plan 2002-2007			Approved provision for Annual Plan 2002-2003		
R	C	T	R	C	T
20.00	-	20.00	7.00	-	7.00

13. Introduction of New Courses in Emerging Technology

(Rs. 500.00 lakhs for 10th Plan 2002-07)

(Rs. 100.00 lakhs for A.P. 2002-03)

Emerging technologies are essential for the national development and technical advancement. Such areas are identified by the working group of Govt. of India, Ministry of Human Resource Development and include degree level new engineering programmes in specialization like Biotechnology, Bioinformatics, Automobile Engineering, Metallurgy and Material Science, Mechatronics, Environmental Engineering, Dairy Technology, etc. New engineering programmes at the diploma level in areas like Biotechnology, Energy Technology, Environmental Engineering (which is already available for girls should be made available for boys also), Food Technology, etc. Certificate level programmes in areas such as Computer Accountancy including usage of Business Machines, Salesmanship and Marketing, Sanitary Inspection, Medical Equipment Servicing, Computer Maintenance, Audio-Visual Equipment Servicing including colour TV, VCRs, Stereos, etc. The need for trained manpower in the new emerging areas has been recognised at the National level itself and this is applicable to the National Capital Territory of Delhi. Govt. of India based on the statistical data has also identified some critical areas where weakness exists, e.g. computer science, electronics, printing technology, market technology, maintenance engineering, instrumentation etc. based on frequent demand for trained manpower. Following are to be introduced in the 10th Plan period:

1. Degree (Engg.) in Electronics & Communication Kasturba Polytechnic
(Intake 30)
2. Degree (Engg.) in Information Technology Kasturba Polytechnic
(Intake 30)

3.	MCA (Intake 30 each)	Pusa & Kasturba Polytechnic
4.	MBA (CAM) 2 YRS. (Intake 30) & MBA (PT) 3 yrs. (Intake 30)	BPIBS
5.	B. Pharmacy (Intake 20) (4 yrs)	Meerabai Polytechnic
6.	B. Medical Lab Technology (Intake 30) 3 yrs	Meerabai Polytechnic

It is decided to discontinue all the Post Diploma courses except Refrigeration and Air-Conditioning.

The approved provision for the 10th plan is Rs.500.00 and for Annual Plan 2002-2003 is Rs.100.00 lakhs.

Approved Provision for 10 th Five Year Plan 2002-2007			Approved Provision for Annual Plan 2002-2003		
R	C	T	R	C	T
500.00	-	500.00	100.00	-	100.00

14. Renovation/Addition/ Alteration required in the Existing Institutional Buildings

(Rs. 500.00 lakhs for 10th Plan 2002-07)

(Rs. 150.00 lakhs for A.P. 2002-03)

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. Raising of boundary walls, providing generating sets, compound lights, establishment of computer labs, installation of new equipment and machinery, development of playgrounds, construction of mini stadium, air conditioning of labs, construction of cycle stand, scooter and bus garage, improvement of drainage system, improvement of canteen and providing tiles in kitchen, bathroom, exhaust fan in kitchen as per norms of CPWD and providing pelmates, wire mesh door, in staff quarters as per norms are the various items of works required to be undertaken in the 10th Five Year Plan. Under this proposal all the polytechnics including their hostels as well as residential staff quarters, as also Bhai Parmanand Institute of Business Studies, Mahila Institute of

Technology office building of Directorate of Technical Education, Board of Technical Education shall be covered. Further complete renovation of workshop block of Pusa Polytechnic would also be taken up during 10th Plan. Provision of Rs.500.00 lakhs has been approved for this work in the 10th plan. Provision of Rs.150.00 lakhs has been approved for Annual Plan 2002-2003.

(Rs. in lakhs)

Approved outlay of 10 th Five year plan 2002-2007			Approved outlay of Annual Plan 2002-2003		
R	C	T	R	C	T
--	500.00	500.00	--	150.00	150.00

15. **Strengthening of Community Polytechnic Scheme**

(Rs. 50.00 lakhs for 10th Plan 2002-07)

(Rs. 10.00 lakhs for A.P. 2002-03)

For a country like India with its more than 80% of the population living in villages and in urban slums it is essential that development achieved in the field of science and technology be harnessed for ameliorating the living conditions of the poor.

Viewed against this background, Government of India, had launched various programmes for the uplift of rural people and other disadvantaged section of society with a view to generate employment, alleviating poverty and improving the quality of life in Rural Areas and Urban slums. In addition to the already existing programmes, it was felt that the involvement of Technical institutions in the rural development will go a long way to supplement the efforts by utilising the expertise and infrastructure available in the Polytechnic.

Objective of community Polytechnics is to provide non-formal training to the local people in basic skills, knowledge and attitude to adopt any occupational activity leading to self-employment. Training can be imparted for upgradation of skills in their own field for adoption of modern technology. Efforts are also made to develop the entrepreneurial capabilities.

At present the Department of Training and Technical Education is implementing the scheme of Community polytechnic through Direct Central Assistance provided by Government of India, Ministry of Human Resource Development. Community Polytechnic Scheme have been implemented in G.B.Pant Polytechnic, Arya Bhat Polytechnic, Meera Bai Polytechnic and Kasturba Polytechnic. Extension Centres at various locations have been opened by the Department in association with the Non-Government organisation and with the slum Department, Rural Department of M.C.D. & Government of Delhi.

So far 28 community Polytechnic Extension Centres have been set up to provide training to the people at their doorsteps. The Direct Central Assistance provided is not sufficient to increase the quality coverage of Community Polytechnics for which there is an increasing demand in Delhi. During the 9th Five Year Plan, it was proposed to set up 100 Community Polytechnic Extension Centres to provide non-formal training to the people. It is, therefore, essential to strengthen and set up a cell in the Directorate (HQ) for effective monitoring of the Community Polytechnic Scheme for which one Publicity van (Matador) has been procured under the scheme and following posts have already been created :

Project Officer	1	Rs.10,000-15,200
Attendant-cum-Chowkidar	8	Rs.2550-3200

Out of the above posts Project Officer has joined and Attendant-cum-Chokidar are likely to join.

Provision of Rs.50.00 lakhs has been approved for this scheme during the 10th Five Year Plan and a provision of Rs.10.00 lakh is approved for the annual plan 2002-2003.

Approved outlay for 10 th Plan 2002-2007			Approved outlay for the Annual Plan 2002-2003		
R	C	T	R	C	T
50.00	---	50.00	10.00	--	10.00

16. Expansion of Existing Facilities of Bhai Parmanand Institute of Business Studies

(Rs. 400.00 lakhs for 10th Plan 2002-07)

(Rs. 100.00 lakhs for A.P. 2002-03)

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, Business Administration etc. Department is working for a proposal for upgradation of some of the polytechnics into degree level institutions. Under this scheme MCA (full time) programme has already been introduced in the year 2000-01 and the following degree level programmes are proposed to be introduced in this institute:

NAME OF THE PROGRAMME		INTAKE
1.	MBA(Full time)	40
2.	MBA (Part-time)	20

For introduction of above mentioned degree level programmes in the field of Business Administration proposals have already been sent to AICTE. These post graduate programmes shall be affiliated to Indraprastha University. After obtaining necessary approval from AICTE the requisite posts and necessary physical infrastructure shall be created as per norms for which an outlay of Rs.100.00 lakhs is approved during the annual plan 2002-2003.

(Rs. In Lakhs)

Approved provision for 10 th Five Year Plan 2002-2007			Approved provision for Annual Plan 2002-2003		
R	C	T	R	C	T
400.00	--	400.00	100.00	--	100.00

18. Setting up of three Government Polytechnic/ Institutions in Delhi
(Rs. 1000.00 lakhs for 10th Plan 2002-07)

(Rs. 250.00 lakhs for A.P. 2002-03)

There are eight Government Diploma level institutions in Delhi, out of which two are exclusively reserved for women while others are co-educational. The intake capacity in these institutions is about 3,000 students per annum and there is a mismatch between

the demand and supply positions of technical personnel prevailing currently in Delhi. The study conducted by the institute and Applied Manpower and Research for the Directorate of Training and Technical Education Delhi had also indicated a growing need for technical personnel at Diploma level in various Engineering branches. There is a great rush of admission seekers in the polytechnics. Every year nearly 18 – 20 thousand apply for admission in these institutions. Further the industrial growth in Delhi has also taken a leap and may become necessary to introduce more courses suited to the requirement of industries and in the specialised areas. Taking into consideration the geographical dispersal of the existing institutions it is proposed to establish three more polytechnics/institutions in Delhi to cater to the needs of a wider population base.

Courses proposed to be offered in these polytechnics are such as Electronics & Electrical Communication, Computer Engineering, Satellite Technology, Dairy Technology, Tool & Dye Design, Environmental Engineering, Architecture, Pharmacy, Medical Lab Technology, Fashion Designing, Information Technology, M.OP, Electronic Engg. etc.

Land for the Co-educational polytechnic has already been identified in the ITI Jaffarpur campus. The setting up of the co-educational polytechnic in the ITI campus will form an integrated campus. Canteen, Library and Computer Centre would be common facilities for the ITI and polytechnic in the campus. SFC memo for the construction of the building at Jaffarpur campus has already been approved.

The possession of land at Dwaraka for the integrated ITI & Polytechnic for the disabled has been taken over from Delhi Development Authority. Polytechnic at Dheerpur for which land has already been acquired and the project report is being prepared.

Financial Implications :

A provision of Rs.1000.00 lakhs has been approved for this scheme during the 10th Five Year Plan and out of which Rs.250.00 lakhs for the annual plan 2002-2003.

Approved Provision for 10 th Five Year Plan 2002-2007			Approved provision for Annual Plan 2002-2003		
R	C	T	R	C	T
200.00	800.00	1000.00	50.00	200.00	250.00

18. Introduction of Short-term Computer Based and other Courses in the Existing Institutions

(Rs.20.00 lakhs for 10th Plan 2002-07)

(Rs. 5.00 lakhs for A.P. 2002-03)

Computer Training is now a part of curriculum for each discipline in polytechnics. Therefore, computer labs have been set up in each institution with latest hardware and software. The infrastructure of providing training in computers is already available in all institutes functioning under this directorate. Taking into consideration the demand of trainees in the field of computers, particularly in private sectors, short-term computer courses have already been introduced in Kasturba Polytechnic. It is now proposed to cover other Polytechnics under the same scheme. It is also proposed to introduce short term computer based course (A,B,C & O levels) in some of the Polytechnics for which approval and recognition of Department of Electronics and AICTE would be obtained in due course. Additional posts would also be created of the appropriate level as per the requirement and the response from public for these courses. In this way the computer labs and infrastructure already created in Polytechnics would be fully utilised. The short term courses which have been introduced on self supporting pattern at Kasturba Polytechnic will be introduced in other Polytechnics also to enhance the internal revenue generation in technician education sector. Additional furniture and software as per the requirement would also be added in the respective labs. Further the following Fast Track Courses have been identified at various degree/diploma level:

1. Secretarial Practice & Office automation.
2. Library automation
3. Manufacturing Automation
4. Refrigeration & Air-Conditioning

5. Repair & Maintenance of Educational and commercial instruments
 - (a) CRO
 - (b) Signal Generator
 - (c) VTVM
 - (d) Power Supplies
6. Repair & Maintenance of domestic electronic gadgets. (Transistor, Tape recorders, TV, VCR, Music Systems)
7. Repair & Maintenance of domestic electrical gadgets. (Washing machines, coolers, convectors, Food Processors, Geysers Hotcases.)
8. Computer awareness, assembly, repair & maintenance.
9. MS Office 2000
10. Micro Processor & Micro Controller Application.s
11. WINDOWS NT & LINUX
12. Computer Networking & Internet
13. Web Designing
14. V C ++ & Oracle 8i
15. VB & Oracle 8 i
16. JAVA
17. Accountancy & e-Commerce

Provision of Rs.20.00 lakhs has been approved for this scheme in 10th plan and Rs.5.00 lakhs for the annual plan 2002-03.

Approved Provision for 10 th Five Year Plan 2002-2007		
R	C	T
20.00	-	20.00

Approved provision for Annual Plan 2002-03		
R	C	T
5.00	-	5.00

19. Strengthening of MIT

(Rs. 1300.00 lakhs for 10th Plan 2002-07)

(Rs. 200.00 lakhs for A.P. 2002-03)

There is a significant regional imbalance in the facilities available for undergraduate level Technical Education in the country.

A statement indicating the All India picture of Engineering and Pharmacy institutions in the country is given below:

**ALL INDIA PICTURE OF ENGG. & TECH. PHARMACY
AT UNDERGRADUATE & DIPLOMA LEVEL INSTITUTIONS
APPROVED BY AICTE**

S.No	Region	Engineering/ Technology						Pharmacy					
		Diploma			Degree			Degree			Diploma		
		NOI	NOC	INT-AKE	NOI	NOC	INT-AKE	NOI	NOC	INT-AKE	NOI	NOC	INT-AKE
1	Central	70	283	9925	25	107	4440	25	25	1220	8	8	320
2	East	60	218	7510	17	77	3192	11	11	520	2	2	80
3	North	134	519	16839	37	147	5684	36	36	1420	7	7	270
4	North west	133	575	19625	45	195	7627	59	59	3085	12	12	470
5	South	225	863	41397	112	540	28195	35	35	1940	31	31	1552
6	South west	214	847	35165	68	420	23964	107	107	5875	52	52	2528
7	Total	1029	4086	166456	416	1991	101451	352	353	18310	150	150	7015

**ALL INDIA PICTURE OF ENGG. & TECH. PHARMACY
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S.N.	Region	Engineering/ Technology						Pharmacy					
		Diploma			Degree			Degree			Diploma		
		NOI	NOC	Intake	NOI	NOC	Intake	NOI	NOC	Intake	NOI	NOC	Intake
1.	Central	70	283	9925	25	107	4440	25	25	1220	8	8	320
2.	East	60	218	7510	17	77	3192	11	11	520	2	2	80
3.	North	134	519	16839	37	147	5684	36	36	1420	7	7	270
4.	North West	133	575	19625	45	195	7627	59	59	3085	12	12	470
5.	South	225	863	41397	112	540	28195	35	35	1940	31	31	1552
6.	South West	214	847	35165	68	420	23964	107	107	5875	52	52	2528
7.	West	193	781	35995	112	505	28349	79	80	4250	38	38	1795
Total		1029	4086	166456	416	1991	101451	352	353	18310	150	150	7015

It is quite apparent that as against the total intake capacity of 1,01,451 in the country, North Western region comprising of Chandigarh, Haryana Himachal Pradesh, Jammu and Kashmir, New Delhi, Punjab and Rajasthan has only an intake of 7627 seats i.e. 7% of the total intake. On the other hand the intake capacity of South, South –West and West are 28195, 23964, 28349 i.e. 27%, 23.6%, 28% respectively. This has resulted in a situation that students in the National Capital Territory of Delhi has to face a lot of competition and even as bright students as those getting more than 90% of Delhi are also placed in disadvantageous position in other States because of the domicile factor. Students in other states even with 60% or so marks are getting admission in these State Engineering Colleges and thus causing dis-contentment amongst the students of Delhi. In view of this there is an absolute necessity of opening additional Engineering College in Delhi. Out of these one Engineering College exclusively for Women i.e. Mahila Institute of Technology has already been setup in 1998-99 to impart following Under-graduate programmes.

1. Computer and Communication Engineering. Intake - 40
2. Electrical and Electronics Engineering Intake - 60
3. Mechanical and Automation Engineering Intake - 60

Following additional degree level courses are to be added in M.I.T. during the academic session 2001-2002:-

1. Environmental Engineering with an intake capacity of 30.
2. Chemical Engineering with an intake capacity of 30.

Proposals for the same have already been sent to A.I.C.T.E. After approval of the A.I.C.T.E. requisite infrastructure in terms of human resource and physical facilities shall be created as per A.I.C.T.E norms.

This Institution has become a constituent college of GGSIP University as per Notification issued in May,2002.

