

# PROSPECTUS AND SYLLABUS

ASSOCIATESHIP IN INFORMATION SCIENCE  
(A Master's Degree Course)  
(2004-2006)



**NISCAIR**  
**NATIONAL INSTITUTE OF SCIENCE COMMUNICATION AND**  
**INFORMATION RESOURCES**  
(Council of Scientific and Industrial Research)  
14 Satsang Vihar Marg, New Delhi - 110 067. INDIA

Price Rs. 100/-

## CALENDAR OF EVENTS

<i>Last date for applying</i>	<i>June 04, 2004</i>
<i>Admission Test</i>	June 17, 2004
<i>Interview</i>	3rd week of July, 2004 [Dates to be announced]
<i>Declaration of Result</i>	1st week of August, 2004
<i>Last date for Payment of Course Fee</i>	August 23, 2004
<b><u>Course Work</u></b>	
<i>First Semester</i>	September 01, 2004 - January 31, 2005
Mid-Semester Test I	October 26-29, 2004
Mid-Semester Test II	December 13-15, 2004
<i>Semester-I Examination</i>	January 17-28, 2005
<i>Mid-year break</i>	February 01-28, 2005
<i>Second Semester</i>	March 01 - July 29, 2005
Mid-Semester Test I	April 12 - 15, 2005
Mid-Semester Test II	May 25 - 27, 2005
<i>Semester-II Examination</i>	July 18 - 29, 2005
<b><u>Dissertation Work</u></b>	
<i>Selection and Finalisation of Dissertation Topics</i>	August 01 - 12, 2005
<i>Annual Break</i>	August 15 - August 31, 2005
<i>Third Semester</i>	September 01, 2005 - February 28, 2006
Submission of Dissertation Outline	October 07, 2005
Submission of Progress Reports	November 30, 2005 February 28, 2006
<i>Fourth Semester</i>	March 01, 2006 - August 31, 2006
Submission of Progress Reports	March 31, 2006 June 30, 2006
Submission of Dissertation	August 31, 2006

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## PROSPECTUS

### 1. About NISCAIR

National Institute of Science Communication and Information Resources (NISCAIR), a constituent establishment of Council of Scientific & Industrial Research (CSIR), is a new set up formed by merger of Indian National Scientific Documentation Centre (INSDOC) and National Institute of Science Communication (NISCOM) with effect from September 30, 2002. It embodies synergy of the core competencies and resources of INSDOC and NISCOM. INSDOC came into existence in 1952 and was engaged in providing S&T information and documentation services through myriad activities such as abstracting and indexing, library automation, access to international information sources, human resource development, consultancy in setting up modern library-cum-information centres and so on. Now with the formation of NISCAIR the multifaceted activities of INSDOC and NISCOM have been amalgamated, making the newly emerged institution capable of providing best platform for developing human resources using available modern ICT infrastructure in an effective manner.

The **Mission Statement** of the NISCAIR is : *“To become the prime custodian of all information resources on current and traditional knowledge systems in science and technology in the country and to promote communication in science to diverse constituents at all levels, using the most appropriate technologies”.*

To accomplish this mission, the Education, Training and Translation Group (ETTG) of NISCAIR assumes the major responsibility of executing the related **mandate** i.e. *“To develop human resources in the field of science communication, library, documentation and information science, and S&T information management systems and services”.*

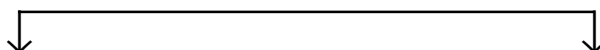
Erstwhile INSDOC started offering an advanced training course in Documentation and Reprography in August 1964. In 1977, the course was renamed as Associateship in Information Science keeping in mind the changing context of information requirements. The course has been revised from time to time in the last thirty nine years to suit the changing needs of the country and to incorporate the expanding dimensions of documentation and information science. In the light of the new situation developing in the country and the region, the course has now been thoroughly redesigned to suit not only Indian needs, but also the needs of other developing countries. From the Academic Session 1999-2001, one seat has been earmarked for each nation in the South Asian Association for Regional Cooperation (SAARC).

The Education Division of ETTG of NISCAIR organises and oversees the activities related to the Associateship in Information Science (AIS) programme which is a two year advanced Master's degree level academic course in Information Science & Documentation. In addition, the Training Division of ETTG conducts various short-term courses and attachment training programmes in various areas of information technology and computer applications of library and information science. NISCAIR is also designated as Programme Study Centre for several courses of Indira Gandhi National Open University (IGNOU), such as Master in Computer

#### 4. COURSE STRUCTURE



DURATION - 2 YEARS



First Year  
Class Room Instructions  
(Semester I & II)

Second Year  
Dissertation Work  
(Semester III & IV)



Number of Papers	10
Semester-I	5
(5 Compulsory Papers)	
Semester-II	5
(4 Compulsory & 1 Elective Paper)	

Dissertation Synopsis
Research work
Progress Report
Preparation of Dissertation
Submission of Dissertation



Formal Lectures	15 Hrs/Week
Practical Training	15 Hrs/Week
Tutorials	2 Hrs/Week
On-the-job Training	2 Hrs/Week
Seminars	2 Hrs/Week

Mid- Semester Tests - 4

Semesters Final Examinations - 2

Applications (MCA), Bachelor in Computer Applications (BCA), Master of Library & Information Science (MLISc) and Bachelor of Library & Information Science (BLISc).

