

## **From the Director's Desk**

National Institute of Technical Teachers' Training and Research (NITTTR), Chandigarh was established by the Ministry of Human Resource Development, Government of India in 1967 in collaboration with the Royal Netherlands Government with an aim to improve the quality of technical education in general and technician education in particular. NITTTR, Chandigarh is one of the four such institutes set up by the Government for the four regions of the country, the other three being at Bhopal, Kolkata and Chennai.

NITTTR, Chandigarh looks after the training needs of the teachers of polytechnics and engineering colleges in the Northern Region comprising the states of Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan, Uttar Pradesh, Uttarakhand and Union Territory of Chandigarh. Beside organizing short term training programmes for polytechnic and engineering college teachers in the field of engineering and management of technology, the institute also offers master's degree programmes in manufacturing technology, construction technology and management, computer science and engineering, electronics and communication engineering, instrumentation and control and engineering education.

Established with the broad objective of imparting professional training to polytechnic and engineering college teachers, the institute is mandated to work actively in the areas of (i) staff development (ii) curriculum development (iii) instructional material development (iv) research and development and (v) extension services and consultancy.

Presently, the institute has a number of academic departments and centers/cells viz. civil engineering, mechanical engineering, electrical engineering, electronics and communication engineering, computer science and engineering, curriculum development, education and educational management, educational television centre, applied science, entrepreneurship development and industrial coordination, information management and coordination, media centre, rural development, continuing education, electronics service centre, library, academic cell and instructional resource marketing unit (IRMU).

Over the years, this institute has developed many print and non-print instructional materials on various topics which are of use to the teachers of polytechnics and engineering colleges of the country. This booklet is an effort to compile these materials in a systematic manner so that the beneficiaries can decide upon procuring the needed ones by even giving a cursory glance at the booklet. It goes without saying that the materials prepared are of much relevance to the teaching needs of polytechnics and engineering colleges and I hereby exhort the teachers of these institutions to make the most use of them.

I congratulate the Instructional Resource Marketing Unit (IRMU) of the institute for taking the pain to compile and sequence the information and present them in the form of this booklet which, I am sure, will go a long way in helping anybody who is somebody in the field of technical education system of the country in general and the northern region in particular.

**Dr. Parijat De**

## INSTRUCTIONAL RESOURCE MARKETING UNIT

Instructional Resource Marketing Unit (IRMU) was set up at NITTTR, Chandigarh in October, 1995. The unit markets the instructional resources (both print and non-print) produced by the faculty of the institute. Since its inception, IRMU has sold instructional resources worth more than Rs.45 lakhs. The print material include books, research reports, modules, monographs, data books, handbooks, readers, charts etc. The non-print instructional resources include, educational software tools, educational video films and VHS tapes. Both print and non-print instructional resources are available in the areas of :

1. Applied Science
2. Civil Engineering
3. Computer Science and Engineering
4. Curriculum Development
5. Education and Educational Management
6. Educational Television
7. Electrical Engineering
8. Electronics and Communication Engineering
9. Entrepreneurship Development and Industrial Coordination
10. Mechanical Engineering
11. Media and Continuing Education
12. Rural Development

IRMU offers 10 % discount on print instructional material. No discount is allowed on other non – print instructional materials. In case of substantial orders, packing and postage/freight expenses are borne by this institute. All the payments should be sent through crossed demand draft in favour of Director, NITTTR, Chandigarh payable at Chandigarh.

The catalogue information is also available on Institute **website : [www.nitttrchd.ac.in](http://www.nitttrchd.ac.in)**.

For any further information regarding IRMU, please write to :

### Faculty Incharge

Instructional Resource Marketing Unit (IRMU)  
National Institute of Technical Teachers' Training and Research,  
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4. We expect payment in advance by cash/demand draft.
5. The price of books are subject to change by the publishers.

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## **( A ) BOOKS**

### **APPLIED SCIENCE**

1. Malhotra MM et. al "Text Book in Applied Mechanics" New Age International (P) Ltd., Publishers, New Delhi, 1994, 570 p. Price : Rs. 200/-

### **CIVIL ENGINEERING**

1. Kulkarni PD "Civil Engineering Materials" Tata McGraw Hill, New Delhi, 1998, 336 p. Price : Rs. 175/-
2. Gahlot PS and Dhir BM "Construction Planning and Management" New Age International (P) Ltd., Publishers, New Delhi, 1992, 163 p. Price : Rs. 125/-
3. Dhameja SK "Environmental Engineering and Management" S.K. Kataria and Sons, Delhi, 2004, 496p. Price : Rs. 100/-
4. Dhameja SK "Environmental Studies" SK Kataria and Sons, Delhi, 2005 (Revised Edition), 401p. Price : Rs. 140/-
5. Kulkarni PD "A Text Book of Concrete Technology" (Revised Edition), New Age International (P) Ltd, New Delhi, 1999. Price : Rs. 200/-
6. Gurjar BR "Sludge Treatment & Disposal" Oxford and IBH, New Delhi. Price : Rs. 375/-
7. Sharma Sanjay and Gahlot PS "Building Repair and Maintenance Management" CBS Publishers and Distributors, New Delhi. Price : Rs. 300/-

### **CURRICULUM DEVELOPMENT**

1. Mittal LN, Anand YK, Singla PK, Gupta AB, Gupta SK and Thukral TN "Curriculum Development for Polytechnics" 1999, 177p. Price : Rs. 200/-
2. Jaidka Kuldeep, Dhillon Alwinder and Singla Parmod Kumar "English and Communication Skills" Book-I, Abhishek Publications, Chandigarh Price : Rs. 120/-
3. Jaidka Kuldeep, Dhillon Alwinder and Singla Parmod Kumar "English and Communication Skills" Book-II, Abhishek Publications, Chandigarh Price : Rs. 120/-

4. Jaidka Kuldeep, Dhillon Alwinder and Singla Parmod Kumar "English and Communication Skills" Book – III, Abhishek Publications, Chandigarh.  
Price : Rs. 120/-
5. Singh Harbhajan (Col.), Singla TL and Singla Parmod Kumar "Applied Mechanics", Abhishek Publications, Chandigarh.  
Price : Rs. 195/-

## **ELECTRICAL ENGINEERING**

1. Raina KB, Bhattacharya SK and Juneja Tilak "Electrical Engineering Materials" (Hindi Edition), SK Kataria and Sons, Ludhiana, 1992, 284p. Price : Rs. 45/-
2. Bhattacharya SK "Electrical Machine (Second Edition) Tata McGraw - Hill Publishing Co. Ltd., New Delhi, 1998, 45p. Price : Rs. 145/-
3. Bhattacharya SK "Electrical Engineering Drawing" (2<sup>nd</sup> Edition), New Age International (P) Ltd., Publishers, New Delhi, 1998, 244p. Price : Rs. 150/-
4. Bhattacharya SK and Chatterji S "Industrial Electronics and Control" Tata McGraw Hill Publishing Co. Ltd. New Delhi, 1998, 649p. Price : Rs. 175/-
5. Bhattacharya SK and Mathew Lini "Electrical Technology for Engineering Services Examination" Tata McGraw - Hill Publishing Co. Ltd., New Delhi, 1996, 555p. Price : Rs. 150/-
6. Bhattacharya SK and Chatterji S "Projects in Electrical and Electronics, Instrumentation Control and Computer Engineering" S. Chand and Company, New Delhi, 1997, 430p. Price : Rs. 200/-
7. Bhattacharya SK and Singh Brijinder "Control of Electrical Machines" (Revised 2<sup>nd</sup> Edition), New Age International (P) Ltd., Publishers, New Delhi.  
Price : Rs. 175/-

## **ELECTRONICS AND COMMUNICATION ENGINEERING**

1. Bhargava NN, Kulshrestha DC and Gupta SC "Basic Electronics and Linear Circuits" Tata McGraw - Hill Publishing Co. Ltd., New Delhi, 1984, 490p.  
Price : Rs. 150/-
2. Attri Sanjay "Audio and Video System" BPB Publication, New Delhi, 1996, 223p. Price : Rs. 99/-
3. Bhattacharya SK and Vig Renu "Principles of Electronics" SK Kataria and Sons, New Delhi, 1998. Price : Rs. 155/-

