Chapter-1
Introduction
INTRODUCTION

Rapid advances in computer, communication, storage and network technology have made the whole world a global village. World is already becoming increasingly dependent upon networks. Networks planners are forecasting unprecedented growth and increasing use of internet in all spheres of human activities. Internet, a low cost channel, offers users an easy access to global information, defying geographical boundaries and time zones.

Internet has become the most powerful medium for access, communication, publishing and delivery of information. It offers tremendous opportunities and challenges for all kinds of libraries in achieving their goals. It provides instantaneous, economical and faster access to a large volume of bibliographic, textual and factual information. The volume of information on the net is growing exponentially as it is being regularly updated with the latest information from different fields.

With the development of digital collections, electronic journals and global network, Internet has become the most powerful library tool for providing information services to the users.

INTERNET

Internet is worldwide communication system which links together thousands of computers. In fact, it is a network of thousands of net-works which communicate among themselves using single set of software which are generally known as protocols. In internet environment such protocols are termed as TCP/IP. The TCP/IP protocols can also be used on local area network without actually being connected to internet. However, if
they are connected, they can have access to all other computers and databases situated world wide and use their resources.

The computers which are part of the internet are called hosts. Some common facilities provided by internet are:

- Exchange of electronic mail and other data files in a wide area environment.
- Online real-time interaction with other network users.
- Participation in electronic media mailing lists and conference.
- Receipt (and delivery) of electronic publications.
- Access to data stored on remote computer.
- Access to remote scientific computing equipment such as supercomputers, remote sensing equipment, telescopes and graphic processors; and
- Access to wide selection of public domain and shareware software.

THE CONCEPT OF INTERNET

The backbone of information superhighway is the internet. The internet is the collection of thousands of computers and network systems of all sizes. We can simply refer to the internet as the international network of networks. No one actually owns or runs it. Each network is locally administered and in some cases, funded by volunteers. It is estimated that more than 200 countries are directly or indirectly involved in the internet. This number is increasing on a daily basis.

During 1969, the US Department of Defense through their Advanced Research Project Agency (ARPA) did an experiment. This was a Packet Switched Network over telephone lines. Out of this initial
Advanced Research Project Agency Network (ARPANET), one of the early forerunners of Internet was born. During 1970’s, the ARPA developed a set of rules called protocols that helped in connecting different networks having different host computers. The number of networks connected to ARPA continued to grow over the years. In 1982, ARPANET joined with MILNET (Military Network) and a few others and it is said that the internet was thus formed from this consolidation of networks. As per the latest information available, there are 2,20,00,000 current users on the Internet, and every month 1,50,000 new users are joining it.

**FEATURES OF INTERNET:** The following are the basic features of the internet:

- Internet provides an interactive environment for information handling.
- Easy publishing on the web.
- Enables information to be delivered to the desktop of the user.
- Multimedia integration (text, image, audio and video).
- Hypertext linking and navigation.
- Availability of public domain information publishing and access tools.
- One E-copy is sufficient to be accessed by many users at any number of times.
- Reduced time for publishing and accessing.
CHARACTERISTICS OF INTERNET:

There are some characteristics of internet such as:

- It is a network of computers, some acting as servers others as clients;
- Ability to locate/search huge amount of data;
- A modem is required to connect and convert signal between analog and digital;
- Point to point communication, rather than one to many broadcast communication;
- The repositories of services such as the World Wide Web, e-mail is ever increasing;
- The increasing diversity of use is supported by a number of protocols;
- The internet is governed by the number of organizations which is responsible for the organizing development of the online world;

NEED TO ACCESS INTERNET

In addition to the traditional use of telecommunication for phone conversation and paging, there is an increasing need for remote communication to transfer digital information. There are at least six reasons why the user(s) require to access information centers and libraries from the Internet.

1. To get help publishing their information
2. To get help locating Information (online services and catalogues)
3. To get help in determining the quality of various information resources.
4. Document Delivery and distribution is another area of traditional ICC services that the internet technology is changing.
5. Full text documents and information are also available via internet. Users can find path to current information about many organizations including names, addresses contact information, list of reports, and other documents. Users can borrow or search these documents by using tools viz., Gopher, Mosaic, World Wide Web (WWW), etc.

