

# **How to Succeed ?**

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*Title* : **How to Succeed?**

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*www.kvasu.ac.in*

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*Year of Publication* : 2014

*No. of Copies* : 2000

*Price* : Rs. 140 /- (*Rupees One Hundred and Forty only*)

*Layout & Design* : *Santhosh Joeboy, Thrissur*

*Printed @ KBPS, Kakkannad, Kochi*

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## Message

The educational sector is witnessing spectacular growth in the country. The stagnation of employment in developed countries and apparent recovery in developing countries has renewed perceptions of a global shift in employment to the developing world. Major changes like Liberalization, Globalization and Privatization have opened up avenues for graduates to enter in to new generation occupations and employability skills.

Emergence of new courses, increasing network of educational institutions, demand for career oriented programmes and for overseas programmes are the recent trends observed in the educational sector. However the education sector can fulfill its responsibilities if only students, teachers and parents are aware of the changing trends and challenges.

Selection of the courses for higher education is a major challenge faced by students and parents. Recently launched socio-educational project by KVASU, Jyothis addresses all the emerging issues in higher education sector. This gives an opportunity for the students to understand and choose from the available options.

Capacity building is a crucial but expensive component of human resource development (HRD). The improvement in performance can be effected mainly through training. Training is a planned effort that intends to improve the efficiency and effectiveness of performance of the teachers. Taking into account the importance of teacher training, Kerala Veterinary and Animal Sciences University is collaborating with Jyothis implementation committee for conducting advanced training programmes and for creating awareness among teachers and students.

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Innovative teaching makes class room interactive and interesting thereby igniting and inspiring the minds of students. There exists a huge gap in curriculum, teaching methods, research resources and pedagogical issues between India and developed countries. I am sure this book on **How to Succeed?** by Dr.T.P.Sethumadhavan will help to improve the capacities of teachers, students and parents.

Pookode  
15.01.2014

**Dr.B.Ashok IAS**  
Vice Chancellor  
Kerala Veterinary and Animal  
Sciences University

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## Foreword

“Education is the manifestation of the perfection already in man”... this well known quotation by Swami Vivekananda helps an educationist to realize two fundamental facts, (i) Every person has a perfection built within themselves and (ii) education is a tool that aids to manifest this perfection. In simpler words education should be a process of facilitation to bring out the already existing perfection in human beings! Richard Gerver, named as the Head teacher of the Year in 2005 in UK, in his interesting book on “change” makes some valid and insightful observations: *we are born learners. We arrive in this world with inquiring minds. We have learned a vast amount before we go to school. As we get old we lose the curiosity of the child.* It is the capability of the teacher to introduce the students to memorable learning experience that decides the success of a teacher- the ability to sustain the curiosity for the future and exploring the perfection in the learners. In this regard it would be appropriate to remember the three dimensions of a teacher: as a Guru, as Acharyan and as Adhyapakan. In a formal educational set up, in the present era it is very important that the teachers understand their roles and work towards attaining them. Very often we feel that a formal degree in teacher education is the ultimate license to teaching. Though administratively it is so, very often good teachers learn through experiences, integrate their learning from each class and bring in the World outside to the class room, to benefit the next class. It is a continuous process of learning, unlearning and relearning in an effort to bring out the best in the learner.

“Jyothis”, the socio-educational project envisaged in improving the awareness of the students about the opportunities for

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them in the future is a novel one - since it also provides a platform for the teachers and parents who are the direct sources of influence on the students. This book titled **How to Succeed?** attempts to introduce the teachers to the realms of world outside the classrooms so as to benefit the students. Kerala Veterinary and Animal Sciences University is happy to participate in the socio educational project JYOTHIS rendering our role as a Higher Education Centre.

**Prof. S. Ramkumar M.V.Sc, Ph.D (UK)**

Director, Entrepreneurship,

Kerala Veterinary and Animal Sciences

University

Pookode

15.01.2014

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## How Students Succeed?

Over the years, educational sector is witnessing spectacular growth in the country. The stagnation of employment in developed countries and apparent recovery in developing countries have renewed perceptions of a global shift in employment to the developing world. Liberalization, Globalization and Privatization have opened up avenues for graduates to enter in to new generation emerging occupations. Emergence of new generation courses, increasing network of educational institutions and demand for career oriented programmes and prospects for study abroad programmes are the recent trends observed in the educational sector. But the education sector can fulfill the responsibilities only if students, teachers and parents are aware of the changing trends.

There is nothing more dangerous than creating unemployable youths. Proper education is the key to National security and social progress. Education should focus on expansion, equity, excellence and employability. Education sector had witnessed sustained expansion. From 1947 the literacy in the country has grown from 17 percent to 74 percent; Women's literacy from 8.9 percent to 65.5 percent. The number of students pursuing higher education from 4 lakh to two Crore. Number of Universities from 30 to 648 and number of colleges from 700 to 35000. With opportunities transcending barriers of caste, religion, gender, ethnic divisions and distance, education sector has achieved equity in some measure. But the country requires more educational institutions of excellence. Employers complain that graduates produced by some of our educational institutions are unemployable. Knowledge of English was a passport to economic, social and educational advancement. Keralites have to interact with non Malayalam speaking people, especially because their land cannot provide them large employment opportunities and they are forced to go to the rest of the World.

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2014 will witness spectacular employment opportunities in Engineering, IT, Biotechnology, Pharmaceutical industry, Entrepreneurship, Education, Healthcare, Hospitality, FMCG, Retail industry, Agribusiness and Food processing sectors. Recent study reveals that over two million jobs will be generated in communication, media, manufacturing and banking sectors. Gender wise, girls will perform better than boys with an employability percentage of 42% compared with 33%. Information Security Analysts, Petroleum Engineers, Interpreters and Translators, Convention and Event Planners, Database Administrators, Software Developers, Applications and Systems Software, Logisticians, Web Developers, Physical Therapists, Financial Analysts, Training and Development Specialists, Market Research Analysts and Marketing Specialists are the fastest growing and highest paying jobs in the coming future. With regard to demand for talent, an increase in demand at the middle management level across all sectors and steady volume of recruitment at graduate level is also expected in the coming years. IT and software industry plans to hire more of management graduates than other domains. Industries are looking for hands-on people. NASSCOM studies reveal that one in four joining the labor force was employable.

The common problems students face while making career choices are parents dictating every move, financial burdens, social and peer pressure, information gaps, myths, biases, and prejudices, hierarchical systems and pecking orders and fear of failure. Eliminate the things which the student does not want in a future career, identify the hobbies that energize. Identify the favorite subjects and prepare Curriculum vitae based on strength. While searching for jobs research the sector based on history, research the jobs available in these sectors and identify the right jobs based on the job description. The book titled **How to Succeed?** Introduces the emerging areas which can transform young student's minds and provide new insights for acquiring better career.

Thrissur  
15.01.2014

**Dr.T.P.Sethumadhavan**



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## **Recent Trends in Career and education**

Education is becoming more customized in the country. With the advancement in ICT and E learning, Universities like Harvard and Stanford started offering free online courses through Coursera and Edex. Problem based learning. Active learning and activity based learning are becoming new methodologies for teaching. Trend in the career market will be based on acquired skills. Career success today is about watching skills as they emerge, thus customizing education for better skills are more important.

Information technology will be a key career opportunity in the coming years. Outsourcing and advances in IT especially BPO, KPO and LPO will create more employment in India and other developing countries. Research findings reveal that by 2020, 75 percent of jobs will have technology component. Small and medium

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size business will exhibit robust growth in developed and developing countries. Technology enabled learning offer many new generation courses. These new courses with IT support will create lot of home based businesses. New models will emerge in sectors like healthcare and education with IT support systems. These programmes will be of highly skilled, educative and innovative in nature.

Entrepreneurship will be one of the key sectors which will create more employment in Agriculture, industry and service sectors.

Internal cloud services brokerage will retain and build influence inside the organization and become a value centre in the face of challenging new requirements as an approach to IT consumption. Memory computing, integrated systems and ecosystems will provide transformational opportunities. Shortage of skills is closely linked to levels of education. As economies become sophisticated and technologically complex, work demands a much higher and wider range of skills. Average gap between employment rates of skilled and low skilled people is more than 35 percent. In European Union it is nearly 37 percent. India has 51 percent work force of with average age of 26years. By 2030 only 12 per cent of scientific, technical and professional workforce of the country will be above 60; whereas in United States, 59 percent of the work force is of average 55-64 years. In Scandinavian countries it is 65 percent. This trend demands among OECD countries for import of labor and for outsourcing of work to other parts of the world. Developed countries will continue to receive international migrants from developing countries. Migration will increase from developing to industrialized countries.

By 2014-15 mobile phones will overtake PCs as the most common web access device worldwide. By 2015 more than 80 percent of the handsets sold in the market will be smart phones and 20 percent will be windows phones. Moreover tablets will acquire 50 percent of the laptop market. Worldwide, of the total engineers

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13 percent are from India. It will be increased to 25 percent by 2020. As a sequel to foreign direct investment policy, retail, supply chain, logistic, strategic marketing, distribution, operational, agribusiness management and dual management sectors will offer better growth. Financial analysts, Chartered accountants, actuaries and financial consultants can expect better offers. Banking, insurance and related service sectors will exhibit robust growth. Food processing sector will exhibit more growth in production, processing, value addition and marketing. Robotics, genomics, molecular studies, stem cell research, hybrid systems, developmental science, bio informatics, IT, Computer science, sustainable agriculture, biodiversity, trade related issues, intellectual property rights, biotechnology, management studies, biologicals, food safety, food security. Photonics, health, electronics, Dairy science, construction, architecture, biomedical science, environmental studies, etc will continue to be some of the important areas of research in the coming years.

### **India expects more jobs during 2015**

Recent man power Employment outlook survey reveals that net employment outlook for India stood at 41 percent indicating that job seekers may benefit from a vigorous hiring pace in the coming three months. Employers can expect robust hiring plans in all seven industry sectors in four regions during 2015. This was mainly due to the recovery made by IT firms and allied companies. Moreover there are umpteen opportunities for e commerce in the career market. Future demands in the IT sector for skills will include web analytics, design skills, IT languages, sector knowledge, security issues, database management and analytical skills.

Net employment would be around 45 percent in whole sale, retail and other service sectors. Employment will be around 52percent in the Northern states. When compared to other countries, employee hiring will be more in India, Taiwan, Brazil, panama and

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Singapore. European Union will attain economic stability and will generate more employment.

### **L-1 visa is on the verge of closure**

United States is planning to make control over L-1 Visa. L-1 visa facilitates the temporary transfer of foreign nationals with primary specialist skills to US; It is more popular in IT industry. TCS, Cognizant and IBM are the biggest users of L-1 visa in United States. This decision if implemented may compel the company to transfer employees from US to India.

### **CBSE to conduct Global Aptitude Test for Class X Students**

Central Board of Secondary Education (CBSE) is implementing novel projects to strengthen school education the Country. Continuous and comprehensive evaluation is a big success in the country. CBSE is promoting teacher training initiatives and career counseling initiatives. There are number of novel electives like legal studies, human rights and gender, theatre in education, mass media & production and retail. CBSE will start a student support centre to address these issues across the Country. CBSE will conduct a Global Aptitude Test (SGT) for students of class X in a bid to give more time for them to decide on the stream they should choose in class XI. It will be based on psychometric principles which would help them to make an appropriate decision.



## **ASER report is an eye opener for India**

Annual statement on education report for the year 2012 ASER is an eye opener for Indian education System. The report which is not good for Indian Students reveals that student learning levels have fallen in reading and in Mathematics and the flow to private schools continues. Number of Class Five students who can do two-digit number subtraction declined from 58.8% to 49.1% during 2011-12. Earlier reports ranked class 10 children 73<sup>rd</sup> out of 74 countries in the world.

### **Salient features of ASER and policy recommendations:**

**Shift focus to outcomes from inputs:** Success of a school system lies in what students are learning and not just in the number of children enroll or teachers present. The board exams need to be reformed

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to test true understanding so that this focus percolates to the primary classes easily.

**Re-examine RTE:** Many educationists believe that there are serious problems with RTE by defining quality in terms of inputs (infrastructure, number of teachers, etc.) and does not focus on learning. Concepts like continuous and comprehensive learning are to be introduced.

**Build instructional capacity:** It may appear that students are not learning to read and do subtraction because teachers do not teach well. Helping first generation learners to develop skills need to be systematically researched and disseminated through dedicated science learning institutes.

**Reading initiatives:** Reading-focused initiatives need to be implemented annually.

**Use technology:** Many initiatives like biometric attendance to ensure teachers and students and technologies like reading tests and tools on tablets need to be developed, piloted and scaled up.

**Strengthen Government schools and explore PPP:** Primary focus should be on Government schools and Public-Private-Partnerships in education so as to allow innovation for improving the system.



## **Changing trends in Agri, Vet and allied health courses**

There is growing apprehension among students and parents about the choice of courses and its career prospects. Student's attitude, aptitude and interest must be given priority while selecting the courses.

In the era of globalization, Bachelor programme in Ayurveda, BAMS is acquiring momentum in the country. Member of the planning commission Dr.Sam Pitroda has identified Ayurveda as one of the potential sectors in the country. As part of holistic therapy and health tourism, Ayurveda is emerging as one of the important alternative systems of medicine globally. Moreover in this sector Commercialization and branding are taking place at a faster pace. BAMS graduates can start clinics under self employment venture or work under public and private sector enterprises. They have umpteen opportunities for higher education and research within



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the country and abroad. In the changing environment where treatment costs are increasing day by day, as a cost effective system, homeopathy is emerging as one of the promising areas in the health sector. Kerala Health and allied Sciences University is making all efforts to popularize Ayurveda and Homeopathy in the state. Homeopathy is more prevalent in Canada, European countries and United States.

### **Agricultural courses**

In the era where food security and food safety issues are emerging, trends in Agriculture, Dairy science, Veterinary science and allied sectors indicate that these sectors are moving from subsistence to commercial farming practices. Agri business management is emerging as one of the potential sectors in the country. Above sectors have higher education and research prospects within the country and abroad. As a sequel to FDI in retail sector, retail, supply chain and logistics management is emerging as some of the promising areas. Conservation, biotechnology, bio informatics, Agri informatics, food processing technology, trade related issues, animal welfare, public health, rural development, etc are some of the potential areas in agriculture sector. Agricultural courses have enough potential for pursuing specialization and research abroad. Agricultural graduates can undertake research in agricultural universities. They can apply for agriculture research scientist examinations. Among agricultural courses Veterinary science, Dairy science, Agriculture, Fisheries and Forestry have more opportunities in public and private sector.

Veterinary graduates have umpteen higher education and career opportunities in Canada, European Union and United States. Moreover they can specialize in Bioinformatics and Biotechnology, which are having immense potential within the country and abroad. Biostatistics, Laboratory animal medicine, pet animal medicine,

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molecular biology, Microbiology, wild life studies and dairy science are some of the potential areas of specialization for Veterinary and Dairy science graduates. Agri and allied graduates can apply for bank probationary/agricultural/rural development officers in public sector/private banks. Animal Husbandry and Dairying sectors play an important role in the National economy and socio economic development of the country. India continues to be the largest producer of milk in the world. Recent studies done by Dr. Agarwal Committee reveals that India requires 40,000 Veterinary Graduates to meet the challenges in Dairy sector. Novel projects are being implemented to boost milk production in the country.

In order to overcome the challenges in the employment sector, students need to acquire better skills and knowledge in their respective fields. So in the emerging job market, agriculture and allied graduates may not get a mere walkover; but require specialization and skill based on work efficiency and performance.

### **Better prospects for Management, Commerce and Accounting professionals**

Lower birth rates and increasing levels of education are gradually restoring balance between population and employment opportunities. Recent World Bank study estimates that 68 million immigrants will be needed to meet labor requirements by 2050. In the globalised era educational and career prospects may vary depending upon the developmental initiatives and emerging issues. In the competitive market analytics driven HR and management programmes will become an important tool for companies to build team structure, individual progress, collaboration tools, workflows, decision making processes and working relationship between team members. Trends in the career market will be based on acquired skills. Career success today is about watching skills as they emerge, thus customizing education for better skills are more important.

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NACE job outlook 2013 survey reveals that during 2013-15 employees expect to hire 13 percent more fresh graduates than 2012. It will be highest in retail sector. Other industries projecting hiring increases are management consultancy (16.5 percent), computer and electronics manufacturing (14.6 percent), finance, insurance and real estate (12.6 percent), manufacturing (11 percent) and miscellaneous professional services (13.3 percent).

Among OECD countries France has a lowest migration of one in 30 when compared to one in six in UK. Less than five percent of skilled nationals from (BRIC countries) India, China, Indonesia, Russia and Brazil are living in developed countries. Management consultants, accountants, financial analysts, Chartered accountants, actuaries and financial consultants can expect better offers. Banking, insurance and related service sectors will exhibit robust growth in the coming years. Global management programmes like CIMA which has representation across the globe will become one of the most wanted courses in future. Management programmes in the area of Entrepreneurship, agribusiness, retail, supply chain and facilities will emerge as the potential areas of specialization for commerce and Business administration graduates. Entrepreneurship will be one of the key sectors which will create more employment in Agriculture, industry and service sectors in the forthcoming years.

Shortage of skills is closely linked to levels of education. As economies become sophisticated and technologically complex, work demands a much higher and wider range of skills. Average gap between employment rates of skilled and low skilled people is more than 35 percent.



## Entrepreneurship Management

Entrepreneurship is a powerful educational means of training business professionals regardless of whether they started a new venture or not. Entrepreneurs see business in a more holistic way than do managers, who often see issues in terms of functional domains. We live in an increasingly busy world in which the divide between the haves and the have nots is growing. This requires job creation at rates that are not possible for most businesses and Governments. This results in high rate of unemployment among educated youths. This is a major challenge and necessitates Entrepreneurship development programmes. BRIC countries are pursuing the opportunities to become new hubs of global business activity and innovation. Even though management education emphasizes profit maximization and shareholder value creation,

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entrepreneurship envisages maximizing common good and minimizing social injustice and environmental impact.

Entrepreneurship leadership has three principles. They include **Cognitive ambidexterity, social, environment and economic responsibility and sustainability and self and social awareness**. Developing cognitive ambidexterity has two logics. They are prediction logic as a traditional approach and creation logic which is a decision approach. An uncertain future can be predicted in the prediction logic whereas creation logic is based on action, discovery and creation. An entrepreneurial leader can use both prediction and creation logics to create new ideas or innovations.