The Education and Training Divisions of NISCAIR, thus are dedicated to the qualitative educational facilities in the core disciplines of the institute inducting students from India, SAARC and neighbouring countries

## 2. BOARD OF STUDIES

The course is run under the overall guidance of Board of Studies consisting of eminent information professionals, industry personnel, planners and academicians of the country. The members of the present Board of Studies are:

- |   |                     |
|---|---------------------|
| 1. Director<br>National Institute of Science Communication and<br>Information Resources (NISCAIR)<br>14-Satsang Vihar Marg<br>New Delhi-110 067 | Ex-officio Chairman |
| 2. Dr. T R Kem<br>Additional Secretary<br>University Grants Commission<br>Bahadur Shah Zafar Marg<br>New Delhi – 110 002                        | Member              |
| 3. Dr. Mohinder Singh<br>Director<br>Defence Scientific Inf. and Documentation Centre<br>(DESIDOC)<br>Metcalf House<br>Delhi-110 054            | Member              |
| 4. Dr. P N Razdan<br>Advisor<br>All India Council of Technical Education<br>IG Stadium, New Delhi – 110 002                                     | Member              |
| 5. Dr. Naresh Kumar<br>Scientist G<br>Institute of Microbial Technology (IMT)<br>Sector - 39 A, Chandigarh – 160 036                            | Member              |

- |     |   |                             |
|-----|---|-----------------------------|
| 6.  | Prof. O P Goyal<br>Dean, School of Management and<br>School of Academic Research<br>Guru Gobind Singh Indraprastha University<br>Kashmere Gate, Delhi – 110 006             | Member                      |
| 7.  | Prof. P B Mangla<br>Emeritus Professor<br>EB-210 Maya Enclave<br>New Delhi – 110 064  | Member                      |
| 8.  | Prof. Karmeshu<br>School of Computer & Systems Sciences<br>Jawaharlal Nehru University<br>New Delhi – 110 067   | Member                      |
| 9.  | Prof. S B Ghosh<br>School of Library & Information Science<br>Indira Gandhi National Open University (IGNOU)<br>Maidangarhi<br>New Delhi – 110 068                          | Member                      |
| 10. | Mr. Sanjeev Kumar<br>Director, Higher Education<br>Dept. of Secondary and Higher Education<br>Ministry of Human Resource Development<br>Shastri Bhavan, New Delhi – 110 001 | Member                      |
| 11. | Head, ETTG<br>National Institute of Science Communication and<br>Information Resources (NISCAIR)<br>14, Satsang Vihar Marg<br>New Delhi – 110067                            | Ex-officio Member Secretary |

### **3. OBJECTIVES**

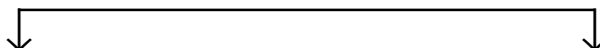
The objectives of the course are to provide the students with

- an understanding and appreciation of the vital and pervasive role of information as an essential input in all developmental activities;
- a thorough insight into all techniques of information handling with special emphasis on the application of information technology;
- full comprehension of the global nature of information for proper cooperation and coordination among countries; and
- necessary skills and information technology background for designing, implementing, operating and managing information systems

#### 4. COURSE STRUCTURE



DURATION - 2 YEARS



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(Semester I & II)

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Dissertation Work  
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Mid- Semester Tests - 4

Semesters Final Examinations - 2

## **5. ACADEMIC PROGRAMME**

The medium of instruction of the course is English. The course covers comprehensively all aspects of information science and technology with particular emphasis on the practical aspects. The academic programme is as below:

### **FIRST YEAR**

#### ***SEMESTER I***

Paper 1	Information and Society
Paper 2	Information Sources
Paper 3	Information Processing and Organisation
Paper 4	Information Systems and Networks
Paper 5	Fundamentals of Information Technology

#### ***SEMESTER II***

Paper 6	Information Products and Services
Paper 7	Data Processing and Management Techniques
Paper 8	Computer Networking: Technology and Services
Paper 9	Information System Management
Paper 10	Elective (Any one of the following)
	1) Informetrics
	2) Technical Writing
	3) Research Methodology
	4) Business Information Systems
	5) Medical Information Systems
	6) Patent Information Systems

### **SECOND YEAR**

#### ***SEMESTERS III AND IV***

Paper 11	Dissertation
----------	--------------

#### **5.1 Selection of Topics for Dissertation**

- a) An Expert Committee comprising inhouse faculty members and external experts decides the topics of dissertations of the students. The Committee also decides the Guides (both external and internal) in consultation with the students.
- b) A student may choose an external guide for his dissertation with prior approval of the Expert Committee. In such a case, the Committee will nominate a Scientist of NISCAIR as the Internal Guide.

## 5.2 Colloquia and Seminars

An important feature of the course is the periodical holding of colloquia and seminars which provide opportunities to the students for debating, articulation and collective thinking. Besides, the students may also have opportunities to participate in seminars, workshops and short term courses conducted by NISCAIR from time to time.

## 5.3 Field Work

Opportunities will be provided to the students to visit, observe and study the working of a variety of institutions such as documentation and information centres, libraries, government departments connected with industrial development, planning, etc.

## 6. FACULTY AND STAFF

The course is conducted by well-trained and experienced teachers working in the Education and other Divisions of NISCAIR. The services of experts from inside and outside the organisation are also availed for running the course.

## 7. ADMISSION

- a) The minimum qualification for admission to the course is a minimum of 50% aggregate marks in:
  - i) Master's degree; or
  - ii) Four-year plus degree like B.E./M.B.B.S.; or
  - iii) Bachelor's degree *plus* B.Lib.Sc. *plus* one year of relevant experience after B.Lib.Sc.