**APPLICATION OF INTERNET:**

The internet provides access to an enormous number of data base distributed around the world and to a variety of scientific facilities including digital ICLs unique database. The internet connection offers tremendous potential for collaborating and for sharing resources such as document software data and network service.

- The internet lets the people meet around the world, with similar interest;
- The internet is being used for research, government and commercial policy and decision making, education, medicine and reference etc;
- Information and tutorials provide to keep to do more things are available on internet;
- Help in accessing of job sites;
- It makes locally produced databases available to the remote users;
Regarding SDI services, it gathers information from users to create their SDI profile;

- It does various library related functions like inter-library-loan (ILL), verification, requests, Document Delivery Services (DDS), and consortia file sharing e-journal, image data and text file of FTP and websites, cataloguing, book-journal ordering;

- It produces homepages of libraries so that information regarding the library, its resources and services can be made available throughout the world; and

- It provides the connectivity facility among the libraries.

INTERNET ACCESS TOOLS

Internet provides various tools to access, communicate and transfer information. These tools are used to access data bases, files and variety of other applications. The following are the important tools of the internet:-

- E-Mail
- Usenet (Newsgroup)
- WAIS

E-Mail

E-mail is the most commonly used service of internet. E-mail facilitates communication with people all over the world. It made the geographical boundaries of nations shrink, as one can send mail to anyone connected to internet wherever he is almost instantaneously. It has become the life blood of internet with millions and millions of messages exchanged across the globe daily. Internet provides several e-
mail programmes, many of them free of charge, subject to certain terms and conditions of usage. These facilities are in reality, put on by computer Firms like Microsoft Network, Netscape communication, etc. Hotmail, Lycos mail, Yahoo! India mail etc. are free whereas e-mail facilities offered by networks like CompuServe, America Online, Delphi etc are subscription based.

E-mail, in most of the cases, reduces postal delays, which otherwise is a usual phenomenon in traditional correspondence. The mail is received with in seconds and it is not uncommon to receive reply in a matter of few hours (even few minutes). Apart from correspondence and communication of programmes, plans, participation in meeting/conference, etc the important use of e-mail in library environment is in document delivery. Text and image files, downloaded from databases can be dovetailed with regular mails as attachments. Even printed pages can be scanned and sent as image files. Further e-mail facilities online ordering, sending interlibrary loan requested and exchange of data.

**Benefits of E-mail:** Some of the many benefits include:

1. It is asynchronous, unobtrusive
2. It has speed, accuracy, dependability and efficiency.
3. It can cross geographic, time and linguistic barriers.
4. Provides stimulus for students to learn about other cultures.
5. Increased comprehensive, hand eye coordination and typing skills.
Usenet (Newsgroup)

Usenet is an international meeting place where people gather to meet their friends, discuss the day’s events and keep up with the current trends. It is distributed action of computers that exchanges messages via a set of agreed upon protocols called newsgroups. These groups together discuss various problems related to their subject areas and communicate among them.

Usenet has significant cultural importance in the networked world, having given rise to, or popularized, many widely recognized concepts and terms such as "FAQ" and "spam".

WAIS (Wide Area Information System)

The WAIS was developed by Brewster Kahle at Thinking Machines Corporation (TMC) of Cambridge, in 1990. WAIS was a system for organizing information into databases that could be searched using commands known as natural query language. The WAIS software performed keywords searches of databases and refined searched based on relevancy as determined by an algorithm – a series of steps or formulas designed to retrieved information by indexing data based on “weighting”. The intent was to give more relevant documents a higher search query. The WAIS search engine processed a search by retrieving a relevant ranked list of documents. Each document was given a score from 1 to 1000 based on how well it matched the search expression. A search could be executed in the form of a question, through natural language, or by use of specified fields. To use WAIS effectively to find information, files and data in every site needed to be indexed, which was not the case. After the introduction of Mosaic and Netscape, WAIS was eventually used as a
back end search engine for HTTP server to find everything from relative hyperlinks to image references.

**World Wide Web (WWW)**

World Wide Web or WWW is the most popular and highly used service on the internet. World Wide Web also known as WEB this is the generic name given to all of the hypertext-based HTML documents on the Internet. A revolutionary Internet browsing system that allows point and click% navigation of the Internet. The WWW is a spider web like interconnection of millions of pieces of information located on computers around the world. Web documents use hypertext, which incorporates text and graphical links to other documents and files on Internet-connected computers. The use of Web has changed the way people access, organize, use and publish information on the Internet.