Globally entrepreneurial leaders are concerned about social, environment and economic responsibility and sustainability. Individuals and organizations are increasingly being held accountable for the social, environment economic outcomes of their actions. They must understand the inherent tensions and potential synergies that exist among social, environmental and economic value creation.

**Self and social awareness** focuses on developing self and social awareness among the entrepreneurial leaders. It involves critical understanding of themselves and the societal context of business opportunities.

Courses related to Entrepreneurship management in the areas of agriculture and allied fields will help in understanding the social, economic and environmental implications of action to choose a path in both unknowable and uncertain situations. Entrepreneurship and innovation management are emerging as some of the specialization areas in entrepreneurship. Moreover Government of India is giving more thrust to food security and food safety issues.

### **Agribusiness Management**

As a sequele to GATT and ASEAN agreement, in order to exploit the potentials of market access like export, cutting edge technologies in the areas of value addition, food safety, packaging,

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quality control, HACCP, etc are needed. Moreover food security issues are emerging over the globe. For achieving the above envisaged objectives, technocrats endowed with relevant management skills and experience are essential. This paved the way for Agri Business Management for Commerce and management graduates. Critical management and entrepreneurial competencies enable them to own and manage Agri-business enterprises of global standards. Commercialization of agriculture and allied activities pave the way for experts in Agri Business Management to acquire better jobs in this sector. Supply chain and logistics management are some of career oriented courses. National institute of Extension management, Hyderabad is one of premier institutes offering post graduate programme in Agribusiness management and supply chain management.



## **Volatile environment prevails in IT sector**

Indian IT industry is facing stiff competition from global players where as other industries and retail sector shows robust growth. Recent reports of NASSCOM reveal that job creation in the sector is likely to drop from 1.8 lakh in the previous fiscal to 1.3 lakh jobs. Recent consumer price Index reveals that food inflation in retail sector is showing a declining trend. In urban areas it reduced from 10.84% to 10.38%, whereas in rural areas it reduced further from 11.01 to 10.33 percent. Protein based items like eggs, meat and fish, the rate of price rise at retail reduced to 14.36 percent.

In the wake of Nation wide protests against HCL technologies for deferring joining dates for campus recruits, Infosys, which has also deferred placements, made it clear that it would stick to its commitment. Clients are finding it tough time to take any

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decisions in this adverse climatic condition. Moreover IT's dependence on discretionary spending is 32-33 percent whereas in industry it is only 17-18 percent. Industry average can not be taken as a benchmark for comparison.

Impact of this volatility will be prevalent in higher education and career sector in the country. IT based engineering students need to develop better knowledge, skills and employability skills to overcome the emerging stiff competition in the IT employment sector.





## **Better career prospects for NID's graduate and Post Graduate courses**

National institute of design's graduate and post graduate courses have better career options within the country and abroad. Some of the promising areas are listed below.

### **Exhibition Design**

Exhibition design is concerned with display and the creation of viewing experiences. It is similar to controlled storytelling, and the exhibition designer has to understand a totality of experience. The Exhibition Design programme integrates several disciplines such as Communication Design, Industrial Design, and Spatial Design. There are inputs on conceptualization and communication of design concepts, communication theories, visual language, spatial perception and design. The programme involves the development of skills through the study of materials, processes, finishes, and structures. The

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understanding of technology, human perception, history of design and systems thinking are also crucial components of the programme. The act of display involves the need to collect, having a clear objective, skills in classification, creating a structure, and presentation in an enjoyable manner. The exhibition designer needs to develop all these capabilities, and understand the extent of human interpretation. Students of Exhibition Design work in design studios, architectural firms, for museums, NGOs and the government.

### **Animation Film Design**

The art of visual story-telling has been a part of human culture since the beginning of civilization. Animation is one of the many ways in which we tell our stories and communicate with one another. Graduates of Animation Film Design work as independent animators. Some students freelance as storyboard and pre-production visualizers. Others work as art directors, and as part of creative teams in channels such as Channel [V], MTV, Nickelodeon, Cartoon Network, and in multimedia agencies like Tata Interactive, Infosys and production houses like Famous House of Animation, Vaibhav Studio, and Miditech.

### **Furniture and Interior Design**

Furniture impacts our immediate living environment breathing life and function into empty spaces. Objects around us become extensions of our bodies and directly affect the quality of life. Through sensitive design, furniture can cater to a variety of human needs. The Furniture and Interior Design Course is a specialized programme under the Department of Industrial Design. The focus is on learning by doing, with a strong hands-on approach. Students gain a thorough understanding of form, structure, context and material by building workable prototypes in the workshops and labs. A combination of courses, projects and field visits ensures exposure to both the craft

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sector and mass manufacture. The subjects of waste material, ergonomics, modularity, anthropometry, traditional techniques, lifestyle, manufacturing, and customization are concerns of the furniture designer. Furniture is a large component of interiors, and a good knowledge of furniture helps design interior elements. Furniture design graduates work with small and large manufacturers, trade, craft, retail, display and exhibition.

### **Film and Video Communication**

Film as a medium is closest to reality and mirrors every aspect of the human experience. Film-making is telling a story through moving images. India is rich in living traditions and stories, and provides a vast live laboratory for film-makers. The NID trains film students in the classical film-making tradition and in short films. Film-making is at once at the centre of design, and at the periphery of it. Being in NID, the students grow to become design-informed film-makers. Film-making is multi-disciplinary in nature, involving costume, space, light, camera, graphic design, and furniture. Design as an activity comes together in cinema. The film course introduces communication and social theory, and the language and technology of film and video. Through projects students are exposed to all roles and responsibilities of the film-maker. Films today in India are smarter, stories are better, and technique is on par with the best in the world. India's rich regional cinema lends diversity, and at the same time reinforces the Indian identity through film. NID graduates go on to create ad film, documentaries, feature films, and television content.

### **Ceramic and Glass Design**

The creation of ceramic and glass objects of utilitarian and aesthetic value is one of the oldest activities of human beings. Ceramic and Glass Design takes inspiration from art and craft traditions, as well as modern techniques of mass production. The Ceramic and Glass Design discipline involves both traditional ways of working,

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as well as a thorough understanding of the industrial sector. In India, the Ceramic and Glass Industry ranges from the large, medium and small scale sectors to village industries. Students of Ceramic and Glass Design work in the sectors of tableware, tiles, sanitary ware, NGOs and the craft sector. There are numerous applications in architecture for building facades, partitions, garden curtains and sculptures. The programme aims to enable the students to work as designers for the industry, the government sector, other agencies or start their own independent practice.

### **Textile Design**

Textile design is the understanding and creation of textiles to solve design problems. It involves an understanding of traditional techniques as well as modern mass production methods. The Textile Design programme also provides field exposure to craft and industrial production. There is equal emphasis on both printing and weaving. Students become familiar with both traditional and mass production methods. Students go on to work as textile designers in textile manufacturing, export houses, retail houses, multinational corporations, and design studios. Students also set up their own entrepreneurial ventures or work with craft centres.

### **Graphic Design**

The design of messages, in the form of text, image, and now moving images is the role of the graphic designer. Graphic design plays many roles, as effective information-dispenser, communicator and persuader. Technology and mediums are rapidly changing the way the graphic designer works, but basic principles of good design hold strong. Besides aesthetic considerations, graphic design encompasses contemporary culture, media, research, analysis, and critical judgement. Development of conceptual thinking as well as traditional design skills is given equal emphasis during the course.

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Graphic design offers different areas of study as such typography, illustration, publication design, identity design, branding, and information design. It covers a range of work, from signage systems to medical leaflets, and educational tools to logos. Graphic design graduates work with leading design studios, in the areas of branding, publication, social communications and other related fields.

### **Eligibility for GDPD**

Students who have passed or who will appear for qualifying examinations under the Higher Secondary (10+2) or equivalents like AISSCE/ IB/ ISC during the academic year of admission are eligible to apply for GDPD.

### **Eligibility for PGDPD**

Degree in any discipline, OR Diploma in Design (under 10+2+4yr) <http://www.nid.edu>



## Facilities Management

Recently numerous new generation management programmes like facilities management are emerging as the potential employment sectors in the country. Understanding the complexities of technologies used in various operations, architects, consultants, builders, contractors, property managers and facility managers today need to understand the new requirements of facilities. It is therefore becoming increasingly necessary to create awareness on the relevance and global techniques employed to make facilities efficient. Quantum jump in Banking and financial services, healthcare, IT and ITeS paved the way for growth in Facilities management. It is an interdisciplinary field devoted to the coordination of space, infrastructure, people and organization, often associates with business services functions such as offices, arenas, schools, convention centers, shopping

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complexes, hospitals, hotels, etc. This facilitates the business on a much wider range of activities than just business services.

Employment opportunities for Facilities management professionals are more in private sector. Facilities management includes time management, self motivation, relationship building, credibility enhancement, workplace conflict resolution, problem solving and managerial competence. Graduates can apply for post graduate programme in facilities management. Facilities management professionals can work with retail, supply chain, banking, financial services, tourism, hospitality and healthcare sector.

The core content of the courses are planning and project management, operations and maintenance, real estate, quality assessment and innovation, leadership and management, human and environmental factors, finance, communication, and all trades pertaining to facility management.

Facility managers are involved in managing all aspects of a facility or facilities. They operate at Strategic and operational levels. At the strategic level, one needs to take crucial decisions and contribute to strategic planning while at the operational level, a facility manager need to take charge of maintenance of more technical services. Facility managers should have requisite skills and knowledge in Designing and Space Planning, Strategic Planning, Financial Planning, Communication, Organizing and Team management.



## **Startups will create umpteen job opportunities**

India needs innovation in the Science and Technology sector to reach the productivity frontier and to use the best practices for production. Ninth innovation summit held at Bangalore reiterated the importance of startups in the country. The desire for innovation in India has been driven by search for low cost solutions to public problems. Innovation is the application of new ideas to solve problems with resultant benefits to different stakeholders. Through innovation incubation, students can become employers rather than employees. This is the success behind start ups in United States and UK. UK is among the world's top research nations which derive much economic benefit from its innovations, excellent research and entrepreneurial ecosystem. Universities like Oxford, Cambridge, Imperial and University College London ranks among the top ten



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Universities in the world. India needs to create 1.5 crore jobs per year for the next ten years to provide employment to youngsters. In this juncture accelerating entrepreneurship and creating business are crucial for massive employment generation. Government of India is promoting start ups to scale up startup ecosystem in the country. There are 120 Government sponsored incubators in India sponsored by educational institutions. These incubation centres will convert the innovations in to viable products. Opportunity for startups was unparalleled especially in the IT sector because cloud and mobile technologies have reduced the cost of doing business.

India's premier IT and software services trade association NASSCOM has opened its first co-working facility called Startup Warehouse for tech startups and the entrepreneur community in Bangalore. Nasscom aims to nurture 10,000 startups in the next 10 years and give a major boost to software product development in India. It has already received some 2,000 applications stating interest in this Startup Warehouse initiative. The Startup Warehouse will provide a well-connected, top-class office space for technology startups, and will support entrepreneurs in their early stage of operations as well as act as a hub for innovation, collaboration, and entrepreneurship. NASSCOM will start similar Startup Warehouse facilities in other cities across India, aiming to offer good infrastructure to tech startups at an affordable price.

Innovation in startup ecosystem depends on ideas, validation process and good partner relationship. Major steps in this process are laying the foundation, creating a challenge book, building participation, experimentation with cost, speedy implementation, building innovation sand box and putting a margin of safety.



## **Wildlife conservation and research**

Globally conservation is emerging as one of the focus areas of research. Many international agencies are collaborating with Government and non Governmental institutions to conduct research on conservation issues. Research on Asian elephants, Rhinoceros and Tiger assumes more significance now a days. In 2012 Wildlife without borders awarded 50 grants from Asian elephants, Rhinoceros and Tiger conservation fund totaling 2.6 million US dollars for research. These funds supported innovative conservation projects. They include education and outreach programmes, strengthening the collaborating efforts, developing multi agency monitoring systems for transnational wild life crimes and law enforcement, strengthening capacity and building conservation support among front line border enforcement officers and building support within National and regional

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government agencies to more effectively address cross border wild life crimes.

Asian elephants occur in isolated populations in 13 range States, with an approximate total range area of almost 880,000 square kilometers equivalent to only one-tenth of the historical range as defined by the IUCN. Today Asian elephants occur in Bangladesh, Bhutan, India, Nepal, Sri Lanka, Cambodia, China, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Thailand, and Viet Nam. Feral populations occur on some of the Andaman Islands in India. Recent reports from across the 13 Asian elephant range States suggest that there are between 39,500 and 43,500 wild Asian elephants. In addition, there are approximately 13,000 domesticated (working or former working) elephants in Asia.

Asian elephants occur in isolated populations in 13 range States, with an approximate total range area of almost 880,000 square kilometers equivalent to only one-tenth of the historical range as defined by the IUCN. Historically they were used for work. Destruction of forests, the advancements of agriculture and the encroachment of human development pose the greatest threats to the survival of Asia's wild elephants. Poaching- the illegal killing of elephants for ivory, meat, skin, teeth, feet and bones-poses a serious threat among Asian elephant male tuskers.

As early in 1960s, International discussion began focusing on the rate at which the world's wild animals and plants are being threatened by unregulated international trade. CITES (Convention on International Trade in Endangered Species) entered in to force in 1975, and became the only global treaty to ensure that international trade in plants and animals does not threaten their survival in the wild. It provides a framework for cooperation and collaboration among nations to prevent decline in wild populations of animals and plants. Currently 175 countries are implementing CITES. CITES secretariat is located at Geneva, Switzerland which administers the

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treaty and provides technical and scientific including research support to member countries. The Conference on Parties (COP) meets approximately every three years to review CITES implementation and assess the status of species in trade.

Recently conservation research is emerging as one of the areas of research for life science graduates. There are plenty of international agencies and research institutes ready to fund sustainable projects in these areas. Life science graduates can do research in the areas of conservation, habitat loss, emerging diseases like Tuberculosis and Elephant endothelial herpes viral infection, wild life crimes, human elephant conflict, international trade, etc. United States, Canada and European Union are some of the best destinations for wild life research. Students can collect data from India and can do research from overseas institutions. Smithsonian institution, Washington DC, USA, US fish and Wild life, Ringling brothers, Conservation and research centre., Pitts burgh zoo, Asian elephant support, international elephant and rhino foundation, Disney animal kingdom, Houston zoo, Cincinnati zoo, London zoo, etc are some of the best institutions students can identify for research programmes. English proficiency examination TOEFL/IELTS and Graduate record examination GRE are required for admission to any doctoral programmes in United States.

Some of the useful websites are [www.toefl.org](http://www.toefl.org), [www.gre.org](http://www.gre.org), [www.ielts.org](http://www.ielts.org), [www.fws.gov](http://www.fws.gov), [www.asianelephantsupport.org](http://www.asianelephantsupport.org) and [www.internationalelephantfoundation.org](http://www.internationalelephantfoundation.org)



## **Food Technology and Management**

Food processing sector in the country is exhibiting spectacular results showing annual growth rate of around 16.9 percent. Moreover food technology and entrepreneurship are emerging as the potential employment sectors in the country. Professionals in this field can work as Food Process Engineer, Nutrition Specialist, Entrepreneurship, Food regulatory specialist, Product Development Specialist, Food analyst, Quality Control Supervisor and Retail Supply chain Manager within the country or abroad.

National Institute of Food Technology and Entrepreneurship Management NIFTEM is one of the pioneering institutions in the field of Food Technology and Entrepreneurship which was conceptualized by Government of India on persistent demand of the food industry. The institute is spread over an area of 100 acres

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in Haryana. NIFTEM intends to act as a centre of excellence and an apex world class centre of global standards in the area of Food Technology and Management. It will cater to the needs of various stakeholders such as entrepreneurs, industry, exporters, policy makers, government and existing institutions. NIFTEM will work actively in assisting in setting up food standards, businesses incubation and knowledge sharing. It would also be an apex institution in the field of food technology and management, networking and coordinating with other institutions in the same field. B. Tech Food Technology and Management is a composite degree offered by NIFTEM which provides a mix of technical and managerial knowledge.

NIFTEM has created an Innovation Fund for students and encourage students to let their imagination run wild in terms of a business plan and then they can submit their ideas in a two-page business model form. This gives the students the required confidence to take up challenges and to establish the business.

### **Under Graduate Programme:**

Four years regular B. Tech degree in Food Technology and Management.

### **Eligibility**

Pass in 10+2 or its equivalent with a minimum average of 60% (55% for SC / ST) marks in Physics, Chemistry and Mathematics (PCM) or Physics, Chemistry, Mathematics and Biology (PCMB).

### **Post Graduate Programmes:**

Two years regular M. Tech degree in

1. Food Supply Chain Management
2. Food Safety and Quality Management
3. Food Process Engineering Management
4. Food Plant Operations Management
5. Food Technology and Management.

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**Eligibility:**

Four years degree in Food Science / Food Technology and Management / Food Technology / Food Process Engineering / Food Engineering / Dairy Engineering / Dairy Technology / Agricultural Process Engineering / Agricultural & Food Engineering / Agricultural Engineering / Bio Technology / Bio Chemical Engineering / Chemical Engineering / Mechanical Engineering or in related allied fields from a recognized University / Institute is must.

M. Sc degree holder from a recognized University / Institute in Horticulture / Post Harvest Technology / Food Technology / Food Science and Technology / Food Process Engineering / Fruit Production and Post-Harvest Technology / Microbiology or Industrial Microbiology / Bio Technology or in related allied fields are also acceptable for admission in all MTech programmes except for M. Tech in Food Process Engineering Management.

The selection of students will be done based on All India Rank of JEE Main. Counseling for admission will be done by NIFTEM admission cell.

For more details visit [www.niftem.ac.in](http://www.niftem.ac.in)



## Emerging areas of Engineering

### **Engineering: Civil, Structural & Environmental**

Of the total number of engineers in the world 13 percent are Indian Engineers. It has been decided to increase the number of Engineers from 13 percent to 25 percent by 2020. Research activity in Civil and Structural Engineering and in Environmental Building is focused on four themes: coastal engineering; sustainable building; structural engineering; and engineering management. Coastal Engineering Research is at the forefront of developments in the study of flood risk, field and laboratory measurements of wave impact loading and beach morphology, and in theoretical development and numerical modeling.

