

Student's Study Guide

MIT School of Distance Education

S. No. 124, Paud Road
Kothrud, Pune 411038
Maharashtra, India

www.mitsde.com

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Dear Student,

Welcome to the MIT family! You are now a valued student of the MITSDE. This study guide has been compiled to make your journey during the course, easy and trouble free.

The study guide briefs you on the important aspects of the course you need to know. It will also be a reference book you can turn to whenever you are in doubt, as it gives you details about how to complete your assignments, how to appear for examination, the grading system we follow, the examination format and so on. Keep it handy and safe!

I am sure you will enjoy your course and avail the support services we have arranged for you.

Best of Luck.

A handwritten signature in black ink that reads "Sunil Karad". The signature is written in a cursive style with a circular flourish at the beginning.

Dr. Sunil Karad
Executive Director
MITSDE

Maharashtra Institute of Technology (MIT)

MAEER's Maharashtra Institute of Technology (MIT), Pune, came into being in June 1983 with the objective to educate and train, young and deserving students in the field of engineering and technology. Since its inception, it has strived for the betterment of the society through a value based education system. With over 50,000 students across varied disciplines under its umbrella, MIT Group of Institutes has achieved tremendous success in a short span of time and reflects its excellence in the field of Engineering, Medicine, Research, Management, Primary and Secondary Education, Peace Studies, Environment and Pollution Control and also towards promoting Human Values and attaining the ultimate goal of World Peace.

Faculty of Engineering

- Maharashtra Institute of Technology (MIT), Pune
- Maharashtra Academy of Engineering (MAE), Pune
- MIT Women Engineering College (MITWEC), Pune
- Sri Savitribai Phule Polytechnic (SSPP), Pune
- Maharashtra Academy of Naval Education and Training (MANET), Pune

Faculty of Management

- MIT School of Management (MITSOM), Pune
- Sri Saraswati Institute of Computer Sciences (SSICS), Ambejogai

Autonomous Institutes

- MIT College of Insurance, Pune
- MIT School of Distance Education, Pune
- MIT School of Foreign Languages, Pune
- MIT School of Government, Pune

Faculty of Medicine

- Maharashtra Institute of Medical Sciences and Research (MIMSR)
Medical College, Latur
- Maharashtra Institute of Medical Education and Research (MIMER)
Medical College, Talegaon (Dabhade) Pune
- Maharashtra Institute of Pharmacy
Pharmacy College, Pune
- College of Nursing, Latur

Schools & Colleges

- MIT Junior College (Arts), Rameshwar, Latur
- MIT Junior College of Science & Commerce, Pune
- Sri Sharada Prathamik Vidyalaya, Pune, (Marathi Medium)
- Shri Sant Dnyaneshwar Madhyamik Vidyalaya, Pune (Marathi Medium)
- Shri Swami Vivekananda Primary School, Pune (English Medium)
- New Shree Saraswati High School, Pune (English Medium)
- Sri Saraswati Vidyalaya, Rameshwar, Latur
- Sri Saraswati New English School (Public School) Ambajogai, Beed
- Vivekanand Academy Primary School, Aurangabad
- Sri Prayag Karad English School, Barshi
- Shri Eknathrao Avhad Vidyanagari, Chichondi, Ahmednagar
- Vishwashanti Gurukul, Rajbaug, Pune

World Peace Centre, Alandi, Pune

UNESCO Chair for Human Rights, Democracy, Peace & Tolerance

About Distance Education

Distance education traditionally provides access to instructional programmes for students who are separated by time and/or physical location from an instructor. It is thought of as a pre-packaged text, audio, and/or video course taken by an isolated learner with limited interaction with an instructor or other students.

But now, this perspective has changed. Today information technology can allow a rich interactive distance education experience that can surpass the interactivity of a traditional classroom.

Distance education does not preclude traditional education processes; but is used in conjunction with in-person classroom or professional training procedures and practices.

For us at MITSDE, distance education is an instructional delivery system that connects learners with educational resources. It provides educational access to learners who cannot enrol themselves, for certain reasons, to regular educational programmes. It also enhances educational opportunities for students and working people.

MIT School of Distance Education (MITSDE)

Although, MIT has several institutions conducting regular courses in Engineering, Medicine and Management, we felt that there is a large segment of young professionals and aspiring students who are unable to pursue these courses either due to financial constraints or lack of time.

MIT School of Distance Education started with the primary aim of making quality education accessible, affordable and convenient, and reach out to as many aspiring students as possible.

Considering the changes in the field of technology and the challenges that come with it, we offer specialised courses, which is the need of the hour. We understand the necessity and relevance of these courses in today's world and offer specialised training in them based on latest theories. The courses have been designed and structured to suit the distance mode of education.

We have full-fledged autonomous departments of the courses we have offered, hence, further help and assistance is readily available for the students.

Distance education has always been associated with courses on more theoretical subjects like Insurance, Management, Journalism, etc. MITSDE has taken a bold step of offering highly practical and specialised courses in the field of engineering technology and medical sciences. Courses like Energy Management, Piping Design and Engineering and Fire Protection Engineering have been introduced. A diploma in any of these courses is not just a value addition to your CV but a step forward in your professional career.

A diploma in Fire Protection Engineering gives you specialised training in different aspects pertaining to design, installation, commissioning, and maintenance of fire protection systems. A course in Piping Design can help system designers, mechanical, packaging, and manufacturing engineers to accurately design, route documents, and produce complex piping and tubing systems. The diploma in Energy Management would help in understanding the importance of Energy Management, target setting, planning, monitoring, reporting, and implementing optimal control strategies.

Study Procedure

MIT School of Distance Education has developed a unique “Distance Education” methodology that combines all the three forms of learning available today: text-books, internet/CD (e-learning).

All the MITSDE education programmes combine the latest technologies, quality curriculum and innovative teaching methodologies to provide a unique learning experience to the students.

Upon Enrolment

Upon enrolment as a student, you will receive the following:

- Identity Card
- Log-in ID and Password
- Course material for the semester in the form of Hard Copy
- Course material in the form of CD-ROM

Course material

Comprehensive course material will be provided at the beginning of each semester. The course material has been written and compiled by highly qualified and experienced faculty members.

E-learning

Students will be provided with CDs of the course material for select courses along with the hard copy as a supplementary learning methodology.

E-mentoring

Students are provided with an extremely fast and effective e-mentoring system, which enables him/her to address specific academic queries via e-mail. An expert faculty will reply to the query within a period of four working days.

Web-based support services

There is a powerful web portal, LMS (Learning Management System) procured from The Boston Group U.S.A. that provides the facilities listed below:

- Submit on-line assignments at any time and view results immediately
- Book a time slot and date for on-line examination
- View important instructions regarding exams, assignments and other activities through the Message Board
- View academic status of individual student
- Send e-mail to the distance education representative as per the nature of query
- Membership of MIT digital library
- Information about seminars/conferences in specific field
- Conference proceedings
- Product catalogues
- Live case studies

The LMS is customised and updated with latest learning management features, which enables students to learn in the most technologically advanced way.

