Delhi Technological University

(formerly Delhi College of Engineering)

Estd by the Government of NCT of Delhi vide Delhi Act 6 of 2009

"Delhi Technological University is a non-affiliating teaching-cum-research University engaged in fostering excellence in education, research and innovations in engineering and technology, applied sciences and management"

The University is inspired by talent and driven by innovations and is firmly committed to provide industry relevant, socially responsible manpower to meet the challenges of 21st Century. The culture of research and innovations is vibrant in the DTU campus which inspires students from UG levels onwards to engage in cutting edge technology development and discover the value and worth of the knowledge acquired by them during their studies. With its illustrious history spanning over 71 years the institution is marching on the pathways of excellence and is one of the highly sought-after university for the inspired students community and faculty.

Vision:

"DTU to be a leading World Class Technology University playing its role as a key node in National and Global Knowledge Network thus empowering India with the Wings of Knowledge and Power of Innovations."

In meeting its stated vision, the nature of DTU shall be:

i. Completely Autonomous.
ii. A pioneering world class S&T University.
iii. A University creating synergy between education and research and synergy between science and engineering.
iv. A change agent to align India's S&T education to global standards.
v. Industrially Relevant and Mission Oriented R&D.
vi. Impacting the Community with innovative solutions to pressing problems.

The DTU Act provides the necessary autonomy to excel in education and research and accelerate the pace of innovations and new product development in areas of engineering and technology, applied sciences and management.

Mission:

The mission of the DTU is as follows:

i. Be a world class centre for education, research and innovations in S&T arena, focus on cutting edge technologies for education delivery and foster an environment of seamlessness between science and technology.
ii. Promote the engineering spirit of product development through effective integration of design engineering and rapid prototyping.
iii. Emerge as a centre for attracting the best minds both nationally and internationally, from academia and industry.
iv. Meet the need for engineers and scientists at all levels of tertiary education, UG, PG, and Doctoral levels.

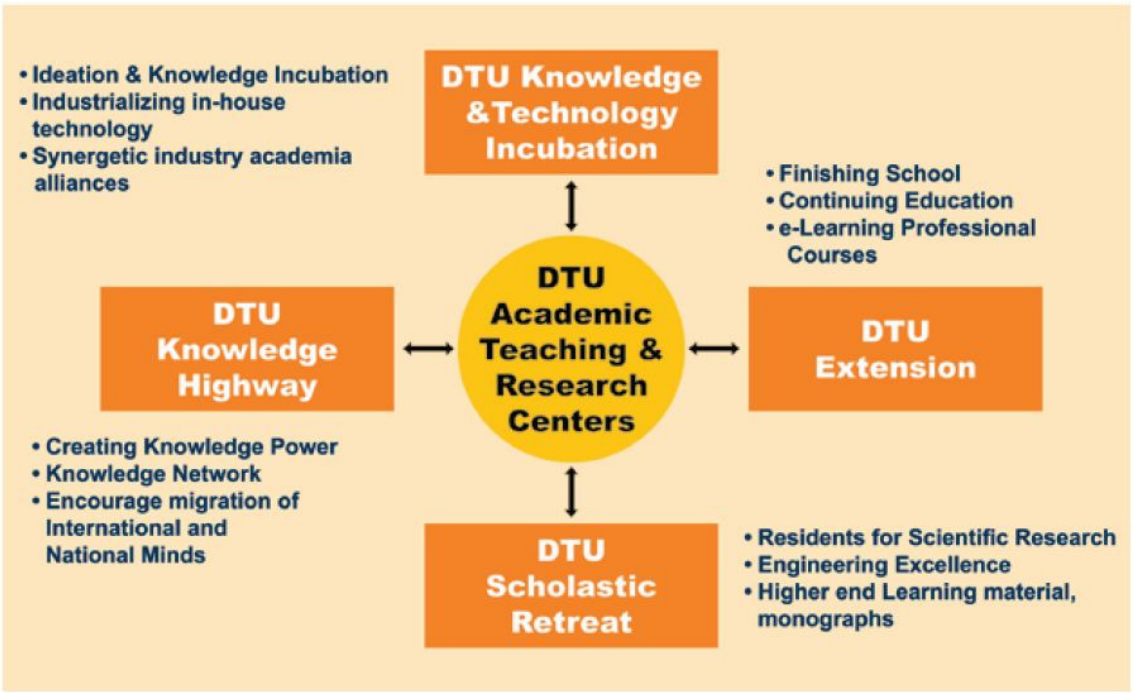
v. Produce well-rounded, socially responsible, up to date, scientifically tempered, design oriented engineer and scientists capable of meeting the challenges of the new knowledge age.

