CHAPTER IV

PROFILE OF INDIAN INSTITUTES OF TECHNOLOGY
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4.0 Introduction

The INDEST-AICTE Consortium is the most ambitious initiative taken so far in the country. It would not only benefit 48 major technological institutions in the country (including IITs, IISc, NITs, IIITs and others), but it also invites all AICTE accredited and University Grants Commission (UGC)-affiliated institutions to join hands with the leading engineering and technological institutions in India and share the benefits of its offers in terms of lower subscription rates and better terms of agreement with the publishers. The consortium’s headquarter is located at IIT Delhi. The membership of the consortium is open to any private or government funded engineering/ technological/ educational institutions. The consortium will charge nominal annual fee for its services. The e-resources that can be subscribed through the INDEST consortium are: IEL Online, Springer’s link, Applied Science and Technology Plus (ASTP), ABI/Inform Complete, ACM Digital Library, Compendex (1970+), MathSciNet, JGATE Online, J-Gate Online with CD-ROM back-up (Gulati, 2004).

4.1 Indian Institute of Technology (IIT), Kharagpur

The history of the IIT system dates back to 1946 when a committee was set up by Hon’ble Sir Jogendra Singh, Member of the Viceroy's Executive Council, Department of Education, Health and Agriculture to consider the setting up of Higher Technical Institutions for post war industrial development in India. The 22 member committee headed by Sri N.R. Sarkar, in its report, recommended the establishment of four Higher Technical Institutions in the Eastern, Western, Northern and Southern regions, possibly on the lines of the Massachusetts Institute of Technology, USA, with a number of secondary institutions affiliated to it. The report also urged the speedy establishment of all the four institutions with the ones in the East and the West to be started immediately. The committee also felt that such institutes would not only produce undergraduates but they should be engaged in research, producing research workers and technical teachers as well. The standard of the graduates should be at par with those from first class institutions abroad. They felt that the proportion of undergraduates and postgraduate students should be 2:1.

With the above recommendations of the Sarkar committee in view, the first Indian Institute of Technology was born in May 1950 in Hijli, Kharagpur, in the
eastern part of India. Initially the IIT started functioning from 5, Esplanade East, Calcutta and very soon shifted to Hijli in Sept. 1950. The present name 'Indian Institute of Technology' was adopted before the formal inauguration of the Institute on August 18, 1951, by Maulana Abul Kalam Azad. IIT Kharagpur started its journey in the old Hijli Detention Camp where some of our great freedom fighters toiled and sacrificed their lives for the independence of our country. The history of IIT Kharagpur is thus intimately linked with the history of the Hijli Detention Camp. This is possibly one of the very few Institutions all over the world which started life in a prison house.

On Sept. 15, 1956, the Parliament of India passed an act known as the Indian Institute of Technology (Kharagpur) Act declaring this Institute as an Institute of national importance. The Institute was also given the status of an autonomous University. From this modest start in 1950, IIT Kharagpur has been engaged in a steady process of development with about 18 academic departments, five centres of excellence. The vast tree-laden campus, spreading over 2100 acres has a self-contained township of over 15,000 inhabitants. Currently we have about 550 faculty, 1700 employees and 9000 students on the campus.

4.1.2 Departments, Centres and Schools in Indian Institute of Technology, Kharagpur

There are 19 departments, 7 centers, 8 Schools and 15 research facilities for interdisciplinary research, various undergraduate, postgraduate, integrated degree programmes, interdisciplinary programmes and PhDs programmes are available in all academic department of the institute.

4.1.3 IIT Kharagpur Library

The Central Library of IIT Kharagpur started in a small room of the Institute old Building (ShahidBhavan) in the year 1951, and moved to its present premises in 1956. Since then, it has grown in size and content to take the present shape. With the developments in computers, microelectronics and communication technologies, the behavioral characteristics of the information seekers have been changing rapidly and the library is trying its best to adapt with the technological advancement. For the last six decades, the library has been the lifeline of the academic activities of the Institute.
It is no exaggeration to state that the Central Library of IIT Kharagpur is one of the largest and finest technical libraries in Asia.