India ranks third in telecommunication sector in the world. By 2015 this sector will exhibit spectacular growth and create immense job opportunities in India. This will be reflected in the



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information technology sector also. Taking in to account the emerging technologies like 4G & 5G and opportunities in the telecom sector, electronics, electronics and communication, electrical and electronics and Information Technology will have more potential during the coming years. Nanotechnology, Mechatronics and Bioinformatics are emerging as the promising technological areas within the country and abroad. BTech graduates can join for MS in mechatronics or Nanotechnology abroad which are having more research and career prospects. Biomedical science; Bioinformatics, electronics & communication, Mechanical engineering, Dairy technology, Environmental engineering, Maritime engineering and Fashion technology are emerging as the major placement oriented courses. In United States Biomedical engineering is having more careers potential since more than 50 percent vacancies of biomedical engineers exist in the country. Civil, Architecture and Chemical engineering graduates can pursue post graduation abroad for better placements. By 2015 eco friendly technologies will acquire momentum in the country. As part of popularizing green technologies, chemical engineering may emerge as one of the potential sectors, which can assist in developing eco friendly pollution control measures.

### **Mechatronics**

Mechatronics is one of the integrated new generation courses having enough careers potential within the country and abroad. This is a combination of mechanical engineering, electrical & electronics, computer engineering, systems engineering and control engineering. It is also called Robotic science. Mechatronics has wide applications in Robotics, Nanotechnology, automation, aircraft engineering, biomedical systems and computer-aided design. Biomechatronics is a branch of Mechatronics having electronics, mechatronics and biology as the different fields of study. Taking in to account the emerging opportunities in the telecom sector, Nanotechnology and Mechatronics is emerging as the promising technological areas.

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Even though mechatronics courses have got wide popularity in Canada, United States and UK, in India it is in the primitive stage. All industrial employers are trying to reduce the number of employees. Their objectives are to increase production, productivity and profitability. They prefer mechatronics engineers to reduce one-third work force of engineering staff. Number of institutions offering mechatronics course is comparatively less in India. There are only very few institutions offering BTech and MTech mechatronics programmes.

Being the four-year graduate programme, engineering students can directly apply for postgraduate programmes in Mechatronics abroad. MS Mechatronics is the most established and successful specialist programme in UK, which will substantially enhance career prospects of students. It is of one-year duration under full-time programme. In United States MS Mechatronics course is of two years duration.

### **Environmental Engineering**

Environment engineering is the study of ways to protect the environment. This will make a real difference in the survival of the planet by finding ways of cleaning oceans, rivers and drinking water, developing air pollution equipment, designing more effective recycling systems or discovering safe ways to dispose of toxic waste.

### **Geological and geophysical Engineering**

This field uses engineering principles to seek and develop deposits of natural resources and design foundations for buildings, bridges and other structures.

### **Aerospace Engineering**

Aerospace engineers design, analyse, model, stimulate and test aircraft, spacecraft, satellites, missiles and rockets.

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## **Agricultural Engineering**

Agricultural engineers use knowledge of engineering technology and science to agriculture and the efficient use of biological resources.

## **\Bioengineering**

Bio engineers study living systems and safety of food systems.

## **Ceramic and material engineering**

They use products made possible by the inventions and designs of engineers working with ceramics and other materials.

## **Chemical engineering**

Chemical engineers discover and manufacture better plastics, paints, fuels, fibres, medicines, fertilizers, semiconductors, paper and other types of chemicals.

## **Civil Engineering**

Civil engineers oversee the construction of buildings and infrastructure that makes up the world, highways, railways, bridges, water reservoirs, etc.

## **Computer Engineering**

It is the design, construction, implementation and maintenance of computers and computer controlled equipments for the benefit of mankind.

## **Electrical Engineering**

It helps in developing components for most essential and fun things in the world. Electrical engineers can work on robotics, computer networks, wireless communications or medical imaging.

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## **Industrial Engineering**

Industrial engineers use the most effective ways to use people, machine, materials, energy and information to make a product or provide a service.

## **Manufacturing Engineering**

Manufacturing engineers direct and coordinate the processes for making things

## **Mechanical engineering**

Mechanical engineers work in every area of technology, from aerospace and automotive to computers and biotechnology.

## **Nuclear engineering**

Nuclear engineers harness the power of atom to benefit mankind.

## **Petroleum Engineering**

They study the earth to find oil and gas reservoirs.



## **Healthy Food from Healthy Animals with World University Network**

Kerala Veterinary and Animal Sciences University (KVASU) is offering courses catering one health concept. Considering the global concern on “adapting to climate change” with the immediate strategic objective of safeguarding food security for the growing human population predicted to reach 9 billion by 2050 a network of the following Universities like University of Bristol, UK, Leeds University, UK, Penn State University, USA, University of Western Australia and Zhejiang University, China under the domain Worldwide Universities Network. KVASU is a participating group in this network along with Rothamsted Research North Wyke Farm Platform, UK. The WUN will focus issues on clean green and ethical farming, organic farming, food safety and climate change.

Worldwide Universities Network (WUN) is a consortium of 19 research-intensive institutions spanning 6 continents. Its mission

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is to be one of the leading international Higher Education network, collaborating to accelerate the creation of knowledge and to develop leaders who will be prepared to address the significant challenges and opportunities of our rapidly changing world. It is a flexible, dynamic organization to create multilateral opportunities for international collaboration in research and education.

This network has the programme of “Ensuring Sustainable and Responsible Production of Healthy Food from Healthy Animals” with a main objective of safeguarding food security for the growing human population and to ensure a moderate consumption of high quality animal products by people all over the world by around 2050.

Its aim is to study on integrated and sustainable farming systems which incorporate utilization of crop residues by animals, nutrient cycling (i.e utilization of animal wastes) to minimize use of artificial fertilizers and to reduce green house gas emission. Moreover this programme focuses on “One Health”, i.e., interactions among human, animal and ecosystem health. This helps in minimizing metabolic diseases, infertility and zoonotic diseases in animals, which in turn reduces infections and food poisoning outbreaks in man, thus improving the general health. Emphasis will be given to scale down intensive farming and to promote livestock rearing on pastures, which improves the nutritive value and palatability of foods from animals and helps in better management of ecosystem.



## Prospects for Botany Graduates

Recent analysis of job prospects of Biology students reveal that among life sciences, Botany has morer emerging as one of the potential areas for career and research prospects within the country and abroad. Botany graduates are working with private sector consultancy firms, the mining industry, government departments (such as Agriculture and Food, Environment and Conservation), botanic gardens and research agencies (CSIRO) that either work in, or are interested in, the environment, conservation, restoration and horticulture in Canada, United States and European Union.

Botany encompasses different specialties. Those who have mathematical skills may opt for biotechnology, bioinformatics, biophysics, developmental botany, genetics, ecology, tissue culture, medicinal plants and plant physiology. Typical employers for life Science related jobs are Universities and clinical research organizations, pharmaceutical and biotechnology companies, private

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hospitals and NHS trusts, national and global health and environmental charities, scientific and technical consultancies, schools and colleges and Outreach organizations, such as museums, science centers and broadcast companies, etc.

Jobs directly related to life science degree include Clinical molecular geneticist, Higher education lecturer, Nature conservation officer, Pharmacologist, Research scientist (life sciences), Research scientist (medical), Secondary school teacher and Soil scientist

In addition to subject-specific knowledge of biological systems and concepts, candidates require communication skills - through report writing and presentations, team working skills - through group projects and seminars, organizational skills, ability to confidently handle masses of diverse data and to draw conclusions, problem-solving, project and time management skills and self-reliance, initiative and business awareness.

Environment Sector, Pharmaceutical or Biotechnology industries, The Biopharma Skills Consortium (BSC) and Cancer Research UK are some of the Subject-specific sectors for life science graduates. Major employers of plant biologists are educational institutions, Government and industries. Job opportunities usually depend upon educational training and experience. Growing world population continues to increase the need for better food supplies. Environmental concerns, such as air, water and soil pollution, will create openings for ecologists in government and industry. The search for new drugs and medicines and useful genes for improving crop plants will continue to create a need for botanical explorers.

Most positions for professional plant scientists are in colleges and universities. Almost all colleges and universities offer courses in plant science and there are faculty positions for botanists who have different specialties. In addition, educational institutions employ botanists as researchers and as administrators. Industries like Drug companies, the oil industry, the chemical industry, lumber and paper companies, seed and nursery companies, fruit growers, food



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companies, fermentation industries (including breweries), biological supply houses and biotechnology firms will hire men and women trained in botany. Recently genetically modified research opens a new career field for botanists.

Popular combinations with botany are Agricultural Science, Chemistry, Conservation Biology, Environmental Science, Genetics, Landscape Architecture, Marine Science, Natural Resource Management and Zoology. Botany graduates can associate with research institutions like KFRI, KEMRI, Universities, ILRI, NMK, Vet Labs, ICIPE, ICRAF, ICRISAT, IISE and Consultancy firms. Graduates can write articles for science journals, news magazines, local or regional newspapers. They can also write or edit (editor) textbooks for any level. Other careers in this field include broadcast and telecast journalism, such as writing or consulting for environmental dramas or serving as a host of television shows about environment, public health or plants, and creative writing, such as writing stories with a plant science, molecular biology, environment and microbiology background. Researchers can associate with National Governmental agencies such as the National Council of Science and Technology (NCST). Project managers in Government ministries, NGOs, Universities and international organizations like FAO, GEF of UN, World Bank, CGIAR organizations like ILRI, ICRISAT, ICRAF, US Fish and Wild life and International Elephant Foundation.

### **Higher education**

MSc microbiology, Marine biology or Biotechnology is available in selected colleges affiliated to Kerala, Mahatma Gandhi, Calicut, Kerala Veterinary and Animal Sciences, Fisheries and allied sciences and Kannur Universities. Post graduates can appear for UGC-CSIR National Eligibility Test (NET) for Junior Research Fellowship (JRF) and Lectureship and do research leading to Ph.D., with fellowship. Meritorious and qualified candidates in botany may

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become botanists, ecologists, foresters, conservationists and taxonomists. Those who have passed Plus Two with physics, chemistry and biology are eligible to go for B.Sc. in microbiology, biochemistry, biotechnology and medical microbiology.

Bachelor's degree holders in science (B.Sc.) and biosciences can apply for M.Sc. microbiology, biotechnology, bioinformatics, biochemistry, phytochemical science and food science. All-India Institute of Medical Sciences, New Delhi conducts M.Sc. programmes in anatomy, biochemistry, biophysics, pharmacology, physiology, urology technology, medical biotechnology. For more details visit [www.aiims.ac.in](http://www.aiims.ac.in).

B.Sc. (botany) graduates are eligible for M.Sc. in environmental biotechnology, coastal aquaculture, marine biotechnology, marine food technology and marine microbiology being offered by Annamalai University. Annamalai University also conducts five-year integrated M.Sc. programmes in microbiology, environmental science, biotechnology, bioinformatics, ocean science and technology, zoology, plant sciences and technology for Plus Two students with physics, chemistry and biology as higher study options. Microbiology, applied microbiology, molecular biology, Biostatistics, animal sciences, biochemistry, dairy Science, wild life studies and animal biotechnology are some of the higher study options life science graduates. Mahatma Gandhi, Calicut and Kannur, Kerala Veterinary and Animal Sciences University offers post graduate programmes in these disciplines. For more details visit [www.kvasu.ac.in](http://www.kvasu.ac.in), [www.tnau.edu](http://www.tnau.edu) and [www.kau.edu](http://www.kau.edu). School of Life Sciences, Guindy campus of University of Madras conducts M.Sc. industrial microbiology, biomedical science, biomedical genetics, molecular biology and biotechnology courses.

Bharathiar University ([www.b-u.ac.in](http://www.b-u.ac.in)), Bharathidasan University ([www.bdu.ac.in](http://www.bdu.ac.in)) and University of Delhi ([www.du.ac.in](http://www.du.ac.in)) offers M.Sc. in microbiology and Biotechnology. The Forest Research Institute, Dehradun, conducts M.Sc. Forestry course for

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life science graduates. Entry qualification is B.Sc. degree with subjects of study including any one among botany, chemistry, geology, mathematics, physics or zoology or B.Sc. agriculture or forestry. The institute also conducts M.Sc. environment management for graduates in any branch of basic or applied sciences. For more details visit [www.icfre.org](http://www.icfre.org)

The Amrita School of Biotechnology offers B.Sc. and M.Sc. courses in biotechnology, microbiology and bioinformatics. Biology background is required for biotechnology and mathematics and computer science for bioinformatics. For more details visit [www.amrita.edu](http://www.amrita.edu). Mar Athanasios College for Advanced Studies, Thiruvalla ([www.macfast.org](http://www.macfast.org)) offers M.Sc. in plant biotechnology and bioinformatics. The Department of Bioinformatics of SRM University, Chennai offers five-year integrated M.Sc. Biotechnology and bioinformatics for Plus Two students M.Sc biotechnology and bioinformatics courses are also available for life science graduates. The University of Delhi offers postgraduate studies and research in biomedical science at the B.R. Ambedkar Centre for Biomedical Research. The courses offered are M.Sc and Ph.D. in biomedical sciences (fulltime two years or part time four year). For details, visit [www.acbrdu.edu](http://www.acbrdu.edu). The Cochin University of Science and Technology offers M.Sc. in industrial fisheries and marine biology for life science graduates. ([www.cusat.ac.in](http://www.cusat.ac.in)). Marine biology, bacteriology, virology, cell biology, genetics, immunology, horticulture, plant taxonomy, ecology, conservation science, developmental biology, environmental science, parasitology, pharmacology, developmental biology and physiology are some of the research areas in plant sciences.

Botany graduates and post graduates from India can write GRE and TOEFL and do higher education and research in US Universities. IELTS is required for higher education in UK and European Union. Those with PhD can apply for post doctoral programmes in foreign Universities without any proficiency tests. Meritorious students can apply for Scholarships/fellowships. Most of the Universities provide assistantships also.



## Gerontology

Gerontology is the science to improve the quality of life of elderly persons. Government of India is now started giving more emphasis to the care of elderly persons. There are post graduate, diploma and certificate courses which are available within the country and abroad. Foreign universities are offering graduate and doctoral programmes in different domains of this subject. The subject covers social gerontology, basic geriatrics, applied geriatrics, and geriatric nursing. Government of India is offering six months course in geriatrics. For more details visit [www.socialjustice.nic.in](http://www.socialjustice.nic.in)

Tata Institute of Social Sciences, Mumbai is offering one year full time diploma programme in gerontology. Plus two students can apply for this programme. For more details visit [www.tiss.edu](http://www.tiss.edu)

Delhi University is offering one year full time Post graduate diploma in health and Social gerontology. Graduates of any discipline can apply for this programme. The course offers scientific study of

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biological, psychological and sociological phenomena associated with ageing.

John Hopkins University, University of Connecticut, North Carolina of United States are offering different levels of Doctoral programmes in gerontology. Biological graduates can do MS and integrated PhD from US. TOEFL and GRE are required for the admission process.

The UMass Boston **Master of Science in Gerontology** online program offers students an advanced degree in the growing field of aging services. This includes long-term care, service-supported housing, community-based services, marketing to an aging population, and health services for those requiring chronic care. The distance learning program will afford professionals in the aging network the opportunity to broaden their perspectives and develop skills in policy development and analysis, program management, administration, and finance with a focus on the aging population. For more details visit the website of University of Massachusetts or [www.umassonline.net](http://www.umassonline.net)

**The Memory and Aging Center (MAC)** is USC University of South California based research center that provides state-of-the-art diagnostic and treatment services. It includes USC's Alzheimer Disease Research Center (ADRC) and two State of California Alzheimer's Disease Centers (CADC). [www.adrc.usc.edu](http://www.adrc.usc.edu)

### **Programs in Gerontology@ University of Massachusetts, Boston**

**Gerontology, PhD** This on campus program is designed to prepare students for leadership roles as educators, researchers, policy analysts and policy makers.

**Management of Aging Services, MS** This completely online program is designed to provide students with advanced training in gerontology and managerial practices in the aging services field. This program is available for part time and full time study.

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**Gerontology Research/Policy, MS** This on campus program employs social science theories, research techniques and content to provide students with the tools to accomplish basic and applied research. It requires the completion of 30 credits and is available for part time and full time study.

**Gerontology Graduate Certificate** This online program requires the completion of 5 three-credit courses that have been approved for the program. It is designed for professionals working in aging services who want to advance their skills within this field. For more details visit <http://www.umb.edu>



## Creative writing Courses

Creative writing will assist the graduates to acquire appropriate job positions. It is any writing that goes outside the bounds of normal professional, journalistic, academic, or technical forms of literature, typically identified by an emphasis on narrative craft, character development, and use of literary tropes. It can technically be considered as any writing of original composition.

BA Creative Writing offers a unique approach to the practice of writing. This offers a highly focused introduction to the study of literature, including a specialist module on creative writing skills and a module on rhetoric with a wide-ranging core module on the theory and practice of creative writing, including topics such as surrealism, the fairy tale, and confessional writing. Moreover the course offers specialist modules in creative writing, ranging across experimental writing, myth, playwriting, and science fiction, and includes the possibility of an independent creative writing project.

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Creative Writing course of British Council offers the opportunity to meet like-minded people and learn a variety of techniques to improve the writing process and enhance creativity. The course content covers fiction, short stories, poetry and dialogue.

For more details visit <http://www.britishcouncil.in/english/courses-adults/creative-writing>

The Diploma Programme in Creative Writing in English provides understanding, skills and professional knowledge about the art of writing and develops the creative ability of those interested in a professional career as a freelance writer. The curriculum is structured to impart instruction in progressive stages so as to ensure that a learner can assimilate information about a writer's art and develops his/her creative ability. This Programme includes training in imaginative writing skills in relation to feature articles (women's issues, book reviews, etc), writing short stories, scripts for TV/Radio and writing poetry.

For more details visit [www.ignou.ac.in](http://www.ignou.ac.in)

List of the most popular and sought after institutions which offer courses in creative writing are given below.

1. The British Council located in all metro cities in India offers degree, diploma and certificate courses in Creative writing.
2. The JNU (Jawaharlal Nehru University) in New Delhi offers creative writing as an optional subject in its MA (English) course
3. Bharatiya Vidya Bhavan in New Delhi offers a Postgraduate Diploma course in Creative Writing
4. Xavier's Mumbai Central Institute of Indian Languages, Karnataka
5. Center for Research in Art of Film and Television, Delhi which offers a one-year diploma course



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6. Indira Gandhi National Open University, New Delhi which offers a PG diploma in Creative writing through the distance learning program
  7. U.P.Rajarshi Tandon Open University, Allahabad offers diploma courses through the distance mode
  8. Dr. Babasaheb Ambedkar Open University, Ahmedabad
  9. The Karnataka State Open University, Karnataka offers Diploma courses through the distance mode.