Approved Provision for 10 th Five Year Plan 2002-2007			Approved provision for Annual Plan 2002-2003		
R	C	T	R	C	T
1200.00	100.00	1300.00	190.00	10.00	200.00

20. Setting up of Engineering College at Geeta Colony.

(Rs. 4000.00 lakhs for 10th Plan 2002-07)

(Rs. 800.00 lakhs for A.P. 2002-03)

Department also proposes to setup one more Engineering College in Geeta Colony, marginal Bund Road, to cater to the training needs of the residents of trans Yamuna Area for which land measuring 4.36 hectares has already been identified. The SFC has cleared the proposal at the cost of Rs. 450.11 lakhs for making payment to DDA for this land.

Approved Provision for 10 th Five Year Plan 2002-2007			Approved provision for Annual Plan 2002-2003		
R	C	T	R	C	T
800.00	3200.00	4000.00	160.00	640.00	800.00

21. Strengthening and Expansion of Existing Facilities in College of Pharmacy

(Rs. 325.00 lakhs for 10th Plan 2002-07)

(Rs. 70.00 lakhs for A.P. 2002-03)

The College at present, conducts the following courses:

- a) Two year course in Diploma in Pharmacy after passing 12th of 10+2 scheme with an intake of 90 students.
- b) Four year B.Pharm degree course with an intake of 40 students after passing 12th of 10+2 scheme.
- c) Two year M.Pharm post graduate course in the disciplines of Pharmaceutics, Pharmacology and hospital pharmacy with an intake of 5 students in each discipline and
- d) Research facilities leading to the Ph.d. programme.

Principal, College of Pharmacy who is in the grade of Rs.18400-22400, has been declared as head of the Department on the analogy of Delhi College of Engineering and College of Art. As the Principal has been declared as Head of the Department all service matters relating to Class-III and Class-IV and issue of sanctions, procurement of all stores etc. is to be dealt in the College itself. Therefore it is essential to provide additional staff on the analogy of other colleges functioning under this Deptt. It is therefore proposed to create following additional posts during the 10th Five Year Plan in the College of Pharmacy:-

S.No	Name of the post	No. of post	Pay scale in Rs.
1.	Director of Physical Education	1	8000-13500
2.	Administrative Officer (Estt.)	1	6500-10500
3.	Accounts Officer	1	7500-12000
4.	Administrative Officer (Academic)	1	8000-13500
5.	Sr. Librarian	1	8000-13500
6.	Sr. Stenographer	1	5500-9000
7.	Jr. Stenographer	2	4000-6000
8.	Head Clerk	1	5000-8000
9.	Care Taker	1	5000-8000
10.	Class-IV	3	2550-3200
11.	U.D.C.	3	4000-6000
12.	L.D.C.	3	3050-4590
13.	Driver one for staff car and other for bus	2	3050-4590

In addition to the above administrative staff, technical and supporting staff required in labs and workshops as per the norms of Pharmacy Council of India are also proposed to be created during the Plan period. It is proposed to purchase one bus for the college and one staff car for Principal who is head of department.

It is also proposed to enhance the intake of B.Pharm and M.Pharm courses to meet the requirement of Pharmacy Industries in the near future.

Department is also working out a proposal for privatisation of security and sanitation services for the College, including the newly constructed hostel building . Proposal in this regard has been sent to Finance Department for necessary approval.

The approved outlay for this scheme during 10th five year plan is Rs.325.00.00 lakhs out of which provision of Rs.70.00 lakhs has been approved for the Annual Plan 2002-2003.

22 SCHEME FOR INTEGRATING PERSONS WITH DISABILITIES IN THE MAIN STREAM OF TECHNICAL & VOCATIONAL EDUCATION

In accordance with “National Policy on Education-1986”. “The Persons with Disabilities Act 1995”, the Ministry of Human Resource Development envisaged a centrally sponsored scheme for upgrading some of the selected polytechnics to integrated persons with disabilities in the mainstream of technical and vocational education. The scheme pivots on giving competency based non-form/skill development programmes to existing illiterate adults with disabilities.

MAJOR OBJECTIVE OF THE SCHEME

- To promote education and training of persons with disabilities by integrating them in the mainstream of technical and vocational education and skill development programmes through formal and non-formal programme.
- To identify the persons with disabilities in the suitable geographical catchment area of polytechnic.

- To identify suitable employment oriented education and training programmes for the disabled.
- To design need and competency based curricula for the disabled.
- To prepare/procure/develop suitable physical, human and informational resources, for effective implementation of the scheme.
- To sensitise administrators, planners, faculty, staff and students and community at large about the problems and capabilities of the students with disabilities and to create suitable environment in polytechnic.
- To develop innovative educational technologies and approaches for education, training and rehabilitation of your with disabilities.
- To evolve suitable method and practices for monitoring the scheme.

TARGETS AND EDUCATIONAL STRATEGIES

The scheme proposes to train annually 25 disables with diploma from the persons with disabilities. Whereas the diploma holders will be mainstreamed with regular students, the vocational training/skill development programmes will be focuss towards persons with disabilities in and around the polytechnic to provide them wage or self-employment opportunities in their own vicinity.

No separate permanent staff will be recruited for the scheme and it will be managed and implemented with the total involvement of existing regular staff with provision for honorarium and engagement of Consultants/Experts/Trainers as per the need on short and contractual basis.

Adequate emphasis in the scheme will be placed on different aspects of the guidance and counseling, besides making all the training programmes competency based with focus on development of employable skills. The knowledge component will normally be directed towards the essentials for developing the competencies.

The guidance and counseling will be comprehensive to include pre-admission guidance, professional and medical counseling on continuous basis during the period of training and facilitation for placement and post employment assistance.

BUDGET AND FUNDING

Education and Training of persons with disabilities is extremely a complex, challenging and difficult task. In the present scenario of the country, it is seen that a vast majority of disabled belong to very poor families who cannot afford to incur any expenditure on education and training of their disabled wards. Further, a few parents who can afford such expenditure are also seen to be reluctant to spend on the handicapped children, considering it as a dead investment because of the social stigma attached to the disabled children. In order to bring them to the training centers of the polytechnics, it is essential to make adequate infra-structural and budgetary provisions for meeting the special needs of the disabled and the total expenses of training.

The polytechnics will be provided non-recurring grants for equipping with special infrastructure for enhancing the effectiveness of training of persons with disabilities. Recurring budget will also be provided as per norms for payment of honorarium and other miscellaneous expenditure for the conduct of the programmes. The state governments will reimburse for the cost of scholarships, transportations, books and uniform allowances and other incidentals, if any, as admissible. All the students with disabilities admitted to formal and non-formal programmes will be exempted from tuition fee. Polytechnics will provide free lodging to those students who require such facilities.

Likely expenditure on this scheme in Annual Plan 2002-03 is about Rs.11.00 lacs which will be met out overall budget provision for Directorate of Technical Education.

II. DELHI COLLEGE OF ENGINEERING

1. Construction of New Buildings for Delhi College of Engineering at Bawana Road (Rs.4200.00 lakhs) tenth plan 2002-07 Rs. 810.00 lakhs- A.P.2002-03.

Delhi College of Engineering has completed 60 years of its service to the nation, contributing approximately 20,400 engineering graduates and post graduates, who have taken up positions of responsibility both in the manufacturing and the service sectors. During the last six decades, the college has retained its focus on quality education and research in engineering and technology. The college has been instrumental in setting up some of the national projects such as IIT Delhi, School of Planning and Architecture, both the institutes of national importance. It has also contributed to the growth and development of College of Art, College of Pharmacy and Netaji Subash Institute of Technology (formerly DIT). Presently college caters for 8 U.G. programmes, 11 P.G. programmes, besides full time Ph.D. research in all the branches of engineering and technology. Thus the DCE's academic commitment is almost three times that of a normal engineering institution. The non-residential nature of the campus and the limited space available for the growth and expansion at the Kashmere Gate, has inhibited DCE's growth and expansion despite being the mother institutions of IIT, Delhi. In order to ensure its further development in such a manner as to take the role of a deemed to be university in the years to come, it was necessary that the college be planned and built on modern lines with all necessary facilities and shifted to a larger complex. For this purpose, the then Delhi Administration had acquired 163.9 acres of land at Bawana Road, near Sector-17, Rohini. The original EFC memo. amounting to Rs.2699.8 lakhs was approved by the Ministry of HRD, Government of India during the year 1985.

During the Seventh Plan period, the plot of land has been duly developed and boundary wall has been constructed. On 23rd May, 1989, the Hon'ble Vice-president of India, laid down the Foundation Stone in the new campus heralding the actual construction activity to start. Subsequently, a revised EFC memo. for Rs.7019 lakhs was submitted to the Ministry of HRD, Government of India in the year 1989-90 on account of cost escalations and proposing certain variations in built up areas. Further, a revised updated

EFC memo. for Rs.10105 lakhs, on account of further escalation of cost, was submitted to Government of India by the Department of Training & Technical Education during the year 1994. The provisions in estimates included in the revised EFC memo. for Rs.10105 lakhs also changed subsequently due to changes in the designs, observations of DUAC and the local bodies, which resulted into delay in approval of the individual building plans and schemes. Considering the requirements for completion of the project, incorporating the necessary modifications further suggested by the college, it was considered necessary to further revise the EFC memo. to project the correct up-to date anticipated cost. Accordingly, the 3rd revised EFC memo. based on final requirements and plans for Rs. 14309 lakhs was submitted to the Government of Delhi for obtaining administrative approval and expenditure sanction for all the works of the project. However, on the advice of the Administrative Department, certain plans incorporated in the EFC, were temporarily set aside and another EFC memo. for Rs.12752 lakhs was submitted to the Government of Delhi after deliberations with the concerned authorities on October 28, 1999. Finally, the SFC memo. for Rs.127.01 crores was approved by Government of Delhi on 12.9.2000.

1.1 The works completed so far

- A. Acquirement of the land: The land was acquired in the VII & VIII Plan.
- B. Institutional Complex: The Administrative Block & Academic Block (Electrical, Electronics & Communication, Computer and Civil Engg. Departments), Mechanical, Production Engg. Block and Science Block are completed during the VIII & IX Plans period.
- C. Residential Complex: The work of construction of Type-I (60 Nos.), Type-II (105Nos.), Type-III (45 Nos.), Type-Iv(60 Nos.), Type-V(56 Nos.) & Type-VI(1 No.) have been completed. Transit Hostel with 20 flats completed during VIII plan period.
- D. Hostels: Construction of 5 Boys hostels with the capacity of 900 students, one Girls hostel with 70 seats, one married students hostel with 15 seats have been completed during the last VIII & IX Plan period.
- E. Other Buildings: Construction of PWD office, Health centre, Electric Sub-stations, Play fields have been completed.

1.2 The Buildings/Premises under construction, to be taken up shortly

1. Library: Curtain walls, internal fixed furniture & Central Air Conditioning
2. Computer Centre: Internal furniture work & Central Air Conditioning
3. Central Workshop: Internal works
4. Main approach road to the Computer Centre & Library
5. Internal works of the hostel rooms
6. Construction of the main gate
7. Internal works of Civil Engg. laboratories
8. Internal works of Mechanical & Production Departments
9. Central Plaza (Open Air Theatre)
10. Canteen
11. Wind Tunnel Building: Laboratories of Mechanical, Production & Civil Engg. Departments
12. Lecture- Theatre cum-seminar Hall
13. Land Scaping

1.3 Proposed Buildings & Works

As mentioned in introduction earlier some of the buildings/works were dropped from the third revised EFC memos. based on final requirements and plans. Those buildings are also an integral part of any institute with residential campus. Therefore, it is proposed to include these buildings/works in the Tenth Five Year Plan.

1. Student activity centre, 2 Sports complex(Stadium), 3 Shopping Complex, 4. Community Centre, 5. Centre for relevance & excellence, 6. Boys Hostel, 7. Girls Hostel, 8. Warden residences, 9. Raising of the height of the boundary wall, 10. Centre for information Technology, 11. Integrated LAN services.

xii). Establishment: In order to maintain the vast campus, its buildings and services including Air conditioning, electricity, water supply & horticulture, the shape and strength of present project team needs to be suitably modified to provide an effective outfit for maintenance works. In this regard, it is proposed to have resident engineer of the rank Superintending Engineer as resident engineer along with 2 Executive engineers, one each

for civil division and electrical division and an Asstt. Director for horticulture. This team is to be supported by suitable numbers of Assistant and Junior Engineers.

It has been experienced in the past that for speedy co-ordination/ monitoring, full – time personnel under the charge of the Delhi College of Engineering are essential. Accordingly, the following personnel are proposed for this big project. In fact, these personnel would be required after the completion of the project also to take care of this large estate :-

1.	Project Co-ordinator	1	Rs. 12000-18000
2.	Steno (Grade-III) (English)	1	Rs. 4000- 6000
3.	L.D.C.	1	Rs. 3050- 4590

One post of Project Officer was created in the scale of Rs. 10,000-15200. Keeping in view the enormous responsibilities and work it is proposed that the post be upgraded to level of Asst. Prof. with designation of Project Co-ordinator.

xiii) Maintenance (Additions & Alterations): To meet the functional requirements of various laboratories resulting from the rapid changes in Academic Curriculum, some changes of the type of additions or alterations to the existing structure are required to be made. Such type of works does not come either under the capital works (Major Head 4202) or under the normal maintenance works (Minor Head 2059) done by PWD. Therefore, the provision of the suitable amount for such a large campus and this kind of works is necessary.

xiv). Security & Surveillance: The college has several premises like computer centre, library etc. where costly equipments, books and intellectual properties of the college are kept. Such premises are required to be provided with electronic security and surveillance mechanism which involves audiovisual monitoring systems.

xv). **Bulk Services (Civil & Electrical): Civil Work**, such as underground tanks, overhead tanks, water purification & treatment, installation of defluoridization plant MCD water connection, storm water drainage connection etc.

xvi) **Electrical Works:** substations, DG Generators sets, Water supply pumping.

xvii). **Land Acquirement & Development including Landscaping & Horticulture:** This includes the payment of enhanced compensation, earth filling, maintenance of natural lake and development of environmental park etc.

1.5 Physical Targets:

2002-2007	2002-2003
Construction of canteen, wind tunnel building, Lecture-theatre cum seminar hall, Students Activity Centre, Sports Complex, Shopping Complex, Community Centre, Material Science Centre (buildings for Centre of Relevance & Excellence), Girls Hostel and Integrated LAN Services. Also the works which are under construction mentioned above at item No. 1.3. & 1.4	1) Library (Curtain Wall & Air Conditioning) 2) Computer Centre (Air conditioning) 3) Central Plaza 4) Canteen 5) Wind tunnel building and 6) Lecture-cum-theatre hall

Rs. 4200.00 lacs is approved for 10th Five Year Plan Rs. 810 lacs is approved for Annual plan 2002-03 for this scheme.

2. **Modernisation of machinery and equipment for existing courses:** (Rs. 1500 lakhs for Tenth Plan 2002-07 Rs.142.00 lakhs for A.P. 2002-03)

Great emphasis has been given on modernization and removal of obsolescence in the national policy on technical education. The college, being old, naturally has some equipment which are old and out-dated, and call for replacement by new and sophisticated

machines and equipment, so that, the students 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 being made for the expenditure involved in training technical supporting staff and also for the procurement of latest books and journals. A 35 seater mini bus would be very much useful from the point of view of mobility of personnel in actually arranging special training to the staff in the use of sophisticated machinery and equipment by National Physical Laboratory, Central Water Commission, National Thermal Power Corporation, and other knowledgeable industries located around Delhi.

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 Deptts. during the 10th V year Plan period (2002-2007), some of them are given here under:

1. Computer Engineering Department:

Two new labs namely Networks and Digital communication work and software engineering are proposed to be developed. Besides the Computer Architecture lab., Multimedia, Image processing, DBMS, computation and A.I. labs. are proposed to be developed with latest software, hardware and equipments such as, VLSI software, design & VLSI trainers, computer maintenance and up-gradation, Digital Photography systems, silicon graphic stations, image analysis and systems, robotic trainers, oracles developer suite, data mining tools and compilers like C, visual basic java etc.

Electronics & Communication Department:

It is proposed to develop new laboratories such as Signal processing lab, BSIL lab, computer communication lab, device fabrication lab, PCB lab with DSP kits, neural network systems, Mat lab software, wave logic suit with multi user facility (up to 15), mixed module software and Unix based Sun work stations and compatible VLSI CAT software, LAN with at least 25 nodes and internet facility, latest networking windows-NETWARE/Windows N T server , fabrication of devices such as diodes and transistors etc. Besides, adding facilities like LCD projector with PC, OHP, direct projector, slide projector etc. in the seminar room, making departmental library equipped with IEE/IEEE journals spectrum and modernization of HECD office are proposed to be done during the next 5 year period.