The Library is well equipped with modern facilities and resources (print and electronic) in the forms of CDROMs, DVD-ROM, online databases, micro-documents, video cassettes, books, journals, patents, standards, theses, reports, etc. It has also developed a full-fledged Digital Library equipped with necessary modern equipment in order to provide various digital mode Library services. Digital Library section of the Central Library has developed an institutional digital repository using open source software DSpace, which preserve the institute's intellectual output for campus wide access and digital preservation for the posterity.

4.1.3.1 Central Library

The Library routine services have been fully automated using the library database management software 'LibSys' version 7. It is an integrated Library management software package, with all the required modules for automated library management systems. The Central Library being a core member of INDEST-AICTE Consortium under the aegis of the Ministry of Human Resource and Development provides online access to many important full-text databases in Science and Engineering subjects as well as abstracting database services. The Central Library website, which is developed by open source software namely “Drupal”, provides online access to all these e-resources. In addition to INDEST-AICTE Consortium e-resources, Central Library, IIT Kharagpur also currently subscribed a good length of e-resources (e-Journals, e-books and e-database). At present, Central Library provides IP based access to 40,000 full-text e-Journals, and 20,000 full-text e-books to the users.

4.1.3.2 Library Timing

The Central Library of IIT Kharagpur is kept open from 8 am to 12 midnight on all the week days and week-end days, except Institute holidays.

4.1.3.3 Library Collection (print and e-resources)

The Library is having a collection of more than 3.5 Lakh documents, subscribing about 300 print journals, and providing access to over 40,000 online full-text journals and several abstracting databases. Besides, there are 45,000 e-books. The

4.2 Indian Institute of Technology (IIT), Bombay

IIT Bombay, the second in the chain of IITs, was set up in 1958. It was the first IIT to be set up with foreign assistance. The funds came from UNESCO in Roubles from the Soviet Union. In 1961, the Parliament decreed IITs as 'Institutes of National Importance'. Since then, IIT Bombay has grown from strength to strength to emerge as one of the top technical universities in the world.

Over the last fifty-three years, around 39,000 engineers and scientists have graduated from the institute. It is noted for its strong research groups in varied areas of science and technology that are making substantial contributions to national projects. In 2011, a total of 1846 degrees, including 173 Ph.D., were awarded, which represents 9.2 per cent increase in the total number of degrees awarded in the previous year. The faculty of the institute has won many prestigious awards and recognitions, including nine Shanti Swaroop Bhatnagar awards.

4.2.1 IIT Bombay Departments, Schools and Centres

IIT Bombay has a total of 14 academic departments, 6 centres, 1 school, and three interdisciplinary programmes. It is recognized worldwide as a leader in the field of engineering education and research. It is reputed for the quality of its faculty and the outstanding caliber of students graduating from its undergraduate and postgraduate programmes. Research programmes leading to the degree of Doctor of Philosophy (Ph.D.) are available in all academic department of the institute.

4.2.2 IIT Bombay library

IIT Bombay’s Central Library is like IIT Bombay – user-focused, innovative, and excellence driven. The library has always benefited from the institutes’ culture, is pioneer in adopting new technology, and is far ahead than many libraries in the country. Central Library manages knowledge, both in print and digital formats, ensures seamless discovery and access to these scholarly resources, and provides faculty, students, and staff with professional support to find, evaluate, manage, and use such resources. It provides high-quality ambiance for both reflective and
collaborative work and study. Its collection of about 4.40 lakh items is used by more than 11000 members and others. The library extensively uses social media for improved communication and interaction and has created a blog to post current and interesting information and news items. Users can also follow us on the facebook and twitter. This is the reflection of library’s continuous engagement with its users as a valuable partner in their learning and research.

4.2.2.1 Library collection

IIT Bombay Library has developed an excellent collection of books, journals and non-book material in science, engineering, technology, humanities, social sciences and management. Collection building – a core activity of the library, has been undergoing a transformation. From print-only environment where all our acquisitions were in hard copy format, it has shifted to print-and-online and to online-only formats. The library currently subscribes to over 80% of its journals in online only format and the trend is likely to continue. However, most of books, both text and reference, are still preferred in print-only. The library collection comprise of books, journals, theses, reports, standards, pamphlets and other reading material.