Assignments and examinations

Assignments and examinations are compulsory and are conducted on-line. The weightage is 30% and 70% respectively. A student is required to pass assignments and examinations separately for all the subjects, to qualify for the Diploma. Each assignment and examination is of 100 marks and the minimum passing marks is 50% for each assignment and examination. Assignments in which students have failed are required to be re-submitted within the period of validity of registration. The assignments can be submitted anytime before the lapse of the registration period. If a student fails in any of the exams for any of the subjects, s/he needs to re-appear for the respective papers and clear them before the lapse of the period of validity of registration for the course.

The semester exams will be held online, four times a year, i.e. in March, June, September and December, through our portal www.mitsde.com. A student can appear for the exams from a location that is convenient to him/her, either in any one of MIT's selected centres or residence or a cyber café.

The basic purpose of the examination is to assess the knowledge and skill a student has acquired through the distance learning mode. In case the score acquired is not the score desired, then the student has the opportunity to re-appear for the same exam in the following quarter and try for a better grade.

Kindly remember that proficiency in the chosen subject is the only decisive factor that will count in your profession. Hence it is our appeal that while appearing for the exams no help from any external source is taken. Attempt the exam with complete honesty and sincerity. We request you to focus on acquiring the knowledge and skills to the maximum to excel in your profession.

Procedure for the online examination

- Check for the date and time on our website, www.mitsde.com
 - You are expected to pay the examination fees for the subjects you have opted for, one month in advance
 - On registering for the online examinations, MITSDE will communicate your Login Id and Password via e-mail
 - Select the location of your computer workstation for the examination, which can either be any of our MITSDE centres or a cyber café or your home
 - Please ensure that your computer has three hours of uninterrupted connectivity of power and internet service
 - On the day of the Exam, Log on to our website www.mitsde.com
 - Enter the Login Id and Password assigned to you
 - You also have an option to appear for a 10 minute mock test before attempting the paper
 - Please note that in case of power failure the student will have to re-appear for the exam in the following quarters on the scheduled date and time
 - The questions will appear on the screen at the scheduled time
 - The duration of the examination will be two hours unless otherwise specified
 - The examination would be of multiple choice questions and you have to click the correct answer
 - Each question will remain on screen for 90 seconds. If you answer or skip the question before 90 seconds, the next question will immediately appear on the screen
 - In any case, the next question will appear after 90 seconds
- The Score will follow after you complete the examination and click on “submit” button. Successful candidates will receive their mark sheets duly stamped, within 10 working days.

Please note that though registration is open round the year a student can appear for the quarterly examination only after three months of registration i.e., a student registered in the month of September can appear of examination in December provided he completes 90 days of registration before the dates for examination. Depending upon your preparations, you can choose to appear for a few or all the subjects of the semester. The examination fees are to be paid separately for each subject.

Diploma

A grading system is used for issuing the Diploma for which the minimum score should be at least 50%.

Grading system		
Grade	Description	Percentage
A+	Distinction	70% and above
A	First Class	65% to 69%
B	Second Class	55% to 64%
C	Pass Class	50% to 54%
D	Fail	Below 50%

Study Tips

We assume that it may have been a long time since you would have studied for any regular course. If you are a professional, it may be difficult to go back to being a student again, or perhaps this may be the first time you have enrolled for a course through the distance mode and it may take you some time to adjust yourself to studying through the distance mode.

It is often felt that distance education has certain inherent handicaps: the obvious one being the absence of a teacher, as against a traditional classroom course.

Frankly stating, in distance education you have the benefit of two teachers. One is the subject matter expert who writes the course material and the other is the tutor who provides guidance and is available on-line throughout the course. As the course progresses, your contact becomes personal with them and you will find that you have received more personal attention and guidance from your distance mode teachers than you would have had in a class of 60 -80 students.

Besides, there are other advantages: you can study at home and at your own pace. Sometimes you might be tired, confused, or just not in a mood to study; then, you have the option to take a break, refresh yourself and get back to your studies. At other times, you find some chapters easy, you go through them faster (than a teacher would in class) and if you don't understand a section, you take your time to go through it again without holding others up, as you would in a classroom. The distance mode of education does have its advantages and with determination you can get the maximum benefit from what has been offered.

To make sure that you get the best from this programme, here are a few important study tips:

1. Each course in each semester has four to five subjects, which cover the topics in detail. Our course material is self-explanatory and the chapters in each course are largely self-contained. However this guide gives a list of easily available books as recommended reading to give further insight into the subject.
2. It is very important that you go through all the chapters and sections in the order they have been presented.
3. We have provided space in the chapters in the form of wide margins. Use the space to make margin notes (these could be important points, or points that need clarification, etc.). You could also list the new terms and concepts introduced in each chapter as well as the concepts you find difficult to understand and would like to seek clarification on.
4. All chapters end with a self-assessment, which consists of objective questions. Please make sure that you work through them before you proceed to the next part of the unit. These exercises are designed to help you assess your progress in the subject and your grasp on it.
5. You can check the answers to these questions that are provided at the end of the book.

Study schedules and deadlines

As mentioned earlier, this may be the first time you are studying through the distance mode. To succeed in this mode of education, the key word is “regularity”.

The system gives you the flexibility to study at your own pace and convenience. Each chapter will take you, on an average, 5 - 10 hours to work through, depending on your pace. When we say work through, we mean you should not read through the unit but do all the activities and self-assessment questions in each chapter. Keeping in mind the schedule of your job and the time you can give to the lessons on holidays and in your free time, draw up a timetable for yourself. Adjust your study hours to suit your individual schedule, but once you make a timetable try to adhere to it. We recommend you put in 10 - 12 hours of study per week. Set yourself a deadline for finishing each chapter.

Fire Protection Engineering

Overview

Fire protection engineering was once a subject treated as a part of the curriculum in Architecture and in Chemical Engineering. Today due to its scope of application, it is a separate stream of specialisation and career.

Indian Fire Fighting News (IFFN) report indicate, annual losses through fire in industrial and domestic sector and natural resources to about 440-500 crores and deaths of hundreds of innocent lives. Applications of Fire protection techniques are considered as important factor in Disaster management.

Fire protection engineers apply their knowledge in a systematic approach to fire prevention planning, review, code compliance, fire safety and loss prevention programmes, fire administration, equipment representation and sales, and fire protection system design. Thus, it is clearly seen that the scope of the subject has increased with the application of the same and has evolved as one of the futuristic subjects of study with a wide area of demand. A fire protection engineer today, has a broad scope for occupational opportunities in a variety of areas which include Insurance Sector, Manufacturing Industry, Refineries, Thermal and Gas based Power Plants, Chemical, Pharmaceutical and Polymer Industries, Airports, Star Hotels and Resorts, Recreation Centres, Institutes, Equipment Manufactures, Municipal Corporations, and State and Central Administrations.

Fire Protection Engineering in India

In India, fire safety compliances are enforced through the National Building Codes of India. The code classifies buildings and specifies necessary requirements to minimise danger to life from fire, smoke, fumes, or panic before the building is evacuated. It thus gives a unified description of the building regulations for the use of the Government departments, Municipal bodies and other construction agencies throughout the country.