Civil Engineering Department:

It is proposed to equip the labs with closed loop with electro hydraulic servo control UTM and Actuator system of 100 kN dynamic capacity, non destructive testing equipment besides adding latest software in the computer aided design center. Besides it is proposed to develop computational hydraulics lab and advance hydraulic labs with high speed computers and relevant software and sophisticated equipments for measurement of turbulence; bed load and suspended load samplers; transducers for measurement of velocity profiles in open channel experiments etc. The BE programme in Environmental Engg. Discipline was started by this Deptt. in 1998, and many laboratories in this area are to be developed in this plan period.

The Deptt of Applied chemistry started a BE programme in polymer science and chemical technology in 1998, and many laboratories associated with this discipline are to be developed by this plan.

The other departments of applied sciences, Electrical Engineering Department and Mechanical Engineering Department and Training & Placement Deptt. have also proposed to develop their existing laboratories with the latest equipments covering the syllabus of the course during the plan period, the details of which are not been given in the

proposal. These will be shown in the annual plans, submitted by the college on year-to-year basis, subsequently.

It is proposed, to create the following positions 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 X five-year plan period.

1.	Sr. System Analyst	1	Rs.10000-15200
2.	System Analyst	2	Rs.8000-13500
3.	Programmer	1	Rs.8000-13500
4.	Senior Tech. Assistant	1	Rs.6500-10000
5.	Technical Assistant	16	Rs.5000-8000
6.	Lab. Attendant	18	Rs.3050-4590
7.	Driver	1	Rs.3050-4590
	Total	40	Posts

Physical Target

2002-2007

2002-03

40 posts to be created, machinery, procured and installed in the campus of the college, training of 50 technical staff to be arranged for latest software, Hardware, internet facility

Machinery, software, robotics, hardware purchased. Training of 10 technical staff to be arranged.

10 posts to be created

This scheme has taken into account Modernisation of workshops and laboratories, induction of educational technology tools for effective and efficient teaching-learning process and also updating the skills and training of technical supporting staff.

Rs. 1500 lacs is approved for 10th plan and Rs. 142 lacs for Annual Plan 2002-03.

3. Faculty Development:

(Rs. 110 lakhs for Tenth Plan 2002-07 Rs.18.00 lakhs for A.P. 2002-03)

A renewed emphasis is to be given to faculty and teaching staff development to meet the aspirations of the national educational policy. The AICTE scales of pay at par with the recommendations of the Dogra Commission have been implemented in the college which provides for book grant to the extent of Rs.1,000/- per year per teacher. The same also provides for meeting expenses of attending national seminars for every teacher once in a year and also attending International seminar/conference for every teacher once every three years. Additionally, the AICTE scales of pay provides for subscription grant for every teacher to various professional societies/institutions. All these activities involve expenditure, the details of which are indicated below:

Industry institute interaction needs to be developed in a big way as it is very important for improving the quality of instructions in an engineering institutions and making them more relevant to the end user. For this purpose most of the teachers will have to be sent for exposure training in large and medium industries for a period of 3-4 months at a stretch. Similarly certain people from the industry will have to be encouraged to spent 3-4 months at this college, participating in laboratories and normal teaching work of the college. This need for such an interaction has been high lighted at numerous forum for the last number of decades, but the country has not succeeded in evolving suitable mechanism to implement it. However, there is no escape as it remains as pre-requisite for the technological advancement of the country. The team sent to the industries would be required to be paid TA/DA. Similarly, the persons visiting forms the industries to this institution will have to be paid consolidate, amount as a remuneration and TA/DA etc. It is proposed to send 50 teachers to the industries during the five year plan period 2002-07.

Physical Target

2002-2007

2002-03

At least 180 teachers

About 120 teachers to be benefited

Expected to be benefited every year

An outlay of Rs.110.00 lakhs is approved for 10th five year plan 2002-07 & Rs. 18.00 lakhs for A.P. 2002-03

4. **Students Welfare**

(Rs.180 lakhs for 10th five year plan 2002-07 Rs.31.00 lakhs annual plan 2002-03.)

Under this scheme, better amenities are provided in the boys' common room, girls' common room, hostel common rooms, hostel mess, college canteen etc. Due to increase in student population in the campus over the years and due to increase in the intake in the existing disciplines, and the new courses introduced recently, there is a shortfall in student amenities in the campus at present; and it is proposed to augment the same during the Xth plan period 2002-07 It is proposed to provide facility like study table, cot and chair , easy chair, molded chair, television sets , music system, computer system with internet facility, Jim library facility and warden office with all necessary office requirement during the Plan as indicated below:

Physical Target

2002-07

About 1200 students
to be benefited every year.

2002-03

about 1200 students
to be benefited.

An outlay of Rs. 180.00 is approved for 10th Five Year plan and Rs. 31.00 lacs for the Annual plan 2002-03.

4. **“Creation of Centres of Advanced Studies, Research and Extension Services”
(Rs. 300 lakhs for Tenth Plan 2002-07 Rs.30.00 lakhs for A.P. 2002-03)**

The advantages of Science and Technology advances can be meaningfully transferred to the people if these are effectively assimilated both in our man power development strategies as well as transformed in terms of technologies and know how to the industries. The pace at which these advances are taking place, especially in the areas

of advanced and appropriate technologies, make it imperative that specific focus and attention be given to those technology areas which are highly relevant to the development of our nation. These areas include Polymer Science and Technology, an area which is rapidly advancing into all spheres of life and industrial activities; Instrumentation design and development to improve the existing methods and techniques of monitoring and control of processes, equipments and machines; industrial tribology and installations in the industry; Power electronics and drives; Power System Analysis and Design; VLSI System Design; Microwave integrated circuits; Institute-industry consultancy; Computational and experimental mechanics; Seismic safety initiatives; Advanced research information technology; Advanced research on energy sciences, Entrepreneurship development, appropriate technology and Continuing Education and extension services.

DCE which has attained a level of maturity in engineering education and research both at UG and PG levels is poised for development of specialized centers of excellence. It is considered highly desired that the role of this college be enhanced in the direction of providing effective linkages with the industry and professional bodies. 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.

1. Centre of Advanced Studies & Research in Polymer Science and Technology

Polymer Science and Technology is a fast developing area practically in every advanced country of the world. Although, there are some institutions in India where work in this direction is going on, due to the rapid growth of demand on one side and

development of new technological processes on the other side, reinforcements in research and development in this field in some more institutions are required. The specific problems proposed to be studied in depth by this center are as follows:

Polymers from renewable sources, polymeric alloys, speciality polymers and development of polymer processing.

Polymers from renewable sources after a challenging method of using some of the raw materials of the country such as castor oil and Cashew nut shell liquid for the production of polymers of a number of grades. It seems also desirable to develop speciality polymers such as Sealants. High temperature polymers and organic superconductors, which may not be required in very large quantities but some of which can be very critical for many projects. The rheological properties of polymers and their behavior during processing need to be studied in depth.

The following personnel would be required to man this center:

		Rupees
1. Professor	1	14300-22400
2. Lecturer	1	8000-13500
3. Technical Asstt.	1	5000-8000
4. Steno Gr. III	1	4000-6000
5. Lab Attendant	1	3050-4590
Total	5	

**(ii) Centre of Advanced Studies & Research in Environmental Engineering
(approx. Rs.30 lakhs)**

Population growth and rapid developments in Industrial and Utility Sectors have created a serious problem of Environmental Pollution in our country. The need for studies and research in this emerging area cannot, therefore, be over emphasized.

There is enough scope for all-round development of bio-techniques for pollution abatement and rectification. For example, floating and semi-submerged weeds like Water Hyacinth, duck weeds, reeds etc. can be effectively used for treatment and self purification of various industrial wastes like Tobacco waste, Dairy waste, Vanaspati waste, Slaughter House waste, Sugar mill waste, steel mill waste and a host of other organic and inorganic wastes. Similarly, bacteria of various types occurring aerobically, anaerobically or facultatively can be used as static or dynamic filter media for treating a large number of domestic and industrial wastes. Development of Trickling filter along with its various recent modifications. Activated sludge process and its subsequent modifications, Dispersed growth aeration techniques, Tube filters(aerators) are only a few that are receiving attention of the Environmental Engineers. Fluidized bed techniques suitable for Indian conditions are still to be experimented and developed. Membrane filtration technique which is rapidly gaining ground is the synthetic version of the natural bio-cell wall permeability mechanism(osmosis).

Delhi College of Engineering has introduced Environmental Engineering as a Post-graduate Programme since 1973. A large number of post-graduates with specialization in Environmental Engineering has come out from this institute and are occupying important positions in government, semi government and private organizations in India and abroad. The college has three laboratories mainly catering to the needs of Environmental Engineering. One is meant for Under-graduate students, one for Post-graduate students, housing sophisticated instruments and the third a semi-open complex, where the Post-graduate students perform various indoor and outdoor experiments. The students are mainly engaged in meaningful field research and every year innovative methods of pollution control are presented in the form of M.E. thesis work. About 12 works – all new, were carried out with Water Hyacinth alone. A couple of them are receiving field trials in full-scale plants with encouraging results. Similarly, two works were completed on fluidized bed techniques. On Tubular Aeration Technique, one work has been completed and a couple of other innovations are going on. A number of Ph.D. research works are in progress for evolving an optimized technique of Physic-Chemical – Biological combine system of wastewater treatment.

With the above background it is most appropriate to open a centre of excellence in Environmental Engg. with special emphasis on Pollution Control in the Delhi College of Engineering during the Xth Five Year Plan period. The Manpower requirement for the Cell is indicated below:

1.	Professor	1	Rs.14300-22400
2.	Lecturer	1	Rs. 8000-13500
3.	Technical Assistant	1	Rs. 5000-8000
4.	Steno Gr.III	1	Rs. 4000-6000
5.	Lab Attendant	1	Rs. 3050-4590
	Total	5	

(iii) Centre for Advanced Manufacturing and Automation.

The rapid development of the country depends on the mode of production and control. It is realized now that for international competitiveness both as regards to quality, reliability and cost, the manufacturing technology has to absorb the latest and also has to keep pace with others. Automation is going to answer many of the problems faced by the industry/service. In this context, it is necessary to train the personnel and do research in this emerging area of multi-disciplinary technology. Therefore, a Centre of Advanced Studies in CAD/CAM, CIMS, FMS, Robotics, Microprocessor Control and Artificial Intelligence-Cybernetics is proposed to be set up at Delhi College of Engineering under the Department of Production and Industrial Engineering. The proposed centre will draw talent from Production and Industrial Engineering Department, Electronics, Computer Engineering and Mechanical Engineering Departments.

Activities of the Centre

The Centre will be engaged in the following activities;

1. Dissemination of information in CAD/CAM, CIMS etc.
2. Design and development of specific microprocessor control or industrial processes.

3. Develop software for industrial services.
4. Take up application of robots in specific areas.
5. Engage in research in the field of AI, Pattern Recognition etc.
6. Arranging short-term courses for training industrial personnel.

The Centre should be able to augment some of its expenditure from the services rendered to the industry.

The following personnel would be required to man this Centre:

1. Professor	1	14300-22400
2. Lecturer	1	8000-13500
3. Technical Asstt.	1	5000-8000
4. Steno-Grade III	1	4000-6000
5. Lab Attendant	1	3050-4390
Total	5	

(iv) Advanced Centre for Entrepreneurship Development

The unemployment and underemployment amongst the educated youth cannot be eradicated unless employment generating entrepreneurial efforts is made by the technically qualified engineers. However, it is necessary that the productivity of such ventures, which would be in small and medium scale, should be high. Therefore, the Production System studies specially suited for small and medium scale ventures need to be carried out and developed. This is in accordance with the national policy of Science and Technology and also the national policy of industry. It is, therefore, proposed that an advanced centre for Entrepreneurship Development be set up in the college under the Department of Production and Industrial Engineering. The centre will be imparting short-term courses pertaining to entrepreneurship to our students and others, conduct Entrepreneurship Development Programmes (EDP) for engineering graduates, besides providing consultancy services to entrepreneurs in and around Delhi. The centre will offer an optional course on entrepreneurship in our BE programmes.

The total manpower required for running this centre is indicated below:

1. Professor	1	14300-22400
2. Industrial Liaison Officer	1	8000-13500
3. Technical Officer	1	6500-10500
4. Steno-Gr.III	1	4000-6000
5. Peon-cum-Farash	1	2550-3200
Total	5	

(v) Centre for Management Studies

This centre shall be interdisciplinary for research and development in the area of technology, production and process management.

The following personnel would be required to man this Centre:

1. Professor	1	14300-22400
2. Lecturer	1	8000-13500
3. Tech. Asstt.	1	5000-8000
4. Steno-Gr.III	1	4000-6000
5. Peon-cum-Farash	1	2550-3200
Total	5	

(vi) Centre for Research in Information Technology

This Centre is proposed under the Department of Computer Engineering for research and development in the area of Information Technology. Due to the rapid development in area of the Information Technology, India needs to produce trained manpower in this area. The vital source of generating revenue through export of software related to information technology. The Govt. of India has already proposed to increase manpower in this field. The Dept. of Computer Engineering feels, it is appropriate time to start BE and ME program with specialization in Information Technology. AICTE has already approved the proposal for starting BE (Information Technology) with an intake of 60 students from the academic session 2001-2002. The centre will also start ME

(Information Technology) in future. Besides this, the centre will also undertake different R & D projects sponsored by Govt. organizations and industries.

Five Laboratories to be developed under this centre

1. Web designing lab
2. Satellite communication lab
3. Internet lab
4. E-commerce lab
5. Computer net working lab

The following personnel would be required to man this Centre:

1. Professor	1	14300-22400
2. Asstt. Professor	1	12000-18000
3. Lecturer	2	8000-13500
4. Senior Technical Asstt.	1	6500-10500
5. Technical Asstt.	2	5000-8000
6. LDC	1	3050-4590
7. Lab attendant	2	3050-4590
8. Peon-cum-Farash	1	2550-3250
Total	11	

(vii) Centre of Advanced Research on Energy Sciences

This Centre is proposed to be interdisciplinary for advanced studies and research in the area of appropriate energy systems. A technology park will be developed as a part of Center's activities besides providing teaching support on advanced topics in energy systems.

Biogas as an alternate fuel for running engines being developed. Solar devices are to be inducted in a big way. Other experimental works on other alternative fuels for running engines is proposed to be carried out in the energy centre.

The following personnel would be required to man this Centre:

1. Professor	1	14300-22400
2. Lecturer	1	8000-13500
3. Tech. Asstt.	1	5000-8000
4. Steno-Gr.III	1	4000-6000
5. Peon-cum-Farash	1	2550-3200

Total	5	

(Viii) Centre of Relevance and Excellence in Fiber Optics and Optical Communication:

There is rapid development in the area of telecommunication systems and stress is being put on Optical Fiber based telecom systems and network. Keeping in view, this fact, Applied Physics and Electronics and Communication Engineering Department have proposed to open a centre for imparting education and research in this area. The proposal for establishing this centre is already approved and is supported by a programme called MISSION REACH under Technology Vision 2020, Department of Science and Technology, Government of India. This centre will run courses in this emerging technology besides carrying out advance level interdisciplinary research and development work. As per terms and conditions of the TIFAC, entire recurring expenditure and non-recurring expenditure up to 50% of the project cost are to be met by the college which includes maintenance of the machinery, equipment and consumables, salary, TA/DA of the staff monitoring the scheme, books, generals, telephone, fax, internet facility and publication materials related with the course.

Activities of centre:

- (1) To run courses related to Fiber Optics and Optical Communication courses at BE/M.Sc./M.E. level.
- (2) To run separate programme at M.E. level in the area of Optical Communication.

- (3) To take-up advance research in the area of lightwave 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 centre of excellence in the field of Fiber Optics and Optical Communication.

The Centre will also get support from the Deptt. of Science & Technology, Government of India and other leading telecom companies, which will be 50% of the non-recurring expenditure.