*Note: Students who have appeared in the final year examination of M.A./M.Sc./M.Com./BE/MBBS will also be eligible for applying for admission to the Course. However, their cases will be considered only in the event of their results being declared before the final selection and their obtaining a minimum of 50% aggregate marks.*

- b) Candidates should be below forty years of age as on August 01, 2004. For sponsored candidates, the age limit may be raised to 50 years at the discretion of the Chairman of the Board of Studies.
- c) Barring foreigners, all candidates will have to appear in an admission test to be held simultaneously in New Delhi, Kolkata, Mumbai and Bangalore. The admission test will be of two-hour duration and is intended to test the candidates' skill in English language, general knowledge, basic mathematics and logic to ascertain their aptitude towards information science. Candidates found successful in the admission test

will be called for interview for final selection in the aforesaid cities. Mumbai will be the centre for test and interview if sufficient number of applicants are there, otherwise Bangalore will also be centre for the applicants of Mumbai region. The result of the admission test and later the list of selected candidates will be displayed on the notice board at NISCAIR and will also be made available on Internet (<http://niscair.res.in>). In case of any dispute on the selection of candidates, the decision of Director, NISCAIR will be final and binding.

- d) In all, there are 25 seats for admission. Out of these, three seats are reserved for candidates belonging to SC/ST category and these candidates will be considered for admission provided the minimum admission requirements are fulfilled by them. If no suitable SC/ST candidates are found, the seats will be treated open.

In addition, there are seven seats for candidates from SAARC countries. For these candidates, there will be no written test, but eligibility conditions as at 6(a) will apply.

- e) Selected candidates will have to deposit the requisite fees within the stipulated date failing which the seat will be offered to candidates on the waiting list.

- f) **How to apply:** The prospectus and the application form can be obtained from **Head, ETG** from **May 06, 2004** onwards in person or by sending a self addressed envelope (25cm x 20 cm size) affixing Rs.25/- postage stamps and enclosing a DD/Postal Order for Rs.100/- drawn in favour of **Director, NISCAIR**, payable at **New Delhi**. Prospectus and application form can also be downloaded from our website at <http://niscair.res.in>. Completed application form should be submitted latest by **June 04, 2004** alongwith,

*either*

(i) The original receipt of Rs. 100 provided for prospectus purchase plus a demand draft/postal order of Rs. 100.

*or*

(ii) A demand draft/postal order of Rs. 200 for those who have downloaded the prospectus and application form.

Demand draft/postal order should be drawn in favour of **Director, NISCAIR** payable at **New Delhi**.

## **8. ATTENDANCE**

A candidate will be debarred from appearing in the examination if he/she fails to get a minimum of 75% attendance in each paper during the formal period of the course.

## **9. EXAMINATION**

Students fulfilling all the requirements including attendance will be permitted to appear in the examinations at the end of each semester.

## **10. EVALUATION**

The performance of the students during the first year is evaluated by written examination,

sessionals and seminars. Each theory paper along with its corresponding sessionals carries 100 marks (50+50). The two seminars (one in each semester) carry 50 marks (25+25). The dissertation submitted by the student at the end of the second year carries 200 marks. The total marks thus work out to be 1250.

## **11. ELIGIBILITY FOR THE AWARD OF ASSOCIATESHIP**

*To qualify, a student should secure:*

- a) a minimum of 40% marks in each theory paper and 50% in each sessional,
- b) a minimum of 50% marks in the aggregate in each paper,
- c) a minimum of 50% marks in the aggregate in dissertation, and
- d) a minimum of 50% marks in the aggregate.

*The grades awarded are:*

Distinction	75% and above
First Class	60% and above, but less than 75%
Second Class	50% and above, but less than 60%

A student not securing the qualifying marks mentioned above in the first chance may reappear in the respective paper/s and/or sessionals and resubmit dissertation as the case may be. The date of completion of the course will be reflected in the marksheet/certificate.

The dissertation is to be submitted by each student on or before 31st August of the due year. If the student fails to submit the dissertation by the due date, he/she has to apply for extension giving genuine reasons for which he/she could not complete the work. The competent authority may extend upto a maximum period of one year after reviewing the progress of the student. The extension is not automatic. The student is also required to submit the progress report as mentioned in the calendar.

If a student fails to submit the dissertation even after the extended period, he/she can submit it within four years from the date of commencement of the course. In this case, the student will be awarded only a II class even if he/she obtains a first class or distinction marks in aggregate.

Dissertation submitted after four years will, in no case, be accepted for evaluation.

## **12. REAPPEARANCE AT THE WRITTEN EXAMINATION**

Students who fail to qualify the theory papers in the first attempt may reappear in the

individual papers in a semester, but they will have to reappear in these papers within a period of 4 years from the date of commencement of the course. The examination will be based on the syllabus of the current year. The number of chances for reappearance in any paper is restricted to a maximum of two. A fee of Rs. 200/- for each paper will be charged. A fee of Rs. 1500/- will be charged for reappearing in all the papers of a particular semester.

### **13. AWARD OF THE ASSOCIATESHIP**

NISCAIR will award the Associateship in Information Science to the successful students.

### **14. ACCREDITATION**

The Government of India and the Union Public Service Commission have recognised this course as equivalent to a Master's Degree for recruitment to superior posts under the Central Government where specialisation in Information Science and Documentation is required. The universities like Andhra, Burdwan, Dharwar, Gulbarga, Jadavpur, Jiwaji, Kerala, Kurukshetra, Sardar Vallabh Bhai Patel, Vidyasagar, Kolkata, IGNOU have recognised this course as equivalent to M.L.I.Sc. for conducting research leading to the award of doctoral degrees.

