
INSTITUTE OF CHEMICAL TECHNOLOGY
(Deemed-to-be University under Section 3 of the UGC Act 1956)
HANDBOOK 2010-11
www.ictmumbai.edu.in

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INSTITUTE OF CHEMICAL TECHNOLOGY

(Deemed-to-be University under Section 3 of the UGC Act 1956)

GRADE 'A' BY MHRD
NBA ACCREDITATION FOR ALL COURSES

The Only State Funded Deemed University in India
World Renowned for Quality of Education, Research and Connectivity with Industry
University Par Excellence

HANDBOOK: 2010-2011

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E-mail: admission@ictmumbai.edu.in
www.ictmumbai.edu.in; www.udct.org

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IMPORTANT INSTRUCTIONS

1. The fees for a single form to a particular course including the Handbook are as follows. Candidates desirous of applying for additional courses must buy relevant form by paying additional fee at the same rate.

Course	**Open Category**		**Backward Class Category****	
	At Counter	By Post ***	At Counter	By Post ***
Undergraduate	Rs.900/-	Rs.950/-	Rs.450/-	Rs.500/-
Postgraduate	Rs.1000/-	Rs.1050/-	Rs.500/-	Rs.550/-

2. * For Foreign National Students, the fee is US $ 50 or in equivalent Indian currency.

3. ** **Fees for Backward class candidates are a**pplicable to the candidates from the State of Maharashtra only.

4. ***To obtain the admission form and Handbook by post, the payment should be made only by a Pay Order/DD drawn in favour of ''**The Director, Institute of Chemical Technology'', payable at Mumbai**. **Payment by cheque or money order will not be accepted**. A copy of the Handbook along with the admission form will be sent by post '**Under Certificate of Posting'** only.

5. The handbook along with the admission form will also be available at the ICT Accounts Section by payment in cash.

6. The admission form may be downloaded from the ICT website, www.ictmumbai.edu.in OR www.udct.org. The duly filled form may be sent to the ICT along with the Pay Order/DD of the amount equal to the amount mentioned above. ICT is not responsible for any postal delay.

7. Anybody, not belonging to the backward class category, found buying application form under that category will be disqualified.

8. **Please read the handbook carefully before filling the admission form.**

9. **Changes if any, in the contents of this printed copy, shall appear in the handbook displayed on** www.ictmumbai.edu.in or www.udct.org

10. **Merit list/ schedule of admission rounds for AIEEE-based admissions and the schedule of institutional tests for PG and Ph D courses will be displayed only on** www.ictmumbai.edu.in or www.udct.org **and ICT notice board. No individual correspondence will be made in this regard. It is the responsibility of the candidates to visit the webpage regularly.**

11. Pleading ignorance about information displayed on the web shall not be entertained.

12. Admission to hostel is on the First-cum-First- Served basis and as per the quota for various courses.

13. Merit is the only criterion for admission to any course and seats are reserved as per Government of Maharashtra's directives in this connection.

14. There are no agencies operating on behalf of the institute and there is no capitation fee or donation in regard of admissions. Be careful of any persons claiming to offer admission to the ICT or knowing authorities. No extraneous considerations should be brought to exert pressure on the admissions committee. It will be strictly dealt with. We take pride in fairness and openness in admissions and all matters and give justice to one and all.

15. All correspondence regarding admissions should be addressed to the Registrar, Institute of Chemical Technology, Nathalal Parekh Marg, Matunga, Mumbai-400019 (admission@ictmumbai.edu.in; +91-22-3361-1111/2222; Fax: +91-22-3361-1020).

APPROACH ROUTES TO ICT AND LANDMARKS

A location map of the ICT, available on Google maps, is provided on page iii and the various access routes are described from nearby railway stations, bus stops and the airport.

Landmarks in the vicinity of ICT

The VJTI (Veermata Jijabai Technological Institute) (Backside), Khalsa College, Don Bosco Church are well-known landmarks adjacent to the ICT on the Nathalal Parekh Marg. The Main Security Hub of ICT prominently depicts its name both in English and Devanagari scripts and cannot be missed**.** The main building is constructed of a yellowish Malad stone, surrounded by excellent greenery and beautiful gardens. The ICT campus is one of the most picturesque and quiet place. It is located on a 16-acre plot, surrounded by Nathalal Parekh Marg (front side), Puranmal Singhani Marg (between Don Bosco and ICT), R.A. Kidwai Marg (backside) and P.B. Sule Marg.