4. Attri Sanjay "Microcontrollers and PLCs" Dhanpat Rai and Co.(P) Ltd., New Delhi, 2004, 233p. Price : Rs. 100/-

## ENTREPRENEURSHIP DEVELOPMENT AND INDUSTRIAL COORDINATION

1. Saini JS "Entrepreneurship Development Programmes and Practices" Deep and Deep Publications, New Delhi, 1996, 410p. Price : Rs. 510
2. Sharma DD, Dhameja SK and Gurjar BR "Entrepreneurship Strategic Management and Globalization" Rawat Publications, Jaipur, 1999, 285p. Price : Rs. 550/-
3. Rathore BS and Dhameja SK "Entrepreneurship in the 21<sup>st</sup> Century" Rawat Publications, Jaipur, 1999, 388p. Price : Rs. 700/-
4. Sharma DD and Saini JS "The Enterprise Edge" Abhishek Publications, Chandigarh, 2002. Price : Rs. 750/-
5. Saini JS and Gurjar BR "Entrepreneurship and Education : Challenges and Strategies" Rawat Publications, Jaipur, 2002. Price : Rs. 650/-
6. Dhameja SK "Women Entrepreneurs" Deep and Deep Publications, New Delhi, 2002, 232p. Price : Rs. 440/-
7. Sharma DD "Quest for World Class Excellence through Total Quality Management : Principles, Implementation and Cases" Sultan Chand and Sons, New Delhi, 2000, 844 p. Price : Rs. 750/-
8. Sharma DD "Total Quality Management : Principles, Implementation and Cases" Sultan Chand and Sons, New Delhi, 2000. Price : Rs. 275/-
9. Sharma DD "Marketing Research : Principles, Applications and Cases" (2<sup>nd</sup> Edition), Sultan Chand and Sons, New Delhi, 2000. Price : Rs. 90/-
10. Sharma DD and Saini JS "Entrepreneurship in Hosiery Industry" Northern Book Center, New Delhi, 2001, 169p. Price : Rs. 500/-
11. Sharma DD and Dhameja SK "Indian Entrepreneurship : Theory and Practice" Abhishek Publications, Chandigarh, 2002, 408p. Price : Rs. 795/-
12. Sharma DD and Dhameja SK "Entrepreneurial Development in India." Abhishek Publications, Chandigarh, 2002. Price : Rs. 495/-

13. Sharma DD and Dhameja SK "Women and Rural Entrepreneurship in India" Abhishek Publications, Chandigarh, 2002, 232p. Price : Rs. 495/-
14. Rathore BS, Saini JS and Gurjar BR "Entrepreneurial Opportunities in Modernizing Economy" Abhishek Publications, Chandigarh, 2000. Price : Rs. 595/-
15. Rathore BS, Sharma DD and Dhameja SK "Entrepreneurship in Knowledge Economy" Abhishek Publications, Chandigarh, 232p. Price : Rs. 595/-
16. Sharma DD and Dhameja SK "Green Entrepreneurship" Abhishek Publications, Chandigarh, 232p. Price : Rs. 495/-

## MECHANICAL ENGINEERING

1. Adithan M "General Mechanical Engineering" Tata McGraw Hill, New Delhi, 1974, 179p. Price : Rs. 65/-
2. Adithan M and Pabla BS "Production Engineering : Estimating and Costing" Konark Publishers, Delhi, 1989, 205p.  
(Soft Bound) Price : Rs. 55/-; (Hard Bound) Price : Rs. 125/-
3. Adithan M "Objective Type Questions and Answers in Mechanical Engineering" Khanna Publishers, Delhi, 1989. Price : Rs. 40/-
4. Adithan M and Laroia SC "Practical Refrigeration and Air Conditioning" New Age International (P) Ltd., Publishers, New Delhi, 1991, 196p. Price : Rs. 100/-
5. Adithan M, Banwait SS and Garg RK "Design and Production Process." Birla Publications, Delhi, 1993, 408p. Price : Rs. 90/-
6. Pabla BS and Adithan M "CNC Machines" New Age International (P) Ltd., Publishers, New Delhi, 1994, 107p. Price : Rs. 100/-
7. Adithan M and Gupta AB "Manufacturing Technology" New Age International (P) Ltd., Publishers, New Delhi, 1996, 372p. Price : Rs. 200/-
8. Laroia SC and Banwait SS "Properties of Refrigerant and Psychometric Tables and Charts in S.I. Unist" Birla Publications, New Delhi, 1998, 55p. Price : Rs. 20/-
9. Laroia SC, Banwait SS, Adithan M and Garg RK "A Text Book of Design and Manufacturing" Birla Publications, Delhi, 2000, 768p. Price : Rs. 165/-



10. Gupta AB "Practical Handbook for Mechanical Engineers" Galgotia Publication, New Delhi, 2000, 451p. Price : Rs. 120/-

## **RURAL DEVELOPMENT**

1. Punia RD and Roy UN "Appropriate Technology" Satya Prakashan, New Delhi, 1999. Price : Rs. 45/-
2. Roy UN "People's Participation in Watershed Management" Kanishka Publishers, New Delhi, 2005. Price : Rs. 1195/-
3. Iyer K. Gopal and Roy UN "Watershed Management and Sustainable Development" Kanishka Publishers, New Delhi, 2005. Price : Rs. 1100/-
4. Saini JS "Informal Sector - Employment and Productivity" Abhishek Publicatios, Chandigarh, 2006. Price : Rs. 450/-
5. Roy UN and Saini JS "People's Empowerment and Sustainable Rural Development : A Technological Approach" Rawat Publications, Jaipur, 2009. Price : Rs. 895/-

## **PWD SCHEME**

1. Saini JS "Vocational and Technical Education for the Disabled" Abhishek Publications, Chandigarh, 2005. Price : Rs. 695/-
2. Saini JS and Goyal Amit "Empowering the Disabled" Abhishek Publications, Chandigarh, 2009. Price : Rs. 795/-

**(B) LABORATORY MANUALS****CIVIL ENGINEERING**

1. Duggal AK and Puri VP "Laboratory Manual in Highway Engineering" New Age International (P) Ltd., Publishers, New Delhi, 2007, 60p. Price : Rs. 100/-
2. Kulkarni PD, Mittal LN and Sood Hemant "Laboratory Manual on Concrete Technology (Revised)" CBS Publishers, New Delhi, 2003. Price : Rs. 90/-
3. Likhi SK "Laboratory in Hydraulics" New Age International (P) Ltd., Publishers, New Delhi, 1995, 105p. Price : Rs. 100/-
4. Sood Hemant "Laboratory Manual on Testing of Engineering Materials" New Age International (P) Ltd., Publishers, New Delhi, 2001. Price : Rs. 120/-
5. Duggal AK "Public Health Engineering" (Instructional Manual for Polytechnic Students), NITTTR, Chandigarh, 2006, 47p. Price : Rs. 61/-
7. Duggal AK "Laboratory Testing in Public Health and Environmental Engineering" (Instructional Manual), NITTTR, Chandigarh, 1999, 65p. Price : Rs. 78/-
8. Kulkarni PD, Mittal LN, Gahlot PS, Chaudhary MR, Jain BL and Chandra Indra "Laboratory Manual in Concrete Technology (Hindi)" 1988, 76p. Price : Rs. 40/-
9. Duggal AK and Sharma Sanjay "Water and Waste Water Analysis" Galgotia Publications, New Delhi, (under print).
10. Duggal AK "Laboratory Testing In Highway Engineering" (Instructional Manual) Price : Rs. 45/-
11. Duggal AK "Laboratory Manual In Soil Engineering" NITTTR, Chandigarh, 2006, 100p. Price : Rs. 78/-

**ELECTRICAL ENGINEERING**

1. Raina KB and Bhattacharya SK "Laboratory Manual in Electrical Machines" NITTTR, Chandigarh, 1988, 116p. Price : Rs. 55/-
2. Chatterji S "Laboratory Manual on Industrial Control" NITTTR, Chandigarh, 1997, 103p. Price : Rs. 55/-

3. Raina KB and Bhattacharya SK "Laboratory Manual on Electrical Machines (Part-I)" NITTTR, Chandigarh, 1986, 123p. Price : Rs. 60/-
4. Bhattacharya SK "Laboratory Manual on Electrical Machines (Part II)" Second Edition, 1984, 90p. Price : Rs. 50/-
5. Bhattacharya SK and Rastogi KM "Laboratory Manual on Basic Electrical Engineering" New Age International (P)Ltd., New Delhi, 1985, 121p. Price : Rs. 60/-

## **MECHANICAL ENGINEERING**

1. Bahl Ravi and Adithan M "Laboratory Manual on Metrology" NITTTR, Chandigarh, 1987, 104p. Price : Rs. 50/-
2. Bahl Ravi, Adithan M and Puneet "Laboratory Manual on Materials and Metallurgy" NITTTR, Chandigarh, 1988, 195p. Price : Rs. 70/-

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### **Manuals on Appropriate Technologies**

1. Vol. I - Sanitation Price : Rs. 70/-
2. Vol. II - Energy Price : Rs. 70/-
3. Vol. IV - Civil Price : Rs. 70/-
4. Vol. V - Mechanical Price : Rs. 70/-

## (C) RESEARCH REPORTS, MODULES, MONOGRAPHS, DATA BOOKS, WORK BOOKS etc.

### APPLIED SCIENCES

1. Chand Bakhshish and Lal HH "Applied Physics-Frames of Reference" (A Teaching-Learning Module), 1996, 18p. Price : Rs. 28/-
2. Singh Mohinder, Dutt Sunil, Sahota GPS, Chand Bakhshish, Lal HH and Agrawal SN "To Investigate the Reasons of Failure of Students in Applied Physics, Applied Mathematics and Applied Chemistry and suggest Remedial Measures there of" 1995, 64p. Price : Rs. 72/-
3. Chand Bakhshish and Lal HH "Electromagnetic Induction Phenomenon and Laws" (A Teaching-Learning Module in Applied Physics), 1997, 25p. Price : Rs. 33/-
4. Chand Bakhshish and Lal HH "Induced E.M.F. due to Motion of Electric Charges / Conductors in Magnetic Field", 1997, 30p. Price : Rs. 33/-
5. Chand Bakhshish and Lal HH "Generators and Eddy Currents" (A Teaching - Learning Module in Applied Physics), 1997, 25p. Price : Rs. 33/-
6. Chand Bakhshish and Lal HH "Inductances and Induced E.M.F" (A Teaching-Learning Module in Applied Physics), 1997, 38p. Price : Rs. 44/-
7. Chand Bakhshish and Lal HH "Conservation Laws" (A Teaching - Learning Module in Applied Physics), 1998, 32p. Price : Rs. 39/-
8. Chand Bakhshish and Lal HH "Simple Harmonic Motion" (A Teaching - Learning Module in Applied Physics), 1999, 56p. Price : Rs. 55/-
9. Chand Bakhshish and Lal HH "Projectile Motion" (A Teaching - Learning Module in Applied Physics), 1999, 36p. Price : Rs. 44/-
10. Chand Bakhshish and Lal HH "Energy and Its Conservation" (A Teaching - Learning Module in Applied Physics), 1998, 46p. Price : Rs. 50/-
11. Chand Bakhshish and Lal HH "The Atomic Nucleus" (A Teaching - Learning Module in Applied Physics), 1999, 38p. Price : Rs. 44/-
12. Chand Bakhshish and Lal HH "Radio- Activity" (A Teaching - Learning Module in Applied Physics), 1999, 40p. Price : Rs. 44/-