### **15. FEE**

The total fee for the entire course is Rs. 5,000/-, which is payable at the time of admission. The fee for students from the countries of the South Asian Association for Regional Cooperation (SAARC) is Indian Rs. 15,000/- and fee for students from other foreign countries is US \$ 2,000/-. Fee once deposited will not be refunded.

### **16. CALENDAR**

The course is of two years duration. While the first year is the formal training period requiring compulsory attendance, the second year is devoted to the preparation of dissertation. The calendar of events is given inside the front cover page of the Prospectus.

### **17. SCHOLARSHIPS**

- a) The award of the scholarships will be recommended by the Scholarship Award Committee, on the basis of students performance in the scholarship test.
- b) Each scholarship is of the value of Rs. 1,000/- per month and is awarded for a maximum

period of 9 months only.

- c) The number of scholarships to be awarded will not exceed 40% of the candidates applying for scholarship.
- d) The progress of the scholarship holders will be reviewed regularly by the Scholarship Award Committee.
- e) The scholarship may be terminated without assigning any reason whatsoever.

### **18. DISQUALIFICATION**

A student may be disqualified from the course at any time under any one or more of the following circumstances:

- a) Regular non-submission of assignments
- b) Regular non-appearance in class tests/seminars
- c) Unsatisfactory performance during the course
- d) Less than 75% attendance in each paper during the formal period of training
- e) Indulging in unfair means during examination
- f) Misbehaviour and misconduct within or outside NISCAIR premises.

### **19. DIVISIONAL FACILITIES**

The Info-Tech laboratory of ETTG is well equipped with over 80 networked Pentium systems and a good number of audio-visual equipments. The division has Internet and LAN facilities. Every student is given adequate computer time to develop good command over application packages like MS OFFICE, FOXPRO, CDS/ISIS, programming languages and operating systems.

CD-ROM facility to search some of the International Databases like SCISEARCH, LISA and many others is also available.

### **20. CENTRAL FACILITIES**

Students are provided hands-on experience in on-line searching of international databases through DIALOG, and, STN access available at NISCAIR.

The other facilities available at NISCAIR include Electronic Mail, Internet Access on dedicated LAN, Electronic Access to Full Text Journals, Document Scanning, Photocopying equipments, etc.

In addition to an extensive collection of reference material on science and technology, the National Science Library of NISCAIR has a very comprehensive collection of documents in library science, documentation, information science and technology, computer science, communication, reprography and other media technologies, management, etc. The Electronic Library Division

of NISCAIR has over 2000 full-text Journals on CD-ROM. The students have a unique opportunity to make use of this excellent collection.

SAARC Documentation Centre (SDC) has been set up at NISCAIR for exchanging S&T information among SAARC nations and has been functioning since January, 1994. As part of various programmes planned by SDC for execution during the next 2-3 years, human resource development in the area of information science and technology in the SAARC region has been accorded top priority.

## **21. HOSTEL FACILITIES**

Limited hostel facilities are available to a few students from outside Delhi.

## **22. EMPLOYMENT OPPORTUNITIES**

The course provides bright employment opportunities to the students. Students who have emanated from this course are now heading Library/Information Divisions of many CSIR laboratories, S&T institutes, and corporate sectors in the country and abroad.

## **23. VENUE**

The course will be conducted at NISCAIR, Satsang Vihar Marg premises which is located to the south of IIT Campus and east of Jawaharlal Nehru University Campus near Qutab Hotel.

## **24. CONTACT PERSON**

*For all correspondences, please write to :*

Mr. V.K. Gupta

Head, Education Training and Translation Group

NISCAIR, 14 Satsang Vihar Marg

New Delhi 110 067 (INDIA)

Phone: Direct: 91-011-2686 3521 EPBAX: 26560143/Extn. 201

E-mail: vkgupta@nisair.res.in, vkg44@rediffmail.com

Fax: 91-011-2686 2228

Website: <http://niscair.res.in>

# SYLLABUS

## SEMESTER I

### PAPER 1: INFORMATION & SOCIETY

**General** - Meaning, definition, properties, scope

#### **Information & Knowledge**

Boundaries of each, overlapping areas, conceptual differences

#### **Generation & Flow**

Factors responsible for generating information

Communication media: human, written, print, telecommunication, electronics and others

Flow dynamics

Technology transfer

Barriers to information flow (linguistic, religious, political, others)

#### **Growth & Obsolescence**

Factors of growth

Birth of a subject

Ramification of a subject

#### **Use, misuse & abuse of information**

Causes: political, religious, natural, translational, etc.

#### **Economic, Societal & Cultural aspects**

Information professionals & institutions

Social implications of information

Economic implications

Political implications

Cultural implications

Industrial implications

#### **Economics of Information and Information Economics (Basics)**

Economic principles relevant to information

Information as a resource and factor of production

Economics of information sources and production

Costing

Pricing

Cost benefit analysis

Information industry

### **Information & Government**

Information policy

Right to information

Censorship, classified and declassified information

Role of information in planning, decision making, management, national development, S&T innovation, forecasting, etc.

Copyright issues

### **Information Science as a Discipline**

**Text Book:** *McGarry K J: Changing Context of Information. 1993.*

## **PAPER 2: INFORMATION SOURCES**

**General Overview:** Origin, development, types, characteristics of each type, utilisation, evaluation and limitations.

**Information Search:** Analysis and understanding of the query; Identification of the source(s); Getting the relevant available source; Finding out the information; Preparation of the answer.