Most of the long distance trains on the Central and Western Railways halt at the Dadar Railway Station (see routes **D** and **E** below). All buses operated by the Maharashtra State Road Transport Corporation and private carriers stop at Dadar bus station on Dr Babasaheb Ambedkar Road near Jagannath Shankarshet Flyover and Khodadad Circle (or popularly called Dadar TT).

A. From Matunga Railway Station (Central Railway-Main Line)

The ICT can be reached in about 15 minutes on foot following L. Nappu Road, Bhandarkar Road, Maheshwari Udyan circle, Don Bosco Church and High School.

B. From Wadala Railway Station (Harbour Line of Central Railway)

It is about 12 minutes walk. Exit on the western gate on the Rafi Ahmed Kidwai Road; walk straight on D.S.Barato Road in front of the station to Wadala Church and turn right on Nathalal Parekh Road (backside of VJTI). It will take about 5 minutes to reach the ICT.

C. From King's Circle Railway Station (Harbour Line of Central Railway)

Get down on Dr. Babasaheb Ambedkar Road and walk southward towards Arora Cinema and then along Nathalal Parekh Road towards Don Bosco Curch, Don Bosco School and ICT. It is about 10 minutes walk.

D. From Dadar Railway Station (Central Railway)

Walk towards Dr. Babasaheb Ambedkar Road via Pritam Hotel. Take BEST Bus No.64 to Maheshwari Udyan and get down at the ICT / Don Bosco bus stop exactly opposite ICT's main gate.

E. From Dadar Railway Station (Western Railway)

Exit on the western gate to Senapati Bapat Marg and walk on Ranade road and N.C. Kelkar Road to Plaza Cinema. Board on Bus No. 169 towards Pratiksha Nagar and alight at the ICT / Don Bosco bus stop exactly opposite ICT's main gate. You can also get on to Bus No. 63 to Chunabhatti and get down at the Bus stop called Gate No 4. Walk along the R.A. Kidwai Marg and enter through the rear gate for the ICT hostels.

F. From Chhatrapati Shivaji Terminus (CST): Main Central Railway Station

Board a Harbour train to Wadala station and follow route **B.** Else board a Main line train to Matunga Central Station and follow route **A**.

G. From Kurla Terminus Railway Station

Board a Harbour train to Wadala station and follow route **B.** Else board the Main line train to Matunga Central Station and follow route **A**.

I. From Chhatrapati Shivaji Internation Airport - Domestic Terminal, Santacruz (East)

Rent either a pre-paid taxi or hire a taxi for Maheshwari Udyan/King's Circle, Don Bosco and ICT. The maximum fare for a regular taxi should be around Rs. 100, without any traffic jams. It takes about 30-40 minutes.

ADMISSION PROCEDURES AND HIGHLIGHTS

1. Admission to any undergraduate (UG), postgraduate (PG) and Ph.D. courses at the ICT is offered on the basis of merit alone, which is decided according to the marks secured by the candidates at the qualifying examinations and the entrance tests.

2. **Admissions to B.Chem.Eng. and B.Tech. courses** are of three different types as given in (**a), (b)** and **(c)** as follows. The details of admission criteria are provided in **Section 8.**

a) All India Level (all States and Union Territories):
AIEEE 2010 score based seats *(30% of total sanctioned intake)*

These admissions will be processed by and at the ICT. Candidates must apply separately at the ICT in prescribed forms and attend the counselling rounds for admission at the ICT as per the instructions displayed on the ICT website www.ictmumbai.edu.in, OR, www.udct.org and the notice-board.

b) State of Maharashtra Level: MHT-CET 2010 score based seats
(70% of total sanctioned intake)