4.2.2.2 Library Membership

Library membership is free to all students, faculty and staff of the IIT Bombay. The membership is also offered to IIT Bombay Alumni, Industrial and Corporate Houses, Engineering Educational Institutions, IITB retired faculty and officers, and other professionals on payment of fees.

4.2.2.3 Library Working Hours

- Monday through Friday 0900 – 2300 hrs
- Monday through Friday 0900 – 0100 hrs (during examination)
- Saturdays / Sundays / Holidays 1000 – 1700 hrs
- Saturdays / Sundays / Holidays 1000 – 0100 hrs (during examination)

4.2.2.4 Library Holidays

The library remains open on all days of the year except on the following Holidays

- Republic Day 26th January
- Independence day 15th August
• Gandhi Jayanti 2nd October
• Holi
• Diwali (Deepavali)

4.2.2.5 Circulation Hours

- Monday through Friday 0900–2000 hrs
- Saturday, Sunday & Holidays 1100–1300 hrs
- Self Issue / self Check out, any time till library is open.
- Study room books issued for overnight, one hour before closing of the library on all days
- A drop box has been placed near security check point. Library members desiring to return the borrowed books can be dropped them in the box.
- Bound volumes of journals, loose issues, pamphlets and standards are issued from first floor issue counter on working days from 0900–1800 hrs.

Central Library is a part of the institute-wide network built around a fiber optic Giga-bit Ethernet backbone comprising of five routing switches. The library is connected to the backbone through one of the routing switches. Institutes’ backbone in turn is connected to 2.7 GBPS of Internet bandwidth. The library has 12 servers, 70 PCs and other accessories adequate to cater to the needs of users. 25 PC are meant for users to access OPAC, databases, e-books, e-journals and other e-resources. The reading area in the library has been WI-Fi enabled to provide wireless access to the Internet. Users are welcome to use their laptops in the library.

4.2.3 Services

Book Bank: Central Library maintains a book bank mainly of undergraduate level text books to help students belonging to economically and socially weaker sections of the society. The bank has two collections namely (I) Special Collection (BC) for SC/ST Students (ii) Technological Lending Library.

Special Collection (BC) for SC/ST Students: Students can borrow up to 5 books from this collection for a period of one semester. The library issues a Circular in the beginning of every Semester and the eligible students may apply to avail the benefit as per the schedule announced by therein.
Photocopying

- The Central Library offers photocopying service to all its members, walk-in users and others.
- Only single copy of journal articles and book chapters are provided for private study and research purpose.
- The service is free to all the faculty members of IITB. Please contact: In charge, Bound Vols Section for details.

4.3 Indian Institute of Technology (IIT), Madras

Indian Institute of Technology Madras is one among the foremost institutes of national importance in higher technological education, basic and applied research. In 1956, the German Government offered technical assistance for establishing an institute of higher education in engineering in India. The first Indo-German agreement in Bonn, West Germany for the establishment of the Indian Institute of Technology at Madras was signed in 1959. IIT Madras is a residential institute with nearly 550 faculty, 8000 students and 1250 administrative & supporting staff and is a self-contained campus located in a beautiful wooded land of about 250 hectares. It has established itself as a premier centre for teaching, research and industrial consultancy in the country.

A faculty of international repute, brilliant student community, excellent technical & supporting staff and an effective administration has all contributed to the pre-eminent status of IIT Madras. The campus is located in the city of Chennai, previously known as Madras. Chennai is the state capital of Tamilnadu, a southern state in India.

4.3.1 IIT Madras Departments and Centres

IIT Madras has a total of 16 academic departments, 11 centres and few advanced research centres in various disciplines of engineering and pure sciences. It is recognised worldwide as a leader in the field of engineering education and research. It is reputed for the quality of its faculty and the outstanding caliber of students graduating from its undergraduate and postgraduate programmes, Research programmes leading to the degree of Doctor of Philosophy (Ph.D.) are available in all academic department of the institute.
4.3.2 IIT Madras Library

The Central Library is housed in a separate building and caters to the information needs of the institute faculty, students, staff, research institutions & industries. In addition, there are smaller libraries in each department, which house books borrowed from the main library for quick reference. It has around 2 million books covering all disciplines of science, engineering, technology, humanities & social sciences. The collection comprises printed documents such as books, reports, theses, standards, atlases, patents and journal back volumes. The non-book collections include material like micro fiche/film, audio/video cassettes and CD ROM discs. It has a separate collection of prescribed textbooks under 'Book Bank' for the exclusive use of students.