The issues of fire protection, fire prevention and fire legislation fall under the purview of local government bodies like the municipal corporation, etc. These bodies are empowered to frame their rules and regulations for their jurisdiction. Besides, the Ministry of Home Affairs (MHA) also renders technical advice to States and Union Territories. This is done through organisations that are directly run by the Ministry of Home Affairs. Some of these organisations are mentioned below:

Central Industrial Security Force (CISF)

<http://cisf.nic.in/>

The CISF was set up under an act of Parliament on 10th March 1969 with 2,800 personnel. Subsequently, the CISF was made an Armed Force of the Union by an act of the Parliament passed on 15th June 1983. With over 95,485 personnel today, it is one of the largest Paramilitary Forces of the nation. The CISF has a highly specialised, trained and fully equipped fire wing. The fire wing provides fire coverage to establishments varying from power plants, refineries, petrochemicals, fertilisers, steel plants, surface transport, heavy industries, space application centre and other related industrial undertakings or installations.

The Bureau of Indian Standards (BIS)

<http://www.bis.org.in/>

The Bureau of Indian Standards (BIS), a Government of India statutory body has developed interactive and user-friendly software based on the National Building Code of India Part-IV, for facilitating human decisions on Fire Protection in Buildings. The software, the Fire Protection Expert System (FPES) is an expert system based on recommendations of the National Building Code of India. The software is tested and approved by Fire Protection Experts. It is priced at Rs 1950, and is available at any BIS sales point or can be obtained by writing to:

Director (Sales)
Bureau of Indian Standards
Manak Bhavan.
9, Bahadur Shah Zafar Marg, New Delhi 110 002

Institute of Fire Engineers (IFE), New Delhi

<http://www.ifeindia.org/contact.htm>

Another important organisation working in the field of fire engineering in India is the Institute of Fire Engineers (India). This was established on recommendations of the standing Fire Advisory Council of the Ministry of Home Affairs (MHA). The Institution is a premier non-government organisation (NGO) and a professional body registered under the Societies Act, 1861, and is dedicated to the cause of fire engineers and fire engineering profession.

The constitution of IFE (India) is drawn on similar lines of the IFE (UK). The main aims and objectives of the institution is to promote, foster, enhance and augment the science, practice the business of Fire Extinction, Fire Prevention and Fire Engineering and all functions connected therewith. The institution is managed by an Executive Council consisting of 18 elected members (six members from fellow/members, six members from Associates and six members from the Graduate category) and three co-opted members.

The institute conducts the 'Graduateship' examination, which is recognised by the Department of Education, Government of India, as the requisite qualification for middle level and senior supervisory posts. It also publishes a quarterly journal called "The Fire Engineer", and closely associates with all organisations engaged in fire protection work. In addition to this, it renders technical advice on the subject and takes up assignments to evaluate Fire Risks, to provide Fire Protection Schemes and to carry out Fire Safety Audits of industries and commercial complexes.

National Fire Service College, Nagpur

http://nfscnagpur.nic.in/about_college.htm

Established in 1956, initially in Rampur, UP and later shifted to Nagpur, the college offers courses, such as, Sub-officer's, Station officer's and Instructor's course, Divisional officer's course,

Breathing apparatus course, Fire prevention course, and a Bachelor of Engineering (Fire). Except for the Bachelor's course which is two and half years in duration, all the other courses are short term. The Ministry of Home Affairs of the Government of India runs the college.

Society of Fire Protection Engineers (SFPE), Bethesda, USA

<http://www.sfpe.org/contact.htm>

At the international level, the biggest organisation working in the field of fire protection engineering is the Society of Fire Protection Engineers (SFPE) based in Bethesda, USA. It was established in 1950 and incorporated as an independent organisation in 1971. The purpose of the Society is to help make advancements in the science and practice of fire protection engineering and its allied fields, to maintain high ethical standards among its members and fire protection engineering education.

The Society's activities include a series of educational seminars and short courses, technical symposia and conferences, books and publications designed to promote fire protection engineering and provide technical information to the fire protection community. The Society publishes a bi-monthly newsletter, a peer reviewed quarterly journal and a quarterly technical magazine called 'Fire Protection Engineering'.

Institutes

India

- National Fire Service College, Nagpur
<http://nfscnagpur.nic.in/about-college.htm>
- The Institute of Engineering, Thiruvananthapuram
- Institute of Fire and Safety Technology (IFAST), Thripunithura
<http://www.nifeindia.com>
- National Institute of Fire and Safety (NIFE), Kochi
www.nifeindia.com
- National Fire Academy, Vadodara
- Institution of Fire Engineers (India), New Delhi
www.ifeindia.org
- Indian Institute of Fire Engineering, New Delhi
<http://www.iteindia.org/contact.htm>
- Maharashtra Institute of Technology (MIT), Pune
www.mitpune.com

Abroad

Department of Fire Protection Engineering, University of Maryland

<http://www.fpe.umd.edu/>

The department offers undergraduate, graduate, distance learning, as well as co-ops and internship programmes. It also offers MS and Ph. D. degrees.

Dr. Marino di Marzo

Chair and Graduate Director

Department of Fire Protection Engineering

University of Maryland

College Park, MD, USA 20742-3031

E-mail: marino@eng.umd.edu

Fire Protection Engineering & Centre for Firesafety Studies, Worcester Polytechnic Institute

<http://www.wpi.edu/Academics/Depts/Fire/>

It is the largest fire protection engineering department in the US offering MS and Ph. D. degrees.

It also offers distance learning programme and various certificate programmes.

Worcester Polytechnic Institute

100 Institute Road, Worcester, MA 01609-2280

School of Fire Protection, Oklahoma State University

<http://fpst.okstate.edu/>

It is one of the oldest US universities offering a four year degree programme in Fire Protection and Safety Technology. It also has the International Fire Service Training Association/Fire Protection Publications (IFSTA/FPP) on the campus. The IFSTA/FPP is the world's largest distributor of fire fighting training manuals.

School of Fire Protection

Oklahoma State University

499 Cordell South, Stillwater, OK 74078-4082

Email: fpst@ceat.okstate.edu

Department of Fire Safety Engineering, Lund University

<http://www.brand.lth.se/english/>

It offers MS and Ph. D. degrees in Fire Safety Engineering. It also has a huge database of online publications.

Department of Fire Safety Engineering

Lund University

P.O. Box 118, SE-221 00 Lund

Sweden

E-mail: brand@brand.lth.se

Career Opportunities

A course on Fire Protection Engineering can be the first step towards a career as a fire safety professional. You can join the civil defence services like home guards, or become a site controller for industries and institutes. Fire safety professionals can also work in services, maintenance, production, civil enforcement agencies, consulting engineering companies, refineries, petroleum and petrochemical plants, airports, hazardous chemical plants, hospitals, commercial complexes, high rise buildings, service sector, insurance companies, etc.

