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PATHFINDER: A CAREER CHOICE PROGRAM

Designed for students who are surrounded by many traditional and emerging careers, Pathfinder encourages the student to view his or her career choice through a variety of lenses. It allows them to

Explore career options, strengths, personality and goals.
Choose two or three career options from many that seem suitable for her or him and
Build an action plan for further studies or jobs

Rishabh Aggarwal

Information is indicative and based on current research. While Inomi attempts to guide and suggest, a career path is a matter of personal choice of the participant / guardians.

The shoe that fits one person pinches another; there is no recipe for living that suits all cases.

Carl G Jung

>> **YOUR PROFILE**

This section describes three aspects

Personality profile as assessed by a

- Psychometric tool, MBTI
- Signature strengths
- Work life Goals and Values

PSYCHOMETRIC PROFILE FOR RISHABH

Extraverted energy	Intuitive perception	Logic based	Flexibility oriented

A person with a broad range of ideas and interests, Rishabh, you understand things quickly and with great depth. You love solving problems and are good at almost anything that interests you. You love learning new facts and coming up with new ideas. Knowledge and big ideas and dreams are your hallmark. You are quite flexible and resourceful when solving a wide range of problems.

An ideas person, you are highly creative and see possibilities everywhere. You love sharing your ideas with people and motivating others to understand and be enthusiastic about them. This often gets you the support you need from others to fulfill your dreams.

A great conversationalist, Rishabh, you enjoy conversation and debate. You may sometimes even switch sides abruptly just for the love of debate. You understand a situation in its entirety quickly and take quick objective and logical decisions, sometimes at the expense of considering the human element in the situation. An innately logical and rational person yourself, you could guard against not paying enough attention to other people's feelings and ideas.

Your love of generating new possibilities sometimes makes you neglect actually implementing those ideas. This could leave you with many exciting half-finished projects, if you do not consciously make yourself finish them. A generally cheerful visionary, you value knowledge, and like to spend time seeking a higher understanding of the world and its possibilities. You become excited about concepts, challenges and difficulties. Creative, clever, curious, and theoretical, you have a broad range of possibilities for your work and personal life.

PERSONALITY AT WORK

Leader, in control
Determined, action oriented
Organized planning and problem solving
Logical, tough minded analysis
Competitive, seeks advancement
Articulate – excellent communication
Values competence in self and others
Comfortable with complex ideas, analysis

PEOPLE WITH THIS PROFILE DO WELL AT

Business
Banking & Finance: all fields
Stockbroking and analysis
Management Consultant
Human Resources Manager
Sales & Marketing
Entrepreneurship

Technical fields
IT & Systems Management
Pilot / Merchant Navy
Computer Professional
Engineer

Academics, Education
Scientist: Applied Research, Biotechnology
Social Sciences: Economics, History, Pol Science, Languages, Sociology, others
Education Consultant
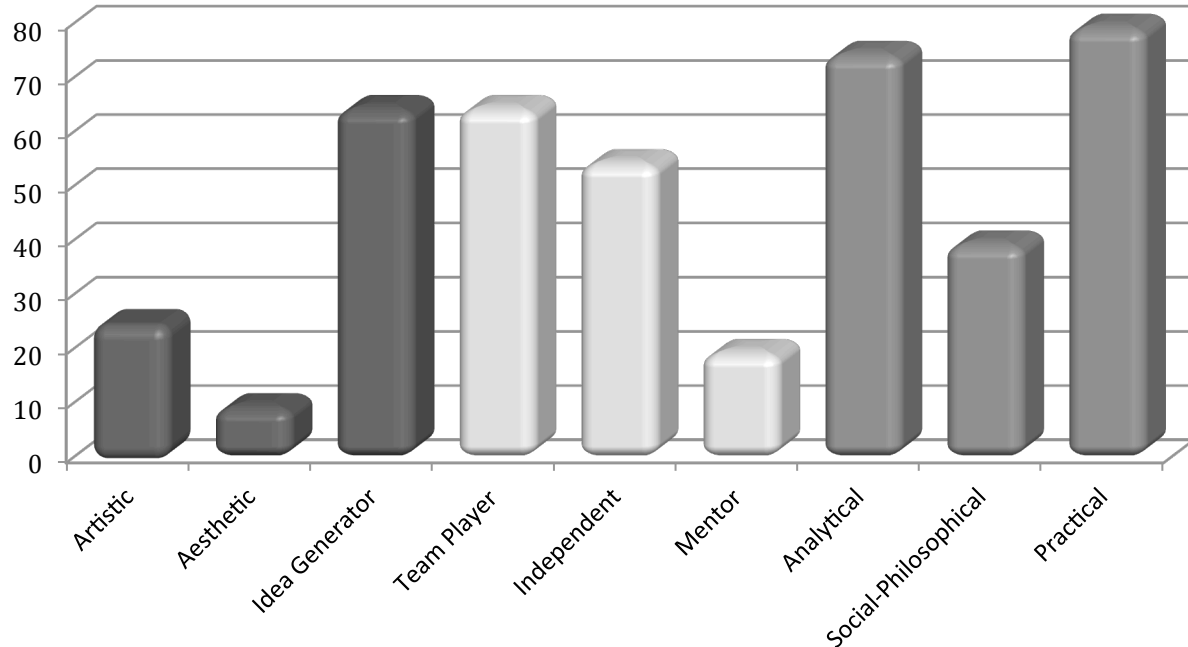Teacher: Science, Social Science, Languages, senior school and above

Creative fields
Actor, Artist
Advertising: Account Management, Strategy
Design: Graphic, Industrial, Web
Photographer

Others
Lawyer: Litigation
Civil Services
Psychologist: Industrial, Training
Hospitality: Travel managers, entrepreneurs

RISHABH'S SIGNATURE STRENGTHS

Intellectual – Practical, Analytical

You love the use of logic in almost any domain and try to find logical explanations to understand how things and people work. You are good at deciphering and understanding laws and rules that influence the behaviour of things and people. You have the ability to use logic independently in new and unfamiliar situations. However, you are keen to uncover practical uses for your knowledge and analysis. A doer as well as a thinker, you are happy to take on projects that require hands on working and practical skills. You enjoy getting things done and are good at working with your hands. You are good at finding practical solutions that work and have the ability to take action to produce concrete outcomes.

Creative – Idea Generator

An original thinker, you are inspired by new ideas in a variety of fields. You enjoy using new approaches in almost everything you do. You believe that new ideas can work and are inspired to translate new ideas into action. Idea Generators have original ways of understanding situations and approaching problem solving in varied areas – interpersonal, logistical, entrepreneurial. You think freely and enjoy new concepts and solutions.

Interpersonal - Team Player

You are good at social skills like conversations, introductions, telling jokes and anecdotes, small talk – especially with people at your own level. You are skillful at building and maintaining effective relationships with new and varied people. You enjoy variety in social interactions and take pride in being on great terms with several different types of people. You make friends easily and enjoy having a good time with friends. You are good at handling social situations. You enjoy belonging to teams, groups, communities etc and working with others to get things done.

RISHABH'S KEY WORK-LIFE GOALS

This refers to an ideal lifestyle which we want our work life to create.
These are rewards from work which define and measure success for us.
This is the ideal work environment for us.

Expertness
To work where my intellectual expertness is valued and recognised.

Impact Society
To work for the betterment of the world or society at large.

Leadership
To affect changes by motivating and energizing other people.

Lifestyle Integration
To allow me to balance my family, career and self fulfillment.

Every man has his own vocation, talent is the call.

Ralph Waldo Emerson

>> YOUR THOUGHTS AND DECISIONS

These sheets record Rishabh's thinking during the program. The first page is an open-ended listing of Rishabh's thoughts.

My Career Inventory on the second page lists careers Rishabh found interesting through the program.

My Career Shortlist on the third page shows careers Rishabh filtered as most suitable through the program.

Love is a better master than duty.

Albert Einstein

My dream has always been to be a
Actor , Cricketer ,Engineer , a succesful CEO, Economist
I am very curious about a career in
Startups, Business ,Engineering
I think I would be very good at
Acting , Army, Politician ,
My parents would like me to be a / make a career in
Engineering , Commerce
My family has a business in —
I plan to
I am considering a career in this sport.... Cricket
Highest level / accomplishment Delhi Academies League/School tournaments /Zonals
If there was no risk of failure, I would try to be a
Startup , Businessman
I have always been interested in
Physics, Acting , Cricket, New

The most likely career that I will go into is
Engineering / Physycist   / Economist

In my wildest fantasies, I see myself working as
An undercover spy , an Astronaut

If nothing else, I could always be / do
a Street plays or ω·be a part of an NGO.

If money was not important, I would love to
Start a company ~~providing free edu~~

Other careers that caught my interest

Software , Mechanical Engineering . Scientific Research - Basic, Applied Merchant Navy.	Army ,Air Force, G Sales and Marketing ,Operations IT and Systems, Corporate Finance Market Research ,Public Relations Investment $, Stocks- Broking, Analysis
Architecture Academics - Economics	Managing Consultant ,Industrial design Advertising. Account Management RBI ,Nationalised Banks

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TOP AT YOUR TRUE BEST

My Thoughts & Decisions

MY CAREER INVENTORY			
Entrepreneurship	Social Work	Engineering (Mechanical, Software)	Scientific Research (Basic Applied)
Stocks - Broking Analysis	Armed Forces	Sales and Marketing	Industrial Design
Managing Consultant	Advertising - Account Management	Investment	Corporate Finance
RBI, Nationalized Banks	Development Sector - International		

My Strengths		My Personality ENT P	
Practical		Stimulated by complexity, problem solving	
Analytical		Comfortable with both facts and theories	
Idea Generative		Confident and outgoing	
Team Player		Value Competence	
		Vareity, diverse interests	+ Interested in Logical and analytical fields

Careers that suit my strengths		Careers arising from my personality	
Architecture	Engineering (Sound) (Mechanical)	Entrepreneurship	Sales and Marketing
Management (Consulting) (Sales and Mkt)	Entrepreneurship	Management and consulting	Banking and Finance
Armed Forces	Finance	Engineer	Scientist
Industrial, Product design	Analyst	Market Research	Industrial design
		Politician	Detective / Intelligence

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YOU AT YOUR TRUE BEST

CAREERS THAT SUIT ME		
Management - Sales, Finance, Consulting, Marketing, Market research	Entrepreneurship	Engineering
Scientist	Architecture	Armed Forces
Others...		