These admissions will be processed by and at the College of Engineering Pune (COEP), Shivaji Nagar, Wellesley Road, Pune, Maharashtra 411005 (Tel:+91-20-25507000; http://www.coep.org.in/). Candidates must apply separately at any of the autonomous institutes and ICT. A list of Application Receiving Centres (ARC), for all autonomous institutes including the ICT is provided by the COEP in a separate brochure published by COEP. The candidate must apply independently in a prescribed form and attend the counselling rounds for admission at the COEP; the details of which are provided by COEP in the said brochure. The ICT does not entertain any queries regarding this procedure.

c) Foreign National (FN)/ Person of Indian Origin (PIO)/ Gulf seats
(15% seats over and above the total sanctioned intake of a) and b) taken together)

These seats are available with a break-up as 10% for Foreign Nationals/ Foreign Students/ Persons of Indian Origin and 5% for Children of Indian workers in the Gulf countries. These admissions will be done by and at the COEP. Eligible candidates seeking admission to the ICT must apply separately to the Director, College of Engineering, Wellesly Road, Shivaji Nagar, Pune- 411 005 and attend the counselling round for admission at the COEP as per the instructions given on their website www.coep.org.in. The ICT does not entertain any queries regarding this procedure.

3. Admissions to all seats for the B. Pharm. course are based on MHT-CET 2010 score (PCB),

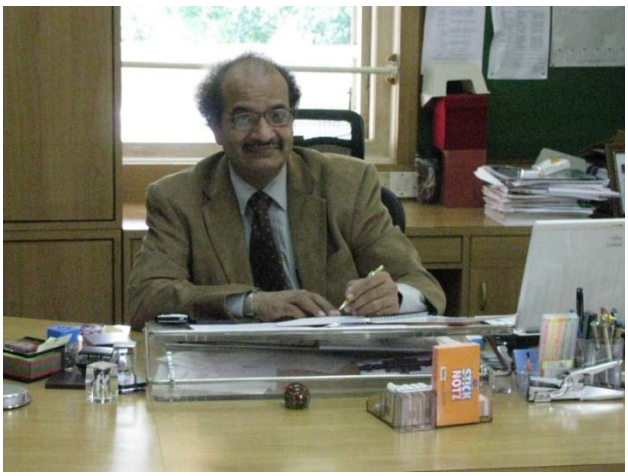
These seats will be filled up through the CAP rounds conducted by the Directorate of Technical Education (DTE), Maharashtra State and these instructions will be available on their website: www.dte.org.in.

4. The cut-off marks for admissions processed by COEP last year for the B. Chem. Eng. and B. Tech. are given at http://www.coep.org.in/admdocs/fybtech/cet/cutoff% 202009-10.html.

5. For admission to the PG courses, the candidates must qualify GATE/GPAT/NET/JRF, etc., as well as the ICT entrance tests, as applicable. Merely having a GATE/GPAT score card does not make the candidate eligible for admission but a clear pass with minimum score is required. Anybody hiding such information will be automatically disqualified.
6. For all Ph.D. admissions, there will be entrance tests and interviews of short listed candidates as per UGC norms. This schedule will typically spread on two days and will be given on the homepage.
7. A candidate, who fails to accept an offer of admission to any of the courses, made by the Institute, for whatever reasons, forfeits his/her claim for admission for that academic year (1st July to 30th June) and the seat may be offered to the next eligible candidate in order of merit. The acceptance of the offer implies payment of the prescribed fees and deposit along with relevant documents by the date specified in the offer letter.

8. The Institute shall not enter into any correspondence with the candidates in the matter related to admission, such as incomplete forms, non-submission of necessary documents in given time period, non-submission of pay order/ demand draft of necessary application fees along with filled application form, absenteeism at the institutional tests for entrance examination for PG and Ph D programmes or interviews, for any reason, non-acceptance of the offer of admission to any of the courses in given time period, etc.
9. No age limit is prescribed for admission to the ICT.
10. The decision of the Director, ICT, shall be final in the case of any dispute about admission.

PROLOGUE



Professor Dr. G. D. Yadav

B.Chem. Eng., Ph.D.(Tech.), F.N.A., F.N.A.Sc.,
Ch.E., F.I.Chem.E.(UK), F.M.A.Sc., F.I.I.Ch.E., F.I.C.S.