13. Bhattacharya SK, Lal Hari Har, Govil IM, Sharma SC, Dev DL, Chatterji S, Bhatti AK, Mittal BR, Malik RC and Chand Bakhshish "Nuclear Energy and its Applications" (ISTE Summer School Course Material), 1998, 290p.  
Price : Rs. 272/-
14. Chand Bakhshish and Lal Hari Har "Gravitation" (A Teaching - Learning Module in Applied Physics), 2000, 61p.  
Price : Rs. 61/-
15. Chand Bakhshish and Lal Hari Har "Nobel Prize Winners in Physics - A Compilation (1901-1999)" 2000, 13p.  
Price : Rs. 17/-
16. Chand Bakhshish and Lal HH "Friction and its Application" (A Teaching-Learning Module in Applied Physics), 2001, 45p.  
Price : Rs. 48/-
17. Chand Bakhshish and Lal HH "Nuclear Energy and Power" (A Reader), 2001, 43 p.  
Price : Rs. 44/-
18. Chand Bakhshish "Physical World and Measurements" (A Teaching - Learning Module in Applied Physics), 2002, 52p.  
Price : Rs. 50/-
19. Chand Bakhshish and Singh Kesar "Rotational Motion" (A Teaching - Learning Module in Applied Physics), 2004, 47p.  
Price : Rs. 56/-
20. Chand Bakhshish and Singh Kesar "Expansion of Solids" (A Teaching - Learning Module in Applied Physics), 2005, 38p.  
Price : Rs. 45/-

## CIVIL ENGINEERING

### Hydraulics

1. Likhi SK and Sharma SK "Hydraulic Data Book for Engineers" New Age International (P) Ltd., Publishers, New Delhi, 1998, 211p.  
Price : Rs. 115/-
2. Likhi SK and Sharma SK "Setting up of Hydraulics Laboratory in Polytechnic" NITTTR, Chandigarh, 1994, 24p.  
Price : Rs. 28/-

### Public Health - Environmental Engineering

3. Sharma SK and Subramanian R "Development of Public Health and Environment Engineering Laboratory in Polytechnic" NITTTR, Chandigarh.  
Price : Rs. 28/-

4. Sharma SK, Jain SC and Garg KK "Solid Waste Management in Chandigarh" NITTTR, Chandigarh, 1996, 32p. Price : Rs. 40/-
5. Sharma SK "Noise Pollution and Control" (A Reader), 2001, 59p. Price : Rs. 60/-
6. Sharma SK "Water Quality Monitoring and Surveillance" (A Reader). Price : Rs. 152/-
7. Sharma SK "Disaster Management" NITTTR, Chandigarh, 2006. Price : Rs. 150/-

### **Highway Engineering**

8. Duggal AK "Maintenance of Highways" (A Reader), NITTTR, Chandigarh, 2005 Price : Rs. 45/-
9. Duggal AK "Types of Highway Construction" (A Reader), NITTTR, Chandigarh, 2006. Price : Rs. 50/-
10. Duggal AK "Design of Airport Pavement" (A Reader), NITTTR, Chandigarh, 2004. Price : Rs. 50/-
11. Duggal AK "Evaluation of Pavement Strength" (A Reader). Price : Rs. 50/-
12. Duggal AK "Bituminous Mix-Design and Quality Control" (A Reader). Price : Rs. 50/-
13. Sood Hemant "Module on Design of Flexible Pavement". Price : Rs. 128/-

### **Soil Mechanics and Foundation Engineering**

14. Duggal AK "Pile Foundation" (A Reader), NITTTR, Chandigarh, 2007, 51p. Price : Rs. 67/-
15. Duggal AK "Improvement of Foundation Soils" (A Reader), NITTTR, Chandigarh. Price : Rs. 40/-
16. Duggal AK "Foundation Failures and their Prevention" (A Reader), NITTTR, Chandigarh, 2008. Price : Rs. 40/-
17. Duggal AK "Bearing Capacity of Shallow Foundations" (A Reader), NITTTR, Chandigarh, 2006. Price : Rs. 50/-

18. Duggal AK "Geo-Synthetics and their Applications in Civil Engineering" (A Reader), NITTTR, Chandigarh, 2006, 21p. Price : Rs. 39/-
19. Sonthwal VK "Shallow Foundation" (A Reader), NITTTR, Chandigarh, 2006. Price : Rs. 73/-
20. Duggal AK "Special Foundations" (A Reader), NITTTR, Chandigarh, 2006. Price : Rs. 40/-
21. Sonthwal VK "Earth Dam" (A Reader), NITTTR, Chandigarh, 2006. Price : Rs. 44/-
22. Sonthwal VK "Construction Equipment" (A Reader), NITTTR, Chandigarh, 2006. Price : Rs. 22/-
23. Sonthwal VK "Dewatering" (A Reader), NITTTR, Chandigarh. Price : Rs. 22/-

### **Building Maintenance**

24. Subramanian R and Sharma Sanjay K "Non Destructive Testing of RCC Structure" NITTTR, Chandigarh, 1997, 90p. Price : Rs. 89/-
25. Sharma SK "Corrosion Mechanism in RCC Structures and NDT Applications in its Assessment" (A Reader), 23p. Price : Rs. 30/-
26. Gahlot PS, Sharma SK, Meena Lt. Col. PM and Chawla Devinder "Repair, Maintenance and Protection of Building" Continuing Education Module, Part - I , 2000, 170p. Price : Rs. 175/-

### **OTHERS**

27. Sonthwal VK "Module on Computer Based Network Analysis", NITTTR, Chandigarh. Price : Rs. 67/-
28. Sood Hemant "Module on Special Concrete". Price : Rs. 130/-
29. Sonthwal VK "AutoCAD" (Instructional Material). Price : Rs. 122/-
30. Duggal AK "Reader on Tall Chimneys". Price : Rs. 30/-
31. Duggal AK "Module on High Rise Buildings". Price : Rs. 28/-
32. Sood Hemant "Module on High Performance Concrete". Price : Rs. 167/-

33. Sood Hemant "Module on Suspension Bridges". Price : Rs. 25/-
34. Sood Hemant "Module on Bridge Bearings". Price : Rs. 30/-
35. Sood Hemant "Reader on Remote Sensing and its Applications". Price : Rs. 100/-
36. Sonthwal VK "Reader on Earth Retaining Structure". Price : Rs. 40/-
37. Sonthwal V K "Reader on Earth Moving Equipment". Price : Rs. 30/-

### **CURRICULUM DEVELOPMENT CENTRE**

1. Thukral TN and Mittal LN "Module on Employment Opportunities, Competency Profile and Curriculum Structure of Diploma Programmes in Engineering and Technology". Price : Rs. 33/-
2. Mittal LN, Anand YK and Likhi Poonam "Curriculum Implementation and its Monitoring" February 2000. Price : Rs. 50/-
3. Singla PK et. al "Manual for External Examiners" NITTTR, Chandigarh. Price : Rs. 60/-
4. Likhi Poonam "Data Base of Experts in Chemical Engineering" (Northern Region), NITTTR, Chandigarh. Price : Rs. 30/-
5. Mittal LN "Interactive Networking for Industry-Polytechnic Interface - A Case Study". Price : Rs. 33/-
6. Likhi Poonam, Thukral TN and Mittal LN "A Study on Effective Implementation of Curriculum in the State of Punjab". Price : Rs. 30/-
7. Likhi Poonam and Rastogi KM "A Study on Effective Implementation of Curriculum in the State of Haryana". Price : Rs. 30/-
8. Gupta SK and Rastogi KM "Future Expectations of Construction Industry from Pass outs of Diploma Programme in Civil Engineering-A Case Study" 2007. Price : Rs. 60/-
9. Rastogi KM et. al "Research Study on Causes and Remedial Measure for High Failure Rate in First Year of Diploma Programmes in Polytechnics of Haryana" 2009. Price : Rs. 120/-



**ELECTRICAL ENGINEERING**

1. Rastogi KM "Work Book on Electrical Machines – I" NITTTR, Chandigarh.  
Price : Rs. 100/-
2. Chatterji S "Work Book on Electrical Machines – II" NITTTR, Chandigarh.  
Price : Rs. 150/-