Industrial and non-industrial sectors that recruit fire safety professionals:

- Petrochemicals
- Gas based industries
- Thermal power stations
- Rayon and viscous industries
- Paper and pulp industry
- Textile and clothing industry
- Garment and leather industry
- Aviation industry
- Logistic support and transport
- Cargo shipping industry
- Steel and iron industry
- Amusement parks and entertainment industry
- Airports and metro railways
- Civil authorities/Government sector
- Hospitals and educational institutes

Some well-known Indian companies that recruit fire engineers:

- Indian Petrochemical Industries Ltd.
<http://www.ipcl.co.in/>
- Reliance Petrochemical
www.ril.com
- Gas Authority of India Ltd.
<http://www.gailonline.com/>
- Oil & Natural Gas Corporation Ltd.
<http://www ONGCINDIA.COM/>
- Herdillia Chemicals Ltd.
[Http://www.herdillia.com/](http://www.herdillia.com/)

- Hindustan Lever Ltd.
<http://www.hll.com/>
- CIPLA
<http://www.cipla.com/>
- Mangalore Refinery & Petrochemicals Ltd.
<http://www.mrpl.co.in/>
- Coal India Ltd.
<http://www.coalindia.nic.in/>

Books

- Fire Protection Engineering in Building Design, First Edition, Jane Lataille, Butterworth-Heinemann (September 20, 2002)
This book is an excellent reference on incorporating fire protection standards compliance into the design of buildings. This handbook is useful for engineers involved with commercial buildings as well as those dealing with industrial structures.
- Handbook of Building Materials for Fire Protection, Charles A Harper, McGraw-Hill Handbooks, 2002
- An Introduction to Fire Dynamics, Dougal Drysdale, Second Edition, John-Welly and sons 1999
This book identifies fire science and fire dynamics and provides the scientific background necessary for the development of fire safety engineering as a professional discipline. It is an essential reading for all those involved in this wide ranging field, from Fire Prevention Officers to Consulting Engineers, whether involved in problems of fire risk assessment, fire safety design or fire investigation.
- Building Fire Performance Analysis, Robert W. Fitzgerald, Wiley Publisher, 2004
- Introduction to Fire Protection, Robert Klinoff, Thomson Delmar Learning, 2002
- National Fire protection Association-codes and Standards 2004-2005, U.S.A.
- Factory Manual Handbook, U.K.(fire protection)
- Tariff Advisory Committee Manuals, Government of India
- Fire Officers Committee Handbook, U.K.

* The books can be obtained from any leading bookshop by placing prior orders, or on the Internet through online bookshops, such as <http://www.barnesandnoble.com/> and <http://www.amazon.com/>

Journals

- Journal of Fire Protection Engineering
Published by Sage Publication, this journal can also be viewed online at <http://www.jfe.sagepub.com/>
- National Fire protection Agency, USA Journals
- Loss Prevention Association of India Journals
- Alarm: Modern Fire Protection and Security Systems Bulletin
ISSN 0528-5984
www.cerberus.ch
- Annual Book of ASTM Standards (A)
www.astm.org
- American Fire Journal
USA
- British Fire Services Association Journal (Q)
UK
- Journal of the Fire Protection Profession (M)
www.dmg.co.uk
- FAM - Fire and Materials: an international journal
W Sussex
- Fire and Rescue
www.nfrmag.com
- Fire Australia
www.fpaa.com.au
- Fire Engineers Journal NB FROM 2002 joint publication with Fire Prevention.
148 New Walk
- Fire Safety Journal
www.elsevier.com/locate/firesaf

Energy Management

Overview

Energy is one of the major inputs for economic development of any country. The demand for energy is increasing day by day, while power generation resources and infrastructure are limited. Hence Energy Efficiency has become a prime issue for industries and our nation at large. The effort to identify wasteful energy use and take action to reduce or eliminate it is the need of the time..

By the implementation of energy efficiency measures, several industries have benefitted through improved profitability and productivity. There is a large demand for knowledge base in this field, which provides a career opportunity for aspiring engineers.

This Post Graduate Diploma Course in Energy Management (PGDBM) is designed to make the students aware of the need for energy conservation and various aspects of managing energy, in order to achieve energy efficiency. The course thus paves the way for a rewarding career in energy management and energy efficiency.

Indian Energy Scenario

The per capita energy consumption is too low for India as compared to the developed countries. It is just about 4% of USA and 20% of the world average. The per capita consumption is likely to grow in India with the growth in economy, thus increasing the energy demand. India's demand for coal is expected to double (from present level of 290 million tons per year) by the year 2010. The demand for petroleum products is likely to rise from 98 million tons in 2001 - 2002 to around 140 million tones in 2007. India currently has a demand shortage of around 14% and an energy deficit of 8.4%. Keeping this in view and to maintain a GDP (Gross Domestic Product) growth of 8% to 10% the Government of India has very prudently set a target of 215800 MW power generation capacity by 2012, from the level of 100010 MW as in 2001. This is capacity addition of 115800 MW in 11 years.

The increase in demand as above is going to increase the requirements for appropriate infrastructure, finance and trained manpower. The need of the hour is to reduce the maximum demand through persistent energy conservation efforts.

Scope of Energy Management in India

The Government of India has already de-licensed the generation of electricity, also allowing inter-state transmission, as a result of which the market is open to all. Accordingly, electricity generators now do not need a licence as long as the power generating project fulfils the terms and

conditions laid down in the Electricity Act, 2003. Considering this, the power generating capacity is supposed to double by 2012.

There is also a separate provision for the encouragement of renewable and alternate sources of energy. It is targeted that by 2010, there shall be 10% of power share from renewable sources of energy.

With the background of high energy saving potential and its benefits, bridging the gap between demand and supply, reducing environmental emissions through energy saving, and to effectively overcome the barrier, the Government of India has enacted the Energy Conservation Act, 2001. The act provides the much-needed legal framework and institutional arrangement for embarking on an energy efficiency drive.

The newly enacted Energy Conservation Act, 2001 has created a huge demand for energy managers and energy auditors. Under this act, all the industries (especially designated industries which are energy intensive) are supposed to conduct energy audits through certified energy auditors. It is also mandatory for them to appoint a certified energy manager.

Agencies involved in Energy Conservation activities

Bureau of Energy Efficiency (BEE)

<http://www.bee-india.nic.in/>

Under the provision of the Energy Conservation Act, 2001, the Bureau of Energy Efficiency (BEE) was established in March 2002 as a statutory body under the Ministry of Power, Government of India. The BEE mission is to institutionalise energy efficiency services, enable delivery mechanisms in the country and provide leadership to the key players involved in the energy conservation movement. The primary goal of the Bureau is to reduce the energy intensity in the economy.

The BEE conducts the National Certification Examination for Energy Managers and Energy Auditors once a year, and a certificate is issued on successful completion of the written examination and viva. The minimum qualification required for the certified energy auditor/manager is a degree/ diploma in any engineering discipline.

Maharashtra Energy Development Agency (MEDA)

<http://www.mahaurja.com/>

MEDA is a state nodal agency of the Ministry of Non-conventional Energy Sources (MNES) functioning since July 1986 with the objective of promoting and developing renewable sources of energy and energy conservation activities in the state of Maharashtra. MEDA is now given the responsibility of a 'Designated Agency' for implementing the Energy Conservation Act, 2001 in Maharashtra.

USAID

<http://www.usaid.gov/>

The United States Agency for International Development (USAID) is working with the private sector in developing countries to expand investment in local development activities of energy management and conservation.

Petroleum Conservation Research Association (PCRA)

<http://www.pcra.org/>

PCRA is a professionally managed organisation, tailor-made to meet industrial needs in the field of energy conservation. PCRA also provides liaison services with equipment manufacturers, financial institutions, government & semi-government agencies.