## **Autonomy for B-Schools- Prospects and Challenges**

Recently the issue of autonomy of management institutions is acquiring momentum in the country. Over the globe degree of autonomy held by Business Schools are divided into four broad categories. Full autonomy applies when a school takes decisions within the limits of the law or the general regulatory framework for education, without the intervention of outside bodies; limited autonomy – when schools take decisions within a set of options predetermined by a higher education authority or obtain approval for their decisions from a higher authority. Schools are considered to be without autonomy when they do not take decisions in a given area. A fourth category appears in the organizational structures of some education systems. In some countries the administrative body and/or local authority may choose whether or not to delegate their decision-making powers in certain areas to schools.

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Impact of Globalization and quantum jump in information and communication technologies (ICT) has paved the way for emerging prospective courses with immense job potential. Recent findings reveal that this trend is gradually replacing the traditional sector. Study conducted by the Associated Chambers of Commerce and Industry of India named as ASSOCHAM Business Barometer (ABB) revealed that IT, ITeS and Management would be the potential areas in the years to come. Over the years management education is emerging as one of the potential areas which can create more employment in banking, finance and insurance sectors. Foreign Direct investment, foreign institutional investments and SOPs on small and medium scale industries augment the prospects of employment among management graduates in the country. Management experts with MBA will get better options within the country and abroad. Students while joining for MBA programme in selected business schools try to identify some of the emerging sectors like retail management, Insurance, Telecom, Banking, IT, Agribusiness and supply chain management. Recent findings reveal that 69.4 percent of the candidates are interested to take MBA to improve their career prospects. 53.3 percent's objective is to learn new skills. 41.1 percent are interested to study MBA to build professional network. 26.9 percent candidate's aim is to get better salary after completing MBA. 22 percent candidates are interested to take MBA as part of their education, whereas 23.89 percent candidate's aim is to start their own business.

As a result of booming interest in MBAs among non-business people, after completing MBA they tend to diverge their activities in to business related areas. Globally information technology, engineering, consultancy, financial services, banking, industry, consumer products, telecommunications, accounting and retail are the major employment sectors for MBA graduates. Moreover 18 percent of the respondents in the employed category are interested

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to study MBA. 14.1 percent MBA holders are working in IT& ITeS areas. Business schools offer specialized MBA programme catering the need for professionals. Dual MBAs are also available in different disciplines. 34 percent of the MBA aspirants reveal that career change is their major motivation to pursue MBA from India or abroad.

Even though Indian students prefer MBA in UK, they have apprehension about the ratings of the MBA programme conducted by different business schools. Of the 12,0000 students graduating annually from UK, fifty-four per cent are graduated from the thirty-six programmes accredited by AMBA (Association of MBA). The Association has major concerns about business school and MBA programme rankings. As a sequele to closure of UK Post Study Visa with effect from 6<sup>th</sup> April 2012 number of Indian students applying for university courses started declining. Recent changes in the UK immigration rules will benefit skilled foreign workers and bright students. Foreign MBA students from UK Universities would be allowed to stay up to one year after graduation in UK as part of Entrepreneurship development programme. During this period they can generate Business ideas of work with startup companies and can apply for visa for skilled worker or entrepreneur. This scheme allows only 1000 students to stay in UK as per this Graduate Entrepreneur Scheme.

India has B schools with customized management programmes and facilities in tune with the B schools abroad. But compared to foreign B schools, Indian B schools are facing unwanted control which warrants more autonomy for those offering post-graduate diploma in management (PGDM). December 2010 notification of the All India Council for Technical Education (AICTE) had withdrawn the autonomy of Management institutions enjoyed for the last 50 years. Even though three interim orders of the SC had stayed AICTE's order, but the final verdict was awaited. The

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country could witness spectacular growth in management education due to the autonomous nature of PGDM programme, which was free from stringent rules of the Universities. Autonomy had helped many PGDM institutions to occupy the top 50 positions in rankings of B-schools.

Moreover it was suggested that the AICTE approval for management schools are for a minimum period of five years. Institutions with international accreditation must be given more autonomy in terms of intake of students and introduction of courses. Since foreign education providers bill is awaiting clearance from upper house of parliament, permitting PGDM institutions to admit students of foreign origin will bring in both foreign exchange and cultural diversity. Research grant from AICTE should be confined to institutions based on their research capabilities.

In the era of globalization where India has already signed as a member country in the GATT and ASEAN agreement, it is easy to market Indian management degree programmes in Asia, Africa and European Union. Moreover faculty members from abroad can work in Indian management schools to support research programmes. There is immense potential for PhD programme in management education so that young scholars can join as teaching faculty at management schools. Moreover B-schools can introduce six-month internship programme against the present two months as part of the management course, so that students can have better industry exposure. While IIM Council, the Indian Institutes of Management will get the power to grant degrees, Indian B-schools want to be free to draft their own syllabus and grant degrees. Since MBA is a professional practicing programme, syllabus should be timely modified in tune with the market demand. Moreover candidates with industry experience should be given preference while selecting the faculty members, professors or Directors. Indian B-schools need to adopt better technology to deliver programmes for

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management students, which they say will help students to save time. They have long been demanding permission to induct senior managers from the industry. At present, to be a professor, one need to be a PhD holder. B-schools authorities revealed that due to the insistence on PhD, they are deprived of experienced professionals. Senior industry executives with over 25 years of experience should be allowed to join B-schools as full-time faculty. This will bring in experienced executives to teach professional courses like investment banking. Business schools should not be expected to prop up the rest of the University to which they are attached, says a report recently handed to the Government by the Council for Excellence in Management and Leadership, a government initiative to tackle poor UK productivity. It calls for dialogue between business school Deans, Vice chancellors and the funding council to give more autonomy to the schools. Schools should be able to use their budgets to attract and retain the best staff, reinvest in their infrastructure and allow academics to keep more of their consultancy earnings to enable them to compete with the US. It recommends that some business schools, particularly those with many graduate students, be separate from universities like Manchester and Cranfield. If autonomy is provided the quality of teaching, management research and knowledge transfer could be improved to meet the future challenges. Business schools can meet their customers and understand their needs. The report revealed that even though a rise in academic and vocational management qualifications in the past 20 years has been achieved, employers were very dissatisfied with the skills they acquired. It criticized business schools for squeezing out work placements and projects as student numbers rise and faculty time stretched.

Education Promotion Society for India (EPSI), requested the HR ministry to modify AICTE to change its policies, and not be prejudiced against PGDM (post-graduate diploma in management)

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institutions. B-schools say that AICTE is also not facilitating private institutions financially; nor helping them with research and spends more time in regulating these institutions than facilitating their growth. Last year, AICTE commissioned the Common Management Admission Test (CMAT), online computer-based test. B-schools authorities said they were not demanding de-regulation of management education, as that might encourage non-serious players to enter the sector but they wanted autonomy in deciding the curriculum and the fees.



## **Residential B schools will assure academic success**

Services sector generates maximum income and output for most of the economies around the world. Moreover size of the services sector in the Indian economy is significant in global scale and is expanding at a faster pace. Although international trade in services is growing at a faster rate than that of goods, India's share in world trade in services is just a little over three per cent. It may be due to India's vast domestic market, which absorbs most of the output of the services sector produced in the country. Moreover logical problem of trading services internationally exists in the country.

Although the services sector has gained substantial share in the major economies, services trade has not displaced goods trade in terms of volume. In this context, absence of liberalization of services sector is taken to be the main reason for slow growth of



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international trade in services. Infrastructural constraints in many of the developing countries prohibit small services providers to take full advantage of the flourishing trade of services in the world. Research findings reveal that by 2020 customized management education will emerge as one of the key employment sectors in the country.

There is nothing more dangerous than creating unemployable youths. Education should focus on expansion, equity, excellence and employability. From 1947 the literacy rate in the country has grown from 17 percent to 74 percent; Women's literacy from 8.9 percent to 65.5 percent. The number of students pursuing higher education increased from 4 lakh to two Crore. Number of Universities from 30 to 648 and number of colleges from 700 to 35000. With opportunities transcending barriers of caste, religion, gender, ethnic divisions and distance, education sector has achieved equity in some measure. But the country requires more educational institutions of excellence.

Employers complain that graduates produced by some of our educational institutions are unemployable. A few top companies hold long training programmes for recruits to make up for the deficiency they have had through poor education in colleges. Knowledge of English was a passport to economic, social and educational advancement. If our students do not learn English they will have the real disadvantage in future. In this situation residential education programmes will facilitate better employability characters including English proficiency among the students.

Recently Business Schools are focusing on residential programmes. The management education experience is more than attending classes—it's about having a sense of community, and feeling that the place where you live for two years is truly your home. There are many benefits to students living on campus. Studies have shown that students who reside on campus receive direct benefits related

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to individual academic success when compared to off-campus counterparts. By living on campus, students' current and future academic lives are greatly impacted. They are more likely to participate in campus learning communities and are more likely to have interaction with faculty through campus study groups and special lectures which will enrich their experience beyond the classroom setting. Moreover it has been shown that students living on campus tend to earn better grades and have retention rates than their off-campus peers. These students are timelier in their graduation and more often go on to Universities for advanced studies and research. Living on campus gives students an academic edge by earning higher grades and promotes their future growth by helping them stay connected to the college environment.

Campus housing effectively integrates learning and social development by providing students the opportunity to form an identity or a sense of community with the institution. Students who live on campus generally participate in more campus activities, take advantage of campus resources, and are more involved in leadership experiences. They tend to have a better understanding of self, experience positive changes in values, have higher self-esteem, and are more satisfied with their experience. On-campus residents are more likely to avail themselves of campus recreational areas, campus facilities, and campus support systems.

Many students find that living on campus is much more convenient since they don't waste as much time for travel. This helps them to maintain a more healthy lifestyle than their off campus counterparts. Because of convenience, access, and the highly structured and supervised environment in which they live, most on-campus students take greater advantage of campus services. They generally interact more with faculty and student mentors. They often take greater advantage of academic support services including mentoring, advising, personal and academic counseling, career

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workshops, faculty mentors, etc. In general, high speed connectivity (including wireless), computer labs, and similar services are more readily available and at a lower cost to those living on campus. On-campus students often have an increased level of accessibility to public safety and security resources, thus lessening safety concerns. On campus life will provide a maturing experience and turn adolescents into young adults and through the unique experience—living with different people, participating in activities and athletics. Most of the students of residential B Schools can get access to a professor or two as mentors who plays a role in shaping the life. Campus living will provide the students the opportunities for Experiential learning where in students learn and retain more when they apply what they hear in the classroom through experiences in real life. Students will get access to volunteer in the community, work along scholars to do research, and study abroad.

The campus design serves to strengthen the sense of community at the School, with the belief that the daily interactions of residential life only increase the potential for learning. More than 80 percent of Harvard Business School (HBS) students live on campus in dorms or apartments and enjoy the convenience of being steps away from any campus activity or resource, and offer several on-campus options. More than one-third of students reside in five on-campus residence halls, managed by HBS Housing. Because of high demand for residence halls, on-campus housing is assigned through a lottery. Harvard University Housing offers furnished, unfurnished, pet-friendly and non-smoking apartments on a fixed-term lease basis and does not require a security deposit or finder's fee.



## How Children Succeed?

On the verge of violence and consequent death of a 17 year student who was stabbed to death and three others were injured during a fight at a high school campus in Houston in the US State of Texas, some of the eminent teachers from United States shares the secrets to make everyone's school experience better and for a peaceful atmosphere in the campus.

A cordial Student-Teacher-Parent relationship will help to maintain success in education. It is important for the parent/guardian to attend school night and parent teacher conferences. This will help to review course expectations, grading policies, distribution of important documents, share contact information and discuss the progress of the child. Try to address potential problems at home that may interfere with child's success at school such as family illness, divorce or economic struggles. These details will help a teacher to

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better communicate with the child. Parents can also rely on mentors (like coaches, advisors or opinion leaders). They are the role models and build confidence to the child and are in a unique position to fill parents and guardians on academic, social and emotional problems that may arise. This would be the most valuable link to your child's personal life.

Social media and the internet are changing the way society communicates, and many teachers are embracing new technologies as a way to engage parents. They want you to interact with them on their websites, social media spaces and blogs. Parents and teachers need to change their traditional thinking about learning. Most teachers are not willing to change because they are under so much pressure to uphold tradition and fear for their jobs. Don't be quick enough to judge a teacher in the way of teaching. New methodologies will prepare students for success in today's society.

The key to student success is the ability and willingness of parents to be partners in education with teachers. When problems arise, parents should not be so quick to defend students before learning both sides. Remember decisions are often made for good of all of students in a class not just for a particular child. Teachers also need parents to support learning through a regular review of assigned work, due dates and grades. Try to maintain good grades. Access to grades in real time is valuable only when parents check it frequently. Teachers should assign projects a few weeks ahead of time, but students often forget about them until the weekend before. When you see a project assigned, set up a time table for your child's completion. If there is a choice of projects, let the child decide, even if it is not the choice you would make. E mail the teacher with any questions, next week gather the materials, and if it is an online project work around the website. Use the remainder of the time for the child to complete the project.

Research findings suggest that one of the best things parents can do to support child is to help him/her develop motivation to



## **Internet will generate more employment in service sectors : McKinsey report**

Recent study on ‘the impact of internet on the Indian economy’ by McKinsey reveals that by 2015 internet will contribute 100 Billion US dollars (5 lakh Crore rupees) to India’s GDP from 30 billion US dollars. Moreover by 2015 number of internet users in India will increase from 120 million to 350 million users and the country will move from third to second largest internet user base in the world. By 2015 number of internet users will become 2.6-2.9 Billion; of which 50 percent population will be from developing countries. Globally nearly 20 percent of the user’s access internet on wireless technologies whereas in India it is around 55 percent. Indian internet economy is 1.6-2 times bigger than education, health, hospitality or utility sectors. This will directly create demand for up and down stream industries in the country. Internet economy in India is driven by large companies where individual consumption is only 29 percent; whereas world average is 45 percent.

Absence of low cost and high speed connectivity in small cities and villages, poor rural penetration, increasing cost of

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ownership & connectivity, poor digital literacy, hurdles in widening and extending application services are the key barriers which affect internet penetration in the country.

Internet will facilitate biggest expansion in agriculture, education, healthcare, public information, entertainment, hospitality & Tourism, retail, telecom, IT, ITeS, Banking, insurance, financial services and industries and will create more employment in the coming years. Since internet facilities can be developed only if entrepreneurship development programmes are strengthened in the country, Entrepreneurship plays a key role in expanding the internet network in the country. E-learning, online education and overseas education prospects will show robust growth in the coming years.

As a sequel to projected development in internet, sectors like education, IT, industries, agriculture, banking and financial services, tourism and export sector will show robust growth in the coming years. So courses catering these areas will have better career potential. Agribusiness, IT, computer science, management programmes, retail, hospitality and tourism management, Banking and financial services, actuary, electronics and communication, cyber security, ITeS, BPO and KPO will be the courses of major attraction in the coming years. Agriculture information, communication, distance and e-learning will witness spectacular growth in the coming years. Education sector will be one of the major beneficiaries through expansion of internet facilities. Online courses from world class universities will reach the doorstep of the users. Universities like Harvard, Stanford and Pennsylvania already started offering free online programmes under Coursera and Edex. Digital literacy will help to create awareness on scientific management practices and will help to augment production. Digital literacy training and entrepreneurship models will create the post of skill developers who can act as intermediaries between the web and users. Moreover there is better potential for public private partnership in this sector.



## Overseas Education

### 1. Fulbright-Nehru Doctoral Research Fellowships

Over the years Fulbright-Nehru and other fellowships have helped to bring the people of India and the United States closer through educational exchanges in the areas of agriculture, arts, business, education, environment, humanities and social sciences, media, public health, and science and technology

USIEF offers a wide range of exchange opportunities to Indian citizens in three main categories:

- Student Awards to pursue a master's degree or attend a US university as a visiting student researcher,
- Scholars and Teacher Awards for academics, teachers and professionals to teach or conduct research in the US, and
- Professional Development Programs for leadership and skill development.



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The Fulbright-Nehru Doctoral Research Fellowships are designed for scholars who are registered for a Ph.D. at an Indian institution. These fellowships are for six to nine months.

Applications from all disciplines will be considered. Priority fields are: Agricultural Sciences; Economics; Education; Energy, Sustainable Development and Climate Change; Environment; International Relations; Management and Leadership Development; Media and Communications with focus on Public Service Broadcasting; Public Administration; Public Health; Science and Technology; Study of India with focus on contemporary issues; and Study of the United States. For Study of India or the Study of the United States (American Studies) the areas could include: language and literature, history, government, economics, society and culture, religion, and film studies.

Application can be downloaded from <http://www.usief.org.in/Fellowships-for-Indian-Citizens>.

The Commission selects scholars through a rigorous review process. Typical grants include a maintenance allowance, roundtrip airfare and a contribution towards tuition fees where applicable. Fulbright scholars receive a high level of support ranging from visa processing and an accident and sickness coverage to a comprehensive pre-departure orientation session.

## **II. Department for International Development Scholarship for Developing Commonwealth Countries in UK**

### **2. Commonwealth Shared Scholarship Scheme (CSSS) - formerly DFID**

Department for International Development (DFID) in association with the University of Bristol and the Association of Common Wealth Universities will be offering six awards at taught

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postgraduate level for students of high academic caliber, and who would benefit from higher education in the United Kingdom but are unable to meet the costs themselves. Priority will be given to subjects relating to the economic, social and technological development of the student's home country. Awards are for one-year taught postgraduate courses. Fees, Maintenance, Return flights, Thesis grant, Study travel grant and Arrival allowance will be covered in the Scholarship. The course fees are paid by the DFID, while the participating institution has to pay the maintenance allowance.

### **Eligibility**

Applicants must be from a developing Commonwealth country, not have undertaken studies lasting one year or more in a developed country, are unable to meet the costs of the course themselves and will return to their home country within two weeks of the end date of their award.