Director (Vice-Chancellor) and R. T. Mody Distinguished Professor

Jagdish Chandra Bose National Fellow (DST-GOI)

ARE YOU POISED TO JOIN ICT?

Dear Student,

On behalf of the Institute of Chemical Technology (ICT), I offer you my most heartfelt congratulations on your sterling performance in the recent examination. Like an explorer on the frontiers, you now stand peering at the horizon, wondering about the prospects that lie ahead for you. Although exhilarating, it could also be unnerving; and many of you may have sought the counsel of your elders to guide you through these unfamiliar waters. Regardless of the path that you ultimately choose, I am certain that success will be your companion and in due course, I hope, you will be successful in your endeavours. As the Director of this institute, I sincerely hope that your credentials and merit fetch you admission to the desired course here and ultimately you would be our proud alumnus, like scores of others who have brought laurels to us.

Genesis and Growth

Established 77 years ago with the noble intention of advancing India's knowledge reserves in chemical science and technology, the Institute has grown to become **a premier (deemed) university devoted to education, training, research and industrial collaboration in chemical engineering, chemical technology, applied chemistry, pharmacy, biotechnology and bio-processing**. The list of achievements of this great centre of learning is voluminous and ever since its inception, the Institute has been a fertile breeding ground for some of India's most gifted minds. **The Institute's alumni have distinguished themselves in all walks of life, be it in industry, academia, government or public service in India as well as abroad**. Some of the rare international honours have been bestowed upon them and some have been role models, serving the nation.

When compared with a large number of engineering and technological institutes, which mushroomed during past 2-3 decades, the genesis of ICT, popularly called UDCT/UICT until recently, is beyond fathom and imagination. Its low profile in common man's vocabulary is both bane and benefit. Even our neighbours have never known what we do or what we stand for - *for them it is a 'dagdi' (stone) college or a hospital, at the most*; they are intrigued and bewildered whereas it is a benefit for us from the academic view point since we continue to work quietly, sans the typical college atmosphere, impart high class education, and conduct research par excellence, having a direct relevance to solving societal problems and adding to quality of life. Philanthropy, visionary leadership of the University of Bombay (now Mumbai), active participation of the industry to create endowments for faculty positions and laboratories, and the support of the then Governor of the Province of Bombay, which extended to almost 10% of India, led to the foundation of the University Department of Chemical Technology on October 1, 1933. The Vice Chancellor Sir Vithal Chandavarkar, an industrialist, educationist and proponent of textile industry, put all his valor behind the fledgling UDCT and assisted in creating a far-sighted roadmap. The Committee constituted by the University for establishing the UDCT was chaired by none other than the great civil engineer Bharat Ratna Sir M. Visvesaraya, and comprised of, among others, such stalwarts as Sir K.M. Munshi, the Founder of Bharatiya Vidya Bhavan, and Shri Kapilram Vakil, a doyen of inorganic chemical industry in India. Research was incorporated as an integral part of the UDCT right from inception, and the first batch of students for the B. Sc. (Tech.)- a two-year post-B Sc. Course, with Textile Chemistry and Chemical Engineering as the branches, was admitted on 4th August, 1934. With the growth in demands for chemicals, drugs, polymers and materials after World War II, other branches of chemical technology embracing Foods and Drugs, Oils, Plastics, Paints, Varnishes, Intermediates and Dyes, Pharmaceuticals and Fine Chemicals, were added and these courses were later reorganized to give a distinct flavour to all branches of Chemical Technology. Birth of several industries was a direct result of UDCTs' activities. In 1951, Chemical Engineering branched out as a post-Inter Science four-year degree programme, B. Chem. Eng., which has been the most sought after ever since. The B.Sc. (Tech.) courses were converted into post-B.Sc. three-year courses in 1966 and finally further converted into B. Tech. programmes, which are post-HSSC (12th Grade) in 1998.

The ICT is a vibrant and invigorating institute, a symbiosis of academic excellence, culture, ethos, value systems, and an architect of new and useful knowledge, standing tall among all institutes of national importance.