**ELECTRONICS AND COMMUNICATION ENGINEERING**

1. Attri Sanjay and Sohi BS "Industrial Applications of Microcontrollers" Part I - Hardware Details (A Continuing Education Project).  
Price : Rs. 80/-
2. Attri Sanjay "Module on Digital Signal Processors and System Design" Part-I, 72p.  
Price : Rs. 125/-
3. Devi Swapna "Module on MATLAB - I : Basics of MATLAB." 86p. Price : Rs. 100/-

**EDUCATION AND EDUCATIONAL MANAGEMENT**

1. Kulkarni PD "Planning and Organising for Teaching and Learning".  
Price : Rs. 28/-
2. Kulkarni PD "Organising of Knowledge and Knowledge Structure" Price : Rs. 20/-
3. Kulkarni PD and Bhattacharya SK "Project on Development of Instructional Material-A Concept Paper".  
Price : Rs. 20/-
4. Kulkarni PD and Bhattacharya SK "Organising Extension Projects on Improvement of Instruction in Polytechnics-A Concept Paper". Price : Rs. 20/-
5. Kulkarni PD, Rajamony N and Bedi SP "Profile of Polytechnic; A Conceptual Framework".  
Price : Rs. 25/-
6. Raina KB, Bhattacharya SK, Ray AK and Radhakrishna M "Improved Methods and Technology for Teaching".  
Price : Rs. 20/-
7. Raina KB and Mittal LN "Network Approach for Quality Improvement of Polytechnics".  
Price : Rs. 20/-
8. Subramanian R and Dhir BM "Strategy for Project Formulation, Implementation and evaluation".  
Price : Rs. 20/-
9. Subramanian R and Dhir BM "Optimization of Resources". Price : Rs. 20/-

10. Kulkarni PD "Basic Concepts of System". Price : Rs. 20/-
11. Kulkarni PD, Krishnamurthi S, Subramanian R and Dhir BM "Resource Generator". Price : Rs. 20/-
12. Malhotra MM, Dhir BM, Likhi Poonam, Menon PN, Puri VP and Dutt Sunil "Determining the Manpower Spectrum of Technician Engineers in Public/Private Industry" NITTTR, Chandigarh, 1993, 46p. Price : Rs. 50/-
13. Malhotra MM, Menon PN (Mrs) Bedi SP and (Ms) Tulsi PK. "Status Study of Internal Assessment of Students in the Polytechnics of Haryana" NITTTR, Chandigarh, 1989, 29p. Price : Rs. 33/-
14. Malhotra MM & Tulsi PK "Scheme for Internal Assessment of Students in the Polytechnics of Haryana" NITTTR, Chandigarh, 1990, 26p. Price : Rs. 33/-
15. Malhotra MM, Bedi SP and Tulsi PK "Content Analysis of Question Papers set in the Board Examination of Haryana Polytechnics" NITTTR, Chandigarh, 1990, 22p. Price : Rs. 28/-
16. Malhotra MM, Tulsi PK and Kaur Satwant "A Case Study of YMCA Institute of Engineering, Faridabad" TTTI, Chandigarh, 1990, 94p. Price : Rs. 95/-
17. Malhotra MM and Menon PN. "A Study on the Factors Contributing to Students Indiscipline in the Polytechnics of Haryana States" TTTI, Chandigarh, 66p.
18. Malhotra MM, Gill HK, Dhir BM and Tulsi PK "A case Study on Status of Directorates of Technical Education of Uttar Pradesh and Rajasthan" NITTTR, Chandigarh, 1992, 50p. Price : Rs. 56/-
19. Bedi SP "Determining Internal Efficiency for the Polytechnics of Delhi" NITTTR, Chandigarh, December 1997. Price : Rs. 60/-
20. Bhattacharya SK and Tulsi PK "A Comparative Study of Participants' Evaluation of various Short Term Courses conducted by TTTI, Chandigarh, in Relation to their Instructional Strategies" 1997. Price : Rs. 30/-
21. Bhattacharya SK and Tulsi PK "Perceptions of Course Participants Regarding Effectiveness of Programmes offered Through Distance-cum-Contact Mode" 1998. Price : Rs. 20/-

- 22 Menon PN, Dutt Sunil and Dhir BM "Factors Contributing to Burnout of Teachers of Polytechnics of Haryana" 2001. Price : Rs. 50/-
- 23 Menon PN, Dutt Sunil and Dhir BM "A Study of the Factors Affecting Motivation of Students in Polytechnics of Haryana" 2001. Price : Rs. 50/-
- 24 Bedi SP, Dutt Sunil and Dhir BM "Study of Barriers to the Implementation of Flexibility (Scheme of Multi-Point Entry and Credit System) in Polytechnics of the State of the Haryana" NITTTR, Chandigarh, February 2001. Price : Rs. 40/-
- 25 Bedi SP and Dhir BM "Study on Evaluation of Expertise of Polytechnic Faculty of Himachal Pradesh in Setting Question Papers and Marking Answer Scripts", NITTTR, Chandigarh, July 2002. Price : Rs. 30/-
- 26 Tulsi PK "A Comparative Study of Teaching Effectiveness in the Polytechnics of Chandigarh" 2003. Price : Rs. 20/-
- 27 Tulsi PK "Teaching Effectiveness in the Polytechnics of Rajasthan" 2004. Price : Rs. 25/-
- 28 "Glimpses of Research" 2008. Price :Rs. 300/-

## **ENTREPRENEURSHIP DEVELOPMENT AND INDUSTRIAL COORDINATION**

1. Rathore BS, Saini JS, Sharma DD and Dhameja SK "Entrepreneurial Awareness Module" NITTTR, Chandigarh. Price : Rs. 60/-
2. Sharma DD "Excellence Through Quality Circles" NITTTR, Chandigarh. Price : Rs. 65/-
3. Saini JS, Dhameja SK and Gupta SK "Case Studies of NITTTR Trained Entrepreneurs" NITTTR, Chandigarh. Price : Rs. 30/-
4. Rathore BS, Dhameja SK and Gurjar BR, "Module on Energy Conservation in Industries Through Energy Audit". Price : Rs. 80/-
5. Sharma DD "Fundamentals of Entrepreneurship Development" NITTTR, Chandigarh, 2004. Price : Rs. 180/-

## **MECHANICAL ENGINEERING**

1. Proceedings of the National Conference on “Advances in Manufacturing Technology” held at NITTTR, Chandigarh from 09 -11 November, 2005.  
Price : Rs. 250/-
2. Proceedings of the National Conference on “Advances in CAD/CAM technology” held at NITTTR, Chandigarh from 22 - 24 March, 2006.  
Price : Rs. 250/-

## **MEDIA AND CONTINUING EDUCATION**

1. Sharma DD and Wats Rakesh “Module on Creating Total Quality Culture in a Organisation”.  
Price : Rs. 200/-
2. Sharma DD and Wats Rakesh “Module on Benchmarking for Excellence”  
Price : Rs. 150/-
3. Gahlot PS, Wats Rakesh and Anand YK “Module on Management of Continuing Education Programmes in Industry and Training Institutes”.  
Price : Rs. 125/-

## (D) CHARTS

(Price : Rs. 125/- Per Chart)

### APPLIED SCIENCE

#### Fourier Analysis Charts

In these charts, fourier components of a given periodic wave forms have been drawn. These charts also show that addition of fourier components results in the original wave forms.

1. Fourier Analysis of Square Wave
2. Fourier Analysis of Saw Tooth Wave
3. Fourier Analysis of Triangular Wave
4. Fourier Analysis of Half Rectified Wave
5. Fourier Analysis of Full Rectified Wave

### CIVIL ENGINEERING

Eleven Charts which explain important concepts, principles and procedures have been prepared. These charts can be used for effective instruction in theory class and in laboratory for continuous exposures of fundamental concepts and principles through exhibition on wall.

1. Flow Chart for manufacture of cement
2. Hydration of cement with different water cement ratio
3. Design curves for cement concrete mixes in relation to 7 days compressive strength of cement.
4. Grading limits for all-in-aggregates
5. Particle shape (Aggregate)
6. Generalised relationship between free water-cement ratio and compressive strength of concrete.
7. Relationship between free water-cement ratio and concrete strength for different cement strengths.
8. Road Signs (Mandatory / Regulatory Signs)
9. Road Signs ( Cautionary / Warning Signs)
10. General Layout of water supply scheme at water works.
11. Soil classification for engineering purposes (Double the standard size of chart)

(Price : Rs. 240/- for Sr. No. 11)

**ELECTRICAL ENGINEERING**

1. Parts of a Transformer
2. Lap Winding
3. Wave Winding
4. Three - Phase single –layer winding
5. Three - Phase double –layer winding
6. Parts of a Three Phase Induction Motor
7. Parts of a Synchronous Machine
8. Fleming's Left Hand and Right Hand Rules
9. A Transformer fitted with various Accessories
10. Parts of a D.C. Machine
11. Different Types of Power Generating Stations
12. Modern Methods of Speed Control of D.C. Motor
13. DC Shunt Motor Starters
14. Constructional Features of Fractional Kilowatt Motors
15. Summary of Motor Characteristics
16. Symbols for Contactor Control Circuit Elements
17. Direct on Line (DOL) Starter for three Phase Induction Motor
18. Star – Delta (Y -  $\Delta$ ) Starter for 3- Phase Induction Motor
19. Miscellaneous Measuring Instruments
20. Resistance Measuring Instruments
21. Basic Types of Electrical Measuring Instruments
22. Essentials of an Electrical Indicating Instruments
23. Single line diagram of Thermal Power Station

## E) EDUCATIONAL SOFTWARE TOOLS

### CIVIL ENGINEERING

#### 1. Hele – Shaw Experiment

**Price : Rs. 300/-**

Irrational flow past a circular cylinder: Theory, equations, experimental and Calculation procedures are given. User can get a fine mesh flow net for flow around a 5 cm dia circular cylinder. User can measure distances between successive equipotentials along the circular surface and enter them in a table. Dimensionless pressures plotted on graphs. Hints for discussion are given.