Courses included in the scheme are Faculty of Engineering- MSc in Water and Environmental Management, Faculty of Medical and Veterinary Sciences- MSc in Meat Science and technology, MSc in Transfusion and Transplantation Sciences

Faculty of Science- MSc in Climate Change Science and Policy, Faculty of Social Sciences and Law-MEd in Education Leadership: Policy and Development, MSc in Development and Security, MSc in Gender and International Relations, MSc in International Development, MSc in International Relations and LLM in International Law. Only students nominated by the departments for consideration for an award will be asked to complete CSSS electronic application system (EAS) forms and the candidate should contact your Departmental Admissions Co-ordinator in the first instance to inform them that you wish to be considered for an award. Please visit <http://www.bristol.ac.uk/studentfunding/financial-help/commonwealth.html>

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### **III. Commonwealth Scholarships 2013/2014**

Commonwealth Scholarships are intended for candidates from common wealth countries to commence their academic studies in the United Kingdom by the start of the UK academic year in September/October months. The candidate should hold a first degree of upper second class honours standard (or above); or a second class degree and a relevant postgraduate qualification, which will normally be a Master's degree.

#### **Scholarships for Developing Commonwealth Countries**

Each Commonwealth Scholarship provides student concessionary or other approved airfare to the United Kingdom and return on expiry of the Scholarship (the cost of journeys made before final award confirmation will not normally be reimbursed, nor can fares be paid for a Scholar's dependants). Candidates will be given a formal Notification of Award – the offer of a Scholarship – as soon as terms of admission to the university/institution have been agreed. Commonwealth Scholarship covers fees, fares and personal maintenance. Commonwealth Scholarships for students from developing Commonwealth countries are offered for Master's, PhD, and split-site (PhD) study in the UK. These scholarships are funded by the UK Department for International Development (DFID). There is a nominating agency for Commonwealth Scholarships in each Commonwealth country. In addition, universities and university bodies in a number of developing Commonwealth countries are invited to nominate candidates to the CSC.

Each year, the CSC invites each nominating agency/university/university body to forward a specific number of nominations. Each nominating agency/university/university body is responsible for its own selection process, and in most cases they will set their own closing date, which will be before the CSC's deadline for nominations

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Other scholarships offered by the CSC are Commonwealth Scholarships 2014 prospectus – includes full terms and conditions and dentistry. Applications are considered according to academic merit of the candidate, Quality of the proposal and Likely impact of the work on the development of the candidate’s home country

Candidates can apply for a Commonwealth Scholarship for Master’s (one-year courses only) and PhD. All applications **must** be made through your **nominating agency (or university/university body, if applicable) in your home country**. The CSC expects all Commonwealth Scholarship candidates to be nominated by an approved nominating agency/university/university body, and to have completed an application form using our Electronic Application System (EAS)

**Visit** <http://cscuk.dfid.gov.uk/apply/scholarships-developing-cw> **for more details**

#### **IV. INLAKS -LAMDA Scholarships**

In a collaborative venture, the Inlaks Shivdasani Foundation and the London Academy of Music and Dramatic Art (LAMDA) invite applications for scholarships in the field of Theatre. Individuals who have been offered places at LAMDA for Stage Management or Acting would then need to go through the Inlaks Shivdasani Foundation selection process by attending the Inlaks final selection interviews in Mumbai .

LAMDA forms can be downloaded from the website: [www.lamda.org.uk](http://www.lamda.org.uk).

#### **V. Felix Scholarships**

The Felix Scholarships enable outstanding students to pursue graduate studies at the University of Oxford, the University of Reading and the School of Oriental and African Studies, University of London (SOAS) in the areas of Medical Sciences, Philosophy, Politics &

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International Relations and Computer Science. Felix has been supporting students at Oxford since 1991. The Scholarships are administered by the three partner universities, with the support of the Felix Trustees. Applicants should be Indian nationals, ordinarily resident in India, and have a first-class undergraduate or Master's degree from an Indian university. They must be under the age of 30 and should be unable to take up their place at Oxford without financial assistance. Scholars are expected to return home after completing their studies. 100% of university and college fees, a grant for living costs and flights (India-UK or UK-India) at the start and end of your course.

A maximum of twenty applicants will be shortlisted and invited to interviews in India. Visit <http://www.ox.ac.uk/feesandfunding/prospectivegrad/scholarships/university/felix/>



## **Asian students rank first in study abroad programmes**

Recent reports reveal that students are showing a positive attitude towards study abroad programmes. As economies become more interconnected and participation in education expands, factors driving general increase in student mobility range from exploding demand for higher education worldwide and perceived value of studying at prestigious post-secondary institutions abroad. Institutions are undertaking major marketing efforts to attract students from outside their boundaries. A significant portion of students coming from G20 non-OECD countries includes the meritorious students, natural candidates for public or private support, or students with high socio-economic background. In the current economic context, shrinking support for scholarships and grants to support student mobility may diminish the pace of student mobility.

According to a report on ‘education at glance’ more than 4.1 million students were enrolled outside their country of citizenship.

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Luxembourg, Australia, the United Kingdom, Austria, Switzerland and New Zealand have the highest percentages of international students among their tertiary enrolments. In Luxembourg largest numbers of foreign students are from China, India and Korea. Asian students represent 52% of foreign students enrolled worldwide. The number of foreign students enrolled in OECD countries was almost three times the number of citizens from an OECD country studying abroad in 2012. In the 21 European countries that are members of the OECD, there were 2.7 foreign students per each European citizen enrolled abroad.

Australia, France, Germany, the UK and the US each receive more than 6% of all foreign students worldwide. International students from OECD countries mainly come from Canada, France, Germany, Japan, Korea, Turkey and the US and they make up 10% or more of the enrolments in tertiary education in Australia, Austria, Luxembourg, New Zealand, Switzerland and the UK.

They also account for more than 20% of enrolments in advanced research programmes in Australia, Austria, Canada, Denmark, Ireland, Luxembourg, New Zealand, Sweden, Switzerland, the UK and the US. The number of foreign tertiary students enrolled in OECD countries has doubled since 2000, for an average annual increase growth rate of 7.2%. Europe is the preferred destination for students studying outside their country, and has 41% of all international students. North America has 21% of all international students.

### **Future trends**

OECD and UNESCO Institute for Statistical data make it possible to examine longer term trends in tertiary student mobility rising dramatically from 0.8 million worldwide in 1975 to 4.1 million in 2010 an increase of more than five-fold.

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The increase in the number of students enrolled abroad since 1975 are due to various factors, from an interest in promoting academic, cultural, social and political ties between countries to a substantial increase in global access to tertiary education, and reduced transportation costs. The internationalization of labour markets for highly skilled individuals has also given people an incentive to gain international experience as part of their studies.

The increase in the number of foreign students can be compared to the increase in tertiary enrolment worldwide. According to UNESCO, 177 million students participated in formal tertiary education around the world in 2012 – an increase of 77 million students (or 77%) since 2000. Most of the new foreign tertiary students come from countries outside the OECD area, and are likely to increase in advanced research programmes in OECD and in G20 countries in the coming years.





## Synchronous technology through SMOC

University of Texas recently launched Synchronous Massive Online Classes (**SMOC**) enrolling around 10000 students Worldwide. University started the programme with introductory psychology classes through synchronous technologies. It is just like a late night Television show and a real time research experiment. Professors lecture in to a camera and students watch on their computers or mobile devices in real time. This paves the way for shifting the static model of higher education to a new technology mode where students get more options which forces schools and professors to compete for their attention. Unlike Massive open online courses (**MOOC**) which can be watched whenever, the SMOC requires students, professors and teaching assistants to be online at the same time. MOOC which started two years ago attracted more than five million students around the world and prompted dozens of

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top Universities to launch classes in conjunction with companies like Coursera and EdX.

SMOC is not a free education just like MOOC. Texas University charges US students 550 US dollars for enrollment. International students have to pay 900 US dollars. New York University is also trying to exploit the potential of internet to disrupt the higher education.

SMOC classes are live. Studio will be like a live demonstrating room. Professor will sit behind the table. A small audience in the studio will make the atmosphere feel more electric. In between relaxed banter, the professors show video clippings of experiments and divide the online audience in to groups in chat rooms to discuss what they saw. To grade the students, a quiz will be given at the beginning of every class. Among tools developed for the course is an algorithm to detect cheating by measuring how students answer the quizzes.



## Harvard and MIT offer free online courses

Students around the world will get a rare opportunity to associate with top class American Universities. Recently American Universities like Harvard and Massachusetts Institute of Technology (MIT) announced a non profitable partnership company **edX** worth 30 million US dollars to offer free online courses. Moreover Universities coming under Ivy League like Stanford, Princeton, Yale, Michigan, Pennsylvania and Chicago formed a new commercial company **Coursera** with 16 million US dollar under venture capital fund. MIT started an open online learning project **MITx**. 1,20,000 students have enrolled for the course on Circuits and Electronics. Meanwhile 200,000 students have enrolled for the course on Artificial intelligence by Stanford Universities.

Through online courses, students can associate with top class universities and enroll the courses free of cost. Moreover

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they can access online education with video lesson segments, embedded quizzes and enjoy immediate feedback and student placed learning situations quickly. Major courses coming under online distance education stream are engineering, humanities, developmental studies, computer science, software, teaching methods, methodologies, etc. Most of the courses are of one year duration. MIT and Harvard officials claimed that the new online classes offer opportunities for students and researchers and the courses will be rated much when compared to low ranked colleges. Those who complete the course will get a certificate of mastery and a grade, but will not get an official credit.

Stanford engineering everywhere has modules on programming methodology, Abstractions and Paradigms ([www.see.stanford.edu](http://www.see.stanford.edu)). Coursera has subjects from various Universities such as University of Pennsylvania, Princeton and Michigan ([www.coursera.org](http://www.coursera.org)). Courses may range from Introduction to Sociology to the ways vaccines work.

In the era of globalization where global village concept is getting momentum in the education sector, these online education programmes of best rated US Universities will be really a boom for students from Asian countries especially from India. Moreover they will get free access to world class universities and their certificate will be rated high in the career market. Advanced teaching methods and methodologies will help to improve skill development and work efficiency among college teachers.



## **Global health initiative promotes Biological research in US**

In the changing scenario where economic recession, food security and food safety issues are emerging, United States of America is continued to be rated as one the best destinations for higher education and career. There are better prospects for education and research in the areas of Biological sciences in United States of America. As part of Global health initiative Nutrition, Child hood obesity, cancer care, food safety, food security, emerging pathogens, antibiotic resistance, formulation of new drugs, etc are some of the research priorities in the country. National institute of Health is closely monitoring the Biological research. International students can identify the emerging areas and pursue graduate and doctoral programmes from United States. Technology advancement is very high in United States. Four years of under graduate programme is the prerequisite for admission to any graduate programmes. Graduate record

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examination **GRE** and Test of English as a Foreign Language **TOEFL** with acceptable scores are mandatory for admission process. Academic merit, research aptitude, test score results and statement of purpose will be reviewed by US universities before giving admission to graduate programmes. One year home work is necessary for completing the admission process. Students can select the Universities based on their areas of interest and can identify one of the Professors as supervisor under whom he can do research. Continuous communication with the Professor through e mail will facilitate the admission process.

Chances of getting financial support through Fellowships/ Assistantships is based on the funding sources/Federal Grant of the University. Students can work up to 20 hours per week as part time within the campus and can earn up to 800 US dollars per month to support the studies. After completing the programme, he can do one year practical training outside the campus and during this period he can try for better positions in US. Of the total number of International students, more than 90 percent are interested to settle in United States. Indian students excel in their research aptitude, knowledge and skill.

After completing plus two, Scholastic aptitude Test **SAT** is required for joining four years BS Pre-medical programme. After BS, **MCAT** Medical college aptitude test is mandatory for **MD** admission programme. This has a residency of minimum two years. So students from US will acquire MD only by 28 years. Some of the institutes have pioneering experience in certain fields. For example MIT for Engineering, Columbia for Business studies, Harvard for management programmes and University of Connecticut for Dentistry, Pharmacy, etc. Identify such premier institutes before applying for admission.

Even though US have economic slowdown, employment potential has not been affected. Engineering, Health, Food Science,

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Veterinary Science, Dentistry, Accounting and law are the potential employment sectors in United States. Following are the Top 5 Highest Paying Jobs in America in 2012 with their average annual salary.

1. Doctors and Surgeons (Average annual salary: \$168,650-\$234,950, Current employment: 618,000+)
2. Orthodontists and Dentists (Average annual salary: \$161,750-\$204,670, Current employment: 101,400)
3. Chief Executive Officers (Average annual salary: \$176,550, Current employment: 267,370)
4. Petroleum Engineer (Average annual salary: \$138,980, Current employment: 30,880)
5. Lawyer (Average annual salary: \$130,490, Current employment: 570,950)
6. Architectural and Engineering Managers (Average annual salary: \$129,350, Current employment: 184,530)

United States of America is the best destination for taking PhD in Science and Engineering. Number of PhDs granted in United States in the last 10 years has increased substantially in Science and Engineering.



## How to write SOP and LR for Study abroad programmes

Overseas education needs one year strategic planning and evaluation. Then only easy access to foreign universities will materialize. Minimum one-year preparatory time is needed for fulfilling the envisaged goals. In American, Canadian and European universities academic year will start from October onwards. Even though some of the universities admit students for the winter semester during February, Indian students prefer to join during the pleasant spring season.

### **Statement of Purpose (SOP)**

Statement of purpose is one of the essential components of application procedure for getting admission in a foreign University. It basically consists of your personal details, factors that have defined



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your career path so far and what interests you professionally and what are your future plans.

A few important points that you must bear in mind while writing your SOP are:

- It is suggested that SOP should reflect your confidence, motivation and ability to successfully pursue the intended course of study.
- When a University/Institute asks you a particular question, you should not reply in a hurry but analyze the question carefully and reply to all aspects of the question.

### **Letters of recommendation (LR)**

This forms one of the crucial parts of your admission procedure in a foreign university. Based on these, the university authorities are able to assess your credentials independently. Before approaching someone for a Recommendation Letter, ensure that the recommending person is one with high professional standing and by virtue of knowing both you and your career plans; can recommend your application. Moreover, your Recommendation letter must spell out the positive attributes in you.

- If you have graduated from a deemed university, you should send official documents clarifying the status of the university to the foreign university where you apply.
- Generally those passing their qualifying examination through distance education mode institutions are not considered at par with full-time programmes but recently some selected universities have begun to accept students passing from distance education institutions.
- If you have acquired a degree of a foreign university, in India, duly recognized by the United States accreditation board, it is considered at par with those offered to regular students in the US.
- Universities in the US consider degrees accredited and recognized by the Indian government. Therefore, the fact should be made clear in your application.

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- In case, there has been a change in the name of the university from which you have passed your qualifying exam, you should submit necessary documents like a copy of the prospectus or a letter from the Registrar of the University or indicate a website with the changed name.

### **Calendar of activities**

During September, the student has to decide the area in which he is interested to pursue the higher studies and collect information about the universities. Shortlist his choices. Register and apply for qualifying examination and admission requirements like TOEFL/ IELTS, GRE/ GMAT, CGFNS, etc. Check the websites of the selected universities and download the application form during October. Collect detailed information including list of relevant deadlines.

During November after carefully reading the instructions, fill up the application form and send it via e-mail to the Professor of the concerned department. Application form must be complete in all aspects. It must be send along with structured curriculum vitae and Statement of purpose. Contact the universities for ensuring the receipt of the filled in application form during December. Collect details about the financial aids like Scholarships/Fellowships, etc during January and the deadlines are mostly 31<sup>st</sup> January. During February follow up the application and reply promptly. Never send a reply without considering the envisaged objectives. Sometimes you will get admission during February itself.

From March to June ensure whether the qualifying examination scores have reached the universities of your choice. Patiently wait for the admission decision from the respective universities. You can contact the Indian students of your university of choice and try to apply for residence near the campus. Admission offer will reach you during June- July months. During that period you can arrange the needed documents for visa interview and travel plans. Complete the visa formalities including interview during August it self. During September you can leave the country for foreign education.



## **Depreciation of rupee affects cost of overseas education**

Recent weakening of rupee over US dollar will likely to inflate overseas education costs. It will increase overseas education costs by 15-20 percent. This situation will affect students aspiring for education in United States, UK, European Union and Canada. The cost is steadily rising to a level that many students can't afford. Getting overseas education can be very expensive now a days. According to the College Board, public colleges cost between \$7,605 and \$11,990 per year in tuition. Private nonprofit colleges average \$27,293. The cost of college is going up at a faster rate than health insurance, personal income or the consumer price index. The amounts of available aid/funding/scholarships have also been declining. Average student loan debt has jumped to \$19,200 per student.

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The exact price of overseas education can rise and fall with the exchange rate of the U.S. dollar, but in general, worldwide colleges are less expensive to attend. Top-ranked Cambridge University charges about \$20,000 U.S. dollars for some degrees at current exchange rates. Some U.S. universities are opening campuses in other countries, and students can now attend New York University in Abu Dhabi or a variety of western colleges at Dubai International Academic City. Studying internationally can be a great way to save money, but there are many considerations that must be taken into account. First, families and students need to decide how to deal with changing exchange rates. Individual countries also have banking requirements that may limit how students operate, financially, in the country. International travel is becoming very expensive. International students always preferred UK as the best destination for higher education due to cutting edge technology, infrastructure facilities, flexible curriculum and availability of short duration courses. Moreover there are options for students to complete graduate / MBA programme within one year period. As a sequel to closure of UK Post Study Visa with effect from 6<sup>th</sup> April 2012 number of Indian students applying for university courses started declining. Each year, foreign students coming to the UK generate nearly 14 billion UK pounds to the nation's economy. Hence, the closure of the UK Tier 1 visa program was being criticized by many including Universities UK.

Reduction in number of Indian students for graduate and post graduate programmes in UK universities have led to concerns over the financial viability of courses and departments particularly in the subjects of Science, Technology, Engineering and Mathematics (STEM). This was mainly due to abolition of the post study work visa.

The facility was popular among self-financing Indian students who sought to recover some of the expenses of studying by working

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for two years. The facility also enabled them to gain work experience in the UK that was seen to aid career prospects in India. The UK Tier 1 visa program provided a good option of financially supporting their stay in the UK by getting employment for a period of two years and also offered valuable work experience for foreign students. Large number of Indians avail the opportunity of working in the UK after successful completion of studies in the UK.

Reduction of Indian students to study STEM subjects affected the sustainability of certain subjects in UK Universities. Some universities are particularly concerned about the impact of reduction of international student numbers on specific subject areas, especially STEM; the reductions may affect the viability of some subjects in the future. Changes in student visa policies created an adverse impact particularly in BRIC countries (Brazil, Russia, India and China) and the business relationships. With the depreciation in the value of Indian Rupee, students are now facing serious financial crisis. The fall in value of Indian rupee has forced many of the students to keep apart their plans to study abroad and take up a job. It is observed that as the overseas education becomes expensive, students will be forced to take higher education courses in Indian institutions.