The Central library currently subscribes to around 1,000 scholarly journals in sciences, engineering and humanities. Under the INDEST consortium, the library provides on-line access to a large number of full-text journal databases from various publishers. These e-journals are accessible on intranet to campus users only.

The library provides various services for its members such as - Lending of books and journal back volumes, reservation of books, inter-library loan, document delivery, photocopying, DTP & offset printing, CDROM and Internet services & video screening. All the library activities are computerized, including bar-coded ID cards and separate On-line Public Access Catalogue (OPAC) terminals for searching books in the library.

The library working hours are from 9 A.M. to 11 P.M. on weekdays and 9 A.M. to 5.30 P.M. on Saturdays, Sundays & holidays. It is closed for 7 days in a year as per the institute's list of holidays.

4.3.2.1 Library collection

The collection of the Central Library in the area of science, technology, engineering, humanities, social sciences, management, generaletc.is very strong. We have total updated collection of Chemical Abstract since its first volume. The collection comprises mainly with books, theses, pamphlets, reports, current journals, back volumes, specifications, standards, patents, audio-video cassette, microfiche, microfilms CD-ROM databases etc. The collection is heavily used by the faculty,
students, retired faculty, alumni members, corporate members, industrial associates, project coordinators, scholars.

4.3.2.2 Library Membership

The Central Library enrolls the following types of members: The Detailed information and Smart Card Application forms are available at Membership Counter which need to be verified by the Deputy Registrar (Admin) for staff/faculty and Deputy Registrar (Academic) for students.

**Individual Member**  
Faculty, Staff and students of IIT Madras.

**Industrial Associate**  
Industrial Organisations who are members of Industrial Associate ship Scheme of IC&SR

**Corporate Member**  
Government R&D Centres

**Outside Member**  
Retired Faculty and Alumnus of IIT Madras

**Special Member**  
Visiting Faculty etc. are enrolled with the approval of the competent authorities of the Institute

4.3.3 Services

In additional to all general services, the Central Library provides various value added services including OPAC, Self-Check in/Check out, Self-Renewal of Books, Electronic Book Drop, Book Bank, Access to Abstracts of Publications through I-Portal, Translation, Book Reservation, Video Viewing, Inter- Library loan, Document Delivery, Reading, Access to E-Resources, Bibliographical Compilation, Patents Information, Standards Information Service, Technical Consultancy, Photocopying.

**Inter Library Loan**

- To develop library co-operation at local, regional, national & international level
- To arrange reprints for the IIT faculty & students
- To arrange consultation cards for local libraries
- To get institutional membership
- To arrange books on interlibrary loan for IIT faculty & students
4.4 Indian Institute of Technology (IIT), Kanpur

Indian Institute of Technology, Kanpur is one of the premier institutions established by the Government of India. The aim of the Institute is to provide meaningful education, to conduct original research of the highest standard and to provide leadership in technological innovation for the industrial growth of the country. The Institute began functioning in the borrowed building of Harcourt Butler Technological Institute in 1959 with 100 students and a small faculty. The Institute now has its own sprawling residential campus, about 2255 undergraduate and 1476 postgraduate students, 309 faculty and more than 900 supporting staff. The combined record of its past and present faculty and students along with the alumni spread across the world is awe-inspiring. With the path-breaking innovations in both its curriculum and research, the Institute is rapidly gaining a legendary reputation.

4.4.1 IIT Kanpur Departments, Schools and Centres

IIT Bombay has a total of sixteen academic departments, seven centres, five school, and six interdisciplinary programmes. It is recognized worldwide as a leader in the field of engineering education and research. It is reputed for the quality of its faculty and the outstanding caliber of students graduating from its undergraduate and postgraduate programmes. Research programmes leading to the degree of Doctor of Philosophy (Ph.D.) are available in all academic department of the institute.