Useful to degree students in engineering.

#### 2. Weir

**Price : Rs. 300/-**

Flow over weirs: For three types of weirs, namely (1) Sharp-crested weir (for 10 discharges), (2) broad – crested weir (for 10 discharges) and (3) 90 Degree V – notch (8 discharges), calibration curves –  $Q_a$  vs  $h$  and  $Q_a$  vs  $Q_t$  – can be prepared, Log-Log graphs are also given. User can enter measured data in a table and compare with the standard graphs. Theory, equations, procedure and hints for discussion are given.

Useful to degree and diploma students in engineering.

#### 3. Drag

**Price : Rs. 300/-**

Drag of a circular Cylinder: Open – circuit wind tunnel and four circular cylinders of diameters of 3,4,6 and 8 cm are provided. Theory, Procedure and necessary data are given. Experiments can be performed for 3 valve openings using all the four cylinders. 8 cm cylinder can be rotated and pressures around its circumference can be measured. User can enter measured data of pressure and drag coefficients in a table/graphs, Log-log and polar graphs are given.

Useful to degree and diploma students in engineering

#### 4. Lift

**Price : Rs. 300/-**

Magnus effect and lift of an airfoil: By using open circuit wind tunnel Lift and drag forces on a 8 cm dia cylinder can be measured for 3 wind Velocities and 3 rotational speeds of the cylinder. User can be measured Values of drag and lift coefficient in a table/graph. Similarly user can do the experiment with an airfoil/graph at different angles of attack. Theory, equations, procedures and hints for discussion are given.

Useful to degree students in engineering.

**5. Bernoulli's Theorem****Price : Rs. 300/-**

Experimental verification of Bernoulli's Theorem: Piezometric heads and discharges can be measured with a convergent divergent section for seven discharges. Constancy of the total head in the convergent section and its decreasing trend in the divergent section can be demonstrated in a table/graph. Procedure and hints for discussion are given.

**6. Momentum Theorem**

Experimental verification of Momentum Theorem : Force on a vertical plate due to jet issuing from a nozzle is measured with a lever system and weights for two nozzles of 1 cm and 1.4 cm dia at end and for 7 discharges, measured forces can be compared with theoretical values in a table/graph. Hints for discussion are given.

Useful to degree and diploma students in engineering.

**7. Orifices and Mouthpieces****Price : Rs. 300/-**

Flow through Orifices and Mouthpieces : With the usual set-up of a tank with orifice on its side, user can determine the coefficients  $C_v$ ,  $C_c$  and  $C_d$  by constant-head and falling-head methods for 6 orifices sizes ranging from 0.5 cm to 3 cm dia. Coefficients of discharge of cylindrical, divergent and convergent mouthpieces can also be found. User can enter data in a table/graph. Theory, procedure and hints for discussion are given.

Useful to degree and diploma students in engineering.

**8. Reynold's Experiment****Price : Rs. 300/-**

Study of transition in pipe flow by using Reynolds's Apparatus: Using a glass pipe of 1 cm dia and 1m long and light oil, user can visualize flow in the pipe and in the efflux for different heads in the inlet tank and with/without a disturber at the inlet. Laminar, transition and turbulent states can be clearly recognized by using the colour band. Friction factor and Reynolds's number can be computed and entered in a table/graph. Procedure and hints for discussion are given.

Useful to degree and diploma students in engineering,



**9. Stokes' Law****Price : Rs. 300/-**

Experimental verification of Stokes' Law : By using a glass jar, two liquids - glycerin, water and five materials – lead, steel, aluminum, glass and lucite, fall velocities can be determined for different sizes of spheres, coefficient of drag and Reynold's number can be computed and entered in a table/graph. This is compared with standard curve. Theory, procedure and hints for discussion are given.

Useful to degree students in engineering.

**10. Pipe Friction****Price : Rs. 300/-**

Determination of friction factor for smooth and rough pipes: Liquids Water and light oil and 5 discharges. Friction factor and Reynold's number are determined in each case and entered in table/graph for comparison with standard curves, related equations, procedure and hints for discussion are given.

Useful to degree and diploma students in engineering

**11. Hydraulic and Energy Grade Lines****Price : Rs. 300**

Determination of Hydraulic Grade Line (HGL) and Total Energy Line (TEL) for pipe flow : User can have several options from 3 pipes of different dia to be connected in any order and 3 systems: (A) freely discharging into atmosphere (B) discharging into another tank and (C) discharging through a nozzle at end. Thereby the user can enter data in a table/figure for comparison. Procedure and hints for discussion are given.

Useful to degree and diploma students in engineering.

**12. Water Hammer****Price : Rs. 300/-**

Study of Water hammer phenomenon in pipe : For the given data of a pipe user can compute water hammer pressure and time limit to attain water hammer due to rapid closure. User can enter time of valve closure and observe the travel of positive and negative wave and reservoir, simultaneously accompanied by the expansion and contraction of the pipe. Procedure and hints for discussion are given.

Useful to degree and diploma students and teachers in engineering.

**13. Manning Coefficient****Price : Rs. 300/-**

Determination of manning coefficient for open channels : User has several options from 7 canal surfaces, 7 discharges and 4 bed slopes. Calculation procedure is given. User's measurements can be compared with computer results in a table/ conveyance graph. Hints for discussion are given.

Useful to degree and diploma students in engineering.

**14. Hydraulic Jump****Price : Rs. 300/-**

Study of elements of hydraulic jumps : In a flume with a horizontal bed, hydraulic jump is formed just below the sluice gate for 7 discharges. Depths before and after the jump and its length are measured with a pointer gauge. User can enter measured and calculated results for comparison with computer results in a table/graph. Hints for discussion are given.

Useful to degree student in engineering.

**15. Water-Surface Profiles****Price : Rs. 300/-**

Study of water-surface profiles below a sluice gate : Theory, equations and experimental procedure related to M2 and M3 curves below a sluice gate are briefly described. For 5 discharges X-Y coordinates of M2 and M3 curves can be measured and compared with actual curves. User can enter calculated results by Bressee or by direct-step method and compare with computer curves. User can also get the values of Bressee's function.

Useful to degree students in engineering.

**Note : Complete package of 15 experiments is available for Rs. 4000/- (Rs. Four Thousand only). There is no discount on these softwares.**

16. Sood Hemant "ConMD-2000 – Design of Concrete Mixes" NITTTR, Chandigarh  
Price : Rs. 5000/-
17. Sood Hemant "Flexi-2001 – Design of Flexible Pavement, Part- I using CBR Method".  
Price : Rs. 5000/-
18. Sood Hemant "Design of Flexible Pavement - Mcleod and Group Index Method Part-II".  
Price : Rs. 5000/-
19. Sood Hemant "Concrete Mix Design - ACI Method".  
Price : Rs. 5000/-

## (F) OHP TRANSPARENCIES

### CIVIL ENGINEERING

#### Material Designation :

OHP transparencies printed in three colours, mounted on ivory sheet and contained in plastic file.

#### Target Population

Civil engineering students of Polytechnics and Engineering Colleges.

#### a) Concrete Technology

Author	:	PS Gahlot
No. of transparencies	:	27
Price	:	Rs. 600/- per set.

#### b) Soil Engineering

Author	:	Ajay Duggal and S. Krishnamurthy
No. of transparencies	:	23
Price	:	Rs. 550/- per set

**(G) EDUCATIONAL VIDEO FILMS****APPLIED SCIENCE**

<b>Sr. No</b>	<b>Name of Video Film</b>	<b>Duration (Mins)</b>
1	Introduction to Laser	25'
2	Introduction to Fiber Optics	22'30"
3	Lesson -1 Force as an Effort	31'08"
4	Lesson - 2 Uniform Motion	40'15"
5	Lesson - 3 Non Uniform Motion Part-I	27'21"
6	Lesson - 4 Non Uniform Motion Part-II	30'
7	Lesson - 5 Scalars and Vectors	30'
8	Lesson - 6 Compositional Vectors Part-I	35'
9	Lesson - 7 Compositional Vectors Part-II	25'28"
10	Lesson - 8 Compositional Vectors Part-III	36'35"

**CIVIL ENGINEERING****a) Hydraulics**

1	Fluid Pressure	20'
2	Stability of Floating and Submerged Bodies	20'
3	Tube well : Operation and Maintenance	20'
4	Flow Measurement	21'
5	Reynolds Numbers	28'

**b) Building Construction**

1	Autoclaved Aerated Concrete – A Construction Material of the Future	18'
2	Safety in Building Construction	26'49"
3	Financial Consideration in Building Construction	23'
4	Design Consideration in Maintenance Masonry Structure	23'
5	Design Consideration in Maintenance RCC Structure	21'
6	Introduction to Building Construction Part-I	21'