Industrial / Product design (handwritten left margin)

My Life Goals	
Expertness	Impact Society
Lifestyle Integration	Leadership

MY CAREER SHORTLIST

Career	What I like about it
1 Engineering	Learning about how things work, working with machines
2 MBA - Finance, Marketing, Sales, Consulting, Entrepreneurship	Variety, interesting, challenging, exciting, well paying, impacting society
3 Industrial design Product design	b. Innovation, Learning along the way, working on my skills
4 Basic Research Applied Research	Getting an in depth knowledge of a very specialized field

I specially want to know*

* Your report will have details on job profile, personality traits, job prospects, salary, and study routes for all shortlisted careers. Please only mention any other questions you night have.

Freedom is not merely the opportunity to do as one pleases; nor is it merely the opportunity to choose between given alternatives. Freedom is the chance to formulate one's own choices, to argue over them – and then, to choose. *C Wright Mills*

When we do what we are meant to do, money comes to us, doors open for us, we feel useful, and the work we do feels like play to us.

>> RECOMMENDATIONS

This section provides primary and contingency career recommendations for Rishabh.

A flow chart with suggested undergraduate, work and post graduate options maps out the recommended path, back-up paths and long-terms options over the next few years.

RECOMMENDED CAREER PLAN FOR RISHABH

⇨ **Key Career Option**: Engineering (Computers, Mechanical)

⇨ **Long-term Career Option**: Management
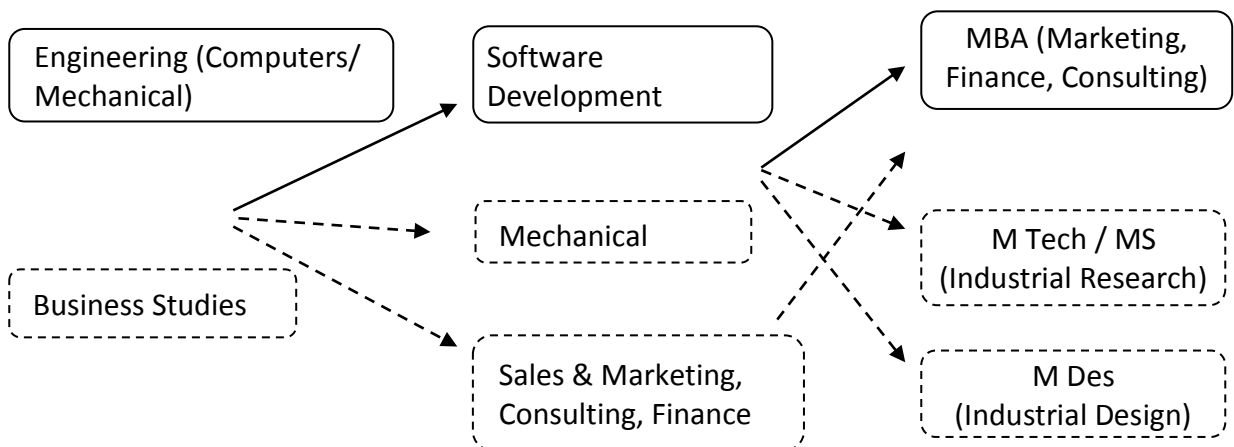Finance, Marketing, Consulting, Entrepreneurship

⇨ **Alternative Career Options**: Industrial Research / Industrial Design

FLEXIBLE CAREER PATH

UNDERGRADUATE	WORK / INTERNSHIP	POSTGRADUATE

Engineering (Computers/ Mechanical)

Business Studies

Software Development

Mechanical

Sales & Marketing, Consulting, Finance

MBA (Marketing, Finance, Consulting)

M Tech / MS (Industrial Research)

M Des (Industrial Design)

YOUR NEXT STEPS

An ideas person who is rooted in logic, Rishabh, you love exploring new areas and learning about them – however, you like to see the practical application of new ideas. A resourceful and hands-on person, you love new possibilities and are happy to do just about anything to make a new idea work. A people-oriented person, you like working with teams and having fun, rather than working on your own. Rishabh, you are at your best when working in a group trying to implement new solutions to practical problems – a new game, a new project or a new club.

You are looking for a work life that rewards learning and expertise. You want your work to allow you to make an impact on the world. You want leadership roles at work so that you can champion and implement new ideas. At the same time, you want a work life which allows you to maintain a healthy balance between work and personal interests.

Several Management careers would leverage your multi-faceted personality. Within Management, Marketing careers would use your highly-developed people skills and ideas – areas such as Market Research, Public Relations and Advertising would also directly use your varied intellectual interests and creativity. Finance – on the other hand – would give you opportunities to use your sharp logic to plan, negotiate and make new deals and possibilities happen. Consulting will be an exciting space for you because you will enjoy working on varied projects across industries and welcome new challenges on each project.

Entrepreneurship, too, is suited and will leverage your logical, creative and interpersonal skills well. However, it is best to enter entrepreneurship after some years of working that lets you build confidence, skills and some networks.

We recommend that you focus on doing an MBA after your graduation. Most leading courses allow you to study all areas within business for the first year and to choose a specialization in your second year from among Sales & Marketing, Finance, Human Resources, Operations and Systems, when you have more exposure and knowledge about these fields.

You can take up any subject of your choice during your undergraduate years for doing an MBA. Popular choices among students aiming for an MBA include Engineering, Economics, Commerce, Sociology and Psychology.

Engineering will be the most suited undergraduate course for you because it will also allow you to explore the world of research and product innovation as well through a post graduate degree in Engineering (leading to Industrial Research) or Design (leading to Product Design).

Within Engineering, both Mechanical and Computers are suited. Mechanical Engineering leads to many interesting fields such as Automobile Design, Robotics and Artificial Intelligence in the long run. Computers will open the world of new technologies and breakthroughs even in the future – like Cloud Computing, Collaboration Software, Software Defined networks, Advanced Data Analytics.

We recommend that you take up Physics, Chemistry and Maths in school. The fourth subject can be chosen between C++ (which will allow you to explore Computers) or Economics.

Fun is when you enjoy what you're doing; work is when you'd rather be doing something else.

Art Buck

>> **DEVELOPMENT RESOURCES**

Short courses, reading resources and videos
to learn more about the area involved

EXPLORING ENGINEERING

SHORT COURSES

US and Canada-based
Boston Leadership Institute:
www.bostonleadershipinstitute.com/applied-physics-and-engineering.html
www.bostonleadershipinstitute.com/engineering-research1.html

University of Pennsylvania, The Engineering Summer Academy at Penn

Stanford University, Stanford Pre-Collegiate Summer Institutes

University of Toronto, Da Vinci Engineering Enrichment Program (DEEP) Summer Academy

University of Connecticut, School of Engineering

GeorgiaTech University Summer programs

India-based

Symbiosis Pre-university program with a focus on "Business, Computer Studies and Engineering"

UK-based

Oxford and Cambridge Summer Academy: 2-week program

2 to 6-week Summer programs at Glasgow, Cambridge, Kingston, Birmingham, Stirling

ONLINE AND DIGITAL RESOURCES

1. Engineering Go for IT: Website with simple inputs on engineering careers
2. Big Brain Theory on Discovery Channel
3. Robots for iPad App
4. Fun resources on engineering

READING LISTS AND VIDEOS

1. James Trevelyan "The Making of an Expert Engineer"
2. Grand Challenges for Engineering (attached)
3. Engineering: A Very Short Introduction by David Blockley
4. Engineering and the Mind's Eye by Eugene S. Ferguson
5. 101 Things I Learned in Engineering School by John Kuprena

EXPLORING IT

US-based

California State Summer School for Mathematics and Science (COSMOS)

Stanford Pre-Collegiate Summer Program: Introduction to Programming; Game Design; Web Technologies; Artificial Intelligence for Robots;

John Hopkins Centre for Talented Youth

Google for Education, Computer Science Summer Institute,

India-based

Symbiosis Pre-university program with a focus on "Business, Computer Studies and Engineering"

UK-based

Oxford and Cambridge Summer Academy: 2-week program

2 to 6 week Summer programs at Glasgow, Cambridge, Kingston, Birmingham, Stirling

ONLINE AND DIGITAL RESOURCES

Project Suggestions

Start online app testing with sites like usertesting.com, http://testfairy.com/ and utest.com (you may need to build some skills first)

MI phones will engage you for testing new apps

Develop and upload YouTube videos of your experience with various apps you use

Build a basic app for household expenses (guidance from mobileapps.its.umich.edu/design/

Online courses

Learn App Development curriculum from Apple https://www.apple.com/newsroom/2017/05/apple-launches-app-development-curriculum-for-high-school-community-college-students/

Follow Apple's coding curriculum, Everyone Can Code

Introduction to Computer Science and Programming Using Python from MIT

On line courses in programming

Online programming with Scratch, from MIT, scratch.mit.edu/

Create your own apps on platforms like ApplePie, Good barbar, App Machine, Game Salad.

Keep yourself updated on The Internet of Things through news websites like Postscapes and IntelligentSystem.com

You can learn how to use python at udemy.com

Easy and fun online basic programming courses for teenagers like hackety.com (HacketyHack), codeschool.com, khanacademy.org/computing/computer-programming, teamtreehouse.com

Learn to develop mobile apps at como.com, AppYet.com (no coding required), mobileapps.its.umich.edu/design/

Short-term online courses on Game Design from University of Alberta - 'Understanding Video Games' through Coursera (coursera.org/course/uvg)

Short term Summer Courses from NIIT On line - Coursera for exploring courses in programming (coursera.org/specializations/fundamentalscomputing1)

Learn to Code: Introduction to Programming: Nanodegree program

Reading Lists and Videos

Computational Theory without computers: http://csunplugged.org/videos/

The Design of Everyday Things, *Donald A. Norman*

Lauren Ipsum: A Story About Computer Science and Other Improbable Things, *Carlos Bueno*

The New Turing Omnibus: 66 Excursions In Computer Science, *A.K. Dewdney*

Ghost in the Wires: My Adventures as the World's Most Wanted Hacker, *Kevin D. Mitnick, William L. Simon, Steve Wozniak*

Where Wizards Stay Up Late: The Origins of the Internet, *Katie Hafner (Goodreads Author), Matthew Lyon*

Code: The Hidden Language of Computer Hardware and Software, *Charles Petzold*

Computational Fairy Tales, *Jeremy Kubica*

EXPLORING SALES & MARKETING

SHORT COURSES

US and Canada-based

Columbia University Communicating with Consumers: The Basics of Marketing, Advertising, and Public Relations
sps.columbia.edu/high-school/nyc/junior-senior-courses/communicating-consumers-the-basics-of-marketing-advertising