**Features of www**

The main features of the www are:

- It is a hyper-text system;
- It is a multimedia system;
- It is a distributed system;
- It incorporates other Internet tool such as FTP, TELNET, Gopher and WAIS.
- It provides an interface to other database system.

**Application of Web:** A partial list of popular web application includes the following.

1. Individual and organizational home pages;
2. Sales prospecting via interactive forms based surveys;
3. Advertising and the distribution of product promotional material;

INTERNET BASED RESOURCES

Internet is a storehouse of world’s information resources. It has become an effective means of enriching and updating the information resources of libraries. It helps in building information sources in libraries more accessible form and in most economical way. Today a vast amount of information is set up by individual/institutions on internet as key information server tool the www, many journals, reports papers and reference sources are available free on internet and they even constitute many of the sites on the web.

- Websites
- Subject Gateways
- Online courses
- List serve/ mailing list
- Virtual Conference/ Conference Proceedings
- E-databases
- E-Books
- E-journals
- Bulletin Board
- Chat
- Online Book shop
- OPAC
- Web OPAC
Websites:

With the fast developments of technology, a large number of websites (general & specialized) are available on internet. It has become difficult to say what constitutes a good website, particularly because of volatile and changing nature of websites. Not everyone has adequate ideas about which website to access for what kind of information. In this process, a lot of precious time of the users is wasted. However subject gateways provide a solution to such a problem.

Subject Gateways:

Today, a lot of literature is available on internet for which one needs to spend sufficient time in searching by going through vast amount of junk information. To solve this problem, information professionals and subject experts who have created subject gateways to include high quality resources only have done a lot of research. Excessive availability of information on the Web has led to the development of a variety of subject search mechanism.

List serve/Mailing list

A list/mail server is a discussion group created to share ideas and knowledge on a subject. A listserv is the most common list server program. A message sent to a list is copied and then forwarded by e-mail to every person who subscribes to the list, thereby providing an excellent resource for distributing information to a group with a shared interest. Discussion group are usually created monitored by someone with an interest is that subject and are open to anyone.
Virtual Conferences/ Conference Proceedings:

In recent time, e-mail based discussion groups, called virtual conference or E-conferences have come into vogue. Here the originator of the ideas of an e-conference accepts the responsibility to maintain it, distribute the message through dissever on other special mailing list management list management software.

subscribe < listname > < youname >

in the message and sending it to the server address.

OPAC

Online Public Access Catalogue (OPAC) is such type of catalogue arrangement that is considerably more user friendly than a card catalogue since it provide a variety of help to the users and can guide the users in a step by step manner in looking for information that he is seeking. OPAC provide access to the libraries holding through various catalogues and indexes such as the author catalogue, the title catalogue, the subject catalogue, the classified catalogue, publisher’s index, conference place index and KWIC/KWOC indexes. All possible are combination sources using Boolean Operators that yield satisfying and precise results, however complex the query. OPACs also provided the facility to request acquisition of titles to reserve materials and to send personalized SDI, overdue/recall/ collect notice and messages by e-mail.
Web OPAC:

The concept of Web OPAC is of recent origin. These web resources are online catalogues that will function as gateways to the resources not only held by respective library but also to the holding of other participating libraries without limiting to local but going beyond to regional, national or international levels. It allows users to interact with documents stored computers all over the world. Thus it makes easier to access catalogue data in the form of bibliographic records. It has sometimes the ability to search the OPAC of other libraries. The tool used in this context is a common user interface (software) known as web browser. A web OPAC is a powerful tool that links all the electronic resources, simply graphic files, the rich multimedia files and a good networking environment.

The usual feature of OPAC, like bibliographic and full text database; internet search engines; and other linked resources from the OPAC are available on the web based OPAC also. As a result the catalogue becomes another search engine. The web OPAC makes the catalogue from providing access to large banks of actual information. They are also referred as ‘web cats’ and information gateways.