4.4.2 IIT Kanpur (P K Kelkar Library) Library

P K Kelkar Library (Formerly Central Library) of the Indian Institute of Technology, Kanpur (IITK) is an academic Library with a collection of more than 3,00,000 volumes and subscriptions to more than 1000 periodicals. It is one of the best Libraries in the nation housed in three-stored building with the total 6973 sq. m. floor area. The Abstracting and Indexing periodicals, Microform, CD-ROM databases, technical reports, Standards and thesis are important part of this collection. Each year, on an average 4500 books and journal volumes are added to the collection.

4.4.2.1 Library Operating Hours

The Library opens 358 days a year, with the following schedule of hours

Monday-Friday : 8 A.M. to 12 midnight
Saturday : 9 A.M. to 12 midnight
Sunday & Holiday: 9 A.M. to 5:30 P.M.

Examination days: round the clock

"Library is closed on National holidays. Library On-line services are accessible 24X7 hours."

4.4.2.2 Library Collection

Books are basically organized by the revised 20th edition of Dewey decimal classification order (DDC20), and placed, collection wise, on the sequences of steel racks beginning from a part of the second floor and extending to top one. A descriptive dictionary card catalogue, based on AACR2 levels 2 cataloguing rules, has been maintained for the traditional access by author, title, LCSH subject headings and by name of series. Each week, new arrivals of books are displayed on the ground floor for readers.

- Books (general and reference) 175,000
- Cartographic materials 500
- Machine-readable databases 25
- Periodicals (back volumes) 135,000
- Technical Reports 25,000
- IIT Kanpur thesis 15,000
- ISI standards 10,000
- Periodicals on current subscription 1,200

The library maintains a card catalogue and on-line catalogue service for information about the holdings of periodicals and the location of individual titles. The currently subscribed journals are placed in the departmental/funding order, the sequence in each division being alphabetical again, also located on the top floor. The latest issues are displayed on the slanting covers of the pigeonholed racks. A rotating Linedex, in alphabetical order of titles, has been maintained for easy location of the current journals. Periodicals, single issues of bound volumes are not issued for home use except for overnight reading by the faculty members. Newly checked-in journals issues are displayed on the top floor, three times a week, and the bibliographic details of the same placed on the network.

CDs: Of late, the library has been building the collection of some information resources in CD-ROM and other magnetic media. Among them are some of the most
important abstract-based databases. With its well-equipped CD workstations, information seeking and researching has become a great deal more fun and easy than ever thought before. Some of the most used international databases on CD-ROM discs and diskettes, including archival files maintained by the library are: Oxford Dictionary, Ulrich on Disk, Psychology, Sociology, Cumulative Book Index, Encyclopedia science & tech, Biological Abstract, ASTM, BIS, LISA and National Geographic

**Photocopy Service:** Photocopying of materials available in the library is provided on payment basis. This service is for I.I.T. Faculty, Students, Staff and outsiders/permit holders only. Please remember that photocopying a complete document is violation of copyright act. Only 50 paise per page (one side) and 75 paise per page (Both side) are photocopy charge. Photocopy timing 9.00 AM – 9.00 PM (except Sunday and Institute holiday)

### 4.5 Indian Institute of Technology (IIT), Delhi

Indian Institute of Technology (IIT), Delhi is the center of higher training, research and development in science, engineering and technology in India. The institute was first established in 1961 as a College of Engineering and Technology in collaboration with the government of United Kingdom and British Industries. The institute was declared as Institute of National Importance under the “Institutes of Technology (Amendment) Act, 1963”. It was renamed “Indian Institute of Technology (IIT), Delhi”. It was having the status of a deemed university with its own academic policies, to conduct its own examinations and to award its own degrees. The institute is a residential institute; it provides residential facilities to the students and teaching staff of the institute. It is situated in Hauz Khas in South Delhi. Its campus extends to an area of 320 acre.

#### 4.5.1 Departments and Centers at IIT, Delhi

There are 13 departments and 13 centers for interdisciplinary research, various undergraduate, postgraduate, integrated degree programmes, interdisciplinary programmes and PhDs programmes are available in all academic department of the institute.
4.5.2 Central library

Central library was setup in August 1961 in the North East of the textile block of the institute. It shifted to the main building of the institute in 1968 and to its existing premises in 1988. The library is spread over three floors with the total covered area of 60,000 sq. ft. (approx.) and is centrally air-conditioned. The central library of IIT, Delhi has 18 departmental libraries. It collectively supports the teaching, research and extension programmes of the Institute. All the students, faculty members and employees of IIT, Delhi are entitled to use the library services, facilities on token membership. The central library is laying a huge collection of books on engineering, science and humanities. The library is fully computerized and uses LibSys software package, which supports all the in-house operations of the library. The LibSys consists of modules on acquisition, cataloguing, circulation, serials, articles indexing and OPAC.