Stanford University - Social Psychology of Large-Scale Media Interventions
summercollege.stanford.edu/academics/courses

Boston University - Psychology
bu.edu/summer/courses/high-school/psychology/

Boston University – Economics

bu.edu/summer/courses/high-school/economics/

The University of British Columbia Business School
vancouversummerprogram.ubc.ca/sauder-school-business

India-based

Symbiosis – International Relations
symbiosissummerschool.in/summer_school_programme.php

UK-based

Oxford University –Business and Entrepreneurship
oxfordsummercourses.com/business-entrepreneurship/#courses

University of Edinburgh - Entrepreneurship
summerschool.ed.ac.uk/course/entrepreneurship

ONLINE AND DIGITAL RESOURCES

Alison offers free modules on 'Introduction to Marketing'
alison.com/learn/marketing-and-sales

Integrated Marketing Communications: Advertising, Public Relations, Digital Marketing and more,
https://www.coursera.org/learn/integrated-marketing-communications

Study.com also has such course videos to understand consumer behavior
study.com/academy/topic/consumer-decision-making.html

Social Media Marketing, Boston University,
https://www.edx.org/course/social-media-marketing-bux-qd504x

Digital Marketing Channels: The Landscape, University of Illinois at Urbana-Champaign
https://www.coursera.org/learn/marketing-channels

Marketing in a Digital World, Curtin University
https://www.edx.org/micromasters/marketing-digital-world

Nanodegree in Digital Marketing in association with Google, FaceBook and others
https://in.udacity.com/course/digital-marketing-nanodegree--nd018/

Drive Customer Behaviour Online, Five-course specialisation
https://www.coursera.org/specializations/digital-marketing

READING LISTS AND VIDEOS

1. MBA at 16 - A Teenager's Guide to the World of Business – Subroto Bagchi

2. Ogilvy on Advertising

3. Corporate Identity – Wally Ollins

4. Good to Great – Jim Collins

5. Built to Last – Jim Collins

6. Contagious – Jonah Berger

7. Lateral Thinking - Edward de Bono

8. Velocity – Ajaz Ahmed

9. Why Would A Parcel Delivery Firm Partner With F1?
   forbes.com/sites/csylt/2016/09/19/why-would-a-parcel-delivery-firm-partner-with-f1/#5e2590765bbd

10. How Two Former Silicon Valley Engineers Amped Up Sales For Their Yarn Company With Subscriptions
    forbes.com/sites/petercarbonara/2015/11/04/how-two-former-silicon-valley-engineers-amped-up-sales-for-their-yarn-company-with-subscriptions/#73279b9a2561

11. When Ideas have Sex
    youtube.com/watch?v=OLHh9E5ilZ4

12. RSA Marketing: Science of Persuasion
    youtube.com/watch?v=cFdCzN7RYbw

13. Marketing Lemonade
    youtube.com/watch?v=FvOCOpu94jk

14. What is marketing?
    youtube.com/watch?v=i1xz5Kv-7VY

15. Steve Jobs: Apple Marketing
    youtube.com/watch?v=kshIWIc15yg

16. Malcolm Gladwell
    youtube.com/watch?v=iliAAhUeR6Y&index=2&list=PLrQdsgrw85q3tEFvoKB10apRig4mrumYu

17. 45 Fabulous Facebook Advertising Tips & Magic Marketing Tricks
    wordstream.com/blog/ws/2014/01/30/facebook-advertising-tips

EXPLORING FINANCE AND ECONOMICS

SHORT COURSES

US-based

Columbia University, Introduction To Business, Finance, And Economics

University of Pennsylvania, Management And Technology Summer Institute,

Cornell University, The Business World

Other courses at Cornell, UC Berkley, Dukes University, Miami, British Columbia, Yale, Stanford, California, Boston Leadership institute

2-month summer courses at Knowledge at Wharton High School

(KWHS also offers various business-based competitions)

2-weeks in KWHS Global Young Leaders Academy for international students

India-based

UWC Mahindra College: I week Youth, Environment and Sustainability course Symbiosis Pre-university program with a focus on "Business, Computer Studies and Engineering"

Symbiosis Pre-university program with a focus on either 'Business, Computer Studies and Engineering' OR 'Law, Economics and Liberal Arts' depending on your interests.

UK and Europe-based
2 to 6-week Summer programs at Glasgow, Cambridge, Kingston, Birmingham, Stirling

ONLINE AND DIGITAL RESOURCES

Interesting modules on Alison including 'Financial Literacy'
Investopedia: offers business-based quizzes and videos

READING LISTS AND VIDEOS

1. Money: The Unauthorized Biography, *Felix Martin*
2. Freakonomics: A Rogue Economist Explores the Hidden Side of Everything, *Steven D. Levitt and Stephen Dubner*
3. The Essays of Warren Buffett: Lessons for Corporate America, *Warren Buffett*
4. Diary of a Hedge Fund Manager: From the Top, to the Bottom, and Back Again, *Keith McCullough*
5. More Money Than God: Hedge Funds and the Making of a New Elite, Sebastian Mallaby

6. The Four Pillars of Investing: Lessons for Building a Winning Portfolio, *William Bernstein*

7. Money & Power: The History of Business, *by Howard Means*

8. Against the Gods: The Remarkable Story of Risk, *by Peter L. Bernstein*

9. [Everything You Need to Know About Finance and Investing](#) William Ackman:

10. [Basic Ideas of Finance](#) The Stock Market Explained Simply

11. [Finance and Investing Basics](#) - Animated Film (1957)

12. Subscribe to Knowledge @ Wharton High School for business news and articles aimed at high-school students

13. Student Journal, Wall Street Journal Education program

>> CAREER REPORTS

Work areas, environment, prospects and study routes for recommended careers.

ENGINEERING

Possibly, the oldest of all skills that distinguish humans from other species, Engineering is simply about designing and using tools and machines to meet practical ends. Engineering would emcompass simple tools like the hammer or the wheel to complex machines like ipods and smartphones. Engineers design, build, maintain and operate such machines.

Many types of engineers	Specialised areas
Computer and electronics	Information science, Cloud computing (Emerging), Management Information Systems (MIS), Information security, Electronics, Telecom
Mechanical Engineering	Automotive, Aeronautical/Aerospace Engineering, Industrial, Robotics, Biomedical engineering, Nanotechnology
Civil Engineering	Transportation/Transport engineering, Structural engineering, Water Resource Engineering, Geotechnical engineering, Construction
Chemical Engineering	Petroleum engineering, Environmental engineering,
Electrical	Power Engineering, Electro - Optical Engineering,
Other areas	Materials and Metallurgical Engineering, Marine, Textiles, Mining, Environmental, Instrumentation

COMPUTERS AND INFORMATION TECHNOLOGY

Computer engineers analyze user needs and design, construct, and maintain computer systems, software and specialized programs in a variety of industries. They coordinate the needs and demands of the computer needs of every department of the company or client they work with – ordering, inventory, billing, and payroll recordkeeping. Computer engineers may also be part of the marketing or sales staff, and serve as the chief technical resource for these sales officers, staff, as well as customers. They may even engage in product sales and provide continued technical support to the buyers and consumers.

Two main areas in this field are Hardware and software

Hardware includes the physical elements of the computer system and deals with the designing, manufacturing and maintenance of computers. This area also includes the assembling of the manufactured components of the computers. Functional areas in *Hardware*:

Manufacturing: This involves the work of production and assembly of components of computer systems such as the CPU, printer, monitors etc.

Maintenance: People in maintenance look after the smooth functioning of the machine and help in rectifying and detecting the breakdown in them. They also help in taking preventive measures so that least amount of damage could be caused to the computer systems and peripherals.

Research & Development: It involves designing of chips and circuits, computer architecture and integration of peripherals. It also includes improvement and upgrading of the existing systems.

Software includes the set of instructions by which a computer is programmed for working and performing specified tasks. Functional areas in *Software*:

Software development: This involves preparing the set of instructions or programs to let the computer work, updating and development of existing operations as well as their refining and improvement. All this is carried is carried out in various stages like analysis, design, construction, implementation etc.

Programming and Testing: Engineers working in this area write and test programs and convert the strategies of the system analyst into working programs.

System analysts: They look after the work of final testing of the software and advising the clients on the purchase and installation of the computer systems. They also are responsible for researching the organizational procedures and planning their computerization.

Networking: This involves development of the basic software computers use to supervise themselves or to communicate with other computers. Engineers working in this area develop and manage technology networks across states, nations and even continents. A company's intranet (the network which links computers inside an organization and ease communication among the various departments) is constructed by these engineers.

No Bluffing

Computer engineers, in conjunction with animators, have created special effects in movies such as "Jurassic Park," "Forrest Gump," and "Interview with the Vampire"? Through "morphing" technology, images are digitally mastered to appear realistic.

MECHANICAL

Mechanical engineers design, construct and maintain mechanical devices that perform mechanical tasks by using power supplied to them. These may include elevators, refrigeration and air-conditioning equipment, robots, and electric generators. Mechanical engineers also design tools used in other engineering areas. They apply sophisticated computer based tools

and equipment such as Computer Aided Design (CAD), robotics and computer controlled manufacturing systems to aid them to produce better machinery more quickly.

These engineers specialize in energy systems, applied mechanics, automotive design, manufacturing, materials, plant engineering and maintenance, pressure vessels and piping and can be employed in various industries.

Mechanical engineering is thus one of the broadest engineering disciplines.

Automobile engineering is a specialised that deals with the design, development and maintenance of automobile and its spare parts. Activities include development (construction, calculation and testing), priming of work, fabrication and observation of the functionality of vehicles for street and rails. These engineers develop car bodies and buildups with aggregates like engines, clutches, gears and steering wheels. They design vehicles according the postulations of aerodynamics and stylistics and construct according the postulations of functionality, safety, economy and efficient use of decreasing resources.

The Ferris Wheel

Considered one of the greatest engineering wonders in the world, the first Ferris Wheel was created by Pittsburgh, Pennsylvania engineer, George W. Ferris, in 1893. The wheel is supported by two 140-foot steel towers and connected by a 45-foot axle -- the largest single piece of forged steel ever made at that time.