vi. To engage into creation of new knowledge and technologies through focus on research, technology incubation and innovative product development.

vii. To provide knowledge infrastructure in line with the best practices in engineering, technology and management education to meet the challenge of knowledge revolution.

viii. Be able to address the impact of globalization on S&T education.

ix. Operate DTU as a world class Knowledge Enterprise to foster student and teacher led knowledge enterprises.



DTU Focus on

***Panchsheel* of Technical education in 21st Century**

- Troika of Education, Research and Innovations imbibing scientific values and professional morality.
- World Quality Curriculum design and delivery; World Class Knowledge Infrastructure.
- Seamless integration of Science and Engineering.
- Research driven, industry relevant Innovations.
- Network with selected World Class Universities.

1. The Inspiration:

The inspiration for upgrading Delhi College of Engineering into a Technological University in the NCT of Delhi has been derived from the fact that in the new Knowledge Age creation and dissemination of knowledge, capabilities of utilizing knowledge to cause quantum jump in quality, performance and service to industry and society and thus, creating a better tomorrow has to be the hallmark of science, engineering and technology education in India. Such an effort when encapsulated with the agile layers of scientific values, unclenching faith in research integrity and professional morality ensures growth, prosperity and happiness around the world. Such an academic environment, in fact, need to be created in the temples of higher learning, especially in the Universities and Institutions imparting professional education. This necessitates the requisite academic and administrative autonomy. The autonomy here becomes the freedom to excel and the associated accountability ensures a much greater commitment and compliance to high academic standards. In the context of Technological Universities and Engineering Institutions, we need also to cause seamless integration of science and engineering so that we succeed in creating the power of science and the might of technology together in our institutional campuses.

Learning from the international experience it goes without saying that we need to establish future Universities in India where science and technology both could flourish together, adding strength to each other's existence and contributing to the growth of interdisciplinary engineering in an environment of scientism.

What we really need to do is to create institutions and academic environment which attracts the very best talent towards science & engineering education and research both in the student community as well as in the faculty. For this we need to create the synergy between science and engineering to ensure that the very best talent is drawn towards university campuses which gravitate with the excitement of science and the thrill and joy of engineering. The DTU is firmly committed to foster this vital synergy between science and engineering.

The National Capital for many decades has been the hub for quality education and research in its premier institutions and universities such as the IIT Delhi, AIIMS, Delhi University colleges including Delhi Technological University. Delhi for a long time has

been also known for promotion of manufacturing and production activities in both medium and small scale sectors. It has witnessed during the last two decades a significant growth of IT and ITES industries in and around Delhi. This has caused a major shift in the emphasis on shifting the hard core engineering activity to soft sectors of the knowledge economy. We could have caused a much greater resurgence of the core engineering sector if along with human resource development; we could have undertaken technology incubation and product innovation in our institutions of higher learning.

DTU as a teaching-cum-research University offers a unique opportunity to create an environment of synergetic partnership between academia and industry. DTU thus, aims to cause a major departure from the conventional system of education and research. It aspires to imbibe a culture of scientific research in its technology disciplines and technology temper in its scientific research and education. The university also aspires to provide the thrill of a corporate R&D environment with a planned focus on industrially relevant projects and technology incubation.

The human resource output of DTU shall impact the growth of future engineering and technology. It will revolutionize the basis of design, systems of manufacturing and give rise to development of new materials, next generation communication technologies, information highways and cyber networks, growth of clean energy and environment technologies and capabilities to manage technology, businesses and enterprises in the connected economy. In fact, the output of DTU is targeted to impact significantly the resurgence of the 3rd Industrial Revolution which is on the anvil given the convergence of IT and the fast developing opportunities for harnessing energy in plenty through renewable energy resources.