Deemed University Status

The UDCT grew in stature over the years and was granted partial autonomy by the University of Mumbai in 1985, which was taken to the next echelon under the concept of autonomy propagated by the University Grants Commission (UGC). Financial, academic and administrative autonomy was conferred during the Diamond Jubilee in 1993-1994 for a period of five years, which was extended for next 5 years in 1998, followed by another extension of five years. The University thought it appropriate to rename it as the University of Mumbai Institute of Chemical Technology (UICT) on 26 January 2002 to distinguish its grander academic programmes and accomplishments surpassing those of a typical University department. The UICT was granted full autonomy in June 2004 by the State of Maharashtra under the Technical Education Quality Improvement Programme (TEQIP) of the World Bank with complete assistance of the University. Upon a strong recommendation of the UGC through a peer review process, the autonomous institute status was finally converted in to a Deemed-to-be-University by the Ministry of Human Resource Development (MHRD), Govt. of India, on 12 September 2008; a strong recommendation was made that the ICT should be fully supported and its activities strengthened by the Government and the new (deemed) University should commence its functioning from academic year 2009-10. A grand ceremony was launched to mark this occasion on 21st May, 2009 with announcement of the new Director (Vice Chancellor), which is occupied by yours truly. It is a unique Deemed University, with unparallel record, funded by the State of Maharashtra, receiving various grants and projects from the UGC, DAE, DBT, DST, CSIR, ICMR, MFC, MOEF and other agencies including Indian and foreign industries. Several Centres of Excellence have been created through the support of central agencies, which have been mainly responsible to nurture quality in education and research. In a recent review of all deemed universities in the country, **the MHRD granted A grade to the ICT,** which is the only one in the State of Maharashtra along with three institutes – TIFR, TISS and CFRI, all which are funded by the Central Government ministries.

Engineering Challenges and Relevance of Courses

If you are admitted to this grand institution, which is strictly based on merit, it is assured that the education you receive will be of the highest order and, in the years to come, will place you at the cutting-edge of science and technology where you will develop products and services that greatly improve the lives of those around you. Do you wonder as to what relevance these courses have vis-a-via 'white collared' engineering programmes and are these courses as rewarding? No virtual world can be created without materials produced by niche and eco-friendly technologies. We all leave in the world of chemicals, molecules, if you may, and products, which are transformed to give quality and longevity to life. In this context, let me direct your attention to the "Grand Challenges", as they are referred to by the US Academy of Engineering, and which include:

1. **Advancing health informatics**
2. **Engineering better medicines**
3. **Making solar energy more affordable**
4. **Providing access to clean water**
5. **Reverse-engineering the human brain**
6. Advancing personal learning
7. **Engineering tools for scientific discovery**
8. **Managing the nitrogen cycle**
9. **Providing clean energy from fusion**
10. **Securing cyberspace**
11. **Developing new methods of carbon sequestration**
12. **Enhancing virtual reality**
13. **Preventing nuclear terror**
14. **Restoring and improving urban infrastructure**

All these challenges are uniquely physicochemical in nature and **an education in chemical engineering or chemical technology particularly empowers you** to tackle these herculean tasks. The technologies related to producing advanced materials, clean energy generation and storage, medicines, high-end drugs, neutraceuticals, food products, fertilizers, agrochemicals, polymers, surface coating materials, laser dyes, colorants, pigments, adhesives, textiles, fibres, oleochemicals, surfactants, lubricants, water treatment and purification, air pollution abatement, bio-processing, downstream processing and a myriad of related issues involve high degree of science and engineering. How are we going to feed billions of people, remain in harmony with nature, and develop sustainable processes and technology? What will be their energy and material needs? Life expectancy is getting extended. Addressing these challenges requires a multifaceted effort that traverses the fields of chemistry, engineering, biotechnology, information technology and nanotechnology, engineering mathematics, environmental engineering and the curriculum and courses offered at the Institute have judiciously incorporated subjects from all these disciplines. Our courses directly allow being on the forefront of these rewarding careers.