Aeronautical Engineers deal with airplanes, while Astronautic engineers deal with spacecraft. Technologies developed by them are used in aviation, defense and space exploration. They may specialize in structural design, guiding, navigating and controlling, instrumentation and communication, or production methodology. They may also specialise in commercial transport, military fighter planes, helicopters, spacecraft, missile or rockets. Aerospace engineers might also specialize in aerodynamics, thermodynamics, celestial mechanic systems, propulsion systems, acoustics, or guidance and control systems.

Biomedical Engineers combine biology and medicine with engineering to develop, design and produce devices used in various medical procedures, such as the computers used to analyze blood or the laser systems used in corrective eye surgery. They also develop artificial organs, imaging systems such as magnetic resonance, ultrasound, and x-ray, and devices for automating insulin injections or controlling body functions.

The Water Slide

A civil engineer designed a pumping system to circulate just the right amount of water to the flume. Without the right flow of water, there is no ride. Additionally, civil engineers have designed the slide to withstand the weight of people, the water, and even the force of the wind blowing on it.

CIVIL

Civil Engineers work with the design, construction and maintenance of major structures such as roads, railways, bridges, tunnels, airports, docks, canals and large structures of every kind from skyscrapers to offshore oil rigs. One of the oldest disciplines of engineering, it contains a variety of specialties like structural, water related, environmental, architectural, transportation and geo-technical engineering.

Structural Engineers design steel, concrete, or timber framed structures such as tall buildings, bridges, dams, towers, platforms, retaining walls, foundations and stadiums.

Energy Engineers design and construct power stations, hydro-electric projects, oil rigs etc.

Waste Treatment Engineers are trained to design and analyze waste treatment plants which can be industrial waste treatment facilities or sanitary waste treatment facility or potable water treatment facility.

Transportation Engineers design and analyze Highways, Railways, Airports, Urban and Suburban Road Networks, Parking Lots, and Traffic Control Signal Systems.

Geotechnical Engineers study subterranean rock and soil to determine its suitability to support extreme loads so that the structures, which are erected, are safe and secure.

Water Management Engineers help in designing the drainage systems detention/retention ponds, navigational waterways, and flood control systems after studying the hydrologic and hydraulic principles.

CHEMICAL ENGINEERING

Chemical engineers convert raw materials and chemicals into useful products and help in finding new materials and techniques of their usage. They design equipment and develop processes for large-scale chemical manufacture and safe treatment of byproducts They also create synthetic replacements for natural materials.

Chemical engineers could specialize in a particular chemical processes such as oxidation or polymerisation or in a specific product such as plastic or rubber. Besides designing equipments and plants, testing manufacturing processes and supervising production; they also study the properties and effects of dangerous chemicals, device process of neutralizing them and also on the development acceptable substitutes.. They are employed by chemical-based industries like paints and drugs as well as manufacturing concerns like electronics,

An electrical or electronics engineer...

Develops construction plans for a skyscraper's electrical lighting system.

Designs a remote-controlled toy race car.

Devises a reliable radio collar so that researchers can track and study wild animals.

ELECTRICAL AND ELECTRONICS ENGINEERS

Electrical and Electronics engineers are involved in a wide variety of technology ranging from huge global positioning systems which can pinpoint the location of a moving vehicle to gigantic electrical power generators. Broadcast and telecommunication systems, electric motors, controls of machinery, lights and wiring in building complexes, vehicles, aircraft, radar and navigation systems, power generation, control and transmission devices which are used by electric utilities are all examples of equipment designed and built by these engineers.

Electrical Engineers install and maintain the power supply in any manufacturing company. They also maintain any motors and heavy electrical equipment in these companies.

Electronics and Telecommunication Engineers design embedded systems i.e. electronic devices. Telecommunication engineers design and manage communication networks e.g. mobile phones, blue tooth devices etc. Electronics engineers work in the design and production of camera, video recorders, television sets, radios, audio equipment like CD players or advanced voice recording equipment.

Instrumentation and Control Engineering is an inter-disciplinary branch of engineering heading towards development of new and intelligent sensors, smart transducers, MEMS Technology, Blue tooth Technology. This discipline finds its origin in electrical and electronics engineering, and covers subjects related to electronics, electrical, mechanical, chemical and computing streams. In short, it deals with measurement, automation and control processes.

TEXTILE ENGINEERS

Textile Engineering deals with the application of scientific and engineering principles to the design and control of all aspects of fiber, textile, and apparel processes, products, and machinery. These include natural and man-made materials, interaction of materials with machines, safety and health, energy conservation, and waste and pollution control. Key areas of work include

Textile chemical technology deals with chemical processing of textile fabrics, yarns and fibres such as dyeing, printing, finishing and coating. These engineers use analytical / testing equipment such as computer colour matching systems, amino-acid analyzers, spectrophotometers, and fastness testers.

Fiber science technology deals with fiber and polymer research, helps to develops new fibers, and tries to increase the productive capacity of fibres being used by industry.

Technical textiles is the term given to textile products manufactured for non-aesthetic purposes, where function is the primary criterion. These include textile structures for automotive applications, medical textiles (e.g. implants), geotextiles (reinforcement of embankments), agrotextiles (textiles for crop protection), protective clothing (e.g. against heat and radiation for fire fighter clothing, against molten metals for welders, stab protection and bulletproof vests), spacesuits (astronauts).

ENVIRONMENTAL ENGINEERING

Environmental engineers develop solutions to environmental problems using the principles of biology and chemistry. They are involved in water and air pollution control, recycling, waste disposal, and public health issues. They conduct hazardous-waste management studies in which they evaluate the significance of the hazard, advice on treatment and containment, and develop regulations to prevent mishaps. They design municipal water supply and industrial wastewater treatment systems. They conduct research on the environmental impact of proposed construction projects, analyze scientific data, and perform quality-control checks.

They study and attempt to minimize the effects of acid rain, global warming, automobile emissions, and ozone depletion. They may also be involved in the protection of wildlife. Many environmental engineers work as consultants, helping their clients to comply with regulations, to prevent environmental damage, and to clean up hazardous sites.

MATERIALS AND METALLURGICAL ENGINEERING

Materials engineers are involved in the extraction, development, processing, and testing of the materials used to create a diversity of products, from computer chips and television screens to golf clubs and snow skis. They work with metals, ceramics, plastics, semiconductors, and combinations of materials called composites to create new materials that meet certain mechanical, electrical, and chemical requirements.

Material engineers deal with extracting, developing, processing and testing of various materials and minerals which are used in order to produce a huge variety of consumer goods like computer chips, television sets, golf clubs and snow skis. New materials are created out of metals, ceramics, plastics, semiconductors, and combinations of materials called composites by these engineers, which are needed for mechanical, chemical and electrical industries. New materials are also chosen by these engineers for new applications and products.

Most materials engineers specialize in a particular material. For example, metallurgical engineers specialize in metals, while ceramic engineers develop ceramic materials and the

processes for making ceramic materials into useful products. Ceramics include all nonmetallic, inorganic materials that generally require high temperatures in their processing. Ceramic engineers work on products as diverse as glassware, automobile and aircraft engine components, fiber optic communication lines, tile, and electric insulators.

WHO MAKES A GREAT ENGINEER

⇨ Scientific and mathematical interests

⇨ Ability to both conceptualise information and pay attention to detail

⇨ Logical and rational reasoning abilities

⇨ Interest in solving technical and practical problems

⇨ Ability to work in a team - supportive and friendly in disposition

⇨ Stamina, both physical and mental to be out in the field for hours at a stretch or work on one problem for long periods

⇨ Crisis management abilities

⇨ Competence in technical and interpersonal communication skills

COMPENSATION

Freshers in the private sector in all areas of engineering earn starting salaries of Rs. 20,000 to Rs. 50,000 per month excluding allowances. Engineers in software and electronics have higher starting salaries at about Rs 40,000 per month.

Senior engineers and software consultants can earn anywhere in between Rs 1 lace and Rs 3 laces a month. Peak salaries would range from Rs 40 lacs per year to Rs 60 lacs a year.

Name that Engineer

1. New tunnels are being built under the Boston Harbor to accommodate more traffic.
 a. Mechanical   b. Industrial   c. Civil Engineer

2. I would like to purchase pants that are resistant to grass stains so that my mom doesn't get mad at me when I come home dirty.
a. Industrial   b. Chemical   c. Materials

3. I need a tool that will enable me to fix the binding on my snowboard.
a. Materials   b. Mechanical   c. Electrical

4. My uncle's elbow is worn out from playing tennis and he needs help.
a. Biomedical   b. Aerospace   c. Environmental

5. The new candy factory that recently opened is emitting a funny smell.
a. Materials   b. Environmental   c. Chemical

6. Black-outs have occurred weekly in Faridabad.
a. Electrical   b. Civil Engineer   c. Industrial

7. There was a malfunction with the plane's navigation system
a. Aeronautical   b. Mechanical   c. Electrical

Answers: 1c, 2c, 3b, 4a, 5b, 6a, 7a

STUDY ROUTES

A bachelor's degree in Engineering is the minimum requirement to become a qualified engineer in any field. A post graduate degree is required for research or teaching posts and an additional degree in business administration is desirable for management positions.

The basic eligibility criteria for a BE / B.Tech. in any field is 10+2 or equivalent examination, with high percentage of marks in Science subjects (Physics, Chemistry and Mathematics).

Selection to the graduate courses (BE / B.Tech.) is based on merit – the JEE is a leading entrance exam for all IITs. Several regional engineering colleges and private engineering colleges use the student's performance in Class XII as the primary criterion for admission.

Selection to the postgraduate courses (M.Sc. / M.Tech.) in different universities is through an 'All India Combined Entrance exam' conducted by JNU, New Delhi and to IIT's through 'GATE' in two-year M.Tech. courses and through JEE in five year integrated M.Tech courses.

JEE Main

Admission to Undergraduate Engineering Programs at NITs, IIITs, other centrally funded Technical Institutions, Institutions funded by several participating State Governments, and several other Institutions is through the Joint Entrance Examination, JEE (Main). Admission will be given basis the exam as well as the students performance in the Class XII boards. 60% weightage is given to the performance in JEE (Main) and 40% weightage to normalised marks in Class 12th or other qualifying examination. The JEE (Main) will also be an eligibility test for the JEE (Advanced), which the candidate has to take if he/she is aspiring for admission to the undergraduate programmes offered by the IITs. Candidiates must have taken at least five subjects in their class XII qualifying examination to be eligible for the JEE Main exam.