### **Documentary Sources (Paper based)**

**Primary** Primary periodicals, technical reports, conference documents, standards, patents, theses, trade literature, monographs, treatises, etc.

**Secondary** Dictionaries, encyclopaedias, yearbooks, almanacs, handbooks, bibliographies, gazetteers, abstracting and indexing periodicals, reviewing periodicals, maps and atlases, guidebooks, etc.

**Tertiary** Guides to reference sources, bibliography of bibliographies, directories, etc.

**Mixed** Newspapers, popular periodicals, technical periodicals, etc.

### **Documentary Sources (Non-paper based)**

A-V aids, documentary films, computerised data bases, micropublications, etc.

### **Non-documentary Sources**

**Human** : Consultants, experts/resource persons, extension workers, representatives of firms, technological gatekeepers, invisible colleges, common men (priest, village head, postman, receptionist, etc.), others.

**Organisations:** International agencies, Govt. ministries and departments, R&D organisations, academic institutions, learned societies, publishing houses, press, broadcasting stations, museums, archives, exhibitions, trade fairs, libraries, documentation and information centres, data banks, information analysis centres, referral centres, etc.

**Text Book:** *Grogan D J : Science and technology: an introduction to the literature. 4th ed.1982.*

### **PAPER 3 : INFORMATION PROCESSING AND ORGANISATION**

Intellectual organisation of information for storage and retrieval

Content analysis and subject representation of all types of documents

Document Description - **ISBD, AACR-II**, Bibliographic record formats

**Indexing:** Concepts, theories and methods

**Indexing Models:**  
Pre-coordinate : Chain indexing, PRECIS, POPSI  
Post-coordinate : Role of computers

**Indexing Languages:** Semantics and syntactics; Vocabulary control; Classification schemes (UDC etc.) subject headings

**Thesauri :** Design and construction

**Automatic Indexing:** Computer based indexing systems and methods

#### **Indexing Systems Evaluation**

**Text Book:** *Foskett A C : Subject approach to information. 5th ed. 1996*

### **PAPER 4 : INFORMATION SYSTEMS AND NETWORKS**

**Information Systems** : Components, Types, Structures, Functions and Services  
**Resource Sharing and Networking**

**National Information Systems** : UK, USA, Russia, China, Japan, India

**Regional Information Systems** : SAARC, ASTINFO, APINMAP, PADIS etc.

**Library Networks in India** : DELNET, CALIBNET, INFLIBNET, MALIBNET etc.

**Global Information Systems and Networks** : AGRIS, CAS, DEVSIS, INIS, INSPEC, MEDLARS, etc.

**International Bodies** : UNISIST, UNESCO, PGI, FID, IFLA, IFIP etc.

## PAPER 5 : FUNDAMENTALS OF INFORMATION TECHNOLOGY

### Introduction to Computers

#### Computer Hardware

Processors	
Memory Types	: Primary Memory, Secondary Memory
Peripherals	: I/O Devices, Storage Devices, Communication Devices, Multimedia Devices

#### Computer Software

Operating Systems	: Basic Functions, Types of OS
Computer Languages	: Generation of Languages, Assemblers, Compilers, Interpreters
Principles of Programming	: Algorithm, Flow Charting, I/O, Conditional and Looping Statements, Procedures and Functions, Recursions
Software Development Life Cycle	: Analysis and Design, Coding, Implementation, Testing etc.
Software Paradigms	: Structured Programming, Object Oriented Programming

**Electronic Storage Media** : Magnetic and Optical

**Computer Maintenance** : Basic Procedures, Virus Protection

**Office Automation** : Word Processing, Spread Sheet, Presentations, Documents Handling

#### Lab Work

DOS	: Introduction, Internal and External Commands, Batch Programming
Windows	: Introduction, Features, OLE, Networking
Internet	: Internet Browsers, e-mail
MS Office	: MS Word, MS Excel, MS Powerpoint
Electronic Publishing	: Concepts, Aldus PageMaker, Corel- Draw, HTML , Design and Creation of Web page

**Text Book :** *Arora, Ashok : Computer fundamentals.2000.*

*Rood H. J. : Logic and structured design for computer programmers*

*Mack E.S. & Platt, Janan : HTML (4.0) no experience required.2000.*

## SEMESTER II

### PAPER 6: INFORMATION PRODUCTS AND SERVICES

**Information Users:** Needs and use studies

**Information Products/Services:** Techniques of production; compilation of information files; structure and organisation; maintenance and use

#### **Specific types of information products/services**

**Marketing:** Information products and services

**Current Awareness Type:** Title announcement, SDI, Research-in-Progress, Press clipping service

**Indexing Type :** Indexing bulletins, subject bibliographies

**Condensation Type :** Abstracts bulletin, Technical digests, briefs

**Consolidation products :** Trend reports, state-of-the art reports, reviews, conference proceedings.

**Compilation products:** Annual reports, manuals and handbooks, directories

#### **Literature search and Referral services**

**Documentation Back-up Services:** Document delivery; Universal Availability of Publications(UAP), Reprographic services

**Translation Services :** Translation journals, Centres and Bureaux, Machine aided translation

**Standards :** For library, documentation and information services

**Text Book:***Guha B: Documentation and information: Services, techniques and systems. 2nd rev ed.1983*

## PAPER 7 : DATA PROCESSING AND MANAGEMENT TECHNIQUES

### Database Management System (DBMS)

Databases : Concepts, Design, Security and Integrity Aspects  
Data Models : Hierarchical, Network, Relational, Object-Oriented Entity Relationship Diagram, Relational Algebraic Operations, Normalisation, Distributed Databases, Artificial Intelligence, Expert Systems, Object Oriented Databases, Data Warehousing, Data Mining

**Types of Databases** : Bibliographic, Factual, Full Text, Multimedia Databases

**Library Automation** : Retrospective Conversion Techniques, Catalogue Management, Acquisition, Circulation, Computer Assisted Classification and Cataloguing, Serials Control, Barcoding

**Electronic Library** : Electronic Journals, CD-ROM Networking, Virtual Library

### Lab Work

FoxPro : Database Design and Handling, SQL Commands, Labels, Reports, Queries and Screen Generation, Indexing and Sorting, Multiple Database Handling, Programming, Formatting Commands, Functions, Project Development.