## **Breakthrough in UK immigration for graduate and doctoral studies**

Recent changes in the UK immigration rules will benefit skilled foreign workers and bright students. Foreign MBA students from UK Universities would be allowed to stay on for up to a year after graduation in UK as part of Entrepreneurship development programme. Up to 1000 international students per year can able to stay in UK as per Graduate Entrepreneur Scheme. During this period they can generate Business ideas of work with startup companies. Then they can apply for skilled worker or entrepreneur visa.

Moreover the changes would allow PhD students to stay on after their studies up to a year and work, without taking any course. Intra company transferees will no longer need to take IELTS if they want to work with other UK companies or to extend their leave in UK. These changes are made to attract the best and brightest global talent to UK. Moreover it will facilitate doctoral students to join for post doctoral research in UK.

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Reduction of Indian students to study STEM subjects affected the sustainability of certain subjects in UK Universities. The reductions may affect the viability of some subjects in the future. Changes in student visa policies created an adverse impact particularly in BRIC countries (Brazil, Russia, India and China) and the business relationships. British Council presented a detailed report to the Government on the likely impact the student visa changes will have, and compared the experiences of Australia and United States.



## **US education- Prospects and Challenges**

### **Under graduate programme**

The process of going from High School to college for undergraduate programmes includes many challenges and opportunities. Decision in this regard must be taken after thorough consultation. Before proceeding for under graduate programme abroad, discuss with the teachers, parents and educational counselors about your probable options. Important criteria for admission are the student's grade point averages based on grades earned in the high school. Examinations like ACT and SAT will test the applicant's abilities in English, Mathematics, reading and Science.

Financial requirement for the study must be met through different ways. Combination of savings, family income, loans, income through part time work, etc must be ascertained.



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**While choosing a college consider the following questions.**

- Does the school offer a degree programme/course working their chosen major or minor field of study?
- What kind of out of class activities and campus organizations are available?
- What kind of facilities is available?
- School's reputation or ranking?
- Requirements for entrance?
- Cost required?
- Location of the school?
- Is the college diverse in population?

Transition to college can also mean living in a city for the first time, living with a roommate, cooking on your own, facing personal choices with relationships and finding one's personal identity. Students feel more pressure to manage their time while maintaining their grades. They can also work part time to earn money.

## **TOEFL**

TOEFL measures ability to use and understand the English Language as it is read, written, heard and spoken in the University classroom.

Scores will be posted online within two weeks after the test date. Scores will be mailed to the Universities or institutions you selected. ETS offers several test preparation resources to help the students. They include the best selling Test prep book, official guide to TOEFL test and TOEFL Practice Online  
[www.toeflgoanywhere.org](http://www.toeflgoanywhere.org)

## **Pre MBA programmes**

Pre MBA programme is the first step to become a knowledgeable, effective business professional. This will help to ensure the following areas

- 
- Preparation for the demands of the graduate business school
  - Academic culture in different countries
  - Develop effective oral and written communication skills
  - Learn about the country's business status.
  - Prepare for graduate admissions tests
  - Get support from experienced academic advisors

### **Why get an MBA**

Meteoric rise in the world's emerging economies and the relative scarcity of management talent has created new opportunities for fresh MBAs abroad.

### **What to keep in mind before selecting a Business School?**

- Identify your criteria
- Build a strong background
- Select an Accredited programme
- Assess your resources
- Differentiate GMAT and GRE scores- which is best?
- Manage your timings
- Prepare for the test
- Have a 'Plan B' for a list of best schools
- Talk to real live people like how you will be treated in the school
- Ask questions like faculty profile, schools success records, alumni status, industry connections, support services, campus environment, technology, innovative programmes, extracurricular opportunities, student to faculty ration, percentage of International students, leadership etc.

### **US Visa**

Prior to your consular interview try to gather the following information.

- Pay the I-901 SEVIS fee. Visit student exchange visitor programme's website for making payment appropriate for your

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programme and save the I-797 receipt. SEVIS is student exchange visitor information system which is used to generate your I-20 or Ds-2019 and keep record of your immigration status while student/ exchange visitor in the US

- Complete and sign electronic e form Non immigrant visa application form DS-156 along with DS-158.
  - US embassy in New Delhi and Consulates in Chennai, Hyderabad, Kolkata and Mumbai.
  - Application DS-160 is the latest one replacing DS-156,157 and 158
  - Pay the Machine readable visa application fee
  - One 2X2 inch passport size photograph
  - A passport valid at least six months beyond your anticipated stay in US
  - I-20/DS-2019 form issued by the programme you plan.
- Exchange visitor need to submit DS-7002

- Transcripts and diplomas from previous institutions attended
- Letter of admission from US institution or sponsor
- Scores of tests like TOEFL, SAT, GRE, GMAT,etc
- Evidence of adequate funding to cover the tuition fee and living expenses-Bank statements, affidavits of support, scholarships, assistantships,etc
- Evidence of strong ties to your home and your intent to return after study
- Relationship of the dependents with proof
- Digital fingerprint scan will be taken before the interview.

Interview will be in English which lasts only 3-5 minutes.

They will review of your application and supporting documents. You must quickly and clearly demonstrate to the consular officer that you are serious in your intentions to the study, have enough funding to support your stay in US, possess the English proficiency and plan to return home after your study period. Since you are applying for a non immigrant visa, you must convince the officer that study in the US is an important part of your ultimate career plan to return to India.



## **Animal welfare and Conservation Medicine**

India is the highest milk producing country in the World and with increasing demands for meat, eggs and milk; Indian farming enterprises are rapidly becoming larger with subsequent animal health and welfare issues which indirectly increased risks for food safety and human health. Moreover there is growing appreciation of conservation medicine and the fact that agriculture and human health are intimately linked, with many infectious, and even occupational, diseases being associated with the food chain. The link between animal health, human health and environmental health – and the important role of the Veterinarian in understanding issues associated with these links and how appropriate animal disease surveillance is established, is of international concern, where humans and animals are likely to come into contact and potential conflict. More than 60

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billion land animals are raised for meat or animal products each year around the world, and with increasing human populations and a rise in meat consumption in places like China and India, these figures are set to double by 2050.

The Jeanne Marching International Centre for Animal Welfare Education was opened at the University of Edinburgh's Royal (Dick) School of Veterinary Studies (RDSVS) in May 2011. Integrated within the RDSVS the Jeanne Marchig International Centre for Animal Welfare Education (JMICAWE) is a venture with ambitious objectives committed to improving the health and welfare of animals through education, training and research and by influencing policy at the highest level. The JMICAWE not only promotes the need for education in animal welfare science and ethics but also emphasizes the important role of Veterinarians in promoting animal welfare along with their involvement in protecting public health.

Understanding the issues and finding ways of enhancing animal welfare is clearly a huge and growing area and is necessary for protecting not only animal health – but also human and environmental health. Edinburgh has a long-standing reputation for the delivery of gold standard research led teaching in the area of animal welfare science, and has recently developed online distance education post-graduate programmes such as the PG Masters in Animal welfare, ethics and law, and the PG Masters in Conservation Medicine, which provides a novel opportunity for those wishing to study off site and part-time, to experience high quality teaching from researchers and experts working around the world.

Edinburgh University's knowledge sharing research and educational activities have involved the development and delivery of three successful workshops with Kerala Veterinary and Animal Science University. The aim of the workshops and meetings has been to aid in the development of innovative delivery of a future focused veterinary teaching at undergraduate and postgraduate level.

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It aims at promoting Veterinarians as ambassadors for animal health and welfare and addressing the internationally recognized need for incorporating critical thinking and ethical analysis as well as clinical skill acquisition and a thorough understanding of infectious disease control and animal welfare science.



## Medical Licensing Examination abroad

Medical licensing examination in developed countries involves a lot of procedures. It may vary from country to country. This article highlights the different procedures for applying for a medical licensing examination abroad.

### **1. United States Medical Licensing Examination (USMLE)**

The United States Medical Licensing Examination (USMLE) is a three-step examination for medical licensure in the United States and is sponsored by the Federation of State Medical Boards (FSMB) and the National Board of Medical Examiners (NBME). The Composite Committee of the USMLE initiated a process to undertake a comprehensive review of the USMLE program in 2004. The Composite Committee establishes policy for the USMLE and is com-

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posed of representatives of the Federation of State Medical Boards (FSMB), National Board of Medical Examiners (NBME) and the Educational Commission for Foreign Medical Graduates (ECFMG), and the American public. The USMLE assesses a physician's ability to apply knowledge, concepts, and principles, and to demonstrate fundamental patient-centered skills, that are important in health and disease and that constitute the basis of safe and effective patient care. Each of the three Steps of the USMLE complements the others; no Step can stand alone in the assessment of readiness for medical licensure.

- National Board of Medical Examiners (NBME): For students/graduates of medical schools in the US or Canada taking or planning to take Step 1, Step 2 CK, or Step 2 CS
- Educational Commission for Foreign Medical Graduates (ECFMG): For students/graduates of medical schools outside the US and Canada taking or planning to take Step 1, Step 2 CK, or Step 2 CS
- Federation of State Medical Boards (FSMB): For any student / graduate taking or planning to take Step 3. Also for students / graduates looking for information about medical licensure.

#### Examinations for ECFMG Certification

The USMLE is a three-step examination for medical licensure in the United States. The USMLE provides a common system to evaluate applicants for medical licensure. The USMLE is sponsored by the Federation of State Medical Boards of the United States, Inc. (FSMB) and the National Board of Medical Examiners (NBME). The USMLE is governed by a committee consisting of representatives of FSMB, NBME, ECFMG, and the American public.

- Before you can apply for a medical license, you must pass a three-step test called the United States Medical Licensing Examination (USMLE), also known as the board exam.



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This test is unusual for two reasons. First, you take each part at a different stage of your medical education. Second, unlike many standardized tests, the USMLE actually assesses your mastery of the material, not how well you take a test. While there are some test-taking strategies that will improve your performance, you won't pass without comprehensive and detailed knowledge of the sciences, as well as an ability to apply that knowledge in a clinical setting.

**The USMLE is divided into three steps:**

- Step 1 is a one-day test, usually taken at the end of the second year of med school. It emphasizes knowledge of basic sciences, including anatomy, biochemistry, behavioral sciences, microbiology, immunology, pathology, pharmacology and physiology. Topics such as nutrition, genetics and aging are also covered. All questions are multiple-choice.
- Step 2 is a two-day test, usually taken in the fourth year of med school. It has two components. The first (called Clinical Knowledge, or CK), requires you to answer multiple-choice questions on clinical sciences like surgery, internal medicine, pediatrics and obstetrics and gynecology. The second (called Clinical Skills or CS) requires you to examine and diagnose actors posing as patients. For the Step 2 CS, students must travel to one of five testing centers around the country.
- Step 3 is a two-day test, usually taken after the first year of residency. This is the final assessment of whether or not you're prepared to practice general medicine in an unsupervised setting. Like Step 2, Step 3 focuses on the diagnosis and treatment of patients. It includes both multiple-choice questions and computer simulations of patient care.

The Step 2 CS has no numerical score. You earn a "pass" or a "fail" based on your ability to gather data, communicate with the patient and write an effective report.

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On all other parts of the test, the number of correct answers you earn is converted into two numerical scores, one on a threedigit scale and the other on a twodigit scale. These are simply two ways of reporting the same result to schools. You must earn a 75 on the twodigit scale to pass.

Step 1 assesses whether you understand and can apply important concepts of the sciences basic to the practice of medicine, with special emphasis on principles and mechanisms underlying health, disease, and modes of therapy. Step 1 ensures mastery of not only the sciences that provide a foundation for the safe and competent practice of medicine in the present, but also the scientific principles required for maintenance of competence through lifelong learning. Step 1 is constructed according to an integrated content outline that organizes basic

### **Procedures for applying**

Log in to this website to:

- Apply for USMLE Step 1, Step 2 CK and/or Step 2 CS.
- Print Scheduling Permit for Step 1, Step 2 CK and/or Step 2 CS
- Print Score Report for Step 1, Step 2 CK and/or Step 2 CS
- Request score documents, certificates and/or confirmation letters.
- Check the status of your registration and document request history.
- Schedule an appointment for Step 2 CS.
- Check and update your personal information (e.g., name, address).
- Print Step 1 and Step 2 CK Eligibility Period Extension Form.
- Print Score Recheck Form.

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## 2. PLAB for UK

The PLAB is basically a registration examination that allows you to practice medicine in the UK. In that sense it is similar to the USMLE Steps of the US system. However, there are three important differences between the PLAB and USMLE exams:

- The PLAB exam is considered to be far easier, and less costly than the USMLE exams.
- There are only 2 parts to the PLAB exam, not 3 like in the USMLE Steps (or 4 if you count USMLE Step 3).
- The PLAB is a pass/fail exam. It makes absolutely no difference to your credentials if you pass the PLAB by an extremely wide margin or just manage to get through by a single mark. This is in contrast to the USMLE Step 1 and Step 2 CK exams, in which a candidate's scores affect the strength of his CV.

The IELTS is a test of the candidate's English skills. It stands for International English Language Testing System. People are required to take this exam to prove they have the minimum acceptable level of proficiency in the English language needed to engage in their academic or work pursuits in the UK, so its not just for doctors. This exam can be taken in many countries, including Pakistan. Currently, it costs around 80 Pounds Sterling and is held twice a month every month throughout the year.

The exam has four sections: Speaking, Listening, Writing and Reading. The result of the test is given as a number on a scale (called band) from 1 to 9. Each band or scale represents a certain level of competency in English. A score of 1 means that the candidate has only a rudimentary grasp of the language. A score of 9 means the candidate is as proficient as a native English speaker.

Each of the four sections are scored separately on the band of 1 to 9. The individual band scores in the different sections are then added up to give an average. For example, if a candidate gets 8 in Speaking, 8 in Listening, 7 in Writing and 7 in Reading it will give him an overall band score of 7.5.

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In order to be eligible to take the PLAB exam, the candidate must have an overall score of at least 7. However, an imposition is made on the individual scores as well. The candidate must have at least 7 in the Speaking section and at least 6 in the other sections. So if a candidate gets 6.5 in speaking, he will not be eligible to take the PLAB exam - even if his overall score is 7 or above.

The IELTS can be taken even while the candidate is still a medical student, although it should be kept in mind that the IELTS result is valid for two years. The candidate must go on to take his PLAB exam within this two year validity period.

### **PLAB Part I**

The first part of the PLAB exam, the Part 1 is administered in a number of countries, including Pakistan where it is held three times a year: in March, July, and November. Currently, the exam cost 145 Pounds Sterling.

In order to be eligible to take the exam, the candidate must be a medical graduate (he cannot give it before graduation) from a WHO-recognized medical college and also have the minimum required IELTS score in hand during the time of application.

The exam consists of a 3 hour paper containing 200 questions. The questions are called “Extended Matching Questions” or EMQs - which simply means they are multiple choice questions with a variable number of possible answers to the questions posed of which the best one is selected. The exam concentrates on the clinical subjects, not on basic sciences. There are also a few questions regarding medical ethics, evidence based medicine, epidemiology, and public health.

### **PLAB Part II**

This part can only be taken in the UK. Recently, the capacity of the PLAB 2 center in London has been expanded enormously,

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and now the exam will be held several times a month every month, throughout the year. Currently, the exam costs 430 Pounds Sterling. The Part 2 is a examination of clinical skills - not a paper-based EMQ exam. The system devised for testing the candidate's clinical skills is called the Objective Structured Clinical Examination, or OSCE.

When you start the examination, you will go to your first “station” in which you will be given some instructions. It could be taking history from a patient there, performing an clinical examination, or a number of other things. You will have 5 minutes to accomplish your task and 1 minute of pause to think before each station. There are 14 stations in all, with two “rest” stations so the exam lasts a total of 96 minutes. The primarily skills tested for are:

- History taking and diagnosis based on history alone.
- Proficiency at physical examination.
- Communication skills with patients.
- Management of emergency cases.

### **3. PRES: Licensing Exam for Doctors in Ireland**

Ireland has a relatively easy exam called Pre Registration Examination System (PRES) formerly called TRAS. If a doctor wants to work in Ireland he must have a degree recognized by Medical Council of Ireland otherwise he has to pass Pres to get registered with the council and then he can practice.

There are three divisions Trainee specialist (training posts) and General division (non-training posts) and super division. Decide in which to opt prior to applying for pres. PRES is divided into 3 Levels commonly said as Pres 1, Pres 2, Pres 3.

Pres 1 is the assessment and verification of documents by the Medical council of Ireland. The requirements are MBBS, MD or equivalent degree in medicine and surgery, Internship in recognized hospital with the respective medical council, IELTS certificate with a combined score of 7.

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Pres 2 is an online written MCQ exam. This can be taken in any of the examination centers in Ireland, Egypt, India, Pakistan. After clearing pres 1, medical council sends admission card and details about the procedure of applying for level 2. The syllabus includes all the final year subjects' i-e surgery, gynae obs, paed, psychiatry, general practice. It is negatively marked. Total time is 2 1/2 hours and total questions are 60.

Pres 3 is a clinical exam (OSCE) in which communication, interpretation and practical skills are examined. Level 3 exam is only taken in Ireland i-e Dublin, Cork or Galway. After passing level 3, applicant can register in training specialist or general division, and apply for respective jobs.

#### **4. Medical Council of Canada Evaluating Examination**

The Medical Council of Canada Evaluating Examination (MCCEE) is a four-hour, computer-based examination offered in both English and French at more than 500 centers in 80 countries worldwide. International medical students or U.S. osteopathic students in the final 20 months of their program and international medical school graduates or U.S. osteopathic graduates must take the MCCEE as a prerequisite for eligibility to the Medical Council of Canada Qualifying Examinations.

The MCCEE is a general assessment of the candidate's basic medical knowledge in the principal disciplines of medicine. It is also designed to assess the skills and knowledge required at the level of a new medical graduate who is about to enter the first year of supervised postgraduate training.

The computer-based MCCEE consists of 180 multiple-choice questions, each listing five possible answers of which only one is the correct or best answer. The MCCEE questions cover the following domains: Child Health, Maternal Health, Adult Health, Mental Health, and Population Health and Ethics. A number of questions in the examination also have a focus on general practice.

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Generally Mondays through Fridays; some sites may run on Saturdays and/or Sundays

- Application to the MCCEE is ongoing. While there are no deadlines for applying to the MCCEE, there are deadlines for scheduling an examination date and time once your MCCEE application is accepted.
- View the list of countries where the MCCEE is offered. The centres (i.e. test sites) are operated by Prometric, the service provider that the MCC has contracted for scheduling and administering the computer-based MCCEE.