The following personnel would be required.

1. Professor	1	14300-22400
2. Lecturer	1	8000-13000
3. Senior Scientific Officer	1	8000-13000
4. Technical Assistant	1	5000-8000
5. Lab Attendant	1	3050-4590
Total	5	

An outlay of Rs.300.00 lakhs is approved for 10th five year plan and Rs 30.00 lakhs is for annual plan 2002-03 for this scheme.

6. Strengthening of Book Bank & Library Innovation.

Rs. 600 lakhs for 10th five year plan 2002-07 & Rs. Annual plan 2002-03.

The library services at Delhi College of Engineering 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, & online databases. Apart from adding the new literature, the basic literature is also to be procured for the new courses along with current one. Some new section and services are also to be started to make the library services of ISO 9001 standard.

Accordingly, New Services and Sections are proposed to be started during the X plan period

A. New Services and Sections :

- 1. Text book section for teachers :** A separate section with reading room facility is required for teachers where at least 5 copies of each textbook shall be made available to them
- 2. Text books section for students with reading room :** A separate text book section for students with reading room facility each required where the textbook shall be made available to the students for reading only. This section will help those students, who are not being provided textbooks from book-bank.
- 3. CD Rom access to engineering and Scientific database :** A large number of databases which are very useful for research activities are available on CD ROM/DVD ROMS which are essential to be subscribed and made available to users through LAN/WAN.
- 4. On line access to Engineering and Scientific databases :** Now-a-days, the societies & publishers are making their literature of books, journals, proceedings & standards available on line which saves the time of user in access to information. Hence, subscription & archiving of online database is essential and will be made available to users through LAN/WAN.

B. EXISTING SERVICES AND SECTION TO BE STRENGTHENED AND UPDATED

1. **Book Bank** : The existing book bank facilities needs to be augmented by adding more textbooks to make the adequate number of textbooks available to the students.
2. **Reference Section** : The existing reference section needs to be augmented by latest editions of handbooks, data books, encyclopedias, dictionaries etc to provide the up-to-date information to the users of the library.
3. **Additional Reading Section** : The section comprising of classical literature in Hindi & other language, History Geography etc. to be strengthened.
4. **Subscription to Journals/Periodicals** : The Journals being the primary source of information are essential to supplement the research activities and are required regularly. The number of foreign & Indian journals shall be subscribed to facilitate the on going research activities & to expand the areas of future research activities.

C. AUTOMATION OF LIBRARY SERVICES

To keep pace with on going technological changes, it is essential that the library records are computerized and the future information is obtained in digital format for making it accessible to the faculty & students at their work places. It will not only save time, but make simultaneous access of information possible at the same time, which is otherwise not possible in print formats. To make the library services automated, the following work has to be carried out.

1. **Data entry of existing collection/records** : The work is to be got done on contract as the volume is very high. All the records of 1.50 lakhs books & journals etc are to computerized to make it available online for research through intranet & Internet.

2. **Data entry of new arrivals :** A running rate contract for data entry of record of new arrival shall also be required, so as to keep the record up-to-date in computer.
3. **Bar coding of existing record/collection :** In order to automate the issue return system of library literature as well as the security system of outgoing books, the bar coding of books journals & other documents is essential. The work shall be got done on contract.
4. **Bar coding of membership cards and incoming records/documents :** Bar coding of membership record and incoming document shall be required on regular basis, hence, a rate contract for the purpose shall be required.
5. **Procurement of hardware and software :** 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 for access through Internet & Intranet.
6. **Security – Surveillance System :** An Electronic security surveillance system consisting of close circuit TVs, cameras and audio-video alarms will be required for monitoring the library security in the new building which is spread in an area of 5000 sq.m.

D. MAINTENANCE OF BOOKS AND EQUIPMENT.

A running maintenance contract will be required for Binding, Cleaning and dusting, Shelving of the books and proper upkeep of the equipment like computer hardware/software.

E. STRENGTHENING OF STAFF.

The library facilities are not being provided only to daytime teaching faculty and research scholars, but also being made available to part time faculty and students of the evening programme, which is conducted between 6 p.m. to 9 p.m. The approval of the

Finance department has recently been secured for opening of the library of all the five days for three hours in the evening to cater to the requirements to the part time faculty and the students. The present staff strength sanctioned for the college is not even adequate to meet the requirement of the library for day time faculty and students further the opening of library for part time faculty and students on regular basis, which is at the moment proposed to be provided with the assistance of existing staff on remuneration basis cannot be continued for a longer duration without regular staff. To meet the manpower requirement of the library, the adequate number of trained library staff with suitable positions will be required . The following positions are proposed to be created during the X Plan period :

1. Dy. Librarian	1	6500-10500
2. Documentalist	1	5500-9000
3. Assistant Librarian	1	4500-7000
4. Computer Operator	2	4000-6000
5. LDC	1	3050-4590
6. Library Attendant	3	2610-3540
Total	9	

Rs.600.00 lakhs is approved for 10th five year plan 2002-07 and Rs. 80.00 lakhs for annual plan 2002-03 .

7. Part-time Degree Courses

(Rs. 150 lakhs for 10th plan & Rs. 30 lacs for Annual Plan 2002-03)

Due to persistent demand from in-service diploma holders in engineering for an avenue to upgrade their knowledge and qualification, the Parliament in 1980 decided that part-time degree courses shall start in Delhi College of Engineering. The University of Delhi formulated a 5 year part-time B.E.(Tech.) Degree Programme for the purpose. Accordingly, the proposal with staff and financial requirements was submitted to the government. In 1980, some of the teaching posts were sanctioned and duly created. The first batch of 120 part-time students was admitted in 1982. The batch passed out in 1987

and, as a result, many of them got departmental promotions and some have secured new posts with higher pay scales.

Another batch of 45 students, 15 each in discipline of Civil Engg., Mechanical Engg. and Electrical Engg. were admitted in 1989. In 1990, for the first time, University of Delhi had introduced an Entrance Examination for admission to these courses and the students were admitted from the merit list. The college is regularly conducting B.Tech. Entrance Examination in the month of July of every year from 1991, the no. of entrants in the examination has almost double, 120 students are being admitted each year. These students are employed in approved engineering works/organization in NCR Delhi and its contiguous industrial towns. At present there are about 500 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.). From the academic year 1996-97 the 5 year B.E.(Tech.) course has been revised to 4 year B.Tech. course.

Continuing education for the technical personnel is extremely important in view of the explosion of knowledge and fast changing technological scenario in the percentage.

The student intake for the part time courses are being increased in a phased manner and the annual intake at the end of plan period 2002-2007 is expected to reach a level of 210 as per the details indicated below:

- (i) Civil Engineering – intake 30 per year.
- (ii) Electrical Engineering – intake 30 per year.
- (iii) Electronics & Communication Engineering – intake 30 per year.
- (iv) Mechanical Engineering – intake 30 per year.
- (v) Production & Industrial Engineering – intake 30 per year(proposed).

It is proposed to start B. Tech. part-time course in Production & Industrial Engineering during the X Plan with an annual intake of 30 students. Presently, diploma

course in Production & Tool Design is offered by the Board of Technical Education. There is persistent demand from such students for improving their qualifications.

(vi) Computer Engineering – intake 30 per year(proposed).

It is proposed to start B Tech. Part-time course in Computer Engineering during the X Plan with an annual intake of 30 students.

(vii) Environmental Engg : in take 30 per year

It is proposed to start a B.Tech Part Time programme in Environmental Engg. with intake of 30 per year during the Xth plan period. A need for this has been felt for some time as number of students with diploma in Environment. Engg. have been approaching the college for further avenues to improve their qualifications.

The programme is presently run with the help of regular and part time faculty engaged from the outside. The sanctioned posts of 8 Asst. Professors and 14 Lecturers are not enough to meet the requirement of the 500 students admitted under the programme. As per the AICTE norm, the teacher-student ratio has been prescribed as 1 to 10 and accordingly the 48 teaching position are required to run the programme. Thus, there is shortage of 26 teachers as on date which is met by engaging teachers from the outside on part-time basis. It has been felt that quality of teaching imparted by the part time teachers and the level of responsibility towards student and institution is not up to the mark. To ensure good standard of teaching and equip the programme with talented faculty members, it is inevitable that additional position of faculty be created to cope up the work requirement of the programme.

The following additional manpower would be required for this programme during 2002-2007.

1. Professor	1	14300-22400
2. Asstt. Professor	1	12000-18000
3. Lecturer	2	8000-13500
4. Peon cum Farash	1	2550-3200
Total	5	

An outlay of Rs. 150.00 lakh is approved for 10th plan 2002-07 and Rs.30.00 lakh for annual plan 2002-03.

**8. Establishment of Modern Computer Centre and Networking:
(Rs 470 Lakhs for 10th plan and Rs. 92.00 lacs for annual plan 2002-03)**

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 centre building has been built and handed over. It is yet to be made functional. Computing facilities in the centre will cater the students, faculty and other staff of the college. The entire new campus is proposed to be networked using state of art technology involving gigabit fibre optic networks. This will incorporate acquisition of the latest networking platforms that will include the then available modern hardware as well as the software. The systems such as Main Server (quad processor), Standby Server, Networking switch hub etc., Database server, PCs' , Printers and software in adequate numbers as per requirement of the centre are to be procured.

The centre has presently, been sanctioned 2 posts of programmer, 1 post of console operator and 3 posts of data entry operator. Two more positions of system engineer and system analyst, (1 each), which were created for the centre, have to be revived. The following additional positions are required to be created to cater the manpower requirements of the centre :

1. System Manager	1	14300-22400
2. Sr. System Analyst	1	12000-18000
3. System Analyst	2	10000-15200
4. Programmer	1	8000-13500
5. System Engineer	2	8000-13500

6. Technical Asstt.	6	5500-9000
7. Computer Operator	4	4500-7000
8. Junior Tech. Asstt.	2	4000-6000
9. Laboratory Attendant	6	3050-4590
Total:	25	

For proper computer education for all the engineering students, the creation of the above posts is essential. The Computer Centre with the facility of 24-hour operation is being thought of. As can be seen from above, the total expenditure during 2002-2007 works out to be Rs. 470 lakhs, the entire amount being Revenue expenditure. An outlay of Rs.470.00 lakh is approved for 10th plan and Rs. 92.00 for annual plan 2002-03.

9. Expansion of Existing Educational Facilities

(Rs. 500 lakhs for 10th Five Year Plan and Rs.20.00 lacs for Annual Plan 2002-03.)

To meet the shortage of technical manpower in the emerging areas of technology, the following courses are proposed to be either spilled over to Xth Year Plan from the IX Plan or started afresh during the Xth Plan:-

B.E. COURSES (Under Graduate Degree Programme)

(i) **COMPUTER ENGG.** – Present intake is 20 per year which has been enhanced to 60 per year from academic session 2001-2002. It is proposed to enhance the intake 90 per year during the Xth plan period.

(ii) **PRODUCTION & INDUSTRIAL ENGG.** – Present intake is 20 per year, which has been enhanced to 30 per year from the academic session 2001-2002. The Intake is proposed to be enhanced to 60 per year in the Xth plan period.

The BE programmes in the discipline of production and industrial. Engineering, computer engg. were started with the intake of 20 each as per the recommendation of the

AICTE from the year 1987-88 and 1989-90 respectively. Although, there is shortage of faculty in the discipline of computer engg., the intake has been increased to 60 per year on the recommendation of AICTE. In order to meet the manpower requirement to cater the enhanced intake, 3 professors, 5 Asst. professors and 11 Lecturers are required. In addition to the faculty requirement, 8 Tech. Asstt., 8 Lab Asstt., 1 LDC and 1 peon cum Farash are also required. These positions are proposed to be created during the Xth five-year plan period.

(iii) **ENVIRONMENTAL ENGG.** – The present Intake is 30 per year. The programme was started from the academic session 1998-99. It is proposed to continue the program during the next five year plan 2002-2007. The faculty positions and the lab supporting staff posts, which could not be created during the ixth plan period, are proposed to be created during the Xth plan period.

(iv) **POLYMER SCIENCE & CHEMICAL TECH.** – The programme was started with intake of 40 from the academic session 1998-99 with the approval of AICTE and University of Delhi. The Programme is proposed to be continued during the xth plan period. The faculty positions and position of the technical staff which were taken up for its creation during the ixth plan period, it is proposed to be taken during the xth plan.

(v) **ELECTRONICS AND COMMUNICATION ENGG:-** intake 40 per year; BE Programme Electronics and Communication Engineering with intake of 40 was started along with the approval of the University of Delhi and Ministry of H.R.D. The intake of the programme has now been enhanced from 40 per year to 90 per year from the academic session 2001-2002. No additional post of faculty and technical supporting staff has been sanctioned to cope up with the requirement of manpower for the enhanced intake of 50. It is therefore proposed to create the faculty positions and positions of the technical supporting staff for the programme during the Xth five year plan 2002-2007.

(VI) **INSTRUMENTATION AND CONTROL ENGG:-** The course already stands approved by the University of Delhi. Since Delhi College of Engineering is already running one M.E. course in Instrumentation and Control for the last several years, it has

the necessary lab. Facilities to start the B.E. course in Instrumentation and Control without any difficulty. Teachers as per norms of the Government of India would however be required and it is proposed to start this programme with an intake of 40 per year. The course is to be approved by the AICTE.

(VII) AUTOMOBILE ENGG. :

It is proposed to start a new BE course in Automobile Engineering during the Xth Plan Period. The Department of Mechanical Engineering, which has been with the college from the very beginning, has seen a considerable growth in as much as that its original intake of 20 at UG level course in Production and Industrial Engineering. The Department is also conducting ME degree level programmes since 1972 in Thermal and Production Engineering besides catering to Ph.D. research programmes. The Department has well equipped laboratories, such as Instrumentation, Strength of Materials, Fluid Mechanics and machinery, Experimental stress analysis, I.C. Engines, Refrigeration and Air Conditioning, Automotive Engineering, Robotics, Welding, CIM, Automation, FMS.

The Automobile industries in India have come a long way now and sky is the limit for its growth in the conceivable future. Keeping this in mind a new UG Programme in Automobile Engineering has been forged in consultation with many experts from the academics and industries. The scheme for BE in Automobile Engineering, as proposed, is a state-of-art scheme, and not just one of those run-of-the mill type. It is proposed to start the programme with an intake capacity of 60 during the x th plan period.

(viii) INFORMATION TECHNOLOGY:

A new BE programme in Information Technology with an annual intake of 60 approved by the AICTE. The programme is likely to be started from the current academic session 2001-2002. It is proposed to enhance this intake to 90 per year in the X th period plan. There is no sanctioned post to run this programme. To cater this programme, the posts of 3 Professors, 6 Asst. Professors and 15 Lecturers are required to be created. Besides, the position of Technical supporting staff i.e. 6 Sr. Tech. Asst, 18 Tech. Asst, 10 Lab Attendant and 6 Ministerial staff as per the AICTE norms are required to be created for the programme during the plan period 2002-2007.

(ix) **BIOTECHNOLOGY**

Biotechnology is an upcoming discipline world over, and has a lot of potential for this country as well. It is high time that the relevant UG and PG programmes in this discipline are started in this country, so that we do not miss the opportunity of advancement in this area, which is sounding relevant today. It is proposed to start a new BE programme in Bio technology with an intake of 30 per year during the Xth five year plan 2002-2007. with the approval of AICTE and University of Delhi.

(X) **MECHATRONICS :**

It is a multidisciplinary area involving the concepts of mechanism (Mech. Engg., Micro Electronic and Materials). There are so many applications of mechatronics, which are available these days as smart devices, most of which are being import only and not produced here. To keep pace with the development taking place in the world, it is essential that we develop relevant UG level programme in this area. It is proposed to start a new BE programme with an intake of 30 per year during the plan period 2002-2007.

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

(i) **M.E. POWER APPARATUS & SYSTEM**

Intake 15 per year – course is approved by the University of Delhi and is to be spilled over to the X Plan (Admission to 5 semester part-time M.E. in Power Apparatus & System is continuing for the past several years).