The research outputs of this university are of high value to India's socio-economic development and for the progress in industrially relevant science and technology. Strong linkages have been forged between teaching and research, university and industry, and university and research laboratories. Collaborative projects with industry and research institutes are also a major focus area of the University.

The DTU is engaged in fostering a culture of excellence supported by qualified faculty and high quality student intake, including international students admitted through

the NRI / PIO / Foreign Nationals Quota. It has the necessary freedom and supportive layers of autonomy to nurture excellence in teaching and research. DTU is envisioned to be a pioneering institute having high productivity of quality scientific and technological human resource and brain ware. We wish to benefit Industry in India from the quality of our graduate out turn and cost effective technology incubation and innovative product development.

The DTU has focussed its academic and research strategy on creating the *Panchamrit* of Academia, Industries, R&D organization, Government and Society, thus enhancing its reach as well as its share of contribution to national economy and playing its role as a partner in progress of the society.

2. Our Glorious Past:

"71 years of Tradition of excellence in Engineering & Technology Education, Research and Innovations" Delhi College of Engineering, (initially established with the name – Delhi Polytechnic) came into existence in the year 1941 to cater the needs of Indian industries for trained technical manpower with practical experience and sound theoretical knowledge. The institution started its functioning at the historic Kashmere Gate campus as a follow up of the Wood and Abott Committee of 1938. It comprised of a multi disciplinary and multi level institution offering wide ranging programmes in engineering, technology, arts and sculpture, architecture, pharmacy and commerce. The national diploma awarded by the institution was recognized as equivalent to degree level for the purposes of employment. In 1952, the college was affiliated with University of Delhi and started formal Degree level Programmes. The department of Architecture later became the School of Planning and Architecture, now a Deemed University and Institution of National importance. The department of Arts and Sculpture became College of Arts and the departments of Chemical Technology and Textile Technology were shifted out en-block to mark beginning of the IIT Delhi at its new campus at Hauz Khas. The department of commerce was later abolished and the faculty of management studies of the University of Delhi was established by Prof. A Das Gupta, of DCE. Delhi College of Engineering is thus the mother institution of a number of national projects including IITD, SPA, College of Arts and even the famous FMS.

Till 1962, the college was under the direct control of Ministry of Education, Government of India. In 1963, the administration of the college was handed over to Delhi Administration. Delhi College of Engineering was under the administrative control of Department of Technical Education & Training, Govt. of NCT of Delhi. For academic purposes, the college was affiliated to University of Delhi since 1952. From July 2009, the DCE has become Delhi Technological University vide Delhi act 6 of 2009.

The erstwhile DCE has functioned from its historic Kashmere Gate Campus for almost 55 years and has shifted in 1996 to its lush green sprawling campus of 164 Acres at Bawana Road, adjoining Sector-17, Rohini, Delhi-42. Its shifting to new campus has added the dimension of research and caused innovations in plenty, which has received high national and international acclaim. As a Delhi Technological University it has the desired autonomy to excel and shape itself as a world class Technological University.

3. Highlights of Major Achievements during the past years:

i. DCE which is now DTU has provided to the nation around 33,000 engineering graduates and postgraduates who have excelled at home and abroad. Many of them have attained positions of high responsibility in government as well as in the corporate world. In addition, 2400 postgraduates and 75 PhDs have been provided by DCE faculty during the past years.

ii. The long list of distinguished alumni of DCE has earned their alma mater a reputation of being one of the premier institutions in the country recognized throughout the world for its academic and professional excellence. Some of the distinguished alumni of DCE are:

- Shri Vinod Dham, the Father of Pentium Chip.
- Shri Raj Soin, Chairman of Soin International and a highly successful Industrialist in USA.
- Shri K.L. Chugh, Chairman Emeritus, ITC Ltd.
- Shri Pramod Haque, one of the world's greatest venture capitalist.
- Shri A.K. Puri, former CMD of BHEL.
- Shri Ashwani Kumar, CMD, Bharat Electronics Ltd.
- Shri Ashok K. Baweja, 1970 Elec, Former Chairman, Hindustan Aeronautics Ltd.