Sr. No	Name of Video Film	Duration (Mins)
7	Building Construction Part-II (Columns, Beams and Slabs)	21'
8	Structural Timber - An Introduction Part I	22'
9	Structural Timber Part – II	24'
10	Wood Based Products – II (Batten Board and Flush doors)	18'
11	Factory Made Door Shutters	24'
12	Water - Proofing Treatment (COBA)	28'
13	Water - Proofing Treatment (Multi-Plast)	22'
14	Water - Proofing Treatment (Tar felt)	18'
15	Water Absorption of Bricks	12'35"
16	Compressive Strength of Bricks	13'46"
17	Dimensional Tolerance of Bricks	9'45"
18	Determination of Efflorescence of Bricks	7'46"

### c) Soil Engineering

1	Water Content Determination (oven drying method)	8'
2	Determination of Liquid Limit and Plastic Limit of Soil	15'27"
3	Liquid Limit Determination by Cone Penetrometer	26'
4	Grain Size Analysis of Soil	29'
5	Dry Density of Soil (sand replacement method)	13'
6	Dry Density of Soil (core cutter method)	11'
7	Direct Shear Test	17'
8	Unconfined Compression Test	17'
9	Standard Proctor Compaction Test (Water content - dry density relationship)	15'
10	Construction of Pile Foundation	18'
11	Standard Penetration Test	10'
12	Testing of Liquid Limit of Soil	22'
13	Soil Sampling	12'

Sr. No	Name of Video Film	Duration (Mins)
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#### d) Highway Engineering

1	Penetration Test of Bitumen	13' 20"
2	Softening Point of Bitumen	14'25"
3	Ductility Test of Bitumen	13'
4	Determination of Aggregate Impact Value Test	13'
5	Los Angeles Abrasion Value Test	16'
6	California Bearing Ratio (CBR) Value Test	16'
7	Construction of Roads–FLEXIBLE PAVEMENTS	17'
8	Earth Moving Equipment	21'
9	Aggregate Crushing Value Test	14'

#### e) Concrete Technology

1	Sieve Analysis of Coarse Aggregate	14'
2	Sieve Analysis of Fine Aggregate	14'37"
3	Determination of Flakiness Elongation Index	18'45"
4	Silt Content in Fine Aggregate	8'10"
5	Bulking of Fine Aggregate	10'47"
6	Specific Gravity and Water Absorption of Fine Aggregate	17'20"
7	Specific Gravity and Water Absorption of Coarse Aggregate	17'20"
8	Bulk Density and Voids of Coarse Aggregate	15'
9	Bulk Density and Voids of Fine Aggregate	12'10"
10	Compressive Strength of Cement Concrete	12'55"
11	Workability of Concrete–Slump Cone Test	9'26"
12	Workability of Concrete–Compacting Factor Test	10'05"
13	Testing of Cement Part–I	16'
14	Testing of Cement Part–II	28'
15	Testing of Cement Part–III	26'
16	Concrete Mix Design	20'

Sr. No	Name of Video Film	Duration (Mins)
17	Workability of Cement Concrete	17'
18	Introduction to Cement Concrete	16'

#### f) Public Health

1	City Environment	18'
2	Atmospheric Pollution	15'
3	Sewage Treatment	24'
4	From Source to the Tap	22'
5	Measurement of Dissolved Oxygen	22'
6	Turbidity Measurement	15'
7	Measurement of Conductivity	13'
8	Measurement of pH Value	18'
9	Measurement of Acidity	10'
10	Determination of Suspended Solids in Water	14'
11	Residual Chlorine Measurement	17'
12	Measurement of Alkalinity	13'
13	Measurement of Hardness of Water	18'
14	Water Analysis Kit	24'
15	Optimum Dose of Coagulant	12'

### COMPUTER SCIENCE AND ENGINEERING

1	Data Base Management System–1 Concept	21'
2	Data Base Management System–2 Entity Relationship Model	21'
3	Data Base Management System–3 Data Base Architecture	16'
4	Data Base Management System–4 Data Base Software	16'
5	Data Base Management System–5 Data Base Relationship Module Part –1	15'
6	Data Base Management System–6 Data Base Relationship Module Part–2	15'

Sr. No	Name of Video Film	Duration (Mins)
7	Data Base Management System–7 Data Base Relational Algebra Part–1	20'
8	Data Base Management System–8 Data Base Relational Algebra Part–2	19'
9	Multimedia	18'
10	An Introduction to Authoring Software (Part I)	28'
11	An Introduction to Authoring Software (Part II)	20'
12	Computer Architecture - I	28'
13	Computer Architecture - II	34'
14	Computer Architecture Lesson–2 Boolean Algebra and its Function	37'
15	Computer Architecture–Data Representation	27'
16	Computer Architecture–Building Computer Circuits	16'
17	Computer Architecture–Optimization of Circuits	15'
18	Computer Architecture–Control Circuits	18'10"
19	Computer Architecture–Binary Storage Devices	21'
20	An Introduction to Computer Aided Design (CAD)	19'

## CURRICULUM DEVELOPMENT

1	Objectives of Polytechnic Education	26'
2	Concept of Use	29'
3	Developing Healthy Work Culture in Technical Institutions	33'
4	Educational Objectives	27'
5	Vocational Education	18'
6	Effective Curriculum Implementation	19'

## EDUCATION AND EDUCATIONAL MANAGEMENT

1	Communication Skills	20'
2	Educational Technology–An overview	15'
3	Education for Employability	19'
4	Catering – A Vocation	25'
5	Health and Hygiene	27'



Sr. No	Name of Video Film	Duration (Mins)
6	Time Management	30'
7	Introduction To Classroom Communication	16'
8	Models for Effective Communication	16'
9	Barrier To Class Room Communication–Teacher Related	59'
10	Technical Education–Issue of Quality and Effectiveness in Changing Context	1hour 08'
11	Communication Essence of Life	16'02"
	Communication Skills–Be a Good Listener	22'16"
13	Emotional Intelligence	1 hour 10'

### EDUCATIONAL TELEVISION

1	Video 'Editing'	14'
2	Studio 'Lighting'	10'
3	'Camera' Operation	15'
4	TV Pattern Generator Use	18'
5	Video Script writing for Professional Subject	29'
6	Dynamic Framing	13'
7	Camera Installation Techniques – 1	19'
8	Camera Installation Techniques – 2	16'
9	FM Cues	14'
10	Colour TV Picture Tube	27'
11	Audio Recording Equipment and Operation	18'
12	Video Recording Equipment and Operation	22'
13	Camera Movements	22'
14	Lighting Techniques – 1	12'
15	Lighting Techniques – 2	13'
16	Presentation of TV Programmes	32'
17	Video Camera Technology–Part I (Light and Color)	13'
18	Video Camera Technology–Part II (Working Principle)	13'
19	Video Camera Technology–Part III	24'
20	Video Camera Technology–Part IV (CCD)	13'
21	Editing Techniques	12'

Sr. No	Name of Video Film	Duration (Mins)
22	Camera Angles	15'
23	An Introduction to Microphone	17'
24	Film on Continuity	25'
25	Script and Story Board Part-1	23'07"
26	Script and Story Board Part-2	17'09"
27	Script and Story Board Part-3	19'54"
28	Introductory to Edusat	48'54"
29	Edusat, Making Teaching-Learning Effective	29'
30	Video Server and Edusat Transmission	39'
31	Technical Education in India	20'
32	Destination India	14'
33	Clean Room Culture	12'
34	Initiation Programme for Libray User	17'
35	The City that Smiles Better-Chandigarh	27'
36	Humming Honey Maker	25'
37	Gift of Red Gold	15'
38	Linear Accelerator: An Indigenous Effort	18'
39	New Horizons in Technician Education	28'
40	The Big Question-Species Interaction	29'
41	Sunrise Over Chandigarh	32'
42	Ek Chhoti Si Katha (Hindi)	10'
43	Doctor Ki Dadi (Hindi)	15'
44	Touching Lives Through Vocational Education	25'
45	Kahey, Bina Kahey (Hindi)	14'26"
46	Textiles Non Apparel Application	19'
47	EVM-Electronic Voting Machine	49'31"
48	Learning From Mahatma Gandhi	33"
49	Concept of Architectural Progression	13'15"
50	National Seminar on- Scheme of the Community Polytechnic	35'
51	How to Write a Book : A Review	33'27"
52	Teachers in Today's Context	45'07"

Sr. No	Name of Video Film	Duration (Mins)
53	Privatization of Technical Education : A Panel Discussion	18'
54	Thalassemia-Fighting for the Red in the Blood	19'35"
55	Another Path for the Youth	29'

## ELECTRICAL ENGINEERING

1	Introduction to Motor Controls	18'
2	Principles of Contactor Control Circuit Design	30'
3	Direct on Line Starting of 3 phase Induction Motor	25'
4	Contactor Control Circuit Design (Reversing Starter)	22'
5	Contactor Control Circuit Design (Star-Delta Starter)	27'
6	Transformer	20'
7	Rotating Magnetic Field	38'
8	Domestic Electric Wiring System	20'
9	Introduction to Thermal Power Station	23'
10	Testing of Transformer for Efficiency	30'
11	Testing of Transformer for Voltage Regulation	20'
12	Phasor Diagram and Equivalent Circuit of Transformer Part - I	22'
13	Phasor Diagram on Load Part-II	21'
14	Equivalent Circuit of Transformer Part-III	21'
15	Power Electronics Component (Introduction, Resistors and Capacitors) Part-I	24'
16	Power Electronics Component (Diodes, Transistors and UJTs) Part-II	29'
17	Power Electronics Component (Thyristors Family-SCRs, DIACs and TRIACs) Part-III	30'
18	Power Electronics Component (General Purpose ICs) Part - IV	36'
19	Power Electronics Component (Testing of Electronic Equipment with a CRO) Part-V	22'
20	Power Electronics Component (V-I Characteristics of SCR) Part-VI	28'