JEE Advanced

Top rankers in JEE Main are eligible to write the JEE Advanced which determines admissions into the IITs and ISMU, Dhanbad. Some other institutes also use this score for admission into undergraduate programs. Admission to IITs and ISM Dhanbad will be based only on the category wise All India Rank (AIR) in JEE (Advanced) – 2013, subject to the condition that such candidates are in the top 20 percentile of successful candidates of their Boards in respective categories. Postgraduate admissions are done on the basis of the GATE and CEED.

BITSAT- QUALIFYING EXAM FOR ADMISSION TO BITS PILANI

Admissions in The Birla Institute of Technology and Science (BITS) Pilani across its three campuses are conducted on the basis of a Computer based Online Test conducted by BITS, Pilani. This test is referred to as 'BITS Admission test, in short as BITSAT. The candidate should have obtained a minimum of 75% aggregate marks in Physics, Chemistry and Mathematics subjects in 12th class examination, at least 60% marks in each of the Physics, Chemistry, and Mathematics subjects and adequate proficiency in English. However, admissions will be made only on his/her merit position based on the score obtained in BITSAT.

LEADING COURSES IN INDIA

Top 25 Engineering Colleges in India
Indian Institute of Technology (IIT) - Kanpur
Indian Institute of Technology (IIT) - Delhi
Indian Institute of Technology (IIT) - Kharagpur
Indian Institute of Technology - Roorkee
Indian Institute of Technology (IIT) - Madras
Birla Institute of Technology and Science (BITS, Pilani) - Pilani
Indian Institute of Technology, Banaras Hindu University (IT, BHU) - Varanasi

Vellore Institute of Technology(VIT) - Vellore
Delhi Technological University - Delhi
Indian Institute of Technology (IIT) - Guwahati
SRM Engineering College, SRM University - Kattankulathur
National Institute of Technology - Surathkal, Karnataka
National Institute of Technology - Tiruchirappalli
PSG College of Technology - Coimbatore
Government College of Engineering (COEP) - Pune
Netaji Subhas Institute Of Technology - Delhi
National Institute of Technology - Warangal
M S Ramaiah Institute of Technology - Bangalore
National Institute of Technology - Kurukshetra
VeerMata Jijabai Technological Institute(VJTI, Mumbai) - Mumbai
National Institute of Technology - Calicut
Thapar Institute of Engineering and Technology - Patiala
International Institute of Information Technology (IIIT) - Hyderabad
Indian Institute of Information Technology (IIIT) - Allahabad
K. J. Somaiya College Of Engineering - Mumbai

National Institute of Technologies (NIT's)

National Institute of Technology, Warrangal, Andhra Pradesh
National Institute of Technology, Silchar, Assam
National Institute of Technology, Jamshedpur, Bihar
Sardar Vallabh Bhai National Institute of Technology, Surat, Gujarat
National Institute of Technology, Kurukshetra, Haryana
National Institute of Technology, NIT Campus, Anu, Hamirpur, Himachal Pradesh
National Institute of Technology, Hazrat bal, Srinagar, Jammu & & Kashmir
Karnataka National Institute of Technology, Suratkal, Srinivasanagar, Karnataka
Calicut National Institute of Technology, Calicut, Kerala
Maulana Azad College of Technology, Bhopal, Madhya Pradesh
Vishvesvarya National Institute of Technology, Nagpur, Maharashtra
National Institute of Technology, Rourkela, Orissa
Dr. B R Amdedkar National Institute of Technology, P O Suranussi, Jalandhar, Punjab
Malviya National Institute of Technology, Jaipur, Rajasthan
National Institute of Technology, Triuchirapalli, Tamil Nadu
National Institute of Technology, Allahabad, Uttar Pradesh
National Institute of Technology, Mahatma Gandhi Avenue, P O Durgapur, West Bengal

Top 50 Govt. Engineering Colleges

1. IIT, Kharagpur
2. IIT, Kanpur
3. IIT, Mumbai
4. IIT, Delhi
5. IIT, Chennai
6. IIT, Roorkee
7. IT BHU, Varanasi
8. Indian School of Mines, Dhanbad
9. IIT, Guwahati
10. College of Engineering, Chennai
11. Jadhavpur College, Calcutta
12. NIT, Trichy
13. NIT, Warangal
14. Delhi School of Engineering, New Delhi
15. Punjab Engineering College, Chandigarh
16. NIT, Suratkal
17. Motilal Nehru NIT, Allahabad
18. Bengal Eng & Science university, Howrah
19. Netaji Subhash Inst of Tech, New Delhi
20. IIIT, Hyderabad
21. Harcourt Butler Technology Inst, Kanpur
22. Malviya National Inst. of Tech, Jaipur
23. MANIT, Bhopal
24. VNIT, Nagpur
25. College of Engineering, Pune
26. IIIT, Allahabad
27. SVNIT, Surat
28. NIT, Rourkela
29. NIT, Kurukshetra
30. NIT, Khozikhode
31. College of Engineering, Vishakapatnam
32. Mumbai University Inst, Mumbai
33. College of Engineering, Thirupuram
34. NIT, Jamshedpur
35. Coimbatore Inst. Of Tech, Coimbatore
36. NIT, Durgapur
37. JNTU, Hyderabad
38. Govt. College of Engineering, Coimbatore
39. Annamalai University, Annamalianagar
40. University Vishvesvarya, Bangalore
41. SGS Inst of Tech & Science, Indore
42. Osmania University, Hyderabad
43. IIIT, Calcutta
44. NIT, Jalandhar
45. NIT, Hamirour
46. Jabalpur Engineering College, Jabalpur
47. JNTU, Kalkinada
48. NIT, Raipur
49. NIT, Patna
50. NIT, Silchar

Top 50 Private Engineering Colleges

1. BITS, Pilani
2. BITS Mesra, Ranchi
3. PSG College of Technology, Coimbatore
4. Thapar Inst of Eng & Technology, Patiala
5. Dhirubai Ambani Instt of Infocom, Gandhinagar
6. Manipal Institute of Tech, Manipal
7. Vellore Institute of Technology, Vellore
8. VJTI, Mumbai
9. SSN College of Engineering, Chennai
26. Amrita Institute of Technology, Coimbatore
27. Sh. Ramdeo Baba inst of Technology, Nagpur
28. Karunya Institute of Technology, Coimbatore
29. Kongu Engineering College, Erode
30. Sreenidhi Institute of Science Tech, Hyderabad
31. SDM College of Engineering, Dharwad
32. Mufkham Jha Eng Coll, Hyderabad
33. MS Ramaiah, Bangalore
34. Vasavi College of Engineering, Hyderabad

10. RV College of Engineering, Bangalore
11. PES Institute of Technology, Bangalore
12. Sardar Patel College of Engg, Mumbai
13. Maharashtra Institute of Tech, Pune
14. SJ College of Engineering, Mysore
15. SASTRA University, Thanjavur
16. Chaitanya Bharati Institute, Hyderabad
17. Nirma Institute of Tech, Ahmedabad
18. BMS College of Engineering, Bangalore
19. SRM Institute of Tech, Chennai
20. Bangalore Institute of Tech, Bangalore
21. Sathyabhama Institute of Tech, Chennai
22. Gitam, Vishakapatnam
23. National Institute of Engineering, Mysore
24. ICFAI Inst of Technology, Hyderabad
25. Mepco Schlenk Eng Col, Sivakasi
35. Jaypee University, Solan
36. RVR & JC College of Engineering, Guntur
37. Kalinga Institute of Ind Tech, Bhubhaneshwar
38. KL College of Engineering, Vaddeswaram
39. Babu Banarasi Das, Lucknow
40. Inst of Tech & Management, Gurgaon
41. Hindustan Inst of Eng Tech, Chennai
42. Siddhartha Eng College, Vijaywada
43. Sona College of Tech, Salem
44. Galgotia, Noida
45. VIT, Pune
46. Yashwantrao Chavan, Nagpur
47. Shri Chitra Thirunal, Thiruvananthapuram
48. Kakatiya Institute, Warangal
49. KLE Society's College of Engineering, Belgaum
50. JSS Academy, Bangalore

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INFORMATION TECHNOLOGY

Software – or information technology (IT) – is really the stuff science fiction was made of even as little as 25 years ago. Fifty years ago, it was being used in the Armed Forces and Intelligence industry mainly. Even remote sensing software was the stuff of fantasy.

Of course, today, we cannot live without IT – how would we manage banking, shopping for books, clothes and even paints without software? And where would we look for information, data, definitions, pronounciations without the internet? Would gaming be dead without IT?

Ten years ago, IT meant computers. Today, it means phones, tablets, google glasses and projection software.

Today, IT includes data management, networking, hardware engineering, database and software design, as well as the management and administration of entire systems. IT departments of organisation may also be involved in Data Entry, Data conversion, Animation and Multimedia, Back office Operations, Book Keeping, proof reading-editing, CAD/CAM, writing and translation, handwriting services, call centre, DTP Typesetting, Medical Transcription, Image Scanning.

Data Management	Networking	Software Development
Capturing data, managing and analysing databases	Configuring and managing communication between computers and other devices within a system	Developing instructions for computers and other hardware devices to perform given functions

DATA MANAGEMENT

Data Administration involves managing lists of users, sales and customer information, mailing lists, inventories of goods, stocks and books etc. Data Administrators use tools such as Structured Query Language (SQL), SAP and Oracle-based software to create and manage databases.

Data Warehousing combines data from multiple or varied sources into one comprehensive and easily manipulated database. Data warehousing is commonly used by companies to analyze trends and in creating strategic overviews to understand business models, make forecasts, reports and projections.

Data Mining and Analysis combines computing techniques, business insights and mathematical tools to get more information from a given database. Some examples are – mining a database of customers in a hypermarket to see if insurance can be cross-sold to them; rating customers of a retail bank on their credit-worthiness based on how much and what they spend on during the year; planning and advertising holiday packages for those looking for cheap destinations as opposed to those looking for low prices for dream destinations – the possibilities are endless!

NETWORKING

Network Administration involves configuring, installing, managing networks (LAN/WAN). Network Administrators monitor network performance daily, trouble shoot network errors, manage network security and configure switches and routers and firewalls. Often administrators are also responsible for system upgrades, evaluating vendor products and security testing.

What does beer have to do with nappies?

A supermarket put aside all its assumptions, and it reassessed its strategy in positioning goods in their outlet – it analysed data across the gender of the buyers, weekdays, items etc. The result: Men who have children often do shop on Saturdays and buy nappies for their babies besides beer for weekend TV evenings. The superstore decided to position cases of beer besides nappies on Saturdays – sales shot up!