Delhi College of Engineering is offering one M.E. course in Power Apparatus & Systems to engineers employed in Delhi on a part-time basis for the last several years with an intake of 5 students per year. It is now proposed to offer the same M.E. course to full-time students during the X Plan period with an intake of 15 students per year. The course naturally is approved by the University of Delhi. Since no teaching position was sanctioned for teaching the part-time students and the faculty was putting additional efforts with a view to establish liaison with the relevant industries and government departments in and around Delhi, it would now be necessary to have teachers according to the norms of Government of India for offering this course to the full-time students. Since

all lab. facilities for running this course already exists, it is proposed to start the full-time course of M.E. in Power Apparatus & Systems at Delhi College of Engineering after obtaining approval from the AICTE during the plan period.

(ii) **M.Sc. APPLIED PHYSICS**

Intake 15 per year – course approved by the University of Delhi and is to be spilled over to X Plan (Annual intake of 10 students for 5 semester part-time M.Sc. in Applied Physics is continuing for the last several years).

Delhi College of Engineering is admitting 10 students every year for employed scientists in and around Delhi on a part-time basis to the course of M.Sc. in Applied Physics. Admission to this course has continued for the last several years and thus the lab. Facilities exist and naturally the course is approved by the University of Delhi. Similar to the course of M.E. in Power Apparatus and Systems as at present, there is no sanction of teaching positions for the course of M.Sc. in Applied Physics also. The college proposes to continue this course and extend to full-time students during the X Plan period with an intake of 15 students per year. It is proposed to start the full-time course of M.Sc. in Applied Physics with emphasis on material science and electronics. The proposal is to be submitted to the University of Delhi and AICTE for approval. It is also proposed to create the positions of the faculty and technical supporting staff to meet the laboratory and technical facilities of this program.

(iii) **ME (Computer Engineering)**

Due to Computer Software and Communication Engg. Industries boom in the global market, the manpower requirement in these fields have increased manifold. Indian software and its specialists have been in great demand all over the world. Delhi College of Engineering, being a 60 years old college and one of the most prestigious technical institutes in India, has produced hundreds of engineers in the field, who are very well established and reputed in their respective fields. The Indian experts in these fields are now taking leading role globally. So, Delhi College of Engineering feels that to cater, for the demand, it must start the new post-graduate courses in computer Engineering.

It is proposed to start the programme with an intake 15 during the Xth plan period. To run this programme effectively, the posts of 1 Professor, 1 Asst. Professor and 1 Lecturer are required to be created.

(iv) **M.E. (MICROWAVES AND OPTICAL COMMUNICATION ENGINEERING)**

There is a need for basic infrastructure development in the area of Microwave and Optical communication due to the boom that is totally place in the area of networking using Microwave and Optical Communication. The internet revolution needs the basic communication like that mainly involves microwave satellite and optical communication. The manpower requirement needs to be upgraded in these areas as these are the basic infrastructure for the I.T. Industry.

Delhi College of Engineering being a premier institution of the country with well equipped Microwave and Optical laboratories, trained technicians, has highly qualified teaching staff in the areas of Microwave and Optical Communication that includes those in Electronics and Communication Department as well as in Physics Department. The area of Microwave and Optical Communication, being the thrust infrastructure requirement in the demand in the above area, it is proposed to start a new PG programme in this specialized field with an intake of 15 during the Xth Plan Period. To run the programme, the post of 1 professor, 1 assistant professor and one lecturer during the Xth five year plan is required to be created.

(v) **M.E. GEOTECH. ENGG. –**

The University of Delhi has approved M.E. course in Geotechnical Engineering, a subject which is in great demand since large scale irrigation projects all over the country are being thought of during X and subsequent Plan and many such projects including micro-hydel projects in the foot hills of Himalayas require specialized training in Geotech. Engg. In addition, developments in the field of Geo-synthetics in India and abroad has thrown new opportunities to improve bearing capacities of relatively weak soil masses. The college proposes to start one M.E. course in Geo-technical Engineering during the plan period with an intake of 15 full-time students per year. Basic lab. facilities to start the

course exist in the college. Approval of AICTE and Government of Delhi according to norms are however required. It is proposed to start this course during the Xth Plan Period.

(vii) **M.E. POWER ELECTRONICS AND DRIVES:**

Intake 15 per year. The courses is to be approved by the University of Delhi and AICTE. It is proposed to start this course during the X Plan.

(viii) **M.E. SIGNAL PROCESSING:**

Intake 15 per year. The course is to be approved by the University of Delhi. It is proposed to start this course during the IX Plan.

(ix) **M.E. INFORMATION TECHNOLOGY :**

Intake 15 per year. The course is to be approved by the University of Delhi and AICTE. It is proposed to start this course during the X Plan.

(x) **M.E. ADVANCED DIGITAL ELECTRONICS AND AUTOMATION:**

Intake 15 per year. The course is to be approved by the University of Delhi and AICTE. It is proposed to start this course during the X Plan. The course will include specialization in thin film technology/superconductivity.

(xi) **M.E. TECHNOLOGY MANAGEMENT:**

Intake 15 per year. This course is to be approved by the University of Delhi and AICTE. It is proposed to start this course during the X Plan.

(xi) **M.E. INDUSTRIAL EQUIPMENT DESIGN**

In this country we have thermal Engg. specialists and production engg. specialists in sufficient number as numerous colleges and universities offering master level programmes in these areas. But very few colleges offering master level design specific programme. As a result of this there is a dearth of good equipment designers in this country. Hence a ME programme with an intake of 10 per year is proposed to be started during the plan period 2002-2007.

Ph.D. PROGRAMMES

The College has suitable expertise in several areas of Science and Technology to guide doctoral level research. Keeping this into consideration, the Ph.D. programme was formulated during the 8th plan period 1992-97. It was proposed to admit 12 Ph.D. students with scholarships on full time basis for a period of 3 years. The programme was spilled over to 9th five year plan, 1997-2002, wherein, it was proposed to admit 25 Ph.D. scholars on full time basis for 3 years with scholarship as approved by the Govt. of India, in various disciplines in emerging areas of technology and science. 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 the 10th plan period 2002-2007 also. Seeing the demand of the students, it is proposed to admit 50 scholars during the 10th five year plan for full time 3 years programme. The total number of Ph.D. scholars at any point of time will be limited to 50 during the 10th five year plan period. The period of programme may be extended by a year subject to recommendation of the Board of research studies on the work performance of the candidate during the proceeding three years. It is being proposed in line with the provision contained in the guidelines/instructions received from the Deptt. of Science & Technology, Ministry of HRD, Govt. of India on the subject matter. The scholar will be entitled to get the scholarship at the same rate during the extended period, as notified at the time of admission.

QIP CENTRE AT DCE

It is proposed to start a QIP centre in all the major departments of the college and all the facilities required for the same are being worked out so that such a scheme can be started during the X Plan.

NEW LABORATORIES TO BE SET UP

In view of new course proposed to be started during the X Plan, it is necessary to provide funds to set up new laboratories. The proposed laboratories are:

1. Advanced digital Communication Lab.
2. Signal Processing Lab.

3. Image Processing & Multimedia Lab.
4. Bipolar MOS Lab.
5. VLSI Design Automation Lab.
6. Intelligent Control Lab.
7. High Voltage Testing Lab.
8. Intelligent Electric Device Lab.
9. Process Control Lab.
10. Bio-Instrumentation Lab.
11. Virtual Instrumentation Lab.
12. Design Audit Lab.
13. Quality Assurance, Standardization & Testing Lab.
14. Electric Power Generation Hybrid Plant including Gas, Solar, Biogas and Wind. Lab.
15. PC Hardware Lab.
16. Distributed and Parallel Processing Lab.
17. CAD and Advanced Graphics Lab.
18. Robotics and Machine Vision Lab.
19. Virtual Reality Lab.
20. Mechatronics Lab.
21. Networking Lab.
22. Remote Sensing Lab.
23. Computer Integrated Manufacturing Lab.
24. Material Science Lab.(Applied Physics)
25. Thin Film Lab.
26. Modern Optics Lab.

The following teaching and laboratory posts are proposed to be created during the Xth Plan for consolidation and expansion of educational facilities under the above scheme:

For Under-graduate course:

1. Professor	9	Rs.14300-22400
2. Asstt. Professor	18	Rs.12000-18000
3. Lecturer	37	Rs.8000-13500

Total posts	64	

Tech. Supporting staff as per norms

1. Sr. Technical Assistant	8	Rs.6500-10500
2. Technical Assistant	32	Rs.5000-8000
3. Jr. Technical Assistant	32	Rs.4000-6000
4. Lab. Attendant	26	Rs.3050-4590
Total Posts	98	

For Post-graduate course:

1. Professor	4	Rs.14300-22400
2. Asstt. Professor	6	Rs.12000-18000
3. Lecturer	6	Rs.8000-13500
Total posts	16	

Ph.D. Programmes

1. Ph.D. Scholars with 50
Scholarship

The college looks forward to significantly expand the educational facilities leading to annual intake of 765 at B.E. level, 275 at full-time M.E. level and 50 at full-time Ph.D. level. The new campus has enough space to expand laboratory, library and computer centre facilities. Thus, expansion of educational facilities is one of the main thrusts of the college in the X Plan, next only to the construction of the new campus.

An outlay of Rs. 470.00lakh is approved for 10th plan and Rs. 92.00 lakh for Annual Plan 2002-03.

10. Coaching Classes for SC/ST Weak Students

(Rs. 10 lakhs for 10th plan Rs. 2.00 annual plan 2002-03).

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 200 students benefit 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 2002-2007 Plan period.

An out lay of Rs. 10.00 lakh is approved for 10th five year plan and Rs. 2.00 lakh for annual plan 2002-03.

11. Strengthening of General and Hostel Administration

(Rs. 450 lakhs for 10th plan Rs.40.00 lakh annual plan 2002-03.)

Having started as a technical school in 1940/1941, the college has gradually acquired the status of one of the leading engineering institutions in Northern India. It now not only caters to the teaching and training of undergraduate courses but also imparts instructions at postgraduate level in several specializations. Besides, full-time research leading to Ph.D. is also under active considerations in various areas of engineering and applied sciences. The college undertakes the responsibility of continuing education; and B.E. Tech Part-time courses at undergraduate level and part-time postgraduate courses are offered to serving engineers for the said purpose. At the end of the X Plan, the annual intake for the various courses would be as follows:

B.E.(Four year course)	- 765
M.E.(1 & ½ year course)	- 275
Ph.D. (Full-time with scholarship)	- 50
B.E. Tech.(4 year part-time course)	- 180

The total full-time student population in the college would then be approx. 3840 and the same excludes the students from friendly and developing countries that are admitted in B.E. and M.E. programmes with the approval of the Government of India.

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 13 UG level programmes and 10 PG level programmes.

The intech. Under UG programme has gone upto 575 whereas under PG programme it has raised at the level of 125. Therefore, it is proposed to strengthen the General and Hostel Administration and also to revise the staff structure for educational administration by creation of post of Director, Registrar, Deputy Registrar and Asstt. Registrar, Financial Adviser and Security Officer, including the Examination Cell (the Examination Cell is provided under the plan head "Examination Cell"). It is proposed to restructure the posts of technical staff in view of Prof. T.D. Sachdeva committee report, which is already under consideration of the government.

Since the present state of General Administrative set up in the college is not fully conducive for further growth and development of technical education as envisaged under the New Education Policy, it is proposed to strengthen the same under the X Fiver Year Plan in the following manner:

1. **Director:** – It is proposed to upgrade the post of the Principal to the level of Director with pay scale of Rs.18400 – 22400. He/She will be the Head of the Institution and would be responsible for all the activities of the college.
2. **Deputy Registrar:** – It is proposed to have one Dy. Registrar(Administration) and one Dy. Registrar(Academic) in the pay scale of Rs12000-18000. At present the college has one Administrative Officer in the pay scale of Rs.10000-15200. It is now proposed to upgrade the post of Administrative Officer to the scale of Rs12000-18000 with the changed designation of Dy. Registrar(Administration). This up gradation is quite justified in view of the fact that the DR(Admn.) would look after the work of (i) Asstt. Registrar(Legal), (ii) Asstt. Registrar (Purchase), (iii) Asstt. Registrar(Stores), (iv) Asstt. Registrar(Public Relations) and (v) Hostel Superintendent. Asstt. Registrar(Legal) would be a newly created post. Asstt. Registrar(Purchase) would also be a newly created post. Asstt. Registrar(Stores) would be an upgraded post corresponding to the existing post of Stores Officer. Asstt. Registrar (Public Relations) would be a newly created post. The post of Hostel Superintendent exists.

3. **Asstt. Registrars:** – It is proposed to have a few Asstt. Registrars in the pay scale of Rs.8000-13500. As mentioned above, the following posts are proposed to be newly created, namely A.R.(Public Relations). A post of Stores Officer in the scale of Rs.6500-10500 exists in the college and it is proposed to upgrade the same to Rs.8000-13500. This is fully justified due to significant increase in the activity of the college as mentioned earlier. A post of Dy. Administrative Officer(D.A.O.) in the scale of Rs.7450-11,500 exists in the college which is proposed to be upgrade to Rs.8000-13500. This is also fully justified in view of the significant increase in the intake at the Under-graduate level over the last several years.

4. **Security Officer and Assistant Security Officer:**– The college in its new campus is a large establishment having highly priced intellectual property, machine and equipment besides a campus on a plot of 165 acres to support academic and residential requirements. The security and safety of college property and its inhabitants is of paramount importance. A post of Security Officer and Assistant security officer is proposed to be created during X Plan to cater for these functions.

5. **Hostel Supdt. And Asstt. Hostel Supdt:-** The Hostel administration is presently deficient in manpower. The College at its Kashmere Gate site was having two hostels with a capacity of accommodation of 360 students. It was being supervised by the wardens designated from amongst the faculty members. No separate post of warden was sanctioned hitherto. One post of Hostel Superintendent in the scale of pay of Rs.6500-10500 was created during the VIII plan period 1992-97. Now, the new campus of the college has provisions of 5 Boys Hostel, 1 Girls Hostel, Transit and PG Hostel for accommodating more than 1000 students. With a view to strengthen the administration and upkeep of the hostels, each hostel is required to be manned by an official of the level of Assistant Hostel Superintendent, LDC, one peon cum Farash. Besides, one more post of Hostel Superintendent is required for proper upkeep and supervision of all the boys hostels, girls hostel, Transit Hostel, Married Student s Hostel and PG Hostel. Accordingly, it is proposed to create additional post of one hostel superintendent and the positions of assistant hostel superintendent, LDC, Peon cum Farash during the Xth five year plan for proper conduct of the hostel management.

6. **Security & Sanitation Services:** – The new campus of the college, which is spread over in an area of 165 acres, is residential in nature. It has a provision of 5 Nos. of Boys Hostels, 1 Girls Hostel, Transit Hostel, Married Students Hostel in addition to academic buildings, Library, Computer, Workshop Building and various centres which are coming up fast in the campus. Therefore, more man power in regard to cope up with the requirement of security and sanitation is required which cannot be met with the limited number of chowkidars and safai karmacharis presently working in the college on regular basis. With a view to strengthen the security of the government property, machines and equipment and to provide the campus a proper sanitation and environment to meet the minimum requirement of the existing campus. In view of this it has been decided to continue with the engagement of 50 security guards, 2 supervisors and 49 safai armchairs from private security & sanitation agencies subject to change depending upon the taking up of additional buildings by the college during the plan period. The engagement has been approved by the A.R. Deptt. & Fin. Deptt. of Govt. of Delhi.

Summarizing, it may be stated that the following plan posts are proposed to be created during the X Plan:-

<u>S.No.</u>	<u>Name of the post</u>	<u>No. of post</u>	<u>Scale of pay</u>
1.	Dy. Registrar	2	12000-18000
2.	Asstt. Registrar	2	8000-13500
3.	Security Officer	1	8000-13500
4.	Assistant Security Officer	1	6500-10500
5.	Assistant Accounts Officer	1	6500-10500
6.	Hostel Supdt.	1	6500-10500
7.	Asst. Hostel Supdt.	10	5500-9000
8.	Head Clerk	5	5000-8000
9.	Steno	3	4000-6000
10.	U.D.C.	10	4000-6000
11.	L.D.C.	10	3050-4590
12.	Despatch Rider	1	3050-4590
13.	Gestener Operator	1	2650-4000
14.	Nursing Orderly	1	2610-3540
15.	Peon-cum-Farash	16	2550-3200
16.	Messenger	2	2550-3200
	Total	67	

The strengthening of General and Hostel Administration, as mentioned above, would go a long way in providing the right support for the much needed growth of the college and the same can easily be done at a quite nominal cost. The new campus of the college has already been planned to provide the necessary accommodation for these officer.