E-Database:

More and more of the resources which used to occupy the reference the indexes sections of academic libraries are available electronically. Initially, databases were made available in the form of CD-ROMs, which can be borrowed and used in a library, or accessed, through university networked PCs. Increasingly, databases are accessible through the internet. The major advantage for students of electronic database is
the facility for speedy electronic searching. Some databases require you to register and use a password; in other cases the databases are purchased by libraries and accessed in library or elsewhere after issue of an ‘ATHENS’ username and password.

There are various kinds of databases available. Some are indexes, providing bibliographic references to articles and books, which you will then need to follow up. Others provide the full text of articles. Particularly useful for research projects in social policy, there are also databases of statistical and other research material.

**E-Book:**

E-books has become a convenient all purpose term to describe a variety of reading experiences and methods for packaging and distributing digital content. An electronic book or an e-book is simply the content of a written manuscript converted into a format that can be read electronically, in the same way that a word processing document is read. The term can also refer to the hardware device that is used to read an electronic book. E-books can take many forms. Primarily, they are electronic versions of documents already in print form, but recently texts which exist solely as e-books have been put on the market.

**E-Journals:**

In an academic environment, scholarly communication is a critical component of knowledge with the emergence of internet; the e-journals are going more important on undergoing a drastic change and becoming web center. Electronic Journals are serially published and distributed
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nationally and internationally via networks. These include both online and also journals which have a print counterpart.

Types of E-Journal Publication: There are currently two types of e-journals:

1. Offline CD-ROM Version
2. Online and Internet based journals

Bulletin Board

Separate notice board option can be created though e-mail facility and the latest information of the daily news. A bulletin board is a public discussion area where people can post message without sending them to anyone's e-mail address that can be viewed by anyone who enters the area. On CompuServe a bulletin board is newsgroups called a forum. On the Internet, the equivalent areas are called opportunities, admission notice, entrance examination, scholarship and fellowships, new courses etc. can be posted and made available for the users through this bulletin board service. It is proposed to provide this facility to display/view news, announcements etc. with constant updating of information in an electronic bulletin board. Several bulletin boards can be made available in the networks for each specific category of user discipline.

Electronic Libraries

Electronic Libraries which offer an important advantage in accessing information required from related sites are classified into two different groups: open or closed access web sites of universities, and other web sites which are completely open through the Internet. The closed sources in Electronic Libraries in universities are based on
academic books and contractual journals and are completely trustworthy. These collections are ideal for the undergraduate/graduate students, researchers, and academicians. The articles in libraries such as Wikipedia, which has become an official research tools can be compared with the information in other resources and this makes it more detailed and reliable. For this reason, the majority of subjects in Wikipedia are written by accessing official and private libraries, although the reliability of the article can only be judged, if the references have been well documented.

Blogs/Forums

Many students are able to access the required information by using search engines for project assignments. The majority of subjects that are listed in search engines are written blogs and forums. The information given in these links is often all that can be found and so is judged acceptable by the readers. Consequently, a comparison should be made after applying different sources and information should be confirmed. These open-access resources are often personal studies of people who are interested the subject, no matter whether they are academicians or not, and therefore, should be confirmed with other sources on the same subject written by people who are well qualified.

RSS

RSS stands for "Really Simple Syndication". It is a way to easily distribute a list of headlines, update notices, and sometimes content to a wide number of people. It is used by computer programs that organize those headlines and notices for easy reading.
RSS works by having the website author maintain a list of notifications on their website in a standard way. This list of notifications is called as "RSS Feed". People who are interested in finding out the latest headlines or changes can check this list. Special computer programs called "RSS aggregators" have been developed that automatically access the RSS feeds of websites user care about on their behalf and organize the results for him.

SEARCH ENGINES

The Internet is not like your school library, with its shelves of well-organized books. Simply browsing the internet is unlikely to find you the information you need, so in order to find the resources you want for your research project, you will need at some point, to use a search engine.

Behind the scene, search engines compile databases of web pages which allow users to search the internet for specific resources, by doing what is termed a keyword search, when a user types in a search request such as "Egypt", the search engine already known where all the pages including "Egypt" are located. The search engine use "bots" or "spiders" which prowl the Internet collecting pages, but depending on the search engine the databases of pages may be more or less up to date.

How to use search Engines?