- Shri A.N. Singh, Shri Janak Bhasin and Shri Kishan Swaroop, all three rose to the level of Chairman of Central Electricity Authority.
- Lt. General K.K. Mehra, Former Director General of EME.
- Prof. Bhuvnesh Goswami, Distinguished Alumni Professor Clemson Univ. USA.
- Prof. D.Y. Goswami, Distinguished Professor at University of Florida, USA.
- Shri Durga D. Agarwal, President, Piping Tech. & Product Inc., USA.
- Sanjeev Ahuja, Chairman, Orange SA.
- Yogesh Sud, 1969 Mech, NASA Gold Medalist Scientist.
- Dr. Krishan Kumar, Advisor-Engineering, Maruti Udyog Ltd.
- Shri Anil K. Sardana, MD, Tata Power.
- Shri Arun Jain, Chairman Polaris Software India.
- Shri C.Y. Pal, Non Executive Chairman Cadbury India
- Shri Amul and Ms. Goldie Gabrani, Founders of Tecpro Systems Ltd.
- Shri Srikant Gokhale, CEO, The Mobile Store
- Shri Suryakant, Sr. Vice President and Head, TCS America
- Shri Satpal Goel, Eminent Management Consultant
- Shri Sharad Sharma, Former CEO Yahoo India
- Shri N. Sivasailan, IAS,MD Bangalore Metro
- Shri A.K. Datt, CMD of Bharat Electronics Ltd.
- Dr. V.K. Mahana, former Director, UPSC
- Shri Satish Kumar,Director (Electrical), Delhi Metro Rail Corporation
- Shri S.K. Wij, former Member Railway Board and Chairman Indian Building Congress.
- Shri Karnal Singh, I.P.S., Jt. Commissioner of Police, Delhi.
- Shri Arun Goel, IAS, Ministry of Finance, GoI.
- Shri. Suresh Raheja, Managing Director, Raheja Associates
- Shri P.K. Adhlakha, Eminent Architect, Adlakha Associates Pvt. Ltd.
- And many more.

3.1 Campus Placements of Students:

Campus placement of graduating students of this institution has always been very high. A large number of leading industries and organizations visit the campus each year for campus placement. The batch graduating in 2012, has received 725 offers from highly reputed 165 industries / organisations which visited DTU campus during the academic year 2011-12. The companies which visited DTU this year included EPIC, Microsoft, Deloitte, Samsung, Yahoo, C-Dot, TCS, Wipro, Alstom, TRAI, IOCL, Maruti, Indian Airforce, Mahindra, CISCO, L&T, NTPC, TATA Steel, HPCL, IBM and many more. During the last few years, our graduates have also received excellent higher educational opportunities in world class Universities such as Stanford, Oxford, Cambridge, MIT, Harvard, Georgia Tech, Carnegie Mellon. DCE as DTU thus continues to surpass the benchmark of its past achievements now that it has the freedom to excel as a Technological University.

DTU continues to remain as one of the most highly sought-after technological institution in the country for admissions to is 15 UG programs, 17 M.Tech programs and MBA in Supply Chain Management, Knowledge and Innovation Management and Info-System Management. During the year 2011-12 for 1218 seats in B.Tech. around 11,000 had registered for admission through online counselling. Likewise our 359 PG seats the University had received around 3000 applications. This year

3.2 Research and Innovations @ DTU:

i. A Centre of Relevance and Excellence in Optical Fiber and Optical Communications has already been established under joint sponsorship of TIFAC-CORE, the Department of Science and Technology, Government of India and Government of N.C.T. of Delhi. Major areas of research undertaken by the centre includes Photonic Crystal Fibre, Nano-scale Optical Devices, Design and Development of Dense Wavelength Division Multiplex Optical Communication System (DWDM). The centre has emerged as a major hub for synergy between science and engineering and for promotion of international collaborations for R&D in the area of Photonic Crystal Devices with University of Glasgow, UK and Hokkaido University, Japan.

ii. A strong material science research group has been created at the erstwhile DCE involving applied Physics and Polymer Science and Chemical Technology. The group has carried out cutting edge research in the areas of Ferro-electric materials, Conducting Polymers and Adhesives, Ion-exchange Materials and Nano Composites. The group has established collaborative R&D with Tokyo Institute of Technology, Japan.