An outlay of Rs. 450.00 lakh is approved for 10th plan and Rs. 40.00 lakh for annual plan 2002-03.

12. Examination Cell

(Rs.30 lakhs for 10th plan Rs.5.00 lakh for Annual Plan 2002-03.)

Being convinced regarding the dire need of an Examination Cell in the college, Delhi Administration created five posts for this purpose on 12.7.1990. In the meantime, the University of Delhi decided to introduce the mode of Combined Entrance Examination (CEE) for admission to B.E. courses for the candidates passing Board Examination from schools located in Delhi. The CEE was conducted on 2.6.1990 and the college had to provide 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. This Entrance Examination for the first time conducted on 15.7.1990. The number of CEE bulletins sold was around 9000 and the same for B.E.(Tech.) Part-time Entrance Examination was about 1100. 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 semester examinations. 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. The positions of Dy. Admn. Officer (Exams), Console operator, Data Entry operator, Daftry and Peon, one each, created for the cell during the 8th plan period, these

are not adequate to meet the manpower requirement of the cell. Considering this point, the following manpower is proposed for the Cell during 2002-2007 Plan.

1. Dy. Registrar (Exam) Officer-in-charge(Exam.)	1	Rs.12000-18000
2. Data Entry Operator	1	Rs.4500-7000
3. Steno Grade III	1	Rs.4000-6000
4 LDC	1	Rs.3050-4590
5 Daftari	1	Rs.2650-4000
6 Messenger	1	Rs.2550-3200
Total	6	

The Examination Cell is playing a vital role in all examination matters relating to about 2000 in-house students in addition to the conduct of Entrance Examinations.

An outlay of Rs. 30.00 lakh is approved for 10th plan and Rs. 5.00 lakh for annual plan 2002-03.

IV College of Art

College of Art is situated at 20-22, Tilak Marg, New Delhi and is administered by Govt. of Delhi. It is an Institution for advanced training in Visual Arts (both Creative and Applied) leading to the Bachelor of Fine Arts (BFA) and Master of Fine Arts (MFA) Degrees of University of Delhi.

The College got the approval of the Delhi Administration and University of Delhi to start the long due Master Course in specialization viz. Painting, Sculpture, Applied Art, Photography/Print-making and History of Art. Out of these specializations, the College has since introduced the Master of Fine Arts Course only in Painting, Sculpture and Applied Art with an intake capacity of maximum of seven for each. Such Post Graduat Courses have been taught in several Universities and Art Institution in other parts of the country also for more than decades. These courses have been in demand for a

long time. In order to meet the requirement of the Capital region as well as foreign countries under the Cultural agreements signed by Government of India. The College got the approval of the Delhi University to introduce Post-Diploma course for Deaf & Dump students in three specialised Department i.e. Applied Art, Painting and Sculpture.

Considering the importance of developing such an important Institution and that too in the Capital city, which would be unique of its kind in the country, it is imperative to make all efforts and provide possible resources to it at the point. Progress and achievements in this area will feed and substantially improve the manpower to provide quality for social, cultural and industrial schemes of our country.

The following are the schemes which are approved by the Planning Commission. All these schemes are continuing one except the 'Introduction of new Courses of Studies.'

1. **Development of Existing College Building And Construction of Additional Blocks In The Campus of the College**
(Rs 490.00 lakh for 10th plan Rs. 92.00lakh for annual plan 2002-03)

All the development scheme and expansion of academic and professional/training of the College under Plan are conducted with the additional accommodation. The Ist phase along with lift block of the permanent building was completed in 1976 and Phase II & III consisting of studios and administrative block, foundary workshops and the development of land was completed and occupied in 1986.

The proposals for the 10th Five Year Plan is to take up the left out essential projects of capital works within the existing campus are as follows:-

- (i) Completion of the continuing projects, additions and alterations and re allocation of studios and workshops in view of the increase in the intake of students, introduction of new courses and installation of new equipments and machinery required for professional courses.

- (ii) Construction of Central block to house the multipurpose hall for seminars, Lectures, Audio Visual shows and Exhibition Gallery and new studios for the new Post-Graduate courses, and housing the essential services such as electric sub-station, fire fighting. It will be constructed in the premises of 22 Tilak Marg after demolishing the existing more than 100 years old single storey building.

- (iii) New blocks to be constructed after demolishing existing old and temporary blocks. It will provide accommodation for the existing College canteen,. Students facilities such as sports, medical, common rooms and workshops. A new boundary wall to replace the old more than 100 years one also to be constructed for the combined campus of the College at 20-22, Tilak Marg.

- (iv) New workshops blocks to be constructed in the southern position of the College for new courses of Applied Design for BFA, likely to be started in the year 2002-2003. In addition to this, Sculpture Deptt., is also to be expanded to accommodate MFA students.

All these projects were approved for the 8th plan but could not materialised due to administrative delays. Sh. Satish Gujral, Architect, appointed for the construction of the new building project as per the specification listed above, has submitted the preliminary estimates for an amount of Rs.4,90,22,500/- (including departmental charges) which is duly vetted by PWD and cleared by the standing Finance Committee. The Administrative approval and expenditure sanction of Lt.Governor, Delhi, thereof also have been obtained. The estimate submitted by the Architect, Sh. Satish Gujral, includes the fee for Architect, Counsultant and other overhead expenses. Now the Chief Engineer, PWD has given new estimates for an amount of Rs.9.97 crores including departmental charges which is being dealt separately.

The construction of the new building is to be taken up on the land after demolishing the existing more than 100 years old Central Block and temporary studios of the College. The land scaping and planning for projects for construction of the new building has thus been made. The plan for construction of the building has been designed in stages so that the smooth functioning of the College may not be disturbed. Since the completion Certificate of the building already constructed and occupied in 1986 has been obtained from NDMC and drawings for the new building designed by the Senior Architect of M/S Design Plus have been submitted to NDMC through PWD for approval which is awaited. In addition the quantities proposed for structural, electrical and civil etc. by the Architect have also been submitted to PWD for inviting tenders. However, the conceptual approval from Delhi Urban Commission has already been taken.

The approved outlay for the 10th Five Year Plan 2002-2007 for the Scheme is Rs.997 Lakh out of which a provision for Rs. 100 lakhs is approved for the Annual Plan 2002-2003.

(2) **Re-organisation of existing Academic Courses.**
(Rs. 150.00 lakh for 10th plan and Rs. 31.20 lakh for annual plan 2002-03)

With the affiliation of the College to the University of Delhi in 1972, it became necessary to re-organise the existing pattern of staffing so as to bring it in conformity with the approved pattern of the University. Accordingly, the four posts of Lecturers (ordinary scale) which existed in the College have since been abolished and instead of this other posts of Lecturers, Asstt. Professors and Professors created as per recommendation of the Madan Committee followed by the Dogra Committee pay scales with matching "Structure of staffing" in respect of ministerial and other categories of supporting staff.

From the 8th Five Year Plan the intake capacity of students at BFA level has been increased to 100 from 80 in addition to 8 seats reserved for Deaf & Dumb and foreign

nationals. Considering the increasing demand, it seems, this also has to be increased further. Apart from the BFA Courses there is also an intake of seven students for each of the three disciplines of MFA Courses.

Accordingly, the College proposed to have the following new posts to be created and filled up during the 9th Five Year Plan because of the starting of PG courses, expansion of academic programmes, restructuring of Courses according to the approved syllabus.

(i)	Junior Artist	1 Post	5000-8000
(ii)	Attendants	5 Posts	2550-3200

Due to the increase in the intake capacity of BFA Courses as already approved by All India Council for Technical Education and Directorate Technical Education, Govt. of Delhi, this College propose the creation of the following posts of faculty staff:-

(1)	Professor	1 No.	14300-22400
(2)	Asstt. Prof.	1 No.	12000-18000
(3)	Lecturer	3 No.	8000-13500

Besides the above posts, the following posts are also required in the College due to setting up of Computer Graphic Cells for introduction of Computer Graphic Courses both the level of BFA & MFA Courses.

(1) Computer Technician	2 Nos..	5500-9000
(2) Mechanic Gr. "C"	1 No.	3050-4590
(3) Attendant	2 Nos.	2550-3200

To start the new Courses in Graphic Design and Graphic Printmaking, more Computers are needed. A provision of Rs.17.00 lakhs is proposed for this financial year for purchase of Equipment/furniture. In addition to this, raw materials, new machinery

and equipments for various Studies and Workshops are also to be provided. This is continue process.

An outlay approved under the scheme for the 10th Five Year Plan is Rs. 150 lakhs out of which a provision of Rs. 31.20 lakhs proposed for the annual plan 2002-2003.

(3) **Development of Library and Acquisition of Specimen of Indian Art.**
(Rs. 20.00 lakh for 10th plan and Rs.4.00 lakh for annual plan 2002-03.)

Though considerable progress has been achieved in the implementation of this scheme during the 8th & 9th Five Years Plan, the scheme is still to be continued in the years to come. The Library of the College has been growing to become one of the finest of its kind in the country. Now it has to get ready for meeting the post-Graduate Research requirements. The college has also made the slide and film library of selected works of art from all over the world.

The acquisition of selected works of traditional and contemporary Indian Art has been going on to become a quite significant collection for the proposed Air Conditioned Art Gallery. This scheme is still to be continued for acquiring new art works as well as for filling up of important gaps in the College collection. They are needed essentially in College for education and enlighten the students, Artists and even for interested public. Provision for pedestals for sculptures, mounting, framing and restoration of paintings and graphics is also to be made. The art Gallery has also to be furnished and provided with suitable display boards and stands. The entire collection of the Gallery has to be listed documented and published in comprehensive catalogues as well as exhibited periodically. For all this, the following posts are proposed for the scheme as per requirement explained above.

(1)	Exhibition Officer	1 No.	8000-13500
(2)	Librarian	1 No.	8000-13500

The proposal to upgrade the post of existing Librarian to a senior scale is under consideration of Govt. of Delhi/India. The existing post filled under Non-Plan side will be surrendered as soon as the proposed post is filled-up.

An outlay Rs. 20 lakhs is approved for the 10th Five Year Plan and a sum of Rs. 4 lakhs is approved for the year 2002-2003 annual plan.

4. **Students/Faculty Development Programme.**

Under this Scheme, the following development programs for students and faculty Members of the College which are extremely important for improving. The quality of teachers as well as taking them out of academic and professional isolation, are proposed to be undertaken during the 10th Five Year Plan 2002-2007.

- (a) Visit of teachers to other important Colleges in India and abroad to learn specific techniques and methods in the field of their specialization.
- (b) Holding of important exhibitions and seminars on new innovations in the field of visual Arts. Arranging illustrated Lecturers by eminent Artists and Professionals from India and Abroad.
- (c) Publication of College magazines to include articles on art education, History, criticism, Creative matters, interaction with other arts etc.

The progress of this Scheme during the 9th Plan was very slow due to lack of accommodation and staff. But it has now planned to send the teachers to visit other important Colleges in India to learn specific techniques and methods in the field of their specialization within the available strength of staff. Due to lack of accommodation, the holding of seminars in the College was not possible to the extent it was desired in the Scheme.

An outlay under this Scheme for the 10th Five Year Plan is Rs. 9.00 lakhs out of which an outlay of Rs. 1.80 lakh is proposed for the year 2002-2003 Annual Plan.

5. Academic Development of SC/ST Students of the College
(Rs. 5.00 lakh for 10th plan and Rs. 1.00 lakh for annual plan 2002-03.)

Good Art material and equipment are quite expensive but important to produce quality work. Under this scheme, it has been planned to provide to all SC/ST students of the college as an assistance free of cost materials who cannot afford to purchase them according to their actual needs. In addition to this, it is also proposed to provide special classes in theory subjects to the students who are found to be weak in the field.

In view of the hike in the cost of material, the proposal for enhancement of cost limit of material per student has been sent to the Govt. of Delhi for their approval which is still awaited.

An outlay under this Scheme during the 10th Five Year Plan is approved as Rs.5.00 lakhs out of which Rs. One lakh is approved for the year 2002-2003.

6. Introduction of New Courses of Studies.
(Rs 26.00 lakh for 10th plan)

The College proposed to start three pending post-Graduate Courses during the 9th Five Year Plan considering the University demand from the academic and profession, with an intake capacity of 7 students each in the following disciplines:-

- (1) Photography (Cinematography/Vedio)
- (2) Graphic Print-Making
- (3) History of Art

These courses are already approved by the University of Delhi. In addition to this, there have been great press as the admission to all BFA Courses specially for Applied Art. All our Graduates have been finding suitable jobs and there is need for more. The Courses Committee has thought about it and proposed to start a new course in Applied Design in BFA level. With an intake capacity of 25 students. This Course also could not be started in the 9th Five Year Plan due to non receipt of approval from the Competent Authority. However, the course has already been approved by the University of Delhi.

The infrastructure already build-up in the College will support the above mentioned courses. However, as per the approved staffing pattern, the following new posts will be required to be created and filled up:-

For MFA Courses.

(1)	Professors	3 Nos.	14300-22400
(2)	Asstt. Prof.	3 Nos.	12000-18000
(3)	Cameraman	1 No.	5500-9000

For BFA Courses

(1)	Professor	1 No.	14300-22400
(2)	Asstt. Prof.	3 Nos.	12000-18000
(3)	Lecturers	6 Nos.	8000-13500

Besides the above, the College also invites experts, Professionals and part-time Lecturers to take special classes to give lectures as well as to fill-up the gap of leave vacancies and unfilled posts.

Stipend to all eligible students of Post-Graduate Courses will be paid as per the rules and conditions approved by the Ministry of HRD, Govt. of India, New Delhi.

As the approval to start the above Courses are still awaited, the College has kept only a nominal provision for the current year for 03 months against the approved Outlay.

Approved outlay for the 10th Five Year Plan is Rs. 26.00 lakhs.

III. NETAJI SUBHASH INSTITUTE OF TECHNOLOGY

INTRODUCTION

To meet the growing demand for the manpower in the field of high level engineering and technology, the then Delhi Administration, on the approval of the Ministry of Human Resource Development, Govt . of India, vide their letter No.F23-28/80-T-5 dated 30.12.83 started a new College of Engineering with the name of "Delhi Institute of Technology" in July, 1983 as a Government Department. Subsequently, the Institute was granted autonomous status in May, 1986 and was registered as a "Society" on 12.07.1987.

The Silicon Revolution that had started churning out new fascinating and intelligent devices since mid-seventies, has cast profound influence on the state-of-art in the fields of Electronics, Telecommunication, Computer, Information Technology, Instrumentation and Manufacturing Systems. In this context , Netaji Subhas Institute of Technology (formerly Delhi Institute of Technology) has been conceived not just as any other Engineering College but as a unique Institute to fill the gaps which remained unattended so far in the national system of Technical Education.

The Institute has been given academic autonomy within the framework of Delhi University on the lines of other sister Institutions. Acquiring the status of "Deemed-to-be-University" by the Institute is a goal. In the very near future. Through a Gazette Notification dated 13.02.1997, the "Delhi Institute of Technology" was renamed as "Netaji Subhas Institute of Technology".

Pending development of its own campus, this Institute started functioning in the Campus vacated by the Food & Craft Institute, Old.I.G.Block, KashmereGate, Delhi. A land measuring 145 acres was acquired at Pappankalan (Dwarka) for the construction of independent Campus for the Institute. Till July'98, the Institute was functioning at Kashmere Gate and after that it has been shifted to its new Campus. The Administrative Block, Academic Block and other major development activities are almost complete.

'Science and Technology Entrepreneurs' Park (STEP) is also to be established in an integrated fashion alongside the Institute's Campus.

Presently, **370** students are being admitted every year in undergraduate programmes leading to the award of degree of B.E. (Electronics & Communication Engineering) , B.E. (Computer Engineering) , B.E. (Instrumentation & Control Engineering) B.E. (Manufacturing Process & Automation Engineering) and B.E. (Information Technology). At present **the total strength of the students is 1150**. Three Postgraduate M.Tech.Courses in the field of M.Tech (Signal Processing) , M.Tech.(Information Systems) & M.Tech. (Process) are being offered presently in addition to Ph.D doctoral Programmes.. Further expansion of Postgraduate courses and R & D activities are to be taken up in a phased manner.