The “Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium” was set-up in 2003 by the Ministry of Human Resource Development (MHRD) on the recommendation of an Expert Group appointed by the Ministry. The IIT Delhi has been designated as the Consortium Headquarters to coordinate its activities. The Consortium enrolls engineering and technological institutions as its members and subscribes to electronic resources for them at discounted rates of subscription and favorable terms and conditions. The Ministry provides funds required for subscription to electronic resources for 62 centrally-funded Government institutions including IITs, IISc Bangalore, NITs, IIITs, IIMs and few other Institutions that are considered as core members of the Consortium. The benefit of consortia-based subscription to electronic resources is not confined to its core members but is also extended to all educational institutions under its open-ended proposition

4.5.2.1 Library Working Hours

Monday through Friday: 9.00 A.M. to 9.00 P.M.
Saturdays, Sundays and Holidays: 10.00 A.M. to 6.30 P.M.
During Minor/Major Exams: 9.00 A.M. to 12.00 Midnight

Only referral services are extended on Saturday, Sundays and Holidays when the Library operates on skeletal staff. However, Textbook Section remains operational
all through the opening hours of the Library on all days. The Library remains closed on Republic Day (January 26), Independence Day (August 15), Dussehra, Diwali, Holi and Mahatma Gandhi’s Birthday (October 2) in observance of the holidays. Special arrangements are made to keep the Library open up to 12.00 O’clock (mid-night), before and during the minor and major examinations. A portion of Library on the ground floor has been segregated as an independent Library Reading Room where users can bring their personal books and other reading materials. Reading room is open to authorized users 24 hours a day.

4.5.2.2 Library Membership and Loan Privileges

All students, faculty and employees of the Institute are entitled for the membership of the Library. Library membership form is available at the Membership Counter at Central Library. The Library membership can also be availed by the retired employees and Alumni of the Institute. The Library has over 9500 valid members.

4.5.2.3 Library Collection (Print Collection)

The library has extensive collection on science, technology, humanities, social sciences and management sciences. Besides general collection, specialized collection in the following;

Reference Collection: The library maintains a separate reference collection consisting of encyclopedias, dictionaries, handbooks, technical data, almanacs, atlases, bibliographies, etc.

Hindi Collection: The central library has built up a good collection of books in Hindi. Books in Hindi include books on various subjects being taught and researched at the institute. Books in Hindi are prominently kept near the reference area in the library to promote its usage.

Print journals and bound volumes of Journals: The library subscribes to 615 current journals in print with back volumes of journals running into 95,510. Several journals that are subscribed in print are also accessible online from the publisher’s web site.

4.5.2.4 Library E-resources (Electronic library)

CD-ROM Database Service: The network based CD-ROM search service is available on the campus network the resources can be accessed on the intranet/internet.
**Print Journal and Access to their Electronic Version:** Full text electronic journals are available through the library website which can be accessed online from the publishers’ website.

**Electronic Books:** users can access to E-book series through the science direct.

**Electronic Resources through INDEST-AICTE Consortium**

**Video Collection:** The library has a collection of 1,064 video cassettes and facility to view them. Most of the video cassettes in the Library are video recordings of series of class room lectures delivered by the IIT faculty to the undergraduate engineering students.

**4.6 Indian Institute of Technology (IIT), Guwahati**

The history of IIT Guwahati traces its roots to the 1985 Assam Accord signed between the All Assam Students Union and the Government of India, which mentions the general improvement in education facilities in Assam and specifically the setting up of an IIT. IITG was established in 1994 by an act of parliament and its academic programme commenced in 1995. IITG admitted its first batch of students into its Bachelor of Technology programme in 1995.