Other agencies working in the field of Energy Management :

- Ministry of Power
<http://powermin.nic.in/>
- Ministry of Non-conventional Energy Sources (MNES)
<http://mnes.nic.in/>
- Indian Renewable Energy Development Agency Ltd. (IREDA)
<http://www.iredald.com/>
- Centre for Wind Energy Technology (C-WET)
<http://www.cwet.tn.nic.in/>
- Confederation of Indian Industries (CII)
<http://www.ciionline.org/>
- Federation of Indian Chambers of Commerce and Industries (FICCI)
<http://www.ficci.com/>
- Maharashtra Industrial & Technical Consultancy Ltd. (MITCON)
- National Productivity Council (NPC)
<http://www.npcindia.org/>

Career Opportunities

Engineers with specialised knowledge and skills in energy management are required by most of the industrial sectors like Textile, Cement, Pharmaceutical, Refinery & Petrochemical,

Paper, Cement, Iron and Steel, Tyre & Rubber, Hospitality industry, Hospitals, Food industry, Automobile, Chemical and other related industries.

Energy efficiency is the need of the hour, especially in the industrial sector. There is a constant need for people who have expertise in the subject. Some of the major industries actively pursuing energy efficiency are:

- Power generation giants like Reliance Energy Ltd. Mumbai
- Tata Power, Carnac Bunder, Mumbai
- Rayon Industries like Century Rayon, Mumbai
- Textile Industries like Arvind Mills, Bombay Dyeing, etc.
- Automobile Industries like Bajaj Auto, Hero Honda, Tata Motors, etc.
- Forging Industries like Bharat Forge, Pune
- Refineries like HPCL, BPCL, IPCL, etc.
- Corporate houses like HLL, Nestle, Hindustan Coke, Thermax, Earnst & Young, etc.

Government agencies are also taking a keen interest in energy efficiency by promoting energy conservation in India. There are financial institutions that provide funding for energy projects. A person with sufficient knowledge about the subject can work on such a project. With proper training in energy management, one can also start a consultancy to handle energy audit and energy conservation projects independently. Alternatively, one can also associate with energy audit firms as per their requirements for specific audit projects. The following are some of the consultancy firms working in the field of Energy Management

- Tata Energy Research Institute (TERI)
- Kirloskar Consultants Ltd.
- Devki Consultants (P)Ltd.
- Energy Management Centre (MIT)
- World Institute of Sustainable Energy (WISE)

Institutes

India

- Devi Ahilya Vishwavidyalaya
<http://www.dauniv.ac.in/>
- Indian Institute of Social Welfare Business Management, Kolkata
<http://www.iiswbm.edu/>
- Indian Institute of Technology, Mumbai
<http://www.iitb.ac.in/>
- Indian Institute of Technology, New Delhi
<http://www.iitd.ernet.in/>
- MIT School of Energy Efficiency, Pune
<http://www.mitpune.com>

- School of Energy Studies, Department of Physics, University of Pune, Pune
<http://physics.unipune.ernet.in/>

Abroad

- University of Wisconsin, Madison, USA
<http://www.wisc.edu/>
- School of Engineering, University of Huddersfield, UK
<http://www.science-engineering.net/colleges/hudeng.htm>
- California Institute of Energy and Environment
<http://ciee.ucop.edu/>

Membership Associations

The following agencies offer membership benefits:

- Association of Energy Engineers (AEE) USA
<http://www.aeecenter.org/membership/>
- Petroleum Conservation Research Association (PCRA)
<http://www.pcr.org/>
- Confederation of Indian Industries (CII)
www.ciionline.org
- World Energy Efficiency Association (WEEA) USA
<http://www.weea.org/>
- The Associated Chambers of Commerce and Industries of India (ASSOCHAM)
<http://www.assochem.org/membership/membership.php>

Books

- Energy Management Handbook, W.C. Turner, John Wiley & Sons
- Standard Handbook for Electrical Engineers, D. G. Fink, McGraw Hill Book Co
- Marks Standard Handbook for Mechanical Engineers, T. Baumeister, McGraw Hill Book Co
- Chemical Engineers' Handbook, R. H. Perry, McGraw Hill Kogakkusha Ltd.
- Pump Handbook, I. J. Karassik, McGraw Hill Books
- Pumps, Fans and Compressors, V. M. Cherkassky, Mir Publishers, Moscow
- Fan Engineering, Robert Jorgensen, Buffalo Forge Co., Buffalo, New York

- Industrial Furnaces, Kazantsev, Mir Publishers, Moscow
- ASHRAE Handbook, American Society of Heating, Refrigeration, and Air Conditioning Engineers Inc., Atlanta
- Compressed Air System: A Guidebook on Energy and Cost Saving, E.M. Talbot, The Fairmont Press Inc., Zibum, USA
- Compressors: Selection and Sizing, Boyce & Brown, Gulf Publishing Co., Houston, USA
- Technology Menu for Efficient Energy Use, Vol. 1, Motor Drive Systems, Centre for Energy and Environmental Studies, Princeton University USA, and National Productivity Council, India
- Cooling Tower Technology: Maintenance, Upgrading and Rebuilding, R. Burger, The Fairmont Press Inc., Georgia, USA
- Industrial Refrigeration Handbook, Wilbert F. Stoecker, McGraw Hill Book Co
- Handbook of Energy Audits, A. Thumann, The Fairmont Press Inc., Liburn, USA
- Planning for Demand Side Management in the Electricity Sector, Jyoti K. Parikh, Tata McGraw Hill Publishing Co. Ltd., New Delhi

* The books can be obtained from any leading bookshop by placing prior orders, or on the Internet through online bookshops, such as <http://www.barnesandnoble.com/> and <http://www.amazon.com/>

Journals

- IEEE Transactions of Industry Applications
www.ieee.org/
Institute of Electrical and Electronic Engineers
445, Hoes Lane, Piscataway, NJ 08855-1331 USA
- ASHRAE Journal
www.ashrae.org/
American Society for Heating, Refrigeration & Air Conditioning Engineers
1791, Tullie circle, N.E., Atlanta, Georgia 30329, USA
- Energy Engineering
Association of Energy Engineers
700, Indian Trail, Liburn, GA 30247, USA
- Energy Policy
Butterworth Heinemann Ltd.
Linacre House, Jordan Hill, Oxford OX 28 DP, UK
- Energy: The International Journal
Pergamon Press Ltd.
Pergamon House, Bampfylde Street, Exeter EX1 24H, England

- EPRI Journal
Electric Power Research Institute, Palo Alto, USA
The Bulletin on Energy Efficiency
IREDA, New Delhi
- Sulzer Technical Review
Sulzer Brothers Ltd., Winterthur, Switzerland

Risk and Insurance Management

Overview

The insurance sector was nationalised in the year 1956 with the establishment of the Life Insurance Corporation Act and the General Insurance sector was nationalised in the year 1972 with the establishment of General Insurance Corporation with its four subsidiaries. However, the insurance sector was privatised only in 1999 with the establishment of the Insurance Regulatory and Development Authority (IRDA). Since then, this industry has grown by 83%. The Insurance premium income has risen to Rs. 82,415 crore in 2003-2004, against Rs. 45,000 crore in 2000-01. It is expected that the premium income in the life insurance sector will increase further by 15-16 per cent and non-life insurance premium by 14% in 2005-06.