iii. DTU has a strong Bio-Diesel Research Group which has carried out commendable research and development work in the area of Biodiesel Reactor Design, offered consultancy to the World Bank and has taken major development work for neat Biodiesel Generator Development with YANMAR of Japan. The group has also developed Algae Bio-diesel Reactor and has promoted energy farming.

iv. DTU has established facilities for info-security research under the Ministry of Communication and Information Technology, Government of India. A major R&D project on Broadband Over Power Lines has been taken up by DTU in collaboration with BSNL,

NDPL and Ministry of ICT. Under this project the DTU campus has been tested for installation of Broadband Over Power Lines during the Pilot Program of the project.

v. EDUSAT Studio cum class-room has also been established with joint support of ISRO and Govt. of Delhi, the facility is connected to 51 institutions in the NCT of Delhi. The facility is being currently utilized for transmission of live lectures to the connected institutions and for broadcast of recorded expert lectures, seminars and workshops.

vi. The first Hybrid Car of India was designed and developed by the student team of this institution in the year 2005 which has won the first place in the student category in the Green Car competition in US.

vii. The first Supermileage Vehicle of India was designed and developed by interdisciplinary teams of students of this institution in the year 2005 which has won the Best Design Award at the world competition organized by the SAE international at Marshall Michigan, USA-2005.

viii. The UG interdisciplinary student teams have designed and developed a number of new innovative products which have competed in the international competitions in US, UK, South Africa, Australia and Singapore. These include, the first Formula Student Car of India which won the FISITA Best Design Endeavour Award from SAE International in UK, India's first All Terrain Vehicle, Mini Baja was also designed and developed by the student team here. The ATV has participated in international competitions in South Africa and India.

ix. The Most Innovative Design of the UAV, Unmanned Aerial Vehicle was also designed and developed by the student team which has received the Most Innovative Design Award – 2006 in International Competition at Georgia, US organized by AUVS International.

x. The AUV, Robotic Submarine has received the Most Improved Design Award – 2008 at San Diego, USA in International competition organized by AUVSI.

xi. The Moon Buggy designed and developed by the UG student team has received the Best Initial Design Award – 2008 from NASA in an international competition organized in US jointly by NASA and American Institute of Aeronautics and Astronautics, AIAA.

xii. The UG Student Team has also developed a Liquid Nitrogen Powered Engine and a Car in collaboration with the Nuclear Science Centre, Delhi.

xiii. The UG Student Team has also designed and developed an Unmanned Aircraft equipped with surveillance capabilities and won The Directors Award at the international AUVSI competition in 2009 and Aurther Reyes Safety Award in 2011.

xiv. The Next Generation DTU Unmanned Aircraft System has also been successfully designed and developed under the Sponsored Research from Lockheed Martin, USA. The Team DTU AUS participated in the Association for Unmanned Vehicle Systems International Competition at Maryland USA and received a cash prize of $3300 and was placed 7th from among 30 teams worldwide.

xv. The DTU Robotic Shera designed and developed by DTU Students was a major draw during the Commonwealth Games 2010 and also later at the India International Trade Fair, the Delhi Pavilion in November 2010.

xvi. The DTU Innovation “Dhobi”, the cycle operated Washing Machine earned first prize at the Innovation Contest organised by CII at Pragati Maidan in February 2011. Sh. Vishma Rai the team leader received high appreciation for his low cost innovated product design.

xvii. The first Solar Car of India DTU “Solaris” has also been designed and developed by the student team of DTU which has participated in the World Solar Challenge in Australia in 2011. This was the only entry from India in this world competition which was participated by a number of world class universities including Stanford, MIT, Cambridge University, Tokai University of Japan, University of Michigan among others. The DTU Solaris was among the top 37 teams which could reach to the final destination within the stipulated period.

xviii. Currently a good number of student teams are working on innovative projects relating to new and emerging areas of science technology including Organic Solar Cell Development, Clean Energy Technologies, Low Cost Water Recycling Technologies, Conducting Polymers, Nano-Composites and Smart Materials, Robotics and Smart Hovercrafts, etc.