CDS/ISIS / WINISIS : Features, Database Creation and Handling, Formatting Language, Indexing, Sorting and Retrieval

ORACLE

Online Databases : DIALOG, STN

CD-ROM Databases

**Text Book** : *Naveen Prakash: Introduction to database management. 1994.*

## PAPER 8 : COMPUTER NETWORKING : TECHNOLOGY AND SERVICES

**Basics** : Network Requirement, Analog and Digital Signal, Bit Rate

**Networks** : Data Communication in Telephone Networks, Modems, Dial-up Protocols  
Switching Techniques - Circuit, Store & Forward, Message and Packet Switching, Cell Switching, ATM  
: Network Protocols and Standards - OSI Architecture, TCP/IP, UDP, FTP, Telnet  
: Local Area Networks - Ring and Bus Networks, Access Methodology  
: Satellite Networks - ALOHA, Slotted ALOHA, VSAT Networks  
: Integrated Services Digital Network

<b>Media</b>	: Wires and Cables, Free Space, Satellites, Optical Fibres
<b>Network Devices</b>	: Transducer, Multiplexer, Concentrator, Modem, Codec, Bridge, Routers, Gateways, Repeater, etc.
<b>Network Services</b>	: Electronic Mail, Remote Login, File Transfer, Computer Mediated Conferencing
<b>Inter-networking</b>	: The Internet, Client Server Model, Domain Addressing, Navigation and Access Tools, Services, Web Design Concepts
<b>Lab Work</b>	
Novell Netware	: Introduction and Installation, User Commands, Supervisor Commands, Peripheral Handling, File Handling
UNIX	: Introduction, Features, Commands, Mail, Shell Programming
WINDOWS NT	
<b>Text Book :</b>	<i>Tanenbaum Andrew S : Computer Networking, 1998.</i> <i>Viswanathan T : Telecommunications Switching Systems and Networks, 1997.</i>

## **PAPER 9 : INFORMATION SYSTEM MANAGEMENT**

**Management Development:** Historical overview; management of components of information system; principles of management; styles/schools of management.

**Management Techniques:** With special reference to information organisation.

**Planning:** Planning process; types of plans; factors and steps in planning; policy-making; decision making; objectives.

**Organising:** Types; organisational structure; coordination; departmentation and hierarchy.

**Human resources management:** Staffing requirement, selection, employment, salary administration, development of skills and expertise to handle information organisations, staff communication, staff development.

**Directing:** Work assignment, supervision, leadership, span of control, motivation.

**Financial Management:** Financial estimation, Budgeting, budgeting techniques, costing, cost analysis.

**Principles of Control:** System analysis, work analysis, work flow and organisation of routines, evaluation techniques, operations research, network analysis, MBO, MIS, TQM.

**Physical Facilities:** Building, equipment, furniture, environment, resources.

**Library/Information Centre Management:** Collection development, Management of various divisions, services and automation aspects.

**Text Book:** *Stueart R D and Moran B B : Library & Information Centre Management. 4th ed. 1993.*

**PAPER 10: ELECTIVE** (any one of the following)

**10(1) : INFORMETRICS**

Meaning, definition, scope

Comparative study of bibliometrics, librametrics, informetrics and scientometrics

Bibliometric and other indicators

Citation studies

Bibliometrics laws

Bibliometric tools

**SCI, SSCI, A & HCI, ISCI**

Mathematical bibliometrics

Applications of bibliometrics

Bibliometric organisations

Institute of Scientific information; National Centre on Bibliometrics

**10(2) : TECHNICAL WRITING**

**Communication Process :** General overview; Characteristic features of technical writing; Target groups in written communication; Reader-writer relationship; Level of technicality in scientific communication.

**Linguistics :** Language as a medium of expression of thought; Functional style, semantics, syntax and diction; Sentence structure and readability; Aberrations in technical writing.

**Structure and Functions of Technical Communications :** Definition, purpose, types, characteristics, functions, structure; Collection, organisation and presentation of data including papers; Short communications; Technical Articles; Review articles; Technical reports; Popular articles; Monographs; Dissertations; House bulletins; Extension literature.

**Technical Editing :** Introduction; Editor: Functions, qualifications and special skills; Editorial process; Evaluation process; Editor-author-referee relationships in quality control.

**Manuscript preparation and production.**

**Editorial Tools :** Dictionaries, Style manuals, Standards specifications, etc.

### 10(3) : RESEARCH METHODOLOGY

**Research :** Meaning, definition, scope

**Research Types :** Statistical method, Historical method, Descriptive Method, Experimental method

**Design of Research :** Literature survey, formulation of hypothesis

#### **Research Process**

Collection of data : sampling, field work, questionnaire, interview, surveys

Tabulation of data : arrangement, layout, construction of tables

Analysis of data

Presentation of data : charts, graphs, monographs

Results and conclusions

### 10(4) : BUSINESS INFORMATION SYSTEMS

#### **Business Information**

Nature and characteristics, role, generation and utilisation

#### **Systems View of Business Information**

**Components of Business Information System:** Resources, Centres, Consultants, Suppliers, Financial Organisations, Industrial Promoters, etc.