Insurance Regulatory and Development Authority (IRDA)

<http://www.irdaindia.org/>

IRDA is the regulatory body for the Insurance Industry. The main function of IRDA is to protect the interest of the policyholders, and to regulate, promote and ensure orderly growth of the insurance industry and matters connected therewith or incidental thereto. The IRDA has ten members in its team consisting of a Chairman, five full-time members, and four part-time members, who are appointed by the Government of India. The head office of IRDA is located at Hyderabad. IRDA undertakes the following activities:

- Approve the insurance products
- Issue licences to insurers
- Register, renew, modify, withdraw, suspend or cancel the appointment of intermediaries such as brokers, advisors, etc.
- Specify the requisite qualifications, code of conduct and practical training for intermediary or insurance intermediaries, agents, surveyors and loss assessors
- Adjudicate the disputes between insurers and intermediaries or insurance intermediaries
- Supervise the functioning of the Tariff Advisory Committee

Institutes

India

Insurance Institute of India

<http://www.insuranceinstituteofindia.com/>

The Insurance Institute of India formerly known as Federation of Insurance Institutes was established in the year 1955 for the purpose of promoting Insurance Education and Training in the country. Located in Mumbai, the Institute conducts qualifying examinations at three basic levels: Licentiate, Associateship and Fellowship and also the introductory examinations, such as those for Inspectors, Surveyors, etc. The institute conducts a short term certificate course in Insurance Salesmanship.

The National Insurance Academy (NIA) (India)

www.niapune.com

The NIA develops and conducts training programmes, seminars and workshops for enriching executives working in the insurance industry in India and other developing countries.

Abroad

LIMRA International

www.limra.com

It is the world's leading life insurance training, consultancy, and research organisation with over 750 insurance companies as its members. It provides advanced degrees in Insurance, Actuarial science, Management and Marketing.

LOMA

www.loma.org

LOMA is an international association through which more than 1250 insurance and financial services companies from over 60 countries engage in research and educational activities to improve company operations. Members are involved in life and health insurance, annuities, pensions, banc assurance, securities and other financial service areas.

The Chartered Insurance Institute (CII)

www.cii.co.uk

CII is the premier professional organisation based in U.K for those working in the insurance and financial services industry. It is dedicated to promoting higher standards of competence and integrity through the provision of relevant qualifications to employees at all levels in the Insurance sector.

Life Insurance companies in the Indian market

- ICICI Prudential Life Insurance Co. Ltd.
www.iciciprulife.com
- Bajaj Allianz Life Insurance Co. Ltd.
www.bajajallianz.co.in
- HDFC Standard Life Insurance Co. Ltd.
www.hdfcinsurance.com
- Kotak Mahindra Old Mutual Life Insurance Co. Ltd.
www.kotak.com
- Birla Sun Life Insurance Co. Ltd.
www.birlasunlife.com
- ING Vysya Life Insurance Co. Pvt. Ltd.
www.ingvysyalife.com
- Max New York Life Insurance Co. Ltd.
www.maxnewyorklife.com
- SBI Life Insurance Co. Ltd.
www.sbilife.co.in
- TATA AIG Life Insurance Co. Ltd.
www.tata-aig.com
- AMP SANMAR Life Assurance Co. Ltd.
www.ampsanmar.com
- MET LIFE India Insurance Co. Pvt. Ltd.
www.metlifeindia.com
- AVIVA Life Insurance Co. India Pvt. Ltd.
www.avivaindia.com
- Sahara India Life Insurance Co. Ltd.
- Life Insurance Corporation of India
www.licindia.com

General Insurance Companies in the Indian Market

- Cholamandalam MS General Insurance Co. Ltd.
www.cholainsurance.com
- ICICI Lombard General Insurance Co. Ltd.
www.icicilombard.com
- IFFCO TOKIO General Insurance Co. Ltd.
[Http://itgi.co.in/index.jsp](http://itgi.co.in/index.jsp)
- Reliance General Insurance Co. Ltd.
http://www.ril.com/aboutus/about_rgi.html
- Royal Sundaram Alliance Insurance Co. Ltd.
[Www.royalsundaram.com](http://www.royalsundaram.com)
- Tata AIG General Insurance Co. Ltd.
[Www.tata-aig.com](http://www.tata-aig.com)
- Bajaj Allianz General Insurance company Pvt. Ltd.
www.bajajallianz.co.in
- HDFC-Chubb General Insurance Co. Ltd.
www.hdfchubbindia.com
- National Insurance Company Ltd.
[Www.nationalinsuranceindia.net](http://www.nationalinsuranceindia.net)
- New India Assurance Company Ltd.
www.niacl.com
- Oriental Insurance Company Ltd.
www.orientalinsurance.nic.in
- United India Insurance Company Ltd.
www.uiic.nic.in
- Agriculture Insurance Company of India
www.aicofindia.com
- Export Credit Guarantee Corporation of India
www.bimaonline.com/cgi-bin/crop/ecgc/ecgc.asp

Career Opportunities

The broad-based risk management industry employs over three million people worldwide. As the world's wealth grows and population ages, the demand for Risk Management professionals will also increase. Risk and Insurance management leads to careers as a risk manager, insurance broker, insurance adviser, insurance representative, financial counselors, employee benefits

manager, insurance underwriter, insurance claim adjustor, surveyors, claim settlers and insurance regulators.

Books

- Immana in India Changing Policies and Emerging Opportunities, Palande P.S , Shah R.S., Lunawat M.L., Reseonse Books
- All About Insurance, Vazir Ahmed Khan, The Insurance Times publication
- Insurance Vision 2000, Vazir Ahmed Khan, The Insurance Times publication
- IRDA Pre-recruitment Agents Training Guide, Vazir Ahmed Khan, The Insurance Times publication
- General Insurance Compendium 1999-2000, Vazir Ahmed Khan, The Insurance Times publication
- Life Insurance, IC-33, Insurance Institute of India
- General Insurance, IC-34, Insurance Institute of India
- Financial Administration of India, Thavaraj M. J. K., S. Chand & Sons
- Indian Financial Management, M. Y. Khan, Tata McGraw Hill
- Introduction to Probability Models, Ross, S. M., Academic Press
- Survival Analysis, J. P. Klein and M. L. Moeschberger, Springer-Verlag New York, Inc.
- Life and Health Insurance, Dearborn Financial Institute, Dearborn Financial Publishing, Inc.
- Dictionary of Insurance Terms, Harvey W. Rubin, Barron's Educational Series
- The New Life Insurance Investment Advisor, Ben G. Baldwin, McGraw-Hill
- Theory and Practice of Insurance, J. Franois Outreville, Kluwer Academic Publishers
- Personal Lines Underwriting, G. William Glendenning, Robert B. Holtom
- An Introduction to Life Underwriting, Dearborn Financial Institute, Dearborn Financial Publishing, Inc.
- Advanced Underwriting Techniques, Joseph F. Mangan, Connor M. Harrison
- Insurance Institute of America: Reinsurance Fundamentals, Ross Phifer, John Wiley & Sons, Inc.