Sr. No	Name of Video Film	Duration (Mins)
21	Power Electronics Component (V-I Characteristics of DIAC) Part-VII	20'
22	Power Electronics Component (V-I Characteristics of TRAIC) Part-VIII	27'
23	Power Electronics Component (V-I Characteristics of UJT) Part-IX	34'
24	Power Electronics Component (UJT as a Relaxation Oscillator) Part – X	10'

## ELECTRONICS AND COMMUNICATION ENGINEERING

1	D.C. Regulated Power Supply	18'
2	An Introduction to SCR (Silicon Controlled Rectifier)	25'
3	Introduction to Flip-Flops	14'
4	Logic Board	12'
5	An Introduction to Microprocessors	14'
6	Environmental Testing of Electronic Equipments	15'
7	Environmental Testing of Electronic Devices	20'
8	Introduction to Resistors – Variable Resistors	17'
9	Power Supply Maintenance	18'
10	Power Supply Testing	11'
11	Oscilloscope Maintenance (Preventive)	21'
12	Oscilloscope Maintenance (Supplies)	38'
13	Oscilloscope Maintenance (Horizontal stage)	22'
14	Oscilloscope Maintenance (Vertical Stage)	32'
15	Cathode Ray Oscilloscope	14'
16	Operation of an Oscilloscope	12'
17	Architecture of 8086 Microprocessor	19 '
18	Television Engineering–Picture Synchronization (Sync Separation, Differentiation and Integration)	1 hours 08'
19	An Emerging Trend in E - Learning	11'
20	Soft Computing Techniques for Antenna	50'
21	Sensors and Image Formation Part-1	54'28"

Sr. No	Name of Video Film	Duration (Mins)
22	Antenna and its Region of Separation	44'
23	Bacterial Foraging for Optimization	58'55'
24	Application of Neural Network in Analysis of Electromagnetic	58'
25	Neuro Spectral Technique	32'48"
26	Neuro Finite Difference Time Domain Technique (NFDTD)	42'54"
27	Cell Design Part-1 (Cell Structure)	19'06"
28	Cell Design Part-2 (Cell Construction)	29'05"
29	Digital Signal Processing	52'43"
30	Digital Filter Classification	42'16"
31	Discrete Time Signal and System	52'43"
32	Cognitive Complicity Metrics of Software	50'06"
33	Wavelet Techniques and Application Part-1	58'27'
34	Wavelet Techniques and Application Part-2	1'01"
35	Wavelet Techniques and Application Part-3	21'11"
36	CDMA System-An Introduction	20'52"
37	Power Control in CDMA System	20'54"
38	Soft Hand off in CDMA System	27'23"
39	Transformation in Teaching Learning Process Part-1	1 Hour 6'
40	Transformation in Teaching Learning Process Part-2	36'10"
41	Spread Spectrum Techniques	54'57"
42	Artificial Neural Network-An Introduction Part-1	41'
43	Artificial Neural Network-An Introduction Part-2	50'04"
44	Operating System	40'14"
45	Excitation Energy Transfer Near Reflecting Surface	57'41"
46	Broadband Wireless Access Technologies for Future Generation Mobile Wireless Networks- Strength and Limitations	1' 04"
47	Virtual Memory Management	54'

Sr. No	Name of Video Film	Duration (Mins)
48	Virtual Memory Management Part–1	27'38"
49	Virtual Memory Management Part–2 (Demand Paging and Process Creation)	27'22'
50	Bacterial Foraging and its Engineering Application	42'19"
51	Frequency Reuse	18'48"
52	CPU Scheduling	56'17"
53	Virtual Memory Management	56'
54	Antenna Engineering–An Introduction to Antenna	56'01"
55	Antenna Engineering–Antenna Parameters	47'45"
56	Sensors and Image Formation Part–II	54'28"
57	CPU Scheduling–Basic Concept, Algorithm & Simulation	50'
58	Microwave Micro Machined Integrated Circuits	43'
59	Evaluation of Operating System	47'46"
60	File System Management–File System Interface	59'53"
61	Sensors and Image Formation Part–III	42'13"
62	Process Management	49'56"
63	Space Technology Application for Change Detection Monitoring Earth Surface	39'
64	Speech Synthesis	18'
65	Recent trends in VLSI Design and Nano-Scale Device (Modeling and Simulation)	30'48"
66	Dead Lock	23'04"
67	Dead Lock Privations	30'45"
68	Cyber Crime	17'
69	Role of Soft Computing Teaching in Mobile Communication	28'21"
70	Next Generation Network and Challenges	18'23"
71	Snake Prey Optimization Techniques	16'
72	Motion Segmentation and Tracking Part–1	26'58"
73	Motion Segmentation and Tracking Part–2	36'28"

Sr. No	Name of Video Film	Duration (Mins)
74	Image Processing	50'05"
75	Antenna Array Part-1 Principal and Array Controlling Factors	30'
76	Antenna Array Part-2 Various Forms of Antenna Array	53'14"
77	Hyper Spectral Imaging	40'46"
78	Image Processing Fundamentals-Enhancement and Restoration Part-1	29'01"
79	Image Processing Fundamentals-Enhancement and Restoration Part-2	30'56"
80	Image Processing Fundamentals-Enhancement and Restoration Part-3	25'27"
81	Multirate Digital Signal Processing Part-1(a)	38'59"
82	Multirate Digital Signal Processing Part-1(b)	36'20"
83	Multirate Digital Signal Processing Part-2(a)	38'59"
84	Multirate Digital Signal Processing Part-2 (b)	44'38"
85	Buzz Words in Instrumentation Part-1	26'11"
86	Buzz Words in Instrumentation Part-2	30'35"
87	Buzz Words in Instrumentation Part-3	32'42"
88	Study of DIP Techniques to Detect Hotspots with Low Resolution Satellite Data Part-1	53'32"
89	Study of DIP Techniques to Detect Hotspots with Low Resolution Satellite Data Part-2	43'24"
90	Mathematical Morphology Part-1	38'25"
91	Mathematical Morphology Part-2	29'23"
92	Soft Approach to Intelligent System and Soft Computing Part-1	26'18"
93	Soft Approach to Intelligent System and Soft Computing Part-2	24'45"
94	Soft Approach to Intelligent System and Soft Computing Part-3	27'22"
95	Soft Approach to Intelligent System and Soft Computing Part-4	21'22"

Sr. No	Name of Video Film	Duration (Mins)
96	Soft Approach to Intelligent System and Soft Computing Part-5	19'42"
97	Soft Approach to Intelligent System and Soft Computing Part-6	20'34"
98	Soft Approach to Intelligent System and Soft Computing Part-7	19'13"
99	Design Development of Active Antenna	27'43"
100	Some Non Standard Antenna Examples	28'09"
101	Antenna Experiment Operation and Receiving Mode	45'52"
102	Introduction to Instruction Set	12'35"
103	Information Fusion	38'09"
104	Evolutionary Algorithms	1 Hour 54"
105	Agro Products Inspection using Colour Image Processing Part-1	53'24"
106	Agro Products Inspection using Colour Image Processing Part-2	43'38"
107	Image Processing-Part -1	59'02"
108	Image Processing Part-2	47'40"
109	Digital Signal Processing and Applications Part-1	27'58"
110	Digital Signal Processing and Applications Part-2	23'34"
111	Digital Signal Processing and Applications Part-3	30'07"
112	Digital Signal Processing and Applications Part-4	17'35"
113	Digital Signal Processing and Applications Part-5	29'23"
114	Complementing Technologies- A Review of Some Important Aspects Part-I	19'33"
115	Complementing Technologies- A Review of Some Important Aspects Part-II	34'08"
116	Image Processing Part-III	32'33'
117	Fusion Imaging Applications in Neurosciences	29'44"
118	Computed Tomography-Principle, Various Types and Advantages	49'38"
119	Microwave Measurement Techniques Part-1	30'38"