Network Engineering While administrator may focus on the day-to-day management of networks, network engineers are responsible for system upgrades, evaluating vendor products, security testing and the hardware aspects of networks.

Network Programmers and Analysts write software programs or scripts that aid in network analysis, such as diagnostics or monitoring utilities. They also evaluate third-party products and strategies the integrating of new software and technologies into an existing network environment or to build a new environment.

SOFTWARE DESIGN AND DEVELOPMENT

Software development is the translation of a user need or marketing goal into a software product. Software development includes not only the actual writing of code but also the preparation of requirements and objectives, the design of what is to be coded, and confirmation that what is developed has met objectives. Phases of software development are:
Discover, Design, Develop, Deploy

Software engineers

Research, develop and adapt programs for computer systems

Create new programs like OS or word processor and, sometimes, new languages

Quality testing against pre-defined standards to ensure the program functions correctly.

Systems Analysts

Analyse and understand the company's/clients needs and the kind of work involved

Document the entire software development steps and determine which procedures can be automated.

Develop the outline structure of a new system and, after approval, work on the design of the system.

Once the design is approved, work with the team to automate the entire design with the help of coding and databases

Application Programmers

Design & write specific programs tailored to a specific task and function, and involve large systems which may be interlinked

Develops code on briefs by systems analysts or designers normally as part of a project team. Generally it is a software for in-house need of the company or maybe for a client requirement

Programmers specialize in applications for mainframes, minicomputers or PCs.

Systems Manager

A Systems Manager's role is very much like that of a Systems Administrator but in a wider context. He maybe having Systems Administrator and Database administrator reporting to him. The entire software team, lead by a System Analyst, maybe also working under him. He normally may look after System administration, software development and maybe MIS also of the company. Job profile may vary depending upon the policies of the company.

Web Development and Design

Web development is a term meaning any activity related to developing a web site for the World Wide Web or an intranet. This can include e-commerce business development, web design, web content development, client-side/server-side coding, and web server configuration.

Web Design generally refers to the visual aspects of Web development i.e. layout, images

Five creative fields that use IT technology

Architecture

Gaming

Advertising, marketing

Film Making

Publishing

They use software to create special effects, 3D modeling software to try

PROSPECTS AND COMPENSATION

Almost every company wants their entire information to be automated and bigger companies are striving towards paperless offices. Software developers are, consequently, highly in demand to help organizations achieve so. Big MNCs as well as small development houses are busy manufacturing software and the market is big enough to accommodate all this and more. While bigger companies like Wipro, Infosys, TCS are mostly working for international clients, small ones are working for domestic clients as well. Starting salaries in this field range between Rs 40,000 and Rs 1,00,000 per month. Peak salaries would be in the range of Rs 3 to Rs 6 lacs a month. This depends on the professional degree/diploma, knowledge base and the platform on which one has to work but starting salary packages for Software Professionals are better than those compared with Database Managers and Networking Professionals.

Developers that work on projects in the US, UK, Europe or Australia earn dollar salaries and perquisites.

WHO MAKES A GREAT IT PROFESSIONAL

⇨ No, you don't have to be an IT geek but yes, it helps if your mind works out the logical relationships between processes on your own as you talk

⇨ Maths skills, especially algebra and calculus, are great indicators of one's propensity to work with coding and networks

⇨ Quick decision making ability – leadership is an important attribute in the long run

⇨ Ability to work under pressure – it's all about managing deadlines, dealing with unexpected bugs and problems, even sudden client requests – all within the deadline!

⇨ Teamwork – it doesn't help to be the IT geek in a company! You have to be the person others can talk and explain things to – you have to understand what the client wants, get others to share data and information and motivate people across functions to use new softwares and systems.

STUDY ROUTES

THE FORMAL SECTOR

The basic requirement is BE/ BTech/ MCA/ Msc in Computer Science/Information Technology with specialization in Systems Management, Systems Development, Systems Engineering, Application Software, Internet, Management Information Systems (MIS), Software Development, Hardware Technology, Networking.

Business Analyst and leadership roles in the long run require an MBA in IT & Systems.

Leading BCA courses in India

- Department of Computer Application, Christ University, Bangalore
- Department of Computer Applications, SRM University, Chennai
- Symbiosis Institute of Computer Studies & Research (SICSR), Pune
- Women's Christian College, Chennai
- St. Joseph's College, Bangalore
- Institute of management Studies (IMS), Noida
- Department of Computer Application, University College, Kurukshetra
- Madras Christian College, Chennai
- Stella Maris College, Chennai
- M.O.P. Vaishnav College for Women, Chennai

Best Institutes in India for a B Tech degree

Indian Institute of Technology (IIT) - Kanpur, Delhi, Kharagpur, Roorkee, Chennai
Birla Institute of Technology and Science (BITS, Pilani) - Pilani
Indian Institute of Technology, Banaras Hindu University (IT, BHU) - Varanasi
Vellore Institute of Technology (VIT) - Vellore
Delhi Technological University - Delhi
Indian Institute of Technology (IIT) - Guwahati
SRM Engineering College, SRM University - Kattankulathur
National Institute of Technology - Surathkal, Karnataka
National Institute of Technology - Tiruchirappalli
PSG College of Technology - Coimbatore
Government College of Engineering (COEP) - Pune
Netaji Subhas Institute Of Technology - Delhi
National Institute of Technology - Warangal
M S Ramaiah Institute of Technology - Bangalore
National Institute of Technology - Kurukshetra
VeerMata Jijabai Technological Institute (VJTI, Mumbai) - Mumbai
National Institute of Technology - Calicut
Thapar Institute of Engineering and Technology - Patiala
International Institute of Information Technology (IIIT) - Hyderabad
Indian Institute of Information Technology (IIIT) - Allahabad
K. J. Somaiya College Of Engineering - Mumbai

Others Institutes in India

Faculty of Engineering & Technology, Jadavpur, Calcutta
Indian Statistical Institute, 203 Barrackpore Trunk Road, Calcutta

Patna University, Patna

Regional Institute of Technology, Jamshedpur

Bhartiya Vidyapeeth, College of Engineering, Mumbai

Thadomal Shahani Engineering College, Mumbai

Indian Institute of Technology, Powai, Mumbai

College of Engineering for Women, Pune

SNDT Women's University, Mumbai

University of Poona, Ganeshkhind, Pune

Pune Institute of Computer Technology, Pune

Lucknow University, Badshahbagh, Lucknow

Roorkee University, Roorkee

Kamla Nehru Institute of Technology, Sultanpur

Indian Institute of Technology, Kanpur

Aligarh Muslim University, Aligarh

Indira Gandhi National Open University, New Delhi

Jawaharlal Nehru University, New Delhi

Jamia Millia Islamia, Faculty of Engineering & Technology, New Delhi

Delhi College of Engineering, Kashmere Gate, Delhi

THE INFORMAL SECTOR

The informal sector comprises of number of private training institutes offering flexible intakes and customised training. Challenges of credibility and standardisation of these have, however, been under intense scrutiny. Hundreds of computer training institutes impart training in computer applications through short duration courses (1-2 years). The course content includes computer languages, databases, networking concepts, SDLC concepts and project management concepts. However, the recognition and value of course taken at a private institute depends on the accreditation the course receives from DOEACC or from leading companies in the IT industry.

Department of Electronics Accreditation of Computer Courses (DOEACC) Brings method into computer training, so as to bring quality and standardisation at all levels. Department of Electronic (DOE) is operating a scheme, namely, department of Electronics Accreditation of Computer Courses (DOEACC) under which computer training institutes/organisations in the non-formal sector, subject to meeting well-defined norms and criteria, are given accreditation for conducting courses. There are four levels of courses under this scheme:

Level	Description	Eligibility
'O' level – Foundation	Certifies Competence as a Programmer Assistant	Class XII + 1 year full time course
'A' Level – Advanced Diploma	Certified Programmer	Graduation + 'O' Level Exam + 1 year full time course / relevant experience
'B' Level – Graduate	Certified Systems analyst / Software Designer / Engineer	Graduate + 'A' Level + 2 years relevant experience
'C' Level – Masters Degree	Certified Systems Manager	'B' Level / B. Tech / BE/MCA/M. Sc./Masters in Maths, Stats, /MBA + 'C' Level

National Centre for Software Technology, Mumbai - Autonomous R&D Organisation of the Department of Electronics. Conducts competence in Software Technology Examination (CST) for the following levels of proficiency: G – Graduate level, D – Diploma level, I – Intermediate level and E – Entry level. Eligibility for the tests is a degree in any subject and computer competence ranging from no computer training (E level) to a full fledged computer science degree (G level). Those with a Diploma in Engineering can also take the E level exam.

IBM courses – IBM Global Services India has 25 ACE training centres in metros and a number of Authorised Training Partners in many cities across the country. The thrust is on software development, offering training in AS/400, Mainframe and E-Business.

Microsoft Education and Certification in India has four main study/training initiatives. About a 100 Microsoft Certified Technical Education Centres (CTECs) including NIIT and Aptech offering Microsoft certification courses. Microsoft Authorised Academic Training institutions impart training on Microsoft products and technologies.

This option can be availed at Xaviers (Mumbai); Narsi Monji Institute of Management Studies (Mumbai); Gujarat University (Ahmedabad) and PES Institute of Technology (Bangalore). NIIT, a part of the HCL group, has an alliance with Microsoft Corporation as training partner in India for training on Microsoft technologies and products.

ORACLE Oracle is a forerunner in RDBMS with almost a 70% market share. It offers the best training option for those planning to enter software development and Database Administration. The courses offered are Oracle Certified Database Administrator Programme, Oracle Developer, Oracle Designer, Java programming and Oracle Web server.

Oracle Global Education Centres conduct 2 fulltime Masters' certificate programmes in Financial Application implementation and Manufacturing Application Implementation for Finance and manufacturing professionals. The degree enhances overseas employment prospects as ERP implementation consultants.

Centre for Electronics Design and Technology of India (CEDT) is an autonomous establishment under the Department of Electronics, Government of India. The centre imparts software and hardware training programme through its Authorised Training Centres (ATC) across the country.