* The books can be obtained from any leading bookshop by placing prior orders, or on the Internet through online bookshops, such as <http://www.barnesandnoble.com/> and <http://www.amazon.com/>

Journals

- Asia Insurance Post
<http://www.asiainsurancepost.com/>
- Insurance Chronicle
<http://www.icfaipress.org/insurance.asp>
- Insurance Plus
- The Insurance Times
<http://www.instimes.co.uk/>

Piping Design and Engineering

Overview

Piping Design and Engineering today is a key element in various fields of engineering. Piping and accessories constitute over 25% of total capital investment in the Chemical process industry, Petroleum and Petrochemical industry, Pharmaceutical industry, Power Plant, long distance LNG/LPG/CNG Piping System and Irrigation Projects. With increasing emphasis on transportation of petroleum products, natural gas, corrosive and hazardous chemicals through underground and long distance pipelines, the requirement for skilled piping engineers is increasing day-by-day. Hence, a piping engineer plays an important role in “Concept to Commissioning” in all sectors of process and related industries.

Piping industry is predicted to witness a steep rise. This is due to new projects in various industrial sectors like Infrastructure, Mining, Oil gas and Chemical, Power etc which eventually will lead to an increase in demand for piping engineers. Transportation of petroleum products through pipelines, LPG distribution within city and long cross country pipeline projects, expansion of refinery, petrochemical industry are the major projects in the offing.

Career Opportunities

Piping Design and Engineering is an established career and also the need of the hour. Some of the industries that provide a scope for employment to Piping Design Engineers are, the Chemical Process Industry, Petroleum and Petrochemical Industry, Power Plant, long distance LNG/LPG/CNG Piping systems and irrigation projects. Some organisations who employ Piping Engineers are:

- Jacobs H&G
- ONGC
- IOCL
- Linde
- Flour Daniel
- Kirloskar Group
- Foster Wheeler
- Rolta (India)
- Dodsal
- L&T
- TCE
- Bechtel
- Lurgi
- Xytel (India)
- Uhde (India)
- Kvaerner Power Gas
- Toyo

- ICB Tecnimont
- Forbes Marshall
- Sulzer (India)
- Thermax
- Praj Industries
- Alfa-Laval

International Society

As a piping engineer you can become a member of the Society of Piping Engineering and Designers (SPED)

www.groups.msn.com/SocietyofPipingEngineersandDesigners/shoebox.msnw

You can also become a member of the Indian Society of Piping Engineers at MIT, Pune.
www.mitpune.com

Institutes

India

- IIT Powai Mumbai, www.iitbombay.org
- IIT (Roorkee), www.iitr.ac.in
- MIT Pune, www.mitpune.com

Abroad

- Strayer University
<http://www.strayer.edu/>
- University of Newcastle upon Tyne
Newcastle Upon Tyne
NE1 7RU, United Kingdom
E-mail: atilla.incecik@ncl.ac.uk
<http://www.ncl.ac.uk/>

Technical and professional organisations

- National Academy of Engineering (NAE)
<http://www.nae.edu/>
- National Society of Professional Engineers (NSPE)
<http://www.nspe.org/>
- A&J Consulting Engineering Services
www.anjengineer.com

- American Institute of Chemical Engineers (AIChE)
<http://www.aiche.org/>
- American Society for Testing and Materials (ASTM)
<http://www.astm.org/>
- Piping Engineer.com
www.pipingengineer.com

Books

- Chemical Engineering: An introduction of Chemical Engineering Design (Volume 6), J. M. Richardson, J. M. Coulson & R. K. Sinnott
- Applied Process Design for Chemical & Petrochemical Plants, Volume I, Ernest & E. Ludwig, By Culinary & Hospitality Industry Publication Services, 3rd edition.
- Process Design of Equipments, Dr. S. D. Dawande By Central Techno Publications
- PERRY'S Chemical Engineer Handbook, Robert H Perry, Don W. Green, Culinary & Hospitality Industry Publication Services
- Piping Handbook (7th Edition)
Edited by: Nayyar, Mohinder L. 2000, McGraw-Hill
- Corrosion-resistant Piping Systems, Philip A. Schweitzer, Krieger Publication.
- Valve Handbook, Philip L. Skousen Culinary & Hospitality Industry Publication Services
- Roark's Formulas for Stress and Strain, Warren C. Young
Culinary & Hospitality Industry Publication Services

* The books can be obtained from any leading bookshop by placing prior orders, or on the Internet through online bookshops, such as <http://www.barnesandnoble.com/> and <http://www.amazon.com/>

Exhibition

Interested candidates may also visit the Chemex exhibitions, held every year in Mumbai and Delhi.

Business Administration

Overview

Business Administration is an exciting and challenging field through which one can bring about immediate impact on the operations of a business or for that matter any activity. It can be understood as a scientific method of handling any activity. When analysed we find 'business' a part of each and every individual's professional life. No matter what we do or who we are, we almost certainly end up managing something, or being managed ourselves. Wherever there is a need for people to work together to accomplish anything, there is a need for Business Administration and leadership. Scientists, engineers and even artists will inevitably have to understand at least the basics of business, and probably a lot more. New tools and techniques are continuously being introduced to improve the efficiency, productivity, and profitability of any organisation. All organisations and their departments, professionals, groups can use Business Administration methodologies like problem solving techniques and guidelines for human interactions to better performances.

Today, the people who are forecasting the future of business opine that the organisations of the future will consist of groups of specialists who will work together on a specific project and disband. This means that for every new project there shall be a fresh set of people, with fresh ideas and experiences. This would result in more challenges to the already existing dynamism of the field. One of the consequences would be that many more people will be 'independent', and will have to understand more about the opportunities and constraints of business. In other words, the combination of specialist qualification and business knowledge will become vital and every man would be a manager in such a scenario. Business administration will help individuals manage business and individual performance in the best possible way in any business/professional environment.

The Course of Business Administration

Business Administration encompasses studies in marketing, human resources, personnel business administration, finance, organisational behaviour, risk and strategic business administration and many more. The ideas and practices from these diverse disciplines are applied to the understanding and administration of profit, non profit and voluntary, commercial and public sector organisations. An education in Business Administration has two aims: firstly, to increase the understanding of the factors which influence the conduct of Business and secondly to provide students with some tools and techniques which they may use to influence organisational life. Two years of intensive studies make a student well-versed in such areas. The course also gives insight to analyse business issues and provides exposure to powerful techniques to help in the further development of business techniques and experiment with the same.