Indian Institute of Technology Guwahati, the sixth member of the IIT fraternity, was established in 1994. The academic programme of IIT Guwahati commenced in 1995. Indian Institute of Technology Guwahati campus is on a sprawling 285 hectares plot of land on the north bank of the river Brahmaputra around 20 kms from the heart of the city. With the majestic Brahmaputra on one side, and with hills and vast open spaces on others, the campus provides an ideal setting for learning.

**4.6.1 Departments and Centers at IIT, Guwahati**

IIT Guwahati is one of the biggest technical institutions in the country having the largest number of academic units. It has 11 academic departments covering engineering, applied sciences, humanities & social sciences, and management programmes, 8 academic centre and sponsored researches conducted till now has covered areas such as theoretical and applied aspects of core science (physics, chemistry and mathematics), social sciences, information and communication technology, electronics, artificial intelligence, material science, nanotechnology, biotechnology, alternative energy, environment, water resources, structural and
earthquake engineering, geotechnical engineering, chemical engineering, heat transfer, machine design, manufacturing, product design, etc. Research programmes leading to the degree of Doctor of Philosophy (Ph.D.) are available in all academic department of the institute.

4.6.2 Lakshminath Bezbaroa Central Library

Central library is a window to the world of latest information in sciences, engineering, technology, humanities & social sciences. The Library of the Institute was named after the renowned and much revered literary figure Sahityarathi Lakshminath Bezbaroa on 5th December, 2014. The Lakshminath Bezbaroa Central Library is housed on a four stored building having a floor area of about 7500 sq. meter. Being a major central service point, it provides necessary supports for teaching, learning, research activities of the Institute by creating state-of-the-art facilities and offering innovative services to the academic community. Library works from 08:00 AM till 12:00 MIDNIGHT (including holidays).

4.6.2.1 Membership Information

The Central Library extends its facilities to about 5000+ regular members. Annually, on an average about 250-350 visitors also avail the facilities of the Library. Its annual transaction of documents is 3.5-4 lakh.

The Central Library remains open from 8.00 a.m. to 12 midnight everyday (including holidays).

- No book or other reading material will be issued without institute identity card.
- Issuing through proxy not allowed.
- While issuing: sign on the 'issue-slip'
- While returning: ensure that the 'return-slip' is signed by library person
- For faculty members only: in addition to total quota of 15 books, maximum 5 extra books can be issued only in case of emergency requirements.

4.6.2.2 Library collections

The Library currently has 1,54,564 printed volumes and 2291 subscribed current journals several e-books, online full text and abstract database, across all domain of academic pursuit through the campus network. Being a member of INDEST-AICTE Consortium and DBT eLibrary Consortium (DeLCON), the
Library provides access to 12835 e-journals. The database for the entire collection is available through web-based On-Line Public Access Catalogue (WebOPAC).

4.7 Indian Institute of Technology (IIT), Roorkee

Indian Institute of Technology - Roorkee is among the foremost of institutes of national importance in higher technological education and in engineering, basic and applied research. Since its establishment, the Institute has played a vital role in providing the technical manpower and know-how to the country and in pursuit of research. The Institute ranks amongst the best technological institutions in the world and has contributed to all sectors of technological development. It has also been considered a trend-setter in the area of education and research in the field of science, technology, and engineering.

The Institute has completed 150th year of its existence in October 1996. On September 21, 2001, an Ordinance issued by the Government of India declared it as the nation's seventh Indian Institute of Technology. The Ordinance is now converted into an Act by the Parliament to make IIT, Roorkee as an "Institution of National Importance".

The Institute offers Bachelor's Degree courses in 10 disciplines of Engineering and Architecture and Postgraduate's Degree in 55 disciplines of Engineering, Applied Science, Architecture and planning. The Institute has facility for doctoral work in all Departments and Research Centres.

The Institute admits students to B.Tech. and B.Arch. courses through the Joint Entrance Examination (JEE) conducted at various centres all over India.