**Users of Business Information :** Categories, Role, Functions, and needs.

#### **Business information sources, products and services**

**Documentary:** Directories, CAS/SDI; Technical enquiry service; Digests; Market Research Reports; Trade Literature; technical Notes; Company Profiles; Intellectual Property Rights (Copy-right, Patent, Design & Trade marks); Computerised Services; Databases; CD-ROMs and Networks, Internet, E-commerce - concepts and scope.

**Institutional:** National & International  
NIDCS, IIFT, ITPO, CII, FICCI, etc.  
UNIDO, UNCTAD, etc.

Standards related to Industries

#### **Organising business information for enduser support**

**Database System:** Business Measurement System; Business Planning System.

**Text Management System:** Text retrieval systems; Office systems.

**Management Support Systems:** Decision support systems; Information Centres.

**Communication Business** : Basics and Useful tips

**Text Book :** *Garland, John L: How to develop business information systems for end user. 1986.*

## **10(5) : MEDICAL INFORMATION SYTEMS**

### **Health science information**

Genesis, growth and developments; Scope and trends; Education and research in India

#### **Users of Health Science Information**

Categories, role, functions and needs

#### **Types of Health Science Libraries/Information Centres**

### **Health science information and global issues**

HELLIS, MEDLARS, BIOSIS etc.

The role and functions of National Medical Library

The role and function of other national and international organisations delivering Health Science Information: WHO; ICMR; Department of Biotechnology, Council of Ayurveda and Siddha; Council of Homoeopathy; Unani System; National Institute of Health and Family Welfare; CDRI, CFTRI, NIN, NII, NIC, etc.

### **Medical information sources**

**Printed Sources :** Primary, Secondary and Tertiary

**Non-print Sources:** Audio Visual Material; Microforms; Electronic form-online databases and databases on CD-ROM.

Interpersonal Sources of Information

## **Medical information services and products**

Current Awareness Services: SDI Services, Indexing and Abstracting Services, Literature Search, Evaluation of information services and products.

## **Organisation of medical information systems**

Community level; Hospital level; Academic level  
Hypertext, Hypermedia, Multimedia applications in biomedical information systems.  
Expert system/Artificial intelligence applications for biomedical information.

## **10(6): PATENT INFORMATION SYSTEM**

### **Intellectual Property Rights (IPR) and Copyright**

Patentability of invention; types of invention; legal protection for computer software and multimedia products; IPR in Agricultural Biotechnology.

### **Basics of Patents**

Definition; qualified rights; national rights; patentability; who can apply for patent?; selection; patents of addition; product and process patent.

### **Stages of Patenting**

Needs for policy, evaluation of innovations for patenting, need for a patent agent/attorney.

### **Patenting in India: Special Provisions of Indian Patent Act and Mechanism for Processing of Patents**

Indian Patent Office : Structure and Jurisdiction

### **Patent Document**

Drafting, structure, text, claims, typical format of invention, definition of invention, drawings, processing of an application, example of complete specification, post acceptance proceedings.

### **Patent as Source of Information and sources of Patent Information**

Patent search; sources of patent information in India; databases; web sites; patent classification and cataloguing; International Patent Classification

### **Patent Opposition and Revocation**

Procedure for opposition; procedure to counter an opposition; patent revocation in India; case studies.

**Enforcement of Patent**

Patent rights, licensing, infringement of patents.

**Harmonization**

Paris Convention and World Intellectual Properties Organisation (WIPO); European Patent Convention; Patent Cooperation Treaty and other conventions like Madrid Convention; The North American Free Trade Agreement (NAFTA); The Budapest Treaty; The General Agreement on Tariff and Trade (GATT); Trade Related Intellectual Property Rights (TRIPS); List of Convention countries of World Trade Organisations (WTO).

**Patenting as a Strategic Tool**

Technology mapping, planning of business strategy

**Lab Work**

INPAT, STN, DIALOG, CD-ROM Databases, Drafting of Patent.

## SELECT READING LIST

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**NATIONAL INSTITUTE OF SCIENCE COMMUNICATION AND  
INFORMATION RESOURCES**

***Application form for admission to the Associateship in  
Information Science course (2004-2006 batch)***

*Note: The application accompanied by DD/postal order for Rs.100/- alongwith original receipt provided for purchase of prospectus or Rs. 200/- for those who downloaded from website, drawn in favour of Director, NISCAIR should reach the Head, ETTG, NISCAIR, 14-Sastang Vihar Marg, New Delhi-110067 latest by 4th June, 2004.*

Amount Rs .....  
D.D.No. ....



Name(in full) Mr./Ms./Dr .....  
(in Block letters)

Father's/Husband's Name .....

Mailing Address: .....  
.....

Permanent Address: .....  
.....

Telephone No: ..... Fax No: ..... E-mail address: .....  
Date of Birth: .....

**Qualifications:**

Degree Year	University	Class or Division Marks %	Subjects
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Matriculation/Hr.Sec.

Bachelor of Arts/  
Commerce/Science/  
Engg./Technology

Master of Arts/Commerce/  
Science/Technology

Research Degrees

B.Lib.Sci.