United States and Canada

Massachusetts Institute of Technology (MIT) , United States

Stanford University, United States

Carnegie Mellon University, United States

University of California, Berkeley (UCB), United States

Harvard University, United States

Princeton University, United States

University of Toronto, Canada

University of California, Los Angeles (UCLA), United States

University of Washington, United States

Cornell University, United States

University of British Columbia, Canada

University of Texas at Austin, United States

California Institute of Technology (Caltech), United States

Georgia Institute of Technology, United States

Columbia University, United States

University of Illinois at Urbana-Champaign, United States

University of Waterloo, Canada

New York University (NYU), United States

Yale University, United States

University of Pennsylvania, United States

University of California, San Diego (UCSD), United States

University of Michigan, United States

University of Maryland, College Park, United States

University of Southern California, United States

Rest of Asia

National University of Singapore (NUS), Singapore

Tsinghua University, China

Peking University, China

The University of Tokyo, Japan

The Hong Kong University of Science and Technology, Hong Kong

Nanyang Technological University, Singapore (NTU), Singapore

The University of Hong Kong, Hong Kong
KAIST - Korea Advanced Institute of Science & Technology, South Korea
The Chinese University of Hong Kong (CUHK), Hong Kong
Seoul National University, South Korea
National Taiwan University (NTU), Taiwan
Shanghai Jiao Tong University, China
Lomonosov Moscow State University , Russia

United Kingdom
University of Cambridge, United Kingdom
University of Oxford, United Kingdom
Imperial College London, United Kingdom
The University of Edinburgh, United Kingdom
UCL (University College London), United Kingdom

Rest of Europe
ETH Zurich - Swiss Federal Institute of Technology, Switzerland
Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland
Technical University of Munich, Germany
Politecnico di Milano, Italy

Australia
The University of Melbourne, Australia
The Australian National University, Australia
The University of New South Wales (UNSW Australia), Australia
The University of Sydney, Australia

MANAGEMENT

So what do MBA's do? Getting an MBA does not prepare you to do actual skill work- that is something you should already have in place. What it does teach you is how to see a problem and make snap decisions on what should be done. It teaches you to martial resources and get things done. The two year MBA course exposes you to five major specialisations- Sales & Marketing, Finance, IT & Systems, Operations & Logistics and Human Resources. The specialisation you pick becomes your expertise.

FIVE MAIN AREAS OF MANAGEMENT

Sales and Marketing	Finance	Human Resources
Selling the product or service directly to customers to maximize revenue. Marketing includes refining the product to suit the market, and managing the sales process including pricing, promotions, place of sale etc.	Optimizing the flows of money into and out of various departments, costing, budgeting, investments, currency trading etc. Keeping an eye on profitability of businesses	Responsible for optimizing the use of people (resources that are human) for the business. Managing recruitment, compensation, welfare services, performance management, training and development.

IT & Systems	Operations and Logistics
Technology services for product delivery and managing the work. Includes managing networks, capturing work data and deriving intelligence from it, optimizing technology for the company	Optimising how the product is made and delivered through manufacturing or services delivery. Includes setting best processes and maximizing efficiency

SALES AND MARKETING

The art of selling – and it's an art, really – is one thing that will never go out of style. If you can sell, you will always find something yourself in demand. It could be ad space on the internet, a weekend at a spa resort, chocolate cream biscuits or advanced robotic technology, everything needs to be sold – someone has to find people who need it, tell them about the product or service and then convince them to buy!

Sales is about making the actual sale transaction – reaching the customer, directly or through distribution channels like retailers or e-tailers and convincing him or her to buy.

Marketing is about planning and strategizing what to sell and how to sell – what product is likely to find a large market, what price it should be sold at, where it should be sold and what messages would best attract customers.

Market Research is the process of getting information about customers – the numbers of customers for a product, their tastes, their social habits and their likely behavior. Market Research is the foundation on which Marketing and Advertising strategy is made.

Retail Mangement

With the new format of shopping with malls that house all types of shops and shops that stock of types of products, the market has changed and marketing has to change with it. Retail Managers track customer demand, consumption pattern and preferences of the consumers**,** and tailor products and stocks according to what's trending.

New Coke

In 1985, Coke tried to celebrate 100 years of Coca Cola by introducing a sweeter variant that market research showed people preferred to Coke as well as Pepsi. The mistake they made was to withdraw the original Coke. The backlash from Coke lovers was so strong that New Coke was withdrawn and things brought back to normal in 79 days. The market research blunder was to not inform the customers during the research that New Coke would *replace* the old taste.

WHO MAKES A GREAT SALES AND MARKETING PERSON

- ⇨ Loves meeting new people
- ⇨ Is usually excited by possibilities
- ⇨ Remembers people and details about them
- ⇨ Has tremendous physical energy
- ⇨ Is good at making conversation and small talk
- ⇨ Enjoys traveling and moving about
- ⇨ Is persuasive and not easily deterred by "no"
- ⇨ Enjoys new ideas to open new opportunities

FINANCE

Money is definitely what makes the world go round. It is hard enough to earn, but even harder to keep track of. The best situation to be in is to have your money work for you. These are places where Accountants, Analysts and Advisors step in. As money becomes increasingly 'abstract' due to technology and mechanization, people who really understand money are well positioned to build careers. Economies around the world are fiercely interlinked and the role of Finance and Accounting professionals is becoming more and more critical.

With the increasing pace of business, financial products are getting increasing complex and varied. Products are created to meet the changing and growing needs of customers in developing and developed countries. Every business activity is today measured in terms of its bottom line. From being back-office jobs mainly for record and book keeping, careers in the Financial Services are increasingly challenging and attractive - offering greater decision making roles, and planning and controlling of operations in many organisation.

There is a wide spectrum of careers that can be followed in Finance

The power of compounding

In the early 1600's, a group of Red Indians sold an island to the Confederates for just $16! But that was not so bad a deal, after all.

Had they re-invested the $16 at a compounded rate of 8%, it would amount to $30 trillion in 1989 when the actual value of the real estate on the entire island - today known as Manhattan -

Commercial Banking deals with everyday banking requirements of individuals and companies like maintaining accounts, cash deposits / withdrawals, investment advisory, deposits, loans (housing, car etc.), credit cards, remittances (payments, Demand drafts etc.), lockers etc. Entry level jobs entail greater customer interaction and communication as banking operations are mostly computerized due to applications like CBS (core banking solutions). While private banks normally resort to campus placements in B-schools for entry level slots, nationalized banks fill up posts based on the examination conducted by the IBPS (Institute of

Banking Personnel Selection) and interviews. With the thrust on financial inclusion of all across the country, banks are gearing up to handle millions of new account holders.

Investments- Broking, Advisory, M&A, VC, Research and Analysis

Stock exchanges are like market places where stockbrokers buy and sell securities for individuals or institutions. Apart from merely managing transaction, stock brokers can also chose to play an advisory role in managing portfolio funds. Markets to invest in are Commodities, Currencies, Futures and Options, Equities, etc.

Investment Banking helps companies and governments raise money from the capital markets – either through issuing shares to the public, privately selling equity, or by raising debt (loans). Advising clients on financial deals such as Mergers & Acquisitions as well as on investing in other companies is an integral part of Investment Banking.

Securities Research and Analysis refers to research and analysis to understand and predict the financial health of securities such as equity shares of companies or debt issues. Equity Research deals with research and analysis of the financial performance of companies while Debt Securities research analyses and predicts the financial health of bonds

Venture Capital investing involves providing capital to new businesses in the early stages of their growth. Generally made as funds in exchange for shares in the company, venture capital investments are usually high risk, but offer the potential for above-average returns. A venture capitalist is a person who evaluates new businesses and invests after detailed risk analysis.

Corporate Financial Management

Corporate Finance professionals work in the Finance department of companies and look after the day-to-day financial requirements of that company. This includes maintaining and monitoring accounts, day-to-day investing, managing bank relationships, garnering loans etc.

WHO MAKES A GREAT FINANCE PROFESSIONAL

⇨ Loves numbers and enjoys arithmetic and calculation
⇨ Excellent analytical and reasoning powers
⇨ Understands complex and technical situations
⇨ Quick decision making ability
⇨ Unbiased objective outlook on most issues
⇨ Ability to work under pressure
⇨ High level of integrity, tact and discretion

OPERATIONS MANAGEMENT

Operations Management (OM) deals with the design and management of products, processes, services and supply chains. It covers a wide range of decisions that companies have to make, such as capacity planning, forecasting, product design, process selection, technology selection, design of facilities and jobs, management of the supply chain, project management, inventory management and maintenance management

People in operations work to make sure their employers' businesses run smoothly, effectively, and professionally. There are various avenues in construction, consulting firms, financial institutions, hospitality, information technology, insurance, manufacturing, retail, transportation and logistics.

Areas of possible specialisation include Customer Service Support, Distribution and Supply Chain Management, Forecasting, Inventory Planning and Control, Operations Planning, Scheduling and Control, Purchasing and Materials Management, Project Management, Process and Methods Planning, Plant Engineering Management, Quality Management, Operations Process Consulting, Traffic Management, Warehouse Management and Distribution.

WHO MAKES A GREAT OPS PERSON
⇨ Strong analytical, troubleshooting and problem solving skills
⇨ Ability to work in a team and good Leadership skills
⇨ Dedication and willingness for self-study and research to upgrade to new technologies
⇨ Willingness to work long and odd hours
⇨ Understands complex and technical situations
⇨ Quick decision making ability
⇨ Unbiased objective outlook on most issues
⇨ Ability to work under pressure

IT & SYSTEMS MANAGEMENT

Computer and information systems managers direct and manage various computer-related activities of a company. They construct business plans, oversee Internet and computer operations, assign projects to staff members, and direct the flow of work. Computer and information systems managers work in manufacturing, industry, government, and educational institutions. They generally are in charge of facilities that have many programmers, systems analysts, and peripheral equipment operations.

IT Administrators and Systems Managers direct the work of systems analysts, computer programmers, support specialists, and other computer-related workers. They plan and coordinate activities such as installation and upgrading of hardware and software, programming and systems design, development of computer networks, and implementation of Internet and intranet sites. They are increasingly involved with the upkeep, maintenance,

and security of networks. They analyze the computer and information needs of their organizations from an operational and strategic perspective and determine immediate and long-range personnel and equipment requirements. They assign and review the work of their subordinates and stay abreast of the latest technology to ensure the organization does not lag behind competitors.

Chief technology officers (CTOs) evaluate the newest and most innovative technologies and determine how these can help their organizations. The chief technology officer often manages and plans technical standards, and tends to the daily information technology issues of the firm. Because of the rapid pace of technological change, chief technology officers must constantly be on the lookout for developments that could benefit their organizations. Once a useful tool has been identified, the CTO must determine an implementation strategy and sell that strategy to management.