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 organise 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 infrastructural 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).

The R & D activities of Universities and Institutes by and large fall in the area of Blue sky i.e. open ended research which no doubt is essential for the growth of knowledge, civilization and future of mankind but is not normally addressed to the present day to day problems. Therefore, in addition to the normal research activities in the Blue sky area, emphasis will be on thrust and mission areas. For example, if Computer is thrust area, development of say PCB around a particular Processor with complete specifications and a time schedule could be a classified Mission. On the other hand, Optical Computing could belong to Blue sky. A conscious effort will be made so that a certain research effort in the Blue sky area migrates to the Thrust and Mission areas under the Technology Transfer Programme. The recommendations of the 44th meeting of Central Advisory Board on Education held in sep'88 have been envisaged to be integrated through Divisions, Schools, Centers and Sciences & Technology Entrepreneurs' Park.

Instruction programmes have been divided into Undergraduate, Postgraduate and Doctoral programmes with a provision of cross migration for different disciplines. Postgraduate programmes would be tailored and run in co-operation with Industries and R & D Organisations as far as possible. Special courses of variable duration and modular nature would be developed. Research and Development Centers have been conceived to build special thrust and to undertake execution of certain Missions in chosen areas.

The academic scheme at NSIT provides for organization into Units of Divisions and Schools. Divisions are organic aggregation of wide areas which are the most important thrust areas and which would need the maximum investment and resources. A particular Division would consist of various groups and subgroups of identified areas of specializations . The schools are the aggregation of areas which are pointed and peaked to some extent but they also play their independent roles and are in no way subsidiary to the main Engineering Divisions. Divisions and Schools are complementary in their functions and at the same time autonomous in implementing their programmes in a co-ordinated manner.

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 Engineering

b) Schools

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

Undergraduate (B.E) Programmes of 4-year duration would admit 100 students in each Division and provide specialization in various streams by means of optional courses. Management studies to students of the Undergraduate and Postgraduate Programmes would be offered by the School of Management and Entrepreneurship.

The School of Humanities and Social Sciences would provide support courses in all the Programmes and undertake research programmes related to societal and Demographic issues of development.

Science & Technology Entrepreneurs' Park (STEP) has been conceived to have a relationship with the Institute on the lines similar to the relationship that Hospital has with a Medical College.

1. CONSTRUCTION OF NEW BUILDINGS IN NSIT

(Rs 295.00 lakhs for 10th Plan 2002-07)

(Rs 286.00 lakhs for A.P. 2002-03)

A land measuring 145 acres for the development of independent campus was acquired at Dwarka in the 8th Plan. Delhi Development Authority has approved the Master plan of Netaji Subhas Institute of Technology in the year 1994. All statutory approvals from various concerned department viz. MCD,DUAC, National Airport Authority and Fire Office have been obtained.

As per the approved Master Plan of the Institute, it is proposed to carryout the construction in Three Parts as per detail given below:-

Part-I (Phase-I & II):-

S.No.	Name of Buildings	Area (sq. mtr.)	Status
1.	Administrative Building	5393	Completed
2.	Academic Block-4,5,6 & 8a	29818	Completed
3.	Library and Computer Centre	1952	Completed
4.	Boys Hostel	5712	Completed
5.	Married Students Hostel	3743	Completed
6.	Sub-Station Building	1180	Completed
7.	Faculty/Staff Quarters	15680	Completed
	i) Type-I - 32 Nos.		
	ii) Type-II – 56 Nos		

	iii) Type-III- 24 Nos. iv) Type-IV- 28 Nos. v) Type-V – 28 Nos vi) Type-VI- 1 No.		
8.	Development/Bulk Services	Job	Completed

Total area of the above buildings is 62302 sq. mtr.

The works under Phase-I & II (Part-I) have been completed except for 5 nos. Type-V & 5 No. Type-IV House which shall be completed by March, 2002.

Part-II (Phase-III):-

To be taken up in Land after approval of Expenditure Finance Committee.

S.No.	Name of Buildings	Area (sq. mtr.)
1.	Administrative Building	500
2.	Academic Building	2000
3.	Library/Computer Centre (Ext.)	7164
4	Girls Hostel	5339
5.	Boys Hostel	12878
6.	Residential Quarters	11970
7.	Guest House	717
8.	Commercial Complex	2500
9.	Hospital	1140
10.	School Buildings	1000
11.	Auditorium	2000
12.	Gym/Swimming Pool Sports Complex	20000
13	Student Activity Centre	1000
14.	Sub-Station Building including equipment	250
15.	Workshops	1500
16.	Development Works Bulk Services	Job

The process of construction of 3 Nos. Additional Hostels, Extension of Library Building & Computer Center, Development of Sports Complex and Construction of Underground Tank have already been initiated. The EFC in its meeting held on 14.03.2002 approved the expenditure of Rs 176.08 crores with certain conditions. Approval of the cabinet is being sought.

An outlay of Rs 295.00 lakhs is approved for 10th Plan and Rs 286.00 lakhs for A.P. 2002-03.

2. STRENGTHENING OF NSIT

(Rs 1500.00 lakhs for 10th Plan 2002-07)

(Rs 159.00 lakhs for A.P. 2002-03)

To strengthen the Academic & administrative departments, posts will be created in Tenth Plan 2002-07 as per requirement after obtaining the approval of Government of Delhi as provided in 'Pattern of Assistance'.

Existing posts created upto 2001-02.

Sno	NAME OF THE POST	EXISTING POSTS	PAY SCALE
	<u>A. FACULTY</u>		
1	PROFESSOR	22	14300-22400
2	ASSTT.PROFESSOR	36	12000-18300
3	LECTURER	69	8000-13500
	<u>B.ESTABLISHMENT</u>		
04	ASSTT. REGISTRAR	01	8000-13500
05	UDC	01	4000-6000
06	LDC	03	3050-4590
07	ATTENDANTS	02	2550-3200
	<u>C.LEGAL CELL</u>		
08	LDC	01	3050-4590

D.ACADEMIC SECTION

09	ASSTT. REGISTRAR	01	8000-13500
10	UDC	02	4000-6000
11	LDC	02	3050-4590
12	ATTENDANT	01	2550-3200

E. EXAMINATION CELL

13	DATA PROCESSOR	01	4000-6000
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F. LIBRARY

14.	ASSTT.LIBRARIAN	2	8000-13,500
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G.. FINANCE

15	UDC	04	4000-6000
16	LDC	02	3050-4590
17	ATTENDANT	01	2550-3200

H. STORE & PURCHASE SECTION

18	HEAD CLERK	01	5000-8000
19	UDC	02	4000-6000
20	ATTENDANT	01	2550-3200

An outlay of Rs.1500.00 lacs is approved for 10th Five Year Plan and Rs.159.00 lacs for Annual Plan 2002-03.

3. PROCUREMENT OF MACHINERY & EQUIPMENT/FURNITURE

(Rs 3000.00 lakhs for 10th Plan 2002-07)

(Rs 400.00 lakhs for A.P. 2002-03)

DIVISION OF ELECTRONICS & COMMUNICATION ENGINEERING

I Major Activities for the 10th five year plan.

The Division of Electronics & Communication Engineering intends to take up the following programmes in 10th five-year plan.

- 1) **UG Programmes:** Specialization in the following areas:

Phase I - Signal Processing

- Phase II- i) Digital Communication and Networking
 ii) Wireless Technology/Communication

2) **M.Tech Programmes:** Introduction of new programs

Phase I – M.Tech in Digital Systems & VLSI Design

Phase II – M.Tech in Digital & Optical Communication

3) **Special Laboratories/Centres:** Strengthening and creation of new Labs

- i) 1) Advanced Analog/Digital Signal Processing Lab
 ii) ASIC and VLSI Design Lab
 iii) Telemetry and Computer Communication Lab
 iv) Microelectronics Lab

II Details of the proposals for creation of infrastructure:

To support the above mentioned programmes, the various laboratories of the Division of ECE are to be strengthened / created as follow :-

A Strengthening of existing Labs:

1 Circuit Simulation/Advanced Circuit Design Lab

Targets

- To improve facilities in the field of circuit simulation/design particularly analog electronic circuits, simulation and design
- To cater to the requirements of UG and PG programs
- To cater to the requirements of research in the area of analog signal Processing

2 Microwave Engineering

Targets

- For advancement of Laboratory facilities in the field of Microwave Eng., particularly for R & D work.
- To increase Microwave components & instruments compatible with the increased intake of 100 students.
- To cater to the requirements of Projects of U.G. & P.G. students.
- To provide well developed infrastructure for Industrial consultancy.
- This lab. is a pilot lab to be later converted into a full-fledged R&D center in the field of Microwave Communication.

3. Electronics Lab

Targets

- To increase laboratory facilities in the existing lab.
- To create infrastructure for project and Industrial consultancy

4. Microprocessor Lab

Targets

- To strengthen the existing Microprocessor laboratory in view of the increased student intake at the UG Level in all streams.
- To cater to the requirement of Lab courses associated with the theory courses on Microprocessors and Computer System organization

5. Digital Integrated Circuits lab

Targets

- To strengthen the existing Digital Integrated Circuits laboratory in view of the increased student intake at the UG Level in all streams.
- To cater to the requirement of Lab courses associated with the theory courses on Digital Circuits and Systems I and II..

7. Analog Integrated Circuits lab

Targets:

- To upgrade the laboratory facilities in field of Analog Circuit Design and Testing.
- The provide infrastructure for UG & PG projects work in the area of Analog Circuit Design.

B Creation of New Labs

1. Statistical Signal Processing Laboratory

Targets

Signal processing problems addressed by the project (For B.Tech and M.Tech lab practicals and projects)

2. ASIC and VLSI Design Lab.

Targets

- to start the facilities in the field of application specific ICs and VLSI design.
- to cater to the requirements of UG and PG programs in the above area.

3. Telemetry and Computer Communication Lab

Targets

- To setup laboratory facilities in the area of Computer communication with the ultimate aim to set up a specialized center.
- To cater to the requirement of Lab courses associated with the theory courses on computer communication
- For conducting short-term courses for academicians and industry oriented people.

4. Digital and Optical Communication Lab

Targets

- To setup laboratory facilities in the area of Optical and Digital Communication.
- To cater to the requirement of Lab courses associated with the theory course on Optical and Digital communication

5. Advanced Communication Laboratory

Targets

The aim is to develop the Laboratory involving advanced experiments for Analog & Digital Communication. Both hardware as well as software experiments are to be carried out at the undergraduate as well as postgraduate level.

6. Microelectronics Lab

Targets

- To develop a new laboratory in the area of Microelectronics
- To cater to the need of U.G, PG & Research programmes
- To provide infrastructures for industrial consultancy

7. Advanced signal Processing Lab

Targets

To create special lab for Advanced Signal processing.

8. PCB and Project Lab

Targets

- To Improve Laboratory facilities in the field of PCB fabrication
- To provide the infrastructure for the various project works taken up by U.G & P.G Students
- To provide infrastructure for individual consultancy and prototype development.

9. Advanced Electronics Lab

Targets

- To upgrade and modernize the laboratories facilities in the field of analog electronics
- To cater to the requirement of PG and Research programmes
- To create infrastructure for industrial consultancy.

DIVISION OF COMPUTER ENGINEERING

1. Artificial Intelligence & Expert System Lab

Aims & Objective

1. To cater the need of the UG/PG/PhD students of the dept.
2. To pursue the research activities in the above said field.

2. Computer Architecture Lab.

Aims & Objectives :

1. To support UG & PG courses centered around digital hardware and its design.
2. To Develop microprocessors and micro controller based applications.
3. To conduct research in the areas of Computer Architecture, parallel processing and digital design.

3. General Computing Lab

Aims & Objectives

1. To provide the general computing facilities to all students
2. To assist & undertake R&D activities

4. General Computation Lab-I (S/W Engg. Lab)

Aims & Objectives

1. To support courses offered at B. Tech. & M.Tech. level
2. To support different stages of Software life cycle
3. To provide access to CASE/CAME tools
4. To support different Information System Methodology
5. To provide an environment for research.

5. Graphics/ Multimedia Lab

Aims & Objectives

1. To support UG, PG and Ph.D. Programmes.
2. To train manpower in the area of multimedia and V/R application

3. To conduct trainings for other section of society such as for catastrophe management, crime detection, etc.
4. To conduct research in the area of research image simulation & modeling.

6. Computer Networking Lab

Aims & Objectives

1. To cater to the need of UG, PG & Ph.D students.
2. To pursue the research activities in the Networking field
3. To initiate activities in the field of computer network.

7. Object Oriented Technology

Aims & Objectives

1. To give a clear understanding of Object Orientation concept tools and techniques.
1. To develop applications and system software based on OO technology.
2. To support Software and systems based courses in UG and PG Programmes.

8. Distributed Computing Lab

Aims & objectives

1. To initiate activities in the field of Distributed computing to cope with current era & industry
2. To provide the hands on practical the students in this challenging field & also to make the concepts of D.C.
3. To cater to meet the need of UG, PG & Ph.D Programme
4. To undertake R&D activities

9. Data Base Lab

Aims & Objective

1. To cater the need of UG/PG/PhD students
2. Research activities in the field of Database/Data mining/Data ware housing

10 Departmental Networking of COE & IT

Aims & Objective

1. To create clusters of Laboratories.
2. To implement Video Conferencing.

DIVISION OF INSTRUMENTATION AND CONTROL ENGINEERING

1 : BIO-MEDICAL INSTRUMENTATION LABORATORY

TARGETS:

- i) To train the students in the area of Bio-Medical Instrumentation.
- ii) To familiarize the students with the different biological parameters involved in the design and development of Bio-Medical Instrumentation.

2 : MECHATRONICS LAB

TRAGETS :

- (a) To expose the students with **state-of-the-art** which has gone in the advance and sophisticated instrumentation.
- (b) To train and make the students feel as how the integration of various branches of engineering accomplish a formidable job of designing a sophisticated instruments based on simple fundamentals.
- (c) To provide advance and interactive laboratory facilities to students for precise measurement of variables normally required in industrial processes and developing user friendly approach in handling.

3 : ARTIFICIAL INTELLIGENCE AND ROBOTICS LAB.

TARGET:

- i) To train the students in the area AI.

ii) To familiarize the students with the different technological parameters involved in the design and development of Robotics.

4 : ELECTRIC DRIVES & INDUSTRIAL AUTOMATION

TARGETS :

1. To carry out research and development work in the area of power electronics and industrial automation.
2. To provide consultancy services in the area of
 - (a) efficient converter design,
 - (b) energy conservation and
 - (c) quality power supply.

5 : INSTRUMENTATION LAB

TARGETS:

- (a) To expose the students with **state-of-the-art** which has gone in the advance and sophisticated instrumentation.
- (b) To train and make the students feel as how the integration of various branches of engineering accomplish a formidable job of designing a sophisticated instruments based on simple fundamentals.
- (c) To provide advance and interactive laboratory facilities to students for precise measurement of variables normally required in industrial processes and developing user friendly approach in handling transducers, sensors and electrodes.

It is also possible to use these instruments for providing services to Universities, Colleges, Research Centres and Industry. Following are the details of the instruments.

6 : POWER AND ENERGY TECHNOLOGY LAB

TARGETS:

I To carry out research and development in

(a) The control of renewable energy systems.

(b) The integration of renewable energy sources.

II To introduce UG and PG level courses in the area of power and energy technology

III To provide consultancy in the design of commercial renewable energy systems.

7 : ELECTRICAL AND INSTRUMENTATION WORKSHOP

TARGET:

To train the students in the area of electrical apparatus and instrumentation.

8 : ADVANCED CONTROL LAB

TARGET:

To Familiarise students to design the dynamic system subject to disturbances random in nature. To carry out research & development work in the area like stochastic process, System Identification, Intelligent control etc.

9 : TELEMETRY AND DATA TRANSMISSION LAB

TARGET:

To train the students in the area of telemetry and data transmission systems.