Career Opportunities

A candidate with Business Administration expertise can develop a career in a range of fields like Finance, Marketing, Planning Human Resource, Production, Business Strategy, Systems, etc. Some organisations where Business Administration professionals are recruited are:

- Business organisations

- Not for profit organisations or Non Government Organisations (NGO)
- Government and agencies
- Health care providers
- Applied science and technology companies
- Arts and leisure business administration
- Entrepreneurial start ups
- IT Organisations

Institutes

India

- MIT School of Management, Pune
- Faculty of Management Studies, Delhi
- Indian Institute of Foreign Trade, Delhi
- Indian Institute of Management, Ahmedabad/Banglore/ Kolkata/ Indore/ Lucknow/ Kozhikode.
- Institute of Management Technology, Ghaziabad
- Indian School of Business, Hyderabad
- Jamnalal Bajaj Institute of Management Studies, Mumbai
- Management Development Institute, Gurgaon
- Narsee Monjee Institute of Management Studies, Mumbai
- SP Jain Institute of Management and Research, Mumbai
- Symbiosis Institute of Business Management, Pune
- Xavier Institute of Management, Bhubaneshwar
- XLRI, Jamshedpur

Abroad

- The Kellogg School of Management
<http://www.kellogg.northwestern.edu/>
- Harvard Business School
<http://www.hbs.edu/>
- London School of Economics
<http://www.lse.ac.uk/>
- Asian Institute of Management, Manila
<http://www.aim.edu.ph/>
- University of Pennsylvania (Wharton)
<http://www.wharton.upenn.edu/>

- University of Michigan
<http://www.umich.edu/noflash.html>
- The University of Chicago
<http://www.uchicago.edu/>
- Carnegie Mellon University
<http://www.cmu.edu/>
- Columbia University in the City of New York
<http://www.columbia.edu/>
- Yale University
<http://www.yale.edu/>

Books

- Repositioning Asia from bubble to Sustainable Economy, Kotler, Philip, Kartajaya, Herm, John Wiley and Sons (Asia)
- Marketing Management, P. Kotler, Prentice Hall, 2003
- Marketing: An Introduction, Gary Armstrong, Philip Kotler, Prentice Hall 2002
- The Financial Management, I. M. Pandey
- The Management, Peter S. Drucker
- In Search of Excellence: Lessons from America's Best Run Companies, Tom Peters et. al., Warner Books, 1988
- How to read a balance sheet, International Labour office
- Talking straight, Iacocca Lee Kleinfield Son
- My years with General Motors, Sloann A.P.
- How they achieved: Stories of personal achievement and business success, Watson, Lucinda
- Human Behaviour at Work: Organisational Behaviour, Keith Davis et. al., MacGraw-Hill, 1989
- The Seven Habits of Highly Effective People, Stephen R. Covey, Free Press, 1990

* The books can be obtained from any leading bookshop by placing prior orders, or on the Internet through online bookshops, such as <http://www.barnesandnoble.com/> and <http://www.amazon.com/>

Journals

- The Business World
<http://www.businessworldindia.com/>
- The Economist
<http://www.economist.com/>
- Harvard Business Review
<http://harvardbusinessonline.hbsp.harvard.edu/>
- Business Today
<http://www.business-today.com/>
- IIMB Management Review
Indian Institute of Management, Bangalore
- Information Business Review
- Business Week
- Fortune

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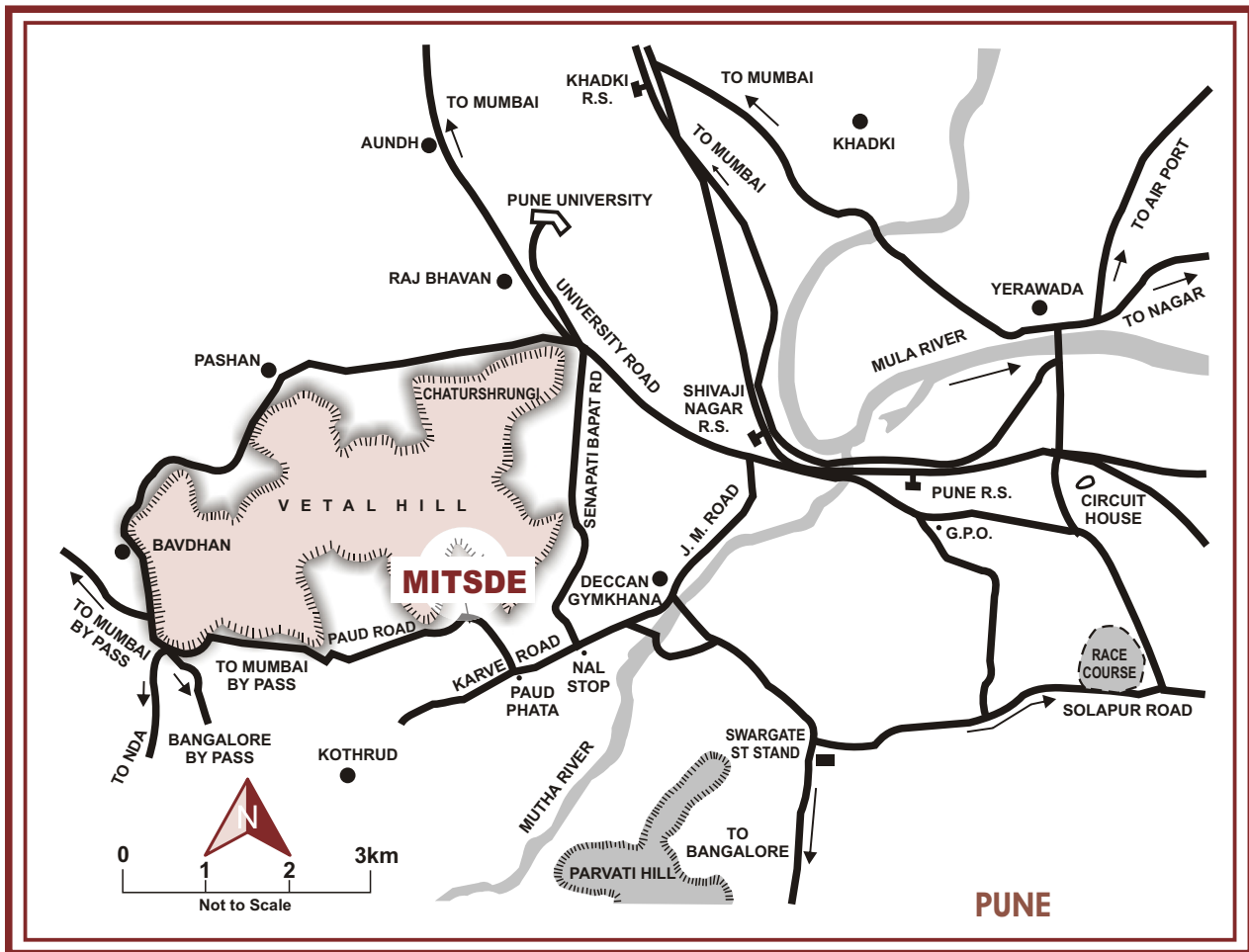
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E-mail: amolsathe@mairm.com

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E-mail: agchandorkar@mitpune.com

Site Map of MIT School of Distance Education, Pune



Transport

City Buses

Pune Municipal Transport (PMT) buses reach every part of the city mainly from : Swargate, Deccan Gymkhana, Pune Station, Shivaji nagar Station, M.G. Bus Stand, Pune Corporation, Saras Baug, Kothrud Bus Depot (2 km from MIT Campus).

Local Transport

Auto rickshaws, six-seaters, municipal and private buses, and rental cars are available.

Local Trains

Local trains run between Pune - Lonavala and Pune - Talegaon.

How to Reach

Distances

Lohagaon Airport to MITSDE	: 20 km
Shivajinagar Rly Station & ST Bus Stand to MITSDE	: 7 km
Pune Rly Station to MITSDE	: 11 km
Swargate ST Bus Stand to MITSDE	: 7 km
Deccan Gymkhana to MITSDE	: 5 km
Nearest International Airport (MUMBAI) to MITSDE	: 180 km