Other Qualifications

Professional experience:

Name of the Institution	Post held	Period
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Whether deputed by the Institution? Yes/No  
If yes, with financial support? Yes/No  
(see note below)

Whether belong to SC/ST category ? Yes/No  
(If yes, please attach an attested copy of the certificate)

Did you apply for the course earlier? If so, when and what was the result?

Centre of Written Test : New Delhi  Kolkata  Bangalore   
(Please tick)  
Mumbai\*

Centre of Interview : New Delhi  Kolkata  Bangalore   
(Please tick)  
Mumbai\*

\*Mumbai will be the centre for test and interview if sufficient number of applicants are there, otherwise the Bangalore will also be the centre for applicants of Mumbai region.

Date.....  
Place.....

**Candidate's Signature**

*Candidate already employed should get the following endorsement signed by his/her present employer.*

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**ENDORSEMENT BY THE HEAD OF THE DEPARTMENT OR OFFICE**

Date:

Full Signature

Designation

Address

**Note:** Candidates deputed by their Institutions for the training course should furnish a certificate to the effect that they will be financially supported by their organisation for the duration of the course.

**SL. No.**

**National Institute of Science Communication and Information Resources  
(NISCAIR)**

14, Satsang Vihar Marg, New Delhi-110067

**RECIEPT**

Received Rs. 100/- from Mr/Ms.....  
towards the cost of prospectus and application form of Associateship in Information  
Science Course (2004-2006 Batch) vide DD/Pay Order no.....  
dated .....

Head, ETTG

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**SL. No.**

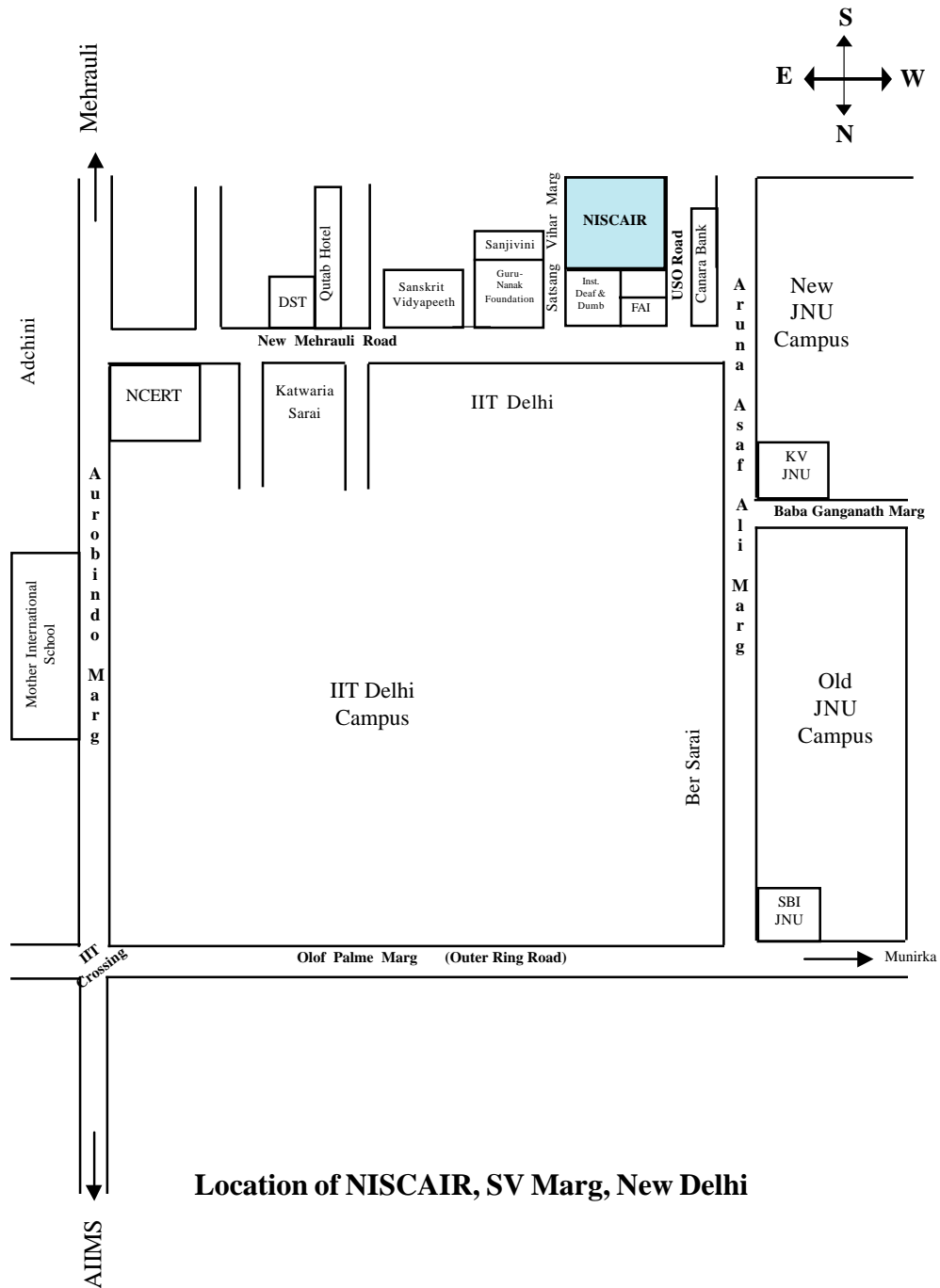
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**Location of NISCAIR, SV Marg, New Delhi**