A search can be made more effective by keeping some tips in mind while entering the search term.

i) On submitting multiple words, the engine will search initially for sites which contain all the words, and then sites which contain any of words.
ii) Submit a phrase enclosed within quotation marks without breaking it into individuals words e.g. Oral cancer as “oral cancer”.

iii) It is well and good to enter longer search terms to limit the result of search so that one may not have to wade through thousands of items.

Some popular Search Engines:

There are many popular search engines.

**43Marks** - This new Meta search engine is a customizable bookmark storage page.

**AltaVista** allows searches for documents in a specific language and provides a topical index.

**AOL Search** is a search engine powered by Excite and enhanced by Google.

**Ask** type a question the way you would normally ask it

**BublLink: Catalogue of Internet Resources** [uses the Dewey Decimal System] selected Internet resources covering all academic subject areas.

**Dewey Browse** - Web Sites Classified by the Dewey Decimal Classification System for Grades K-12

**Dogpile** searches by accessing several search engines. If you have been using the search engine Meta Find, you are now automatically routed to Dogpile.
FindSounds.com is a search engine for finding sound effects on the Web.

Google ranks the quality of sites based on the quality of sites that link to it.

Google Custom Search Engine - Create your own search engine on specific topics and limit it to just the web sites you want students to use.

Google Maps - street maps or satellite maps, directions and business search, they even have traffic information for some cities

Hot Bot allows you to define the search, narrow the search by time (items posted within the last...), or by domain (.com, .net, .edu...).

Internet Public Library - The mission of this site is to provide library services to the Internet community, to learn and teach what librarians have to contribute in a digital environment, to promote librarianship and the importance of libraries, and to share interesting ideas and techniques with other librarians.

MetaCrawler search for a word or a phrase

Search.com posted by cnet and powered by Excite. Their topical index is in the form of a pull-down menu or a listing of topics they call Specialty Searches.

SortFix - SortFix has developed a system that does all the hard work. Behind the scene an intelligent algorithm imitates a professional searcher - by scanning and examining the results, it reveals the significant keywords and terms that will help to define a better question.
Thomas - (as in Thomas Jefferson) a Library of Congress team brought the THOMAS World Wide Web system online in January 1995."

Visual Thesaurus - Really cool way to look up synonyms. It is just a trial version but look up a few words at a time without paying.

Web-crawler has a clean new look. No ads, No Banners, No Pop-Ups.

Yahoo! features a topical index as well as a search function. The topical index provides pre-defined search results.

Vertical search Engines

A vertical search engine can be defined as one that contains only gathered from a particular narrowly defined web niche, and therefore the search results will only be relevant to certain users. Vertical search engines are also referred to as vertical portals, especially search engines and typical search engines. Vertical search engine may be a website which focus on the particular topics and which especially allow searching for information relating to those topics. One of the biggest specialized search engines at present is LOOK SMART.

METHODS FOR FINDING INFORMATION THROUGH INTERNET

According to Gordan and Pathak, there are four major methods for finding information on the internet. The four methods are:

- Using a known URL
- Using hypertext links to navigate from a web page to another web page.
Narrow cast services or portals, which push web pages to users according to their particular profile.

Search engines and Meta search engines, which allow users to search the web by exploring traditional and advanced information retrieving techniques.

**Assessing the reliability of Internet sources**

Guiding students in a few simple practices will help them gauge the reliability of the information that they locate on the Internet. These can include the following:

**Checking the author**

If an article or opinion is attributed to a specific author, students can use a search engine to learn more about that author. What else has he or she written? What have other people written in response? On occasion, students may want to use e-mail to ask the author questions about his or her work.

**Checking the source**

If no author is connected to the information, students can perform a search for information about the organization that has posted the Web site.

**Checking the Web site**

Students can also assess the reliability of the Web site. What differences might there be in the information these sites provide? To what other sites is the resource site linked?
Checking the information

Regardless of the dependability of the source, students should compare the information to other information that they discover, keeping an eye out for contradictions.

Citing Web sites

If students will use text or media resources from the Internet, remind them of the importance of properly citing their resources. How they include these citations depends on what they are producing. If they are creating a presentation, they should plan to include a screen listing all their resources.