## **5. EU/EEA area**

All doctors working in Finland must be able to speak either Finnish or Swedish. Finland is officially a bilingual country and some 5% of the population speaks Swedish as their first language.

As a non-EU/EEA national, you need to provide official proof of your language proficiency in Finnish or Swedish before you can sit the three-part professional examination. Please note that the only proof we accept is a copy of your National Certificate of Language Proficiency at Skill Level 3 or Civil Service Language Proficiency Certificate at “Satisfactory”. If you are an EU/EEA national, Valvira does not require an official language certificate.

### **Practical medical training (medical internship)**

Having completed your medical qualification in a non-EU/EEA country, you are required to complete a minimum of six months of supervised practice in Finland.

### **Professional competence examination**

Applicants are required to demonstrate their professional competence through an examination. Passing the examination means that your professional skills and competence are equivalent to those who graduate in Finland.

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You can sit the examination after you have completed the six months of supervised practice and have gained the official language certificate.

### **Limited authorisation to practice**

After you have completed the examination Part 1, you can apply for a limited authorisation. The limited authorisation allows you to work at a Finnish state, local authority or joint authority-run hospital under lead and supervision of another doctor licensed to practice medicine.

The authorisation is granted for practice in a named specialty field and for a named hospital/ health centre for a maximum of six months at a time. You can apply for a continuation to the limited authorisation and the authorisation can be granted for a maximum of two years in total.

After you have completed the examination Part 2, you can apply for a limited authorisation at a state, local authority or joint authority-run hospital or health centre.

Please note that you are not allowed to work through a locum/ supply/ employment agency while the limited authorisation is in place. You need to sign an employment contract directly with your employer.

### **How to apply for limited authorization**

Note: most applicants will already have sent copies of all the relevant documents when they applied for approval of qualifications or for Part 1 of the examination. Just make sure you have sent earlier the documents below; if not, then include them in your Application for Licensing.

- A copy of your passport or equivalent so that we can verify your nationality.
- A copy of your degree certificate or diploma and all relevant appendices such as degree transcript and grades awarded.





## Dental Licensing Examinations abroad

With the emergence of more number of dental colleges in the private sector, dental graduates are facing unemployment problem in the country. Dental profession requires better skills to succeed. As economies become sophisticated and technologically complex, work demands a much higher and wider range of skills. Dentistry is a most wanted profession abroad which has more career and educational prospects. Dental licensing examination in developed countries involves lot of procedures. It may vary from country to country. This article highlights the different procedures for applying Dental licensing examination abroad.

### 1. NBDE for United States

National Board Dental Examinations NBDE consists of two parts and is administered by the ADA Joint Commission on National

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Dental Examinations (JCNDE). Part I of NBDE covers most aspects of the biomedical sciences while part II deals with clinical dentistry issues.

Effective from January 2010 the JCNDE started reporting performance in the NBDE exams as pass or fail only, and the new version of this exam combines both parts into one exam that is for the most part composed of clinical cases-specific questions. There are couple of issues that will arise because of this change, and those are mainly related to international dental graduates (foreign trained dentists). Until now the dental graduates from other countries are needed to take part I and use that score to apply to schools that used to look at the score and make their acceptance vs. rejection based on that score and many other criteria. When the new exam is rolled, this will be impossible, since you need to be enrolled in a dental school before being allowed to take the exam, as you can see, the new format can't be used as an admission requirements since you can't even take the exam before being already accepted into school, and because standard scores cannot be reported anymore.

What could make this even more complicated is the fact that with the new format schools may feel obliged to add more biomedical sciences courses to the curriculum of the international programs to make sure their students are adequately prepared to pass the NBDE in its new comprehensive format, this could very well mean longer programs (more than two years), and higher tuition.

The Joint Commission remains committed to the implementation of pass/fail scoring for Part I and Part II as well as for the Dental Hygiene examination from January 1, 2012 onwards.

### **The Dental Licensure Process**

1. Education
2. Written examination
3. Clinical requirement

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Currently, all U.S. licensing jurisdictions accept passing the NBDE exams as fulfilling the written exam requirement.

The NBDE is given in two parts—the first to be taken at the end of two years of dental school, and the second to be taken during the last year of school. The first part spans basic biomedical sciences, including:

- Anatomic Sciences
- Biochemistry-Physiology
- Microbiology-Pathology
- Dental Anatomy and Occlusion

The second part is a comprehensive, 1½ day examination covering clinical dental sciences, and patient management. About 20% of the exam is based on patient cases. States may have different qualifying factors for the clinical requirement of licensure. Find out more from the jurisdiction that will license you.

### **NBDE Part I**

The fee for the NBDE exam is \$265. The following eligibility requirements for taking the NBDE exam apply to international dental graduates or foreign trained dentists.

You must submit an examination application and fee to:

The Joint Commission on National Dental Examinations  
211 East Chicago Avenue, Suite 600  
Chicago, Illinois 60611-2678

### **Applying process**

1. You must have your official dental school course transcripts verified by:  
Educational Credential Evaluators, Inc.  
P.O. Box 514070  
Milwaukee, Wisconsin 53202-3470  
414-289-3400 <http://www.ece.org>

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You must contact Educational Credential Evaluators, Inc. (ECE) and request an ECE application form. The ECE form will describe what educational credentials are required and how to submit them to ECE. Fees for ECE services will also be listed (\$85 at the time this page is published). You should indicate that a General Report should be sent directly to the Joint Commission on National Dental Examinations. It takes approximately four weeks for ECE to evaluate credentials.

2. Educational Credential Evaluators, Inc. will send the ECE General Evaluation Report directly to a) you and b) the Joint Commission on National Dental Examinations

3. The Joint Commission will hold the NBDE examination application, but will not process it before the ECE Evaluation Report is received. The ECE report must be received in the Joint Commission office by the application deadline.

4. Your name on the ECE report must match the name on the application. Any name changes must be accompanied by legal documentation.

Most schools require foreign trained dentists to take NBDE part I and they do assign a certain weight in their acceptance decision on your score on that exam, some may also require part II.

The NBDE exam is administered only at Prometric test centers in the US and Canada, once you register you will receive information directing you on how to register for a certain date.

According to the official candidate guide, the NBDE could take up to 7 hours, divided into 3.5 hours segments, 200 questions each; with an optional one hour break.

## **Part II**

Again, your first step is to become familiar with everything listed in the NBDE Part II The examination fee for part II is \$345. You do not need a new ECE report if you have already taken care of this during Part I.

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Part II is also computer-based, administered in Prometric, you can submit a paper application, or register online. Many other regulations and procedures are similar to Part I. The only difference is the scope of the exam; NBDE Part II tackles the different dental specialties, patient management, and pharmacology.

The exam is administered in two days, day one consists of two 3.5 hours segments and 200 questions each, of discipline-based questions. Day two consists of 100 case-based questions. You will be given several cases with 10-15 questions each.

### **Resources for Preparation**

Obviously, a strong and solid background is needed before you tackle any of these exams, being a foreign trained dentist gives you at least a theoretical advantage because chances are that you are familiar with at least some of the subject covered in the NBDE exams

Released national board dental exams from previous years, can be a great resource, the more recent, the better, they can serve to familiarize you with the format of the exam, and you can use them to test yourself and your preparation,

You can purchase those directly from the American Student Dental Association.

First Aid for the NBDE Part I and First Aid for the NBDE Part II are useful guides published by McGraw-Hill.

1. Another two books and useful guides published by Mosby are: Mosby's Review for the NBDE, Part I and Mosby's Review for the NBDE, Part II. Kaplan published a review guide for Part I: dent Essentials: High-Yield NBDE Part I Review (Kaplan Dentessentials)
2. Crack the NBDE for the National Board Dental Examination Part 1 (2008 Deluxe Edition): It's a computer software that you download.

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3. The Student Doctor Network Forums provide a wealth of information

## **2.New Exam for Overseas Dentists, UK**

The (General Dental Council) GDC is conducting Overseas Registration Examination (ORE)

### **The ORE will be in two parts:**

Part One consist of a written paper covering clinical applied dental science and clinically applied human disease; and - a written paper in aspects of clinical dentistry, law and ethics, and health and safety.

Part Two will consist of an examination on a dental manikin; an objective structured clinical examination (OSCE) that tests candidates' clinical skills; an examination designed to test candidates' diagnostic and treatment planning skills; and a medical emergencies examination.

New candidates applying to sit the ORE must demonstrate that they have at least 1,600 hours clinical experience where they have personally treated patients in the dental chair.

The ORE will be run on a cost-neutral basis to the GDC and the fees, subject to Privy Council approval, will be:

- Part One - £600
- Part One(b) - £150 - this is for those candidates who have passed part A of the IQE and have transferred to the new exam
- Part Two - £2,250

### **Information for dentists**

The General Dental Council (GDC) is the organization which regulates dental professionals in the United Kingdom. All dentists, dental nurses, dental technicians, dental hygienists, dental therapists,

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clinical dental technicians and orthodontic therapists must be registered with the GDC to work in the UK. When you register with the GDC you are licensed to work as a dentist in the UK.

Temporary registration allows dentists who are not eligible for full registration to practice dentistry in the UK in supervised posts for training, teaching, or research purposes only for a limited period.

An overseas qualified dentist can apply for temporary registration in specific approved posts if they hold a dental qualification from a university which is recognized by NARIC UK for the purposes of temporary registration and the overseas registration examination (ORE).

Temporary registration is granted for a minimum of 84 days and a maximum of 365 days at a time. Temporary registration may be renewed, by means of applying, for up to a maximum of 1826 days (5 years).

### **3. Dentists - Non-European Economic Area (EEA) nationals**

Dentists from outside the EEA whose qualifications are not recognized for full registration with the GDC need to take the Overseas Registration Examination (ORE). The ORE tests the clinical skills and knowledge of dentists from outside the EEA whose qualifications are not recognised for full registration with the GDC. The examination is based on the UK dental curriculum and uses modern assessment methods to ensure a robust and consistent examination. Dentists who pass this examination become eligible to apply for full registration to practise in the UK. All applicants need to demonstrate that they have an appropriate level of English language competence before they can sit the ORE and are required to demonstrate their linguistic competence by sitting the International English Language Testing System (IELTS). The IELTS Test Report Form must be no more than two years old when you submit your application.

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## **Vocational training**

Dentists who complete the ORE examination may be required to do up to a year's Vocational Training (VT) in order to work for the NHS. Success in the exam is not a guarantee of employment or a VT place.

## **The right to work in the UK**

Registration with an appropriate regulatory authority does not give you the right to work in the UK.

## **4. Canada**

### **General Certification and Licensure**

Dentists must be licensed to practice dentistry in Canada. Dental licensure is a provincial responsibility. Each province/territory has a dental regulatory authority/licensing body that establishes regulations and requirements for the licensure of general practitioners within their jurisdiction. There are fees for licensure and certification in each province that may change annually.

The National Dental Examining Board (NDEB) of Canada is the organization responsible for establishing and maintaining a national standard of competence for dentists in Canada.

## **5. Non-EU/EEA Nationals**

The National Supervisory Authority for Welfare and Health (Valvira) may grant, upon application and subject to certain conditions, a right to practice as an authorised or licensed dentist in Finland to a non-EU/EEA national who has qualified as a dentist outside of the EU/EEA, who holds the required qualifications as prescribed by Decree and can demonstrate adequate language proficiency.

In order to be licensed or authorized, applicants must have completed any such service, any such additional studies and passed



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any such examination as may be prescribed by Valvira to ensure that their qualifications are of an equivalent standard to dentistry training offered in Finland. Applicants must also be able to demonstrate sufficient knowledge of Finnish or Swedish. Valvira grants, as a rule, non-EU/EEA nationals a license to practice as a dentist in Finland, provided that the above conditions are met in full.

### **Conditions of licensing**

Licensing is subject to the following conditions, as prescribed by Valvira:

#### **1. Non-EU/ EEA graduates**

Training is defined as the completion of a basic dental qualification fulfilling certain prescribed criteria, proof of which the applicant is required to present in the form of a degree certificate or diploma along with a transcript of subjects studied. The degree certificate and its appendix must be provided in Finnish or Swedish translation.

In addition we ask you to send original legalized degree certificate or diploma and degree transcript (Apostille or so-called Grand Legalisation).

#### **2. Knowledge of the Finnish or Swedish language**

Applicants are required to provide a Civil Service Language Proficiency Certificate (grade “satisfactory”) or a National Certificate of Language (intermediate level, skills levels 3–4) as evidence of language proficiency. Certificates of Finnish or Swedish studies, such as language courses, are not in themselves adequate proof of language proficiency.

#### **3. Examination**

Examinations to ascertain the applicants’ competence in dentistry are organised by the University of Helsinki Institute of Dentistry.

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University of Helsinki Institute of Dentistry

Mannerheimintie 172

Helsinki

For further information, please contact:

kimmo.suomalainen@helsinki.fi and erja.riikonen@helsinki.fi

## **5. ADC Examinations**

The Australian Dental Council (ADC) is responsible for assessing overseas trained dentists to enable them to obtain registration in Australia. The ADC also accredits Australian Dental Schools courses leading to registrable qualifications. The dental boards, the dental schools, the Royal Australasian College of Dental Surgeons, the Australian Dental Association, the Australian Dental & Oral Health Therapists Association and the Dental Hygienists Association of Australia are represented on the ADC.

### **Eligibility criteria**

Overseas trained dentists are eligible to undertake the ADC examination procedure if they have completed and passed a dental degree which included at least four years' full-time academic study at a university recognised by the ADC and are registered as a dentist in their country of training or practice.

### **Examination Procedures**

The ADC examination procedures have been developed specifically to assess the qualifications of overseas trained dentists whose qualifications are not accepted as a basis for registration by Australian Dental Boards.

The examination procedure consists of three parts an Occupational English Test (OET); a Preliminary Examination (Multiple Choice Questions and Short Answer questions); and a Final Examination (Clinical). These must be taken sequentially.

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## **Occupational English Test (OET)**

A comprehensive knowledge of English is essential to the practice of dentistry in Australia. All overseas trained dentists (regardless of country of training) are required to pass the Occupational English Test (OET) prior to acceptance into the Australian Dental Council examinations.

The purpose of the OET is to assess a candidate's understanding and use of English in the professional workplace. The OET assesses both written and spoken English in four categories: reading, writing, listening and speaking. All four categories must be passed at an 'A' or 'B' level to achieve an overall satisfactory pass in the test. Web-site: <http://www.occupationalenglishtest.org>

Candidate must pass this test before you proceed to the Preliminary Examination. "A pass is valid for 2 years. Other English tests are not accepted."

## **Preliminary Examination**

The Preliminary Examination is a written examination in multiple choice and short written answer format. It is designed to test your knowledge of the practice of dentistry and of clinical and technical procedures as they are practiced in Australia. Previous examination papers are not available, but sample multiple choice questions are made available to enrolled candidates.

Unlimited attempts are permitted for this examination. A pass is valid for three years. In order to be eligible to attempt the Preliminary Examination, at the closing date for the exam you must have a satisfactory pass in the OET (valid for two years).

## **Final Examination - Clinical**

In order to be eligible to sit for the Final Examination, at the closing date for the exam you must have passed the Preliminary Examination (pass valid for 3 years) and have a satisfactory pass in the OET (valid for two years).

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The Clinical examination is held over three to six days and includes the following three blocks:

- Conservative Dentistry - Operative Dentistry and Paediatric Dentistry;
- Treatment Planning -including consideration of Periodontics and Removable Prosthodontics;
- Oral Surgery, Oral Diagnosis and Radiology.

Clinical disciplines include Orthodontics, Oral Medicine, Oral Pathology and Pharmacology will be included where appropriate (practical and/or theoretical and/or viva voce)..

For more details contact Australian Dental Council (ADC)  
Ground Floor, 120 Jolimont Road East Melbourne Vic 3002,  
Australia

For further enquiries please email: [Info@adc.org.au](mailto:Info@adc.org.au)

## **6. KDLE (Kuwait Dental Licensing Exam)**

The KDLE is a one day written examination in English, composed of 200 multiple-choice questions (MCQs) and is divided into two parts.

Part I: Biomedical Sciences (21/2 hours, morning session)

This part will contain 100 MCQs related to: Anatomical Sciences, Biochemistry, Physiology, Microbiology, Pharmacology, Dental Anatomy, Occlusion, and General Pathology

Part II: Dental and Clinical Sciences (21/2 hours, afternoon session)

This part will contain 100 MCQs related to: Endodontics, Oral Pathology, Oral Medicine, Oral Radiology, Oral Diagnosis, Operative Dentistry, Oral and Maxillofacial Surgery, Pain Control, Management of Emergencies, Orthodontics, Periodontics, Preventive Dentistry, Public Health Dentistry, Prosthodontics, and Pediatric Dentistry.



## **Indian Students prefer American Professors as supervisors**

Indian Students in United States allege that US Professors are more helpful in research than Indian Professors in United States. Survey of students over some of the pioneering Universities like University of Florida, Pittsburgh, Pennsylvania suggested that except a few Indian faculty members, others neither guide properly nor facilitate for getting funding. In some of the cases Students of Florida State University alleged that while American professors prefer to be the second author in the student's research papers, India professors are very keen to become first authors. Moreover they will present these papers in the International conferences without mentioning the name of the students. American Universities excel in quality, technology and infrastructure facilities.

Recently due to rupee devaluation, Indian Students prefer to get appropriate career positions in USA after completing their

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graduate, doctoral or post-doctoral programmes in United States. Biological sciences, commerce, accounting, theater & performing arts, biotechnology and information security courses are emerging as some of the prospective courses in United States. Eventhough Federal Government assistance for research has been gradually on decline during recession and immediate post-recession period, now it started improving.

There is a move in United States to persuade Americans to purchase American made products to improve employment opportunities among students. Some of the sectors like Biotechnology, IT, Nano Science and technology graduates started establishing startup companies in United States to become employers rather than employees. Boston and California are emerging as the largest innovation incubation hubs in the World. Biotechnology, Health care, Information Technology, Telecommunications, Venture capital and Social networking sites will provide more employment in US in the coming months. According to US Bureau of Labor, Industries and occupations related to health care, personal care and social assistance, and construction are projected to be the fastest job growth between 2013 and 2020.