Sr. No	Name of Video Film	Duration (Mins)
120	Microwave Measurement Techniques Part-2	36'21"
121	Satellite Communication–Antenna Technology	51'
122	TMS-320C5510–Architecture and Programming Part-I	1 hour 15'
123	TMS-320C5510–Architecture and Programming Part-II	37'
124	Planar Antenna	1 hour 16'
125	Feeds for Printed Antennas	1 hour 15'
126	Concept, Classification and Types of Maintenance Part-I	56'21"
127	Concept, Classification and Types of Maintenance Part-II	42'15"
128	Concept, Classification and Types of Maintenance Part-III	40'
129	Soft Computing Part-1	57'57"
130	Soft Computing Part-2	33'11"
131	Bacterial Foraging-Optimization Part-1	32'41"
132	Bacterial Foraging-Optimization Part-2	42'01"
133	Repair and Maintenance of VCD Part-1	27'13"
134	Repair and Maintenance of VCD Part-2	25'36"
135	Repair and Maintenance of Audio Tape Recorder	24'55"
136	Repair and Maintenance of Monitor	40'
137	Particle Swarm Optimization Part-1	58'40"
138	Particle Swarm Optimization Part-2	59'
139	Multi-Objective Optimization	37'30"
140	Automatic Rice Classification Using Flat Bed Scanner and Image Processing	1"12"
141	ECG-Signal Processing-Part-1	01 01'22"
142	ECG-Signal Processing-Part-2	01 07'13"
143	Software Defined Radio Issues and Challenges	34'15"
144	Wavelet Transforms and its Application	55'18"
145	Geometry of Hexagonal Cells	18'48"
146	Television Components Layout	29'33"
147	Television Engineering – Purjon Kee Roop Rekha (Hindi) Part-I	22'03"
148	Television Engineering – Purjon Kee Roop Rekha (Hindi) Part-II	21'52"

Sr. No	Name of Video Film	Duration (Mins)
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### MICROPROCESSOR (STEPS) PACKAGE OF 26 LESSONS

1	Introduction to STEPS–Programme on Microprocessor	15'
2	Lesson 1, Concepts and Building Blocks	31'
3	Lesson 2, Algorithmic Sequential Machines (ASM)	25'
4	Lesson 3, Internal Architecture of a Microprocessor	26'
5	Lesson 4, Memory and Memory Organization	28'
6	Lesson 5, Elements of Programming–I	26'
7	Lesson 5A, Elements of Programming–I	30'
8	Lesson 6, Data Transfer and Arithmetic Group of Instructions for 8085A	28'
9	Lesson 7, Logic and Branch Group for Instructions for 8085A	27'
10	Lesson 8, Stacks I/O and Machine Control Group of Instructions for 8085A	29'
11	Lesson 9, Programming Techniques	28'
12	Lesson 10, Interfacing Input/Output Devices	25'
13	Lesson 11, Memory Interfacing	27'
14	Lesson 12, Analog Signal Interfacing	28'
15	Lesson 13, Interrupts	29'
16	Lesson 14, Interrupt Controller	28'
17	Lesson 15, Serial Communication in 8085 and USART IC-8251	27'
18	Lesson 16, Parallel Interface IC–8255	28'
19	Lesson 17, Programmable Interval Timer/Counter IC- 8253	21'
20	Lesson 18, Direct Memory Access and ADMA Controller IC-8257	27'
21	Lesson 19, Programmable Keyboard and Display Interface IC-8279	27'
22	Lesson 20, System Design – General Consideration Based System	26'
23	Lesson 21, System Design, Configuration and Integration	30'

Sr. No	Name of Video Film	Duration (Mins)
24	Lesson 22, Fault Diagnosis and Maintenance of Microprocessor Based System	25'
25	Lesson 23, Other 8 Bit Microprocessors & Microcontrollers	24'
26	Lesson 24, 16 Bit Microprocessors and Current Trends	28'

## ENTREPRENEURSHIP DEVELOPMENT AND INDUSTRIAL CO-ORDINATION

1	Marketing Management	26'
2	Career Opportunities for Engineering Diploma Holders	22'
3	Technical Education and Career Opportunities for Women	25'
4	Self-Analysis Through Johari Window	23'
5	Self-Analysis Through Life Scripts / Positions	21'
6	Entrepreneuring and Entrepreneurship	17'
7	Transactional Analysis Part-I	38'
8	Transactional Analysis Part-II	22'
9	Time Management Part-I	33'
10	Time Management Part-II	28'
11	Time Management Part-III	24'
12	Marketing Strategies Part-I	33'
13	Marketing Strategies Part-II	36'
14	Job Avenues through Career Opportunities Fairs	21'
15	Creativity and Problem Solving Part-I	27'
16	Creativity and Problem Solving Part-II	21'
17	Creativity and Problem Solving Part-III	26'
18	Communication Part-I	33'
19	Communication Part-II	18'
20	Communication Part-III	12'
21	Motivation Part-I	18'
22	Motivation Part-II	28'
23	Motivation Part-III	28'
24	Production Planning and Control Part-I	33'
25	Production Planning and Control Part-II	26'

Sr. No	Name of Video Film	Duration (Mins)
26	Art of Training	14'
27	Stress Management	1'10"
28	Social and Business Skills in Industry	1'24"
29	Philosophy of Managing Self Part-I	51'50"
30	Philosophy of Managing Self Part-II	40'48"
31	Entrepreneur in Action	26'

## MECHANICAL ENGINEERING

1	Domestic Refrigerator	12'
2	Surface Grinding	30'
3	Metal Forming	20'
4	Lathe-An Introduction (Part I)	18'
5	Lathe Part-II (Chucks and Collets)	18'
6	Lathe Part-III (Between Centres : Steady Rest : Face Plate)	16'
7	Shaper (Shaping Machine)	15'
8	Super Finishing	28'
9	Carburetor : The Heart of An Automobile	22'
10	Foundry : An Introduction	20'
11	Screw Threads	18'
12	Electro Discharge Machining	10'
13	Refrigeration Trainer	07'
14	Shape Memory Alloys	12'
15	Shop Floor Safety	17'
16	Introduction to Robotics -Kinematics of Robot Manipulator	56'15"
17	Air Conditioning	7'

## MEDIA CENTRE

1	Types of Media and Media Selection	16'
2	Developing Communication Skills-An introduction and Process	36'03"
3	Developing Communication Skills-Analyzing the Element	35'39"
4	Slides and Film Strips	28'

Sr. No	Name of Video Film	Duration (Mins)
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## RURAL DEVELOPMENT

1	Agricultural Implements	24'
2	Scheme of Community Polytechnic	12'
3	Smokeless Chulha (Hindi/English)	18'
4	Energy for All (Hindi/ English)	26'
5	Rural Housing Part-1	12'
7	Carpentry Tools	27'
8	Job Opportunities for Women	23'
9	Tube-well operation and Maintenance	24'
10	Humming Honey Maker-English	26'27"
11	Solar Water Heating System	18'
12	Improved Agricultural Implements	24'
13	Village and Small Industries-English	27'
14	Village and Small Industries-Hindi	27'
15	Rural Sanitation	24'
16	Bio Gas Technology	26'
17	An introduction to PRA Techniques	25'
18	PRA / PRA Exercise (Part -1)	31'
19	PRA / PRA Exercise (Part-2)	14'
20	PRA / PRA Exercise (Part-3)	16'
21	Organic Farming-A Holistic Approach (Hindi)	15'47"
22	Organic Farming-From East to West (English)	11'47"
23	Organic Farming-From East to West (Punjabi)	11'47"
24	Organic Farming-An Enterprise (Hindi)	21'10"
25	Organic Farming-Boon for Farmers (Hindi)	10'40"
26	Organic Farming-Vocation for Women (Hindi)	15'54"
27	Soldiers of Soil (English)	15'12"
28	Soldiers of Soil-Vasundhra Ke Doot (Hindi)	15'12"
29	Organic Farming (Jaivik Kheti)-(Hindi)	11'4"
30	Towards Sustainable Agriculture	23'
31	Jaivik Kheti Kee Ore-(Hindi)	10'

Sr. No	Name of Video Film	Duration (Mins)
32	Tractor - Shaping Path for Agricultural Development	17'
33	Agriculture Waste Management for Sustainable Agriculture-English	20'48"
35	कृषि अवशेष एवं कार्बनिक पदार्थों का प्रबन्धन (हिन्दी) Agriculture Waste Management for Sustainable Agriculture – Hindi	20'48"
36	Sada Bahaar Kheti Layee Rehnd Khoond Di Varton (Punjabi) Agriculture Waste Management for Sustainable Agriculture (Punjabi)	20'31"
37	Rural Housing Part-II Low Cost Housing	10'

### Centre for Physically Challenged Persons

1	Disability–A Challenge (English)	32'
2	Disability–A Challenge (Hindi)	32'
3	Pehchaan (Hindi)	28'
4	Assistive Devices for the Physically Challenged	21'32"
5	Assistive Devices for the Visually Impaired	21'53"
6	Assistive Devices for the Hearing Impaired	26'
7	Care of the Mentally Challenged	28'
8	A Cultural Programme by Differently Abled Persons	24'
9	Technical and Vocational Education for the Disabled	26'52"
10	Viklaangata Ek Chunauti (Hindi)	12'
11	Ehsaas–(Hindi) -A film on disabled persons	11'
12	Viklaang Saar–Hum Sabhi Viklaang Hein (Hindi)	10'
13	Viklaangata Saar–Ghar, Shikshak Aur Smaaj Ka Kartavya	10'

## (H) CHARGES FOR CDs, DVDs, AND VHS TAPES

No of CDs	Industry/ Other Organisations			Private Academic Institutions			Govt. Academic Institutions		
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005	4000	4500	5000	2750	4000	4000	2000	2500	2500
010	7000	7500	8000	5000	7500	7500	3500	4500	4500
020	12000	13000	13500	9000	14000	14000	6000	8000	8000
040	20000	22000	22500	16000	26000	26000	10000	14000	14000
060	24000	27000	27500	21000	36000	36000	12000	18000	18000
080	32000	36000	36500	24000	44000	44000	16000	20000	20000

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