Conclusion

The potential of the Internet for research-based teaching is producing an explosion of interest among educators. So, in this era, teachers and students can carry forward their work on the Internet in ways that are similar to and tightly intertwined with the traditional ways that they learn, teach and study in libraries, classrooms, laboratories, seminars, conferences, etc. The Internet can provide access to essentially unlimited resources of information not conventionally obtainable through other means. The Internet has emerged as a powerful educational tool. With the increasing impact of information and communication technologies on higher education, all those concerned with higher education are attempting to grasp how ICT could help in modernizing the process of teaching, learning and research.
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http://www.internet-resources.com/

Jamia Millia Islamia, an institution originally established at Aligarh in India in 1920 becomes a central University by act of the Indian Parliament in 1988.

The foundation committee of Jamia Millia Islamia met on 29th October 1920 and elected Hakim Ajmal Khan as first Chancellor of Jamia on 22nd November 1920. It also created a syllabus subcommittee. The known freedom fighter and Muslim Theologian Maulana Mehmud Hasan laid the foundation stone of Jamia Millia Islamia at Aligarh on Friday 29th October 1920.

HISTORY

Hakim Ajmal Khan, Dr. Mukhtar Ahmed Ansari and Abdul Majeed Khwaja supported by Gandhi, shifted Jamia from Aligarh to Karol Bagh in New Delhi in 1925. At that time, Gandhiji’s contacts helped to secure the financial help for Jamia. In 1925, a group of three friends studying in Germany, Dr. Zakir Hussain, Dr. Abid Hussain and Mohammad Mujeeb decided to serve Jamia. The first step they took, was the introduction of the hugely popular evening class for adult education which was later in 1938 becomes an institution called Idara-Taleem-Taraqqi.
Institution under Study
In 1928 the leadership of Jamia moved into hands of Dr. Zakir Hussain who became its vice-chancellor. In 1936 Jamia was shifted to new campus at Okhla. On 4th June 1939, Jamia Millia Islamia was registered as a society. In 1939, Maulana Ubaidullah Sindhi came to Jamia and started a school of Islamic Studies in Jamia, called Baitul Hikmat. In 1949, during Jamia’s siver jubilee celebration, Mohd Ali Jinnah, Liyaqat Ali Khan, Dr. Zakir Hussain, Pt. Jawaharlal Nehru, Asif Ali and Sir Rajagopalachari were present.

In 1962, the UDC declared the Jamia ‘deemed to be University’. Soon thereafter, the school of social work was established. In 1971, Jamia started the Zakir Hussain Institute of Islamic Studies. B.E. course commended in 1978. In 1981, the faculties of humanities and language, Natural Sciences, Social Sciences and the state resource centres were founded. In 1983, University started the Mass Communication Research Centre and the centre for coaching and carrier planning.

**Faculties and Centres**

Jamia Millia Islamia offers academic and extension programs through the following faculties:

- Faculty of Engineering and Technology
- Faculty of Education
- Faculty of Humanities and Language
- Faculty of Law
- Faculty of Natural Sciences
- Faculty of Social sciences
- Faculty of Architecture and Ekistics
- Faculty of Dentistry
FACULTY OF NATURAL SCIENCES

Introduction

The Faculty of Natural Sciences was established in 1981 with the Departments of Physics, Chemistry, Mathematics and Geography. Three years later, the Department of Biosciences was born and became a part of the faculty. Another addition to the faculty was made in 1999 with the creation of the Department of Computer Science.

The faculty offers various diplomas, undergraduate, postgraduate, and research programmes. These courses belonged to the following departments:

Department of Biosciences

Department of Biosciences, is a part of Faculty of natural sciences, the department offers Doctor of Philosophy in Biosciences, Master of Science in Biosciences, Master of Science in Biochemistry and Bachelor of Science in Biosciences courses.

Department of Chemistry

Department of Chemistry is a part of Jamia Millia Islamia, University. The Department offers postgraduate and undergraduate courses. M.Sc. programme is offered in Materials, Physical, Organic and
Inorganic Chemistry. The department has full-fledged research laboratories and offers Ph.D. programmes in the above four specializations.

Department of Physics

Department of Physics offers Doctor of Philosophy, Master of Technology in Nanotechnology, Master of Science, Bachelor of Science and Bachelor of Science in Instrumentation course.

Department of Mathematics

The Department of Mathematics is the department under Jamia Millia Islamia University. The Department of Mathematics was established in the year 1971 with the introduction of B.Sc. (Hon.) course in Mathematics. The Department has recently introduced a Three-year M. Sc. Tech. Program in Industrial Mathematics with Computer Applications.