Nonagriculture employment, which accounts for more than 9 in 10 jobs in the economy, is projected to expand to 150.2 million by 2020. The health care and social assistance sector is projected to gain the most jobs (5.6 million), followed by professional and business services (3.8 million), and construction (1.8 million). Of the 22 major occupational groups, employment in healthcare support occupations is expected to grow most rapidly (34.5 percent), followed by personal care and services occupations (26.8 percent), and healthcare practitioners and technical occupations (25.9 percent). Careers that typically need some type of post-secondary education for entry are projected to grow the fast during the 2013-20 periods. Jobs which need master's degree are projected to grow by 21.7 percent followed by doctoral or professional degree jobs at 19.9 percent and associate's degree jobs at 18 percent.



## **IPR courses- an emerging area of research**

The World Trade Organization envisages free trade of products in a transparent and competitive environment leading to smooth trading activities. Several agreements on Agriculture tariffs, subsidies, sanitary measures and intellectual property rights have come under a single roof of World Trade Organization (WTO) as GATT agreement. More than 100 countries including India knowingly or unknowingly entered in to this global trade regime to promote economic development across the globe. WTO forces member countries to open up their economy to a free flow of imports and exports. Market access, domestic market and TRIPS are the key elements pertaining to WTO in the Agriculture sector.

Recently in the post WTO era intellectual property rights acquires more importance. United Nations has started world intellectual property organization (WIPO) at Geneva in order to

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address the emerging issues. UNCTAD (United Nations council for trade and development) is funding projects on IPR issues for getting sustainable results. Patenting, copyrighting and trade marking should be emphasized now a days. As a sequel to growing importance given to IPR issues, there is a trend towards IPR in the educational and career sector within the country and abroad. Globally various types of courses catering the need for addressing IPR issues at different levels are available in the higher education sector. Post graduate; post diploma and certificate courses on IPR are available in the country and abroad. Even though any graduate can join for the programme, science and engineering graduates will be given preference during admission process. Major objectives of this programme are to disseminate information on national and international IPR issues, to create awareness on IPR among scientists, professionals, academicians, government officials, planners and entrepreneurs and to popularize the documentation and administrative procedures on IPR. These courses are very much useful to Lawyers, research students, professionals, engineers, scientists, brand managers, chartered accountants, regulatory officials and company secretaries. Courses cover wide areas like different patent laws, protection, copyrights, etc.

IPR experts can ensure rights of creators and owners of intellectual property throughout the world. They can carry out tasks like administering international treaties and assist the governments, organizations, farmers, industries and private sector in the emerging IPR issues. There is increasing career potential for IPR professionals in different domains like patent laws, trade marking, patenting, geographical patents, regulatory system, etc. which is an emerging area of research. So there is great potential for scientists and teachers and lawyers in the higher education sector. Many professionals can diversify their activities related to IPR issues. Lawyers can specialize in patent laws and can work as consultants.



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**Different courses on intellectual property rights are available in the country.**

Indira Gandhi national Open University has recently started one-year postgraduate diploma in intellectual property rights in collaboration with WIPO. Details can be had from [www.ignou.ac.in](http://www.ignou.ac.in).

Rajeev Gandhi institute of Intellectual property rights based at IIT, Kharagpur has LLB, MBA and Post diploma programmes with specialisation in IPR. The programmes cover wide areas like Patent law & Practice, IP specifications & Transactions, copyright, Drafting and IP management, registration, commercialisation and technology.

Sri Dharmasthala Manjunatheswara Law College, Mangalore has one year post diploma programme in IPR.

**Many institutions are conducting four to six months certificate programmes in intellectual property rights. They are**

1. SVKM institute of intellectual property studies, Vile Parle (W), Mumbai-56 Email- [info@iips.ac.in](mailto:info@iips.ac.in)
2. Academy of intellectual Property studies, Mumbai-104 Email- [info@aips.ac.in](mailto:info@aips.ac.in)

Post graduate Diploma programmes in IPR are available in Australia, Philippines, New Zealand, England, Ireland, The Netherlands, USA and Canada.

Collaborative programmes in IPR are available at Bangalore, Delhi, Chennai and Mumbai in association with University of Washington. Visit -[www.Giipinfo.com](http://www.Giipinfo.com)

Japanese patent office and Japan Institute of Invention and Innovation is offering training and awareness programmes in intellectual property protection in India.

Canadian, Australian and UK institutions are offering advanced post graduate and post diploma programmes in IPR.



## **Job portals will become the preferred hiring channel for Indian recruiters in 2014**

**2014** will witness spectacular employment opportunities in Engineering, IT, Biotechnology, Pharmaceutical industry, Entrepreneurship, Education, Healthcare, Hospitality, FMCG, Retail industry and Agribusiness and Food processing sectors. Cloud computing will continue to generate new jobs worldwide by 2015, and India alone will create over 2 million, predicts International Data Corporation. Pointing out to a strong linkage between cloud, innovation and entrepreneurship, the recent study predicts that most companies look at migration to cloud computing as a way to free up existing resources and work on more innovative projects. Recent study reveals that over two million jobs will be generated in the communication, media, manufacturing and banking sectors. Gender wise, girls will perform better than boys with an employability percentage of 42% compared with 33%.

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Information Security Analysts, Petroleum Engineers, Interpreters and Translators, Convention and Event Planners, Database Administrators, Software Developers, Applications and Systems Software, Logisticians, Web Developers, Physical Therapists, Financial Analysts, Training and Development Specialists, Market Research Analysts and Marketing Specialists are the fastest growing and highest paying jobs for 2014.

The Indian software industry continues to add jobs at a fast pace. Economic uncertainties in the European Union will force multinational companies like Siemens and GE to start operations from India. International Health & Safety Recruitment Specialists, Allen & York predicted that increase in job opportunities for the Health & Safety practitioner within the Risk & Safety, Oil & Gas industry, Chemical and Renewable Energy sectors.

Research studies done by different HR services research agencies like MAFOI, NASSCOM, ASSOCHAM, CRISIL, Deutsche bank and Hewitt revealed that Indian career market will exhibit quantum jump and by 2020 there will be spectacular changes in key sectors like energy, infrastructure, project engineering, telecom, ITeS, Financial Services, Insurance, Healthcare, Agribusiness, Manufacturing, Hospitality, Trade, Tourism and transport. Banking, Financial Services, Insurance, Manufacturing and Construction sector will exhibit spectacular growth during post parliamentary election period in 2014.

### **Potential sectors are Energy (Oil, Gas, Coal & Power) -**

India has acquired the status of fifth largest power generation capacity in world. There is huge demand for skilled workers in the Oil and Gas industry. Since stiff competition is occurring between Private and PSU units, PSUs are aggressively started revising their HR policies.

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**Infrastructure-** During 2014 there will be reduction in growth of infrastructure sector. Ports, Highways, airports and other amenities are the basic drive behind this growth.

**Project engineering-** Global engineering services Outsourcing market will reach 150-215 US Billion \$ by 2020. Of which India's share will increase from 14% to 25% by 2020. Engineering sector will become the biggest sector after IT and ITeS in the country.

**Pharmaceuticals-** By 2015 Indian Pharmaceutical industry will reach 20Billion US\$ turnover. There is good potential for generic drug market in the country. Indian Pharma industry employs quality manpower and excels from low cost of production, world class technology and research.

**Retail industry-**India ranks fifth in retail industry in the world. Increase in standard of living creates spectrum of opportunities in the retail sector. FDI will seek more man power from Tier 1 and 2 cities. But political issues in pre parliament election period will affect FDI sectors. AAP is working against FDI in the country

**Telecom-**India is the third largest country in Telecom sector globally after China and USA. Country's mobile subscribers will be around 6 % of the world market by 2015. Rural penetration coupled with 4G technology and competition will facilitate better career prospects in this sector.

**Banking, Finance and Insurance-**Banking sector growth will not exhibit spectacular during 2014. Public sector banks are trying to open overseas markets. Government of India started permitting private companies to start banks in the country. Some of the potential areas are Asset management, Broking, Investment and Insurance.

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All Public and private sector banks require skilled professionals in the areas of finance, banking, marketing and HRD management. Banking, financial services and insurance and IT-enabled services are not expecting a major increase during the first two quarters.

**Education, Training and Consultancy-** In the Globalised era education, training and Consultancy are some of the key sectors which can drive more employment in the country.

**Hospitality and Travel-** This is one of the fastest growing segments in the World.

**US jobs-** Fastest growing jobs projected up to 2018 by US Bureau for labor statistics are Biomedical engineers, Network systems and data communication analysts, financial examiners, medical scientists except epidemiologists, Physician assistants, Biochemists and biophysicists, Veterinarians, Software engineers, applications, system software, food technologists. Biomedical engineers, Petroleum engineers and Environmental engineers.

According to People Matters-CareerBuilder survey, 82% of Indian employers prefer job portals as their preferred hiring channel. The survey further noted that Indian organizations still rely very less on social communities as less than 20% of organizations rely heavily on social media hiring. Preferred social media channels that are used for hiring are LinkedIn and Face book. 10% of their hiring is done through print media. The employment outlook will be positive in the country with 58 per cent employers anticipating a growth in staff numbers over the next 12 months. This positive outlook in recruitment has mainly been driven by global companies looking at India as a core growth market due to uncertainties in the US and European economies. Moreover India is emerging as a logical business hub with a well-qualified young workforce (more than 51

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percent of average age group 26) with adequate infrastructure facilities to support international business activities.

With regard to demand for talent, the report forecasts an increase in demand at the middle management level across all sectors. A steady volume of recruitment at graduate level is also expected in the coming years. Specialist skill sets, currently limited in the existing talent pool are also likely to be in demand. IT and software industry plans to hire more of management graduates than other domains. Industries are looking for hands-on people. NASSCOM studies reveal that one in four joining the labour force was employable.

Overall job readiness among Indian job market entrants will be 34% and the sectors like pharmaceuticals (54%) and engineering (51%) will exhibit robust hiring. Those possessing degree or diploma from industrial training institutes, and Master's in computer applications and management will be next in the sequence, with an employable percentage of 46%, 43% and 41%, respectively in Punjab, Tamil Nadu, Uttar Pradesh majority of the employable pool Pradesh, Delhi, Andhra Pradesh, Haryana, Gujarat, Odisha and West Bengal.



[www.nextedu.in](http://www.nextedu.in)

Over the years, educational sector is witnessing spectacular growth in the country. The stagnation of employment in developed countries and apparent recovery in developing countries after the great recession have renewed perceptions of a global shift in employment to the developing world. Major domains like liberalization, Globalization and Privatization have opened up avenues for graduates to enter in to new generation emerging occupations.

Emergence of new generation courses, increasing network of educational institutions and demand for career oriented programmes and prospects for study abroad programmes are the recent trends observed in the educational sector. However the education sector can fulfill its responsibilities if only students, teachers and parents are aware of the changing trends. Selection of the courses for higher education is a major challenge faced by students and parents.

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Capacity building is the crucial but expensive component of human resource development (HRD), however, the performance improvement can be effected mainly through training. Training is a planned effort that intends to improve the efficiency and effectiveness of performance of the teachers. Innovative teaching makes class room interactive and interesting thereby igniting and inspiring the minds of students. There exists a huge gap in curriculum, teaching methods, research resources and pedagogical issues between India and developed countries. It will help to improve the capacities of teachers, students and parents' culminating in a course of selection, matching the aptitude of students.

**Nextedu.in** is an online resource for students, teachers and parents managed by renowned educational and career consultants. It covers teachers' needs with graphite; its online resource rating applications for classrooms. Students, Parents and teachers can search for what they need by subject, grade, common course standard or skill. It will help parents as a learning tool to help their kids get ahead or catch up. Teachers can use the online tool as a supplemental resource to reinforce what they are learning in the class room. The resources encourage peer tutoring and facilitate classroom discussions. Nextedu.in will focus on all aspects of education starting from higher secondary to post doctoral level. This includes educational opportunities within the country and abroad, prospects, procedures, proficiency examinations, career prospects, selection of courses, educational consultancy, educational news, trends, analysis, top rated educational institutions, campus placements and many more on education and career.



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## Appendix

### **Entrepreneurship Management**

Post Graduate Diploma in Livestock Agri Entrepreneurship and Food security management [www.kvasu.ac.in](http://www.kvasu.ac.in)

**S.P. Jain Institute of Management & Research (SPJIMR)** [www.spjimr.org](http://www.spjimr.org)

**NSRCEL, IIM-Bangalore** [www.nsr cel.org](http://www.nsr cel.org)

### **IIM, Ahamedabad**

**Indian School of Business (ISB)** [www.isb.edu](http://www.isb.edu)

Institute of Innovation in Technology & Management [www.innomgmt.com](http://www.innomgmt.com)

XLRI Jamshedpur launches course in entrepreneurship management [www.xlri.ac.in](http://www.xlri.ac.in)

Entrepreneurship Development Institute of India, Gandhinagar, Gujarat, <http://www.ediindia.org>

### **Agri Business Management**

1. MANAGE- National institute of Extension Management, Rajendra nagar, Hyderabad  
[www.manage.gov.in](http://www.manage.gov.in)

2. Institute of Agri Business management, Rajasthan Agricultural University, Bikaner, Rajasthan

[www.iabmbikaner.org](http://www.iabmbikaner.org)

3. Indian institute of management, Ahmedabad

[www.iimahd.ernet.in](http://www.iimahd.ernet.in)

4. Institute of Rural Management, Anand, Gujarat

5. [www.xlri.edu](http://www.xlri.edu)

6. [www.iimk.ac.in](http://www.iimk.ac.in)

7. College of Agribusiness management, GB Pant university of Agricultural Technology, Pantnagar

[www.cabm.ac.in](http://www.cabm.ac.in)

8. [www.xlri.edu](http://www.xlri.edu)

### **Institutes offering Facility Management**

1. International Facility Management Institute, Bangalore  
[www.ifmiindia.org/](http://www.ifmiindia.org/)

2. Tata Institute of Social Sciences, Mumbai

3. Women's Christian College, Chennai

4. INLEAD, Gurgaon, Haryana

5. Imperial college, London [www3.imperial.ac.uk/facilitiesmanagement](http://www3.imperial.ac.uk/facilitiesmanagement)

6. University of Westminster, UK

7. Greenwich University, UK

8. Cardiff University, UK

9. Robert Gordon University, UK

### **Courses on Intellectual property rights are available in the country.**

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Sri Dharmasthala Manjunatheswara Law College, Mangalore has one year post diploma programme in IPR.

**Four to six months certificate programmes in intellectual property rights.**

1. SVKM institute of intellectual property studies, Vile Parle (W), Mumbai-56

Email- info@iips.ac.in

2. Academy of intellectual Property studies, Mumbai-104

Email- info@aips.ac.in

Post graduate Diploma programmes in IPR are available in Australia, Philippines, New Zealand, England, Ireland, The Netherlands, USA and Canada.

Collaborative programmes in IPR are available at Bangalore, Delhi, Chennai and Mumbai in association with University of Washington. Visit -www. Giipinfo.com Japanese patent office and Japan Institute of Invention and Innovation is offering training and awareness programmes in intellectual property protection in India.

Canadian, Australian and UK institutions are offering advanced post graduate and post diploma programmes in IPR.

**National Institute of Design (NID)**

**GRADUATE DIPLOMA PROGRAMME IN DESIGN (GDPD)**

**MAIN CAMPUS, AHMEDABAD:**

• **Product Design (2½ years)**

Degree in Design, Engineering, Technology or Architecture, OR Diploma in Design (under 10+2+4yr)

• **Furniture & Interior Design (2½ years)**

Degree in Design, Engineering, Technology or Architecture, OR Diploma in Interior Design or Craft Design (under 10+2+4yr)

• **Ceramic & Glass Design (2½ years)**

Degree in Design, Fine Arts, Engineering, Technology, Architecture or Interior Design, OR Diploma in Design (under 10+2+4yr)

• **Graphic Design (2½ years)**

Degree in any discipline, OR Diploma in Design (under 10+2+4yr)

• **Animation Film Design (2½ years)**

Degree in any discipline, OR Diploma in Design (under 10+2+4yr)

• **Film & Video Communication (2½ years)**

Degree in any discipline, OR Diploma in Design (under 10+2+4yr)

• **Textile Design (2½ years)**

Degree in Design (Textiles/Fashion/Accessory/Knitwear/Interior), Fine Arts or Architecture, OR Diploma in Handloom Technology/Textile Technology (under 10+2+3yr/4yr)

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**POST GRADUATE DIPLOMA PROGRAMME IN DESIGN (PGDPD)  
PG CAMPUS, GANDHINAGAR:**

- **Transportation & Automobile Design (2½ years)**

Degree in Industrial Design, Engineering, Technology, Architecture or Interior Design, OR Diploma in Design (under 10+2+4yr)

- **Toy & Game Design (2½ years)**

Degree in any discipline, OR Diploma in Design (under 10+2+4yr)

- **Photography Design (2½ years)**

Degree in any discipline, OR Diploma in Design (under 10+2+4yr)

- **Apparel Design (2½ years)**

Degree in Design (Textiles/Fashion/Accessory/Knitwear/Interior), Engineering, Technology, Fine Arts or Architecture, OR Diploma in Handloom Technology/Textile Technology (under 10+2+3yr/4yr)

- **Lifestyle Accessory Design (2½ years)**

Degree in Design, Engineering, Technology, Architecture or Fine Arts, OR Diploma in Design (under 10+2+4yr)

- **New Media Design (2½ years)**

Degree in Design, Engineering, Technology, Architecture, Fine Arts, Music, Computer Science and Applications, Electronics or Visual Communications, OR Diploma in Design (under 10+2+4yr)

- **Strategic Design Management (2½ years)**

Degree in Design, Engineering, Technology, Fine Arts, Architecture, Interior Design or Planning, OR Diploma in Design (under 10+2+4yr)

**R&D CAMPUS, BENGALURU:**

- **Information & Interface Design (2½ years)**

Degree in Design, Engineering, Technology, Architecture, Fine Arts, Music, Computer Science, Electronics or Visual Communications, OR Diploma in Design (under 10+2+4yr)

- **Design for Digital Experience (2½ years)**

Degree in Design, Engineering, Technology, Architecture or Fine Arts, OR Diploma in Design (under 10+2+4yr)

- **Design for Retail Experience (2½ years)**

Degree in any discipline, OR Diploma in Design (under 10+2+4yr)

**How to Apply?**

**A) For General Category:**

The application form may be downloaded from website <http://www.nid.edu>. The completed application forms may be posted to NID/handed over physically with supporting documents and Demand Draft of Rs. 1,500/- drawn on any nationalized bank in favour of 'National Institute of Design' payable at Ahmedabad.