10.: PROPOSAL FOR A DEPARTMENTAL LIBRARY

TARGET:

To establish a departmental Library for the Student, staff and faculty members of ICE Department

DIVISION OF MANUFACTURING PROCESS & AUTOMATION
ENGINEERING

1. Mechanical Sciences Laboratory

Target: To make the students of all disciplines familiar with Applied Statistics and Dynamics, Mechanics of Fluids & Applied Hydraulics.

2. Flexible Manufacturing Laboratory

Target: To familiarize students with computer controlled machine tools and other computer aided functions.

3. Kinematics & Dynamics of Machinery Laboratory

Target: To familiarize students with mechanisms and their behaviour with loads and in motion under varying speeds.

4. Welding Laboratory

Target: For teaching, R&D in welding processes & its automation.

5. Material Testing Laboratory

Target: To familiarize students with testing of materials & fabricated products for various strengths and conduct failure tests.

6 Metrology Laboratory

Target: To familiarize students with industrial inspection procedures and use of mechanical/electrical/pneumatic/optical systems.

7 CAD/CAM/CAE Laboratory

Target: To familiarize students with use of computer in designing, simulation, manufacturing programs and proving of design & manufacturing planning before actual manufacture under various conditions.

8. Computational Laboratory

Target: To provide a platform to MPAAE students for computational needs in all subjects of their studies.

9 Automation Processes Laboratory

Target: To familiarize students with automation elements, their uses in various manufacturing activities like feeding, orienting, transfer, manufacturing operations including assembly.

10. Manufacturing Laboratory

Target: To familiar with newer manufacturing processes.

11. Computer Graphics Lab

Target: To provide training to engineering students on drafting & design with use of computers.

12. Central Workshop

Target:

- (i) To provide training in most of the technical trades to students of ALL disciplines in first year.
- (ii) Training of II, III & IV year. MPAAE students.

DEPARTMENT OF PHYSICS

NAME OF LABORATORY: MATERIAL SCIENCE LABORATORY –NANO TECHNOLOGY - II

(A) TARGET FOR THE NEXT FIVE YEAR : 2001-2005 :

- 1. to develop Material Science Lab. for M.E. students of Material Science.
- 2. to develop appropriate network and collaboration with industry & R&D organizations.
- 3. to cater to the needs of UG and PG Programmes in different areas.
- 4. to undertake R&D activities in this area.

Name of Laboratory : **Opto-Electronics, Photonics**

Laboratory – Nano Technology - I

(A) Targets:

- (i) Courses in opto-electronics areas covering the precision engineering, micro-engineering and nano-technology fields .
- (ii) To support the inter-departmental activity for their courses, R&D and project engagement instrumentation and control, VLSI design fabrication and testing by providing nano-metrology facilities for the purpose.
- (iii) R&D activities in the various aspects of opto-electronics to establish and maintain edge this strategic area.
- (iv) To develop a knowledge and capability base in opto-electronic instrumentation for industrial know-how technology transfer.
- (v) Precision : Engineering and nano-metrological support to industrial and outside customers for calibration and international traceability requirement fulfillments.

DEPARTMENT OF BIO-TECHNOLOGY

Development of following laboratories will be undertaken during the next five year plan (2002-2007)

1. Plant tissue Culture Lab.
2. Microbiology Laboratory
3. Protein Chemistry Lab.
4. Fermentaliens /Bioprocessing Lab.
5. Waste Treatment Lab.
6. Bio-Informatics Lab.

DIVISION OF INFORMATION TECHNOLOGY

1. **Virtual Reality Lab.**

Aims & Objectives

- 1 To support UG, PG and Ph.D. Programmes.
- 2 To train manpower in the area of multimedia and V/R application

- 3 To conduct trainings for other section of society such as for catastrophe management, crime detection, etc.
- 4 To conduct research in the area of research image simulation & modeling.

2. **Office Automation Lab**

Aims & Objectives

1. To initiate activity in the field of office automation
2. To cater to meet the needs of UG, PG & Ph.D student in Management subjects/Office Automation.
3. To assist the R & D activities

3. **E-Commerce**

Aims & Objective

1. To train the students on latest E-Commerce Tools/Techniques
2. To cater the need of students of UG, PG and Researcher
3. To undertake research activities in the above field

4. **Data Communication**

Aims & Objective

1. To cater the need of the UG/PG/PhD students of the Dept.
2. To pursue the research activities in the above said field.
3. To familiarize the students/Teacher with Data Communication tools.

5. **Real Time Embedded System**

Aims & Objectives

1. To Support PG, UG and research Programmes
2. To enhance skills in embedded systems software development
3. To train students on real time operating systems, hardware design techniques and embedded programming skills.

4. Science and Technology Entrepreneurship Park (STEP)

(Rs 200.00 lakhs for 10th Plan 2002-07)

(Rs 5.00 lakhs for A.P. 2002-03)

While drawing up the 9th five-year plan it was envisaged that the setting up of STEP will be delayed for a number of reasons. It was pointed out that the main campus would be ready by the end of 1999, and also that senior level will need to be positioned. In spite of the fact that some of constraints mentioned above are still continuing some activities have been planned in the year 2001-2002 to meet major objective of STEP viz. To create trust and confidence among academic/research institutions and Industrial Enterprises': -

'Help financial institutions in the monitoring of Industrial Enterprises financed by them Students will be actively involved in this process.

- a. Direct interaction with Industrial Enterprises through their associations and encourage students to under-take development work for them. STEP will support such development work financially also.
- b. Arrange short duration training course and week-end workshops for students on management/ technology related topics
- c. 2-3 day meets of engineering students in which they share their experiences in industry with students from other engineering colleges and institutions
- d. Identify talented students and help them develop as entrepreneur.
- e. Holding of workshops and seminars, for generation of newer ideas and for increasing participation from all partners viz. industry, academic/research institutions and financial institutions.
- f. Any other activity, which encourages entrepreneurship amongst students.

During the 10th five-year plan, following the strategy mentioned above it will be possible reap from conversion of Technical Human Resources viz. the engineering students into a regeneration unit, particular in the fading years.

In view of the above, the planning for STEP for the 10th five-year plan shall be as given below: -

- i. Recruitment of staff at the senior most level (2002- 2003)
- ii. Initiating construction of STEP premises at the designated location in the close vicinity of the campus of NSIT. (2002- 2003)
- iii. Filling up other positions as per the envisaged work load (2003 onwards)
- iv. Development of laboratory facilities in the areas of Instrumentation, process control, computers etc., and a workshop for manufacturing practices. (2003- onwards)
- v. Construction of sheds for entrepreneur (2004- onwards)

An outlay of Rs.200.00 lacs is approved for 10th Five Year Plan and Rs.5.00 lacs for Annual Plan 2002-03.

5. Continuing Education Programme (CEP)

(Rs 25.00 lakhs for 10th Plan 2002-07)

(Rs 5.00 lakhs for A.P. 2002-03)

During the 9th five-year plan several short-term courses as well as lectures have been organized under this Programme. Teachers from science colleges from different parts of the country as well as working engineers have benefited from this Programme. As part of industry-institute interaction, few courses on computer hardware have immensely benefited NSIT technicians, so much so that the Institute has saved considerable amount provided for AMC of computers and their peripherals. Further the same technicians, who received training in the above-mentioned programme, help in the running of computer courses for SC/ST candidates under the SCP Programme. Steps have already been taken to induct competent manpower at senior level in order to expand the scope of this Programme

Some of the activities proposed under this program are as given below: -

- a) Engaging faculty members to write monographs on theory courses and lab exercises. Such monographs will be useful in organizing training programs for teachers of various science

colleges and polytechnics. In the next phase this facility will be extended to the faculty of science colleges and polytechnics as part of their training program.

- b) Organise courses for practicing engineers, managers and executives working in industries. In some cases this may require augmenting of laboratory facilities of the institute, and also enhancement of the skill of technicians.
- c) Organise skill development courses for unemployed youth in such disciplines as computers, electronics equipment maintenance etc. for improving their job potential. Such course shall be run on payment basis.
- d) Organise training course for faculty and technicians to augment their skill in the maintenance of laboratory equipments.

An outlay of Rs.25.00 lacs is approved for 10th Five Year Plan and Rs.5.00 lacs for Annual Plan 2002-03.

6. MATERIAL & SUPPLIES (LIBRARY & BOOK BANK)

(Rs 500.00 lakhs for 10th Plan 2002-07)

(Rs 70.00 lakhs for A.P. 2002-03)

Objective:

During the 10th five year plan Library will extend its floor area to provide more library services to more users. Library will set up a series of video camera and magnetic/electronic circuit based security system to prevent any loss of the library property. A local server will be installed in the library. Networking will be extended throughout the library. The services based on databases will be started for library users, apart from the existing library services . The existing library software with available hardware will be updated along with its new requirements for optimum on-line services.

S.N.

- 1 Site preparation for library server
- 2 UPS for server & Centralised UPS with stand by
- 3. Purchase of printers, updation of PCs and New PCs

- 4 Software(Upgradation and New)
- 5 Extention of Networking in Nextfloor
6. Preparation of upper floor (Building)
7. Rack for books, CD's and other non print media
- 8 Education and Video Filming of Library Services
9. Video Cameras in the library
10. Electronic security at entrance.
11. Consumbles (Stationary , tags, Newspaper, etc)
- 12 Computer (Consumable, Accessories, AMC, Bar-Coding of book and patron cards
- 13 Printing
14. Binding
15. Daily wage payment and summer job, training and conferences etc

Department of Physical Education

- a) Department of Physical Education would like to organize the Athletic meet of the Professional colleges in the Delhi region.
- b) Department of Physical Education would like to organize a seminar on yoga & meditation for the staff & students.
- c) Physical fitness programmes for students
- d) Self Defense training for the students of NSIT
- e) Netaji Subhas open cross country Race

An outlay of Rs.500.00 lacs is approved for 10th Five Year Plan and Rs.70.00 lacs for Annual Plan 2002-03.

FACULTY DEVELOPMENT & STUDENT WELFARE AND COLLABORATION

(Rs 100.00 lakhs for 10th Plan 2002-07)

(Rs 12.00 lakhs for A.P. 2002-03)

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 Nop.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 organisations and other Universities/ Institute of higher technical education for teaching and research programmes in India and abroad. "

An outlay of Rs.100.00 lacs is approved for 10th Five Year Plan and Rs.12.00 lacs for Annual Plan 2002-03.

8. AWARDS OF SCHOLARSHIP/RESEARCH ASSOCIATESHIPS

(Rs 150.00 lakhs for 10th Plan 2002-07)

(Rs 22.00 lakhs for A.P. 2002-03)

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. Associateships according to U.G.C norms are also proposed to be awarded therefore a sum of Rs 100 lacs has been earmarked for these activities of the 10th plan period.

An outlay of Rs.150.00 lacs is approved for 10th Five Year Plan and Rs.22.00 lacs for Annual Plan 2002-03.

9. TRAINING PROGRAMME FOR PERSONS BELONGING TO WEAKER SECTION (Coaching facilities to SC/ST/Weaker Students)

(Rs 30.00 lakhs for 10th Plan 2002-07)

(Rs 6.00 lakhs for A.P. 2002-03)

During the 9th five-year plan, the Institute has initiated number of training programmes for SC/ST of NSIT students and for outside SC/ST category candidates, who have passed 10+2 exams. Briefly, the activities under CEP have been:-

- i. Extra coaching classes for NSIT students in the evenings/ week-ends and even during vacations
- ii. Computer hardware courses for SC/ST category outside students, who have passed 10+2 exams.
- iii. Computer literacy and personality development courses for SC/ST category outside students, who have passed 10+2 exams.
- iv. Any other activity which can improve employability of SC/ST candidates. Basic idea is to impart various skill to SC/ST candidates which improve their employability in the market. In the forth-coming plan skills for which laboratory facilities can be arranged at NSIT would be imparted through short duration courses. There is a genuine need to include courses on the repair of household equipments, motor winding, workshop practices and personality development. Steps have already been taken to induct competent manpower in order to expand the scope of this programmed.

An outlay of Rs.30.00 lacs is approved for 10th Five Year Plan and Rs.6.00 lacs for Annual Plan 2002-03.

10. Institute Networking Scheme

(Rs 200.00 lakhs for 10th Plan 2002-07)

(Rs 35.00 lakhs for A.P. 2002-03)

Target:

- i) Maintenance of Institute Computer Network Backbone.
- ii) Upgradation of Equipment and facilities with the state-of-the-art Technology.

- iii) Expansion of this services to new buildings, departments, student's hostels and faculty/officers residences as per need of IT trends.

Justification

Institute Networking Scheme has developed state-of-the-art Campus Wide Computer Network Backbone to fulfill the demand of Information Technology Infrastructure in the Institute under 9th 5-year Plan. Existing setup has covered the connectivity up to all the classrooms, laboratories, library, all the offices of faculty and other administrative officers, and all other sections to meet the demand of multimedia data traffic within the Institute. Remote locations within the campus like hostels and faculty residences have also been covered through telephone lines, Institute is subscribing 128 kbps Leased Radio Link for Internet Access that has enabled us to be linked with world community even when proper Telephone infrastructure was missing in this area. Institute has applied for additional 256 kbps leased circuit through fiber media. Now, the Institute is maintaining in-house web hosting, Email server, FTO server and Intranet Applications along with other development activities that is continuing towards complete computerisation of all administrative works.

Computer Network Technology is the fastest growing area in the world and has started giving The threats towards security and data integrity into the systems as well. This requires constant vigil on the system, deployment of latest tools and of course upgradation of the equipment for maintaining the compatibility with the latest tools and software.

There are still many uncovered areas left that has to be undertaken in the next 5-year Plan, like deployment/integration of telephonic facilities to data network, tele-education, R & D activities in the area and extending the networking facilities to upcoming future buildings in the Institute .Existing arrangement to connect hostels and faculty residences through telephone lines may not be adequate to support future demand of the data band width and therefore enhanced new method/technology has to be adopted to meet the IT requirement.

An outlay of Rs.200.00 lacs is approved for 10th Five Year Plan and Rs.35.00 lacs for Annual Plan 2002-03.

11. Renovation & Maintenance of Institute Buildings.

(Rs 500.00 lakhs for 10th Plan 2002-07)

The Institute from Kashmere Gate has since shifted to the new campus and has started functioning w.e.f. July, 1998. The under mentioned buildings under Phase-I & II (Part-I) are in use at present:-

1. Institutional Area:-

- a) Admn. Block (5,393 m³) alongwith Auditorium, its air-conditioning plants (70 tons capacity) and
2 nos. passenger lifts.
- b) Academic Block VI (10,587 m³) alongwith special erthing as required for labs.
- c) Academic Block IV, V, VIII-A (19,231 m³)
- d) Library cum Computer Centre (1,953 m³)

2. Residential Area:-

- a) Director's Residence
- b) Type-V (28 Nos.) & Type-IV (28 Nos.)
- c) Type-I (32 Nos.), Type-II (56 Nos.) and Type-III (24 Nos.) Houses
- d) Boys Hostel 274 Units
- e) Married Students Hostel – 67 Units.

All buildings have been completed except for 5 nos. Type-IV & V Flats each which shall be completed
by March, 2002.

3. External Essential Services:-

Roads (6 km.), water lines (drinking & horticulture separately), Electric sub-stations (5 nos.), H.T. & L.T.cables laid to form a ring for energizing in the campus, external sewerage system, storm water drains, boundary wall, pump house at NSIT & Kakrola, Reverse Osmosis Water Treatment Plant, canteen, guest house, D.G. sets, lifts, fire alarm system, fire fighting system, etc. etc. have been constructed/provided in the campus.

To maintain & upkeepment of the above buildings, infrastructure such as roads, substations, pump house, street light, external services etc., the requirement of funds under the sub-head “**Renovation and maintenance of the Institute**” has been worked out and is placed at **Annexure-A**.

The proposal includes average annual payment of Rs. 1.60 cores in respect of electricity bills, water bills, telephone bills, house tax, ground rent etc.

It is proposed to carry out the works through AMCs/contracts in respect of different maintenance jobs to avoid the permanent liabilities/labour problems as otherwise has to be done departmentally by appointing regular/daily wage staff of different categories.

An outlay of Rs.500.00 lacs is approved for the 10th Five Year Plan for the renovation & Maintenance of the building.