Management information systems (MIS) directors or information technology (IT) directors manage computing resources for their organizations. They often plan and direct the work of subordinate information technology employees. These managers ensure the availability, continuity, and security of data and information technology services in their organizations. In this capacity, they oversee a variety of user services such as an organization's help desk, which employees can call with questions or problems. MIS directors also may make hardware and software upgrade recommendations based on their experience with an organization's technology.

Project managers develop requirements, budgets, and schedules for their firms' information technology projects. They coordinate such projects from development through implementation, working with internal and external clients, vendors, consultants, and computer specialists. These managers are increasingly involved in projects that upgrade the information security of an organization.

Cyber security is a key issue for most organizations to protect their infrastructure and Internet sites from hackers, viruses, and other acts of cyber terrorism. Cyber security experts will be needed to fill leadership roles in the information technology departments because the integrity of the computing environments is of utmost concern to any organisation. As a result, there will be a high demand for managers proficient in computer security issues.

Also with the growth of e-commerce, KPO, BPO the role of computer and information systems managers will continue to evolve. A Systems Manager/Administrator maybe hired directly by a company to manage its IT resources or maybe employed by another company to which management of IT Infrastructure has been outsourced.

WHO MAKES A GREAT IT&SYSTEMS PERSON

⇨ Ability to work in a team and good Leadership skills
⇨ Dedication and willingness for self-study and research to upgrade to new technologies
⇨ Ability to think quickly and act in emergency situations in case of a disaster
⇨ Ethical, honest and organized
⇨ Willingness to work long and odd hours
⇨ Always abreast with latest industry news.
⇨ Strong analytical, troubleshooting and problem solving skills.
⇨ Effective written and verbal communication and presentation skills

HUMAN RESOURCES

Human Resource (HR) managers interpret the progressive needs of the organisation and direct individual potential towards a common goal. A full-fledged Human Resource Department is headed by a Director of Personnel, with managers taking care of recruitments, training (staff/ management) and resource development. Occupational/ industrial psychologists may also form part of the team. In a small organisation, one person may handle many, if not all aspects of HR work. In contrast, in a large corporation, the top human resource executive usually develops and coordinates personnel programs and policies.

HR Managers are responsible for all tasks involving the management of people's skills, positions and performance within the organization. These tasks can be grouped as:

> "Human Resources are like natural resources…often buried deep; you have to find them. They are not just lying around. You have to create the circumstances where they show themselves"

Recruitment and placement of people at all levels within the organization. This involves staff planning, the actual screening and recruitment of suitable people, networking with placement agencies and head-hunters.

Appraisals, promotions and internal movements – this involves designing and implementing a useful appraisal methodology, as well as advising management on individual assessments and internal movements.

Training and Development involves assessing and identifying the training needs of people at all levels in the organization. Needs could be technical and skill based: selling skills, product knowledge, negotiation skills etc OR they could be behaviour oriented: motivational, team-based or self-based. HR personnel would also design and conduct raining programs.

Employee services like leave management, health, work related facilities, welfare services

Labour and Industrial Relations, especially in manufacturing and factory set-ups, include negotiating with trade union representatives for pay, perks and other conditions. Advising management on labour related laws and amendments to these.

WHO MAKES A GREAT HR PERSON

⇨ Interested in human behaviour and the performance and development of people
⇨ Good social skills, tact, patience, understanding and persuasiveness. HR managers are required to interact with all people in the organization with varied personalities
⇨ Written and verbal communication skills to design and conduct interviews and training
⇨ Ability to see things from both the employer's as well as the employee's perspective
⇨ Basic quantitative skills for financial calculations and managing statistical data, e.g. labour turnover, absence rates and salary budgets
⇨ Analytical and problem solving skills for developing training and appraisal policies, and for planning and forecasting future staffing needs
⇨ Leadership qualities are required in senior managers and team leaders, as the HR department is very lean towards the top.

COMPENSATION - ALL AREAS

Usual Entry Level salaries are between 2-4 lakhs per annum. Middle Management salaries with 5 -10 years of experience range from Rs 5 - 15 lakhs per annum. Senior Management salaries would be over Rs 15 lakhs per annum. Peak Salaries would be in the range of Rs 25 lakhs to over Rs 50 lakhs (in rare cases). Of course, high performers, as in any field, would be able to command a significant premium. An HOD at a leading MNC could be drawing anywhere between Rs 40 lacs to Rs 2 crore per annum.

STUDY ROUTES - ALL AREAS IN MANAGEMENT

Ideally the job requires a postgraduate degree or diploma in business administration (MBA). A PG in Economics, Commerce or a Chartered Accountancy certificate is also possible.

There are no subject restrictions for MBA in Class XII or graduation. However, most institutes require a 50% or above score during graduation for eligibility. Popular undergraduate courses among students aiming for an MBA include Engineering, Economics, Commerce, Sociology and Psychology, Bachelors in Business Administration (BBA) or Management Studies (BMS).

Most MBA courses teach all areas within business for the first year and offer specializations in the second year like Marketing, Finance, Human Resources, Retail, Operations and Systems.

Admissions to MBA/PGDBM are through one of the five all India entrance tests namely-CAT, JMET (conducted by IIT), MAT, ATMA (conducted by AIMA) and XAT (conducted by XLRI).

Common Admission Test (CAT*)* is held on an all India basis for admission to 'postgraduate programme (PGP) in management in IIMs. Several other institutes use the CAT score to evaluate students. The CAT is of two hours duration and questions include verbal ability and reading comprehension, problem solving and logical reasoning, data interpretation and verbal reasoning. Group discussion, leadership test, and a personal interview also count a lot in the final selection.

Joint Management Entrance Test (JMET) is for admission to two year full time MBA courses at the IITs and Indian Institute of Science (IISc). Currently IISc Bangalore, IIT Mumbai, IIT Delhi, IIT Kanpur, IIT Madras, IIT Roorkee, IIT Kharagpur offer such programmes. Eligibility: A bachelor's degree (or equivalent) in engineering or science (minimum 60% aggregate) or a postgraduate degree in science with first class.

Management Aptitude Test (MAT) is conducted by the Centre for Management Service of the All India Management Association (AIMA). Most institutes using this score are members of AICTE (All Indian Council for Technical Education). An indicative list of participating institutes is available at www.highereducationinindia.com/management/management-exams/atma.html.

AIMS Test for Management Admissions (ATMA*)* is conducted by the Association of Indian Management Schools (AIMS). A list of participating institutes is available at www.successcds.net/mbaentranceexam/MAT-Participating-Institutes.htm.

Xavier Admission Test (XAT) is conducted by the Xavier Labor Relations Institute (XLRI)-Jamshedpur. Affiliate and Jesuit institutes like XIM (Xavier Institute of Management), Bhubhaneshwar, LIBA (Loyola Institute of Business Administration), Chennai, and BIM (Bharthidasan Institute of Management), in Trichy also use this test. There are 42 other management institutes who select candidates on the XAT standard. The XAT bulletin is available with select branches of the SBI or can be downloaded from the XAT website.

Undergraduate options	Post Graduate

BBA, BMS, BBE, B Com	MBA
Psychology, Sociology, any other	Retail Management, Human Resources
Foreign languages courses	International Marketing

LEADING UNDERGRADUATE COURSES IN INDIA

- ⇨ Christ University, Bangalore
- ⇨ Symbiosis Centre for Management Studies, Pune
- ⇨ Anil Surendra Modi School of Commerce (ASMSOC, NMIMS University), Mumbai
- ⇨ Wisdom Faculty of Management Studies, Banasthali University, Tonk
- ⇨ Amity School of Business, Noida
- ⇨ Institute of Management Studies (IMS), Noida
- ⇨ Department of Business Administration, SRM University, Chennai
- ⇨ Mount Carmel College, Bangalore
- ⇨ Madras Christian College, Chennai
- ⇨ Ethiraj College, Chennai
- ⇨ Faculty of Management Studies, Delhi University
    - Shaheed Sukhdev Singh College of Business Studies
    - Deen Dayal Upadhyaya College
    - Keshav Mahavidyalaya
    - Gargi College
- ⇨ Symbiosis Center of Management Studies, Pune
- ⇨ Narsee Moinjee Institute of Management Studies, Mumbai
- ⇨ Bharati Vidyapeeth's Institute of Management & Entrepreneurship Development, Pune
- ⇨ Indraprastha University
- ⇨ Lala Lajpatrai College of Commerce & Economics, Mumbai
- ⇨ Wilson College, Mumbai

LEADING POSTGRADUATE COURSES IN INDIA

1. IIM- Ahmedabad
2. IIM - Bangalore
3. IIM - Calcutta
4. IIM - Indore
5. IIM - Lucknow
6. IIM - Kozhikode
7. IIFT- Delhi
8. ISB - Hyderabad
9. IIM - Shillong
10. XLRI-Jamshedpur
11. FMS-Delhi
12. SCMHRD- Pune
13. SIBM - Pune
14. DMS - IIT Delhi
15. S.P. Jain - Mumbai
16. NMIMS - Mumbai
17. Jamnalal Bajaj - Mumbai
18. TISS -Mumbai
19. ICFAI- Hyderabad
20. ICFAI - Mumbai
21. BIMTECH - Delhi
22. IIPM - Mumbai
23. DMS - IIT Kanpur
24. IMT - Ghaziabad
25. XIMB - Bhubaneshwar
26. XIME - Bangalore
27. MDI - Gurgaon
28. Management Group, BITS, Pilani
29. DMS- IIT Roorkee
30. K.J. Somaiya - Mumbai
31. IIPM-New Delhi
32. ITM - Mumbai
33. XISS - Ranchi
34. NIRMA -Ahmedabad
35. VIT, Vellore
36. IIT Bombay
37. MICA- Ahmedabad
38. Lal Bahadur Shastri - Delhi
39. IMI- Delhi
40. VGSOM- IIT Kharagpur
41. IRMA - Anand
42. ABS-Noida
43. GIM-Goa
44. NITIE-Mumbai
45. Welingkar -Mumbai
46. DMS- IIT Chennai
47. Fore- Delhi
48. TA PAI - Manipal
49. LIBA- Chennai
50. CCIM-Bangalore
51. IFMR- Chennai
52. SIES -Mumbai
53. UBS - Chandigarh
54. Great Lakes -Chennai
55. Sydenham -Mumbai
56. RCMA - Bhubaneshwar
57. PSG - Coimbatore