Department of Computer Science

The Department of Computer Science was established in the year 1999 with the objective of producing IT professionals of international standard. The Department offers MCA (3 years), PGDCA (1 1/2 Years) and M.Sc. (Bioinformatics)(2 years) courses through a well-designed industry-oriented curriculum. The Department has two modern air-conditioned computing labs, an air-conditioned seminar room, a departmental library, six class rooms and offices for faculty and staff. These are connected through a LAN in order to provide modern teaching and learning environment and fast access to the Internet. The Department is currently setting up a Cluster Grid high-performance computing
environment based on SUN servers and workstations. The Department has established linkages with other universities and research centres such as JNU, IIT, and CDFD from where it draws most of the visiting faculties to teach additional specialized courses. Department also has a LAN connecting all the labs, the seminar room and offices.

Department of Biotechnology

Department of Biotechnology, Jamia Millia Islamia was established in the year 2008 in the Faculty of Natural Sciences. The Department offers graduate, masters (semester system) and Ph.D. degrees in biotechnology. Prior to it, from the year 2001-2007, courses at the level of Graduate (B.Sc. Biotechnology) and Masters (M.Sc. Biotechnology) were running in the Department of Biosciences of the same university.

Department of Geography

Established in 1971, the Department of Geography offers research facilities, postgraduate and undergraduate courses in geography and also an Advance Diploma in Computer Assisted Cartography.

Dr. ZAKIR HUSAIN LIBRARY

Dr. Zakir Hussain Library is the central library of the Jamia Library system, which includes various faculty libraries. The existing building covers an area of 22,900 sq. ft. A new central library has been sectioned and shall shortly be constructed with a total covered area of 1, 06,850 sq. ft. The building has been designed to reflect the Jamia’s contemporary
image and accommodate the ever increasing the demands of the modern library system.

SECTIONS OF THE LIBRARY

1. Text Book Section

The library maintains a text book section which has a separate collection of text book that can be consulted within the library on deposition of text-book ticket at counter of the section, till the closures of the library. The text book can also be issued for overnight loan after 3:00 pm. To 5:30 pm. against text book ticket with should be returned the next day. The collection has text book in English, Hindi and Urdu.

2. Rare Book section

Dr. Zakir Hussain Library maintained a separate rare books sections. This section contain approximately 1600 books published from the 16th to 19th century in English, Urdu, Persian and Arabic which are of rare nature. This section also has rare news papers published during the period from 16th to 19th century.

3. Jamia Authors section

This section has a special collection of 2500 books written, edited and completed by teachers, researchers and students of Jamia Millia Islamia.

4. Manuscripts

Dr. Zakir Hussain library has 3000 manuscripts on various subjects such as Astronomy, Astrology, Music, Quranic studies, Sufism, Logic,
Institution under Study

Philosophy, Unani Medicine, Mathematics, Oriental Studies and Hinduism in Arabic, Persian, Urdu, Pashto, Punjabi and Brij Bhasha.

LIBRARY SERVICES

Dr. Zakir Hussain Library Provides the following Services to its users:

- Lending Service
- Reading Room Service
- Orientation Programmes
- Document Delivery service
- Photocopy Service
- Inter Library loan service
- Document Procurement Service
- Internet Service
- Reference Service
- Online Public Access Catalogue (OPAC)

Internet Service in Dr. Zakir Hussain Library

The library has introduced the internet service from the 2003 to the bonafide members of the library. At present, the internet service is available free of cost from morning 9:00 am to 5:30 pm in all working days.

The bonafide members are permitted to use this facility after entry in log box maintained at the library.
Digital Information Resources Centre

Dr. Zakir Hussain Library has launched the digital information resources centre for the Jamia Millia Islamia’s academic and research community. It provides the access to databases of electronic resources to the bonafide members. These services are available through internet. The databases of electronic resources are constantly reviewed and updated according to the growing need of the Jamia community. Orientation programmes on use of digital information resources re periodically conducted. The users may log on to the Jamia’s website at http://www.jmi.in—university library –e-journals/digital library. The users may also log on to the concerned website according to the URL indicated at the end of each databases.

Reference

http://www.jmi.ac.in