4.7.1 Departments and Centers at IIT, Roorkee

IIT Roorkee is one of the biggest technical institutions in the country having the largest number of academic units. It has 21 academic departments covering engineering, applied sciences, humanities & social sciences, and management programmes, 1 academic centre, 3 centres of excellence, 5 academic service centres and 3 supporting units. Research programmes leading to the degree of Doctor of Philosophy (Ph.D.) are available in all academic department of the institute.
4.7.2 Mahatma Gandhi Central Library

As in any world class academic institution, library services in IIT Roorkee are the core of academic services, and therefore, Central Library of the Institute finds a unique place in Academic Service centres. Besides Central Library every academic department/centre has its own departmental library which contains the core collection required by the concerned department/centre.

The Central Library of the Institute is one of the best academic libraries in the country. With its collection of more than 3,50,000 documents it provides the world class information support to its users. Besides printed books and journals, its collection contains all forms of documents such as CD-ROMs, On line databases, audio-video material, standards, specifications, theses, reports etc.

The collection is mainly strong in sciences and technology, however substantial quality information sources on humanities and social sciences are also available. Library is open for bonafide members though non-members can also utilize its resources with the permission of the Librarian.

The main emphasis of the central library is on providing digital information support which is provided through its five servers and more than 70 user terminals. The library has access to more than 8000 electronic journals which is available through the campus wide fiber-optic network to all computers in the institute. The Library is currently in the process of digitizing its archival collection and theses and dissertation for which an Imaging Centre has been established with latest equipment.

4.7.2.1 Library Working Hours and Membership Information

The Circulation Section remains open between 9.00 AM to 6.00 PM on weekdays. On Sundays and holidays, only reading room and periodical section remains open. There is no issue and return of books on these days.

The library provides regular membership to all the students, faculty members and employees of the university. The current membership is approximately 4000.

4.7.2.2 Library Collection

Mahatma Gandhi Central Library finds a unique place in the academic spectrum of the Institute. Started in 1848 with a few hundred donated books, its collection has grown to more than 3,50,000 documents in all media. Providing
information through e-resources is the main focus of the Library. It has around 90,000 sq ft of fully air-conditioned space. It can accommodate more than 500 readers at any point of time. The library building is WiFi enabled and contains a total 75 user terminals for dedicated readers. It also contains an 80-seater open reading room.

4.7.2.3 Library Services

**CD-ROM and Online Database Search Services:** A CD-ROM network comprising of 2 Axis Store point CD-Servers with 14 CD-towers, 1 DVD tower and four Pioneer CD-ROM exchangers have been established. The CD Net is integrated with library network. The following CDROM data bases are available with the library

- Compendex plus (Now available on Internet)
- Metadex and Materials Abstracts (Now available on Internet)
- Biotechnology Abstracts
- MathSci (Now available on Internet)
- Inspec Ondisc (Now available on Internet)
- International Civil Engineering Abstract
- Energy and Environment Abstract
- Water Resources Abstract
- ICONDA (International Construction Database)
- Earthquake Engineering Abstract (Now available on Internet)

**E-Journals & Internet Search Services:** Library subscribes to more than 8000 e-journals through INDEST and its own arrangement. Providing latest information to its users is the primary responsibility of any modern library. To fulfill this responsibility, the Central Library had made arrangements to provide Internet search access to its readers with the help of 50 user systems. Readers can also access 7000+ journals online.

**Video Information Services:** The Central Library also maintains four Video Work Stations for screening of technical video films. Presently more than 400 video films are available with the library.

**Xeroxing:** Photo copy facilities are available at the library at the following timing and rates:

Timings: 9.00 AM to 5.30 PM (on all working days)
The service is given at the subsidized rate of 70 paise per page to the students and Rs. 1.50 for outsiders.

4.7.2.4 Text Book Loan Scheme

The Text Book Loan Scheme section contains 30,000(approx.) recent editions of text books prescribed for study at the Undergraduate and M.Sc/M.Tech level. A student may become member of the scheme on payment of prescribed fee. One may get three text books issued for semester duration. Text books may be exchanged on all working Wednesdays and Saturdays. A fine of Rs. 1.00 per volume per day shall be charged after the last day of return is over.

4.7.2.5 Inter Library Loan Scheme

Under the Inter Library Loan Scheme material not available in our library is procured from neighborhood libraries or sister institutions on Inter Library Loan for meeting the special needs of all potential readers. Requisition for Inter Library Loan of material should be send with the recommendation of the Head of Departments or the guides of research scholars. The Inter Library Loan period is one month.