More importantly, you will be **instructed by some of the nation's most eminent scientists and engineers** who themselves are at the vanguard of research in these fields, thereby ensuring that the knowledge passed onto you is pertinent, real experience and updated. Teaching without research is barren and our planners thus were visionary in bringing research component in our teaching to solve real problems. These researcher-cum-teachers are always on their toes and work longer hours to be on the forefront. This invigorating atmosphere is witnessed in my institute. There is no nine-to-five culture; working extended hours is a habit here imbibed by students and teachers alike. Besides, a large number of the ICT faculty acts as consultants/advisors to industry with a strict condition that no institutional material facility is used for these industrial consultations. Research projects investigated in our labs are of both academic sanctity and industrial relevance. So the proverbial '*Practise what you preach*' is indeed executed by the faculty; many of them actually earn their salaries through the one-third share of the consultation fees paid to the institute.

National and International Accolades and Ranking

The Institute's **strong multi-disciplinary research programmes** have helped create a unique learning environment that places great emphasis on synergizing knowledge from several sources to develop creative and effective solutions to many of the problems faced in industry and society and it this eclectic combination of a rigorous and up-to-date curriculum, excellent laboratory and demonstration facilities, world-renowned faculty and a conducive learning environment brimming with the next generation of great minds that sets the Institute apart from its competitors. The ICT is held in high esteem by other premier institutes, industry and government for many of its unique characteristics and achievements. All of them

deem that ICT is different; distinctly different; incredibly different! They wonder how a small university department, with poor funding has managed to excel and that too without any public glare or publicity**? The magic mantra for our success is a concoction of dedicated faculty, meritorious students, admirable support staff, distinguished alumni, strong connectivity with industry, assistance to all needy students, a grand alumni association and above all relevance of our courses in wealth creation. It is unsurprising thus that the Institute of Chemical Technology is ranked as the best chemical engineering and chemical technology teaching and research institute in India and among the 10 top institutions in the world** in an annual ranking of chemical engineering programs conducted by the Georgia Institute of Technology, USA. Different authorities have duly recognized our spectacular performance over the years. The P. Rama Rao Committee appointed by the AICTE as well as the P. Rama Rao IIT Review Committee has recognized the ICT as the best post-graduate technical educational centre in India. The Indian Institute of Management, Bangalore, after surveying a large number of industries in the country, identified the ICT as the best on the basis of its contribution to the development of chemical and pharmaceutical industry. The Directorate of Technical Education, Government of Maharashtra, has awarded Grade 'A^{+}' to the Institute. The National Board of Accreditation (NBA) of the AICTE has accredited all Bachelors and Masters Courses taught by us in February 2008. Very recently the National Project Implementation Unit (A Govt. of India Unit for World Bank Assisted Project for Technical education) commissioned a study on 'Impact Evaluation of Technical Education Quality Improvement Program (TEQIP – I)', covering assessment of 127 institutions in 13 states across India and it is most gratifying that **the ICT has been rated as number one institute**. The number of peer-reviewed quality research publications and citations emanating from the ICT is also the highest in the country. There are over 26,000 citations for publications in high impact factor journals during last 10 years; three faculties have more than 3000 citations each and all of them are fellows of Indian National Science Academy, the most prestigious Science Academy in the country. The recent survey in Current Science (Vol. *97 (3) 303-6 Aug. 10,2009*) places ICT as number 13 in terms of total number of papers, among all elite institutes such as IITs, IISc and NITs, all which have much larger faculty, research students, branches of studies and liberal funding by the Central government. **Indeed, the ICT, with a meager budget, is number one in terms of publications and citations per faculty in the country and in world as well.** The research funding received by ICT is through a highly competitive peer reviewed processes, for which again all these elite institutes are in the race. These statistics are highlighted to demonstrate the uniqueness of ICT.

Quality of Faculty

Except a miniscule few, all members of faculty have doctoral degrees to their credit; several of them have been trained abroad in prestigious institutes after their Ph.D.s, and almost all of them are engaged in research. Over 80% of faculties have been active consultants to industry. Those without Ph.D. are also registered for Ph.D.s. The faculty is highly accomplished, with multi-disciplinary interests and decorated with national and international awards and honours, having live connections with industry. These include: Padma awards of Government of India, Fellowship Royal Society, London, Fellowship of Royal Academy of Engineering, UK, Foreign Associateship of US National Academy of Engineering, Fellowship of TWAS- The Academy of the Developing World, Trieste, Jagdish Chandra Bose National Fellowship, S.S. Bhatnagar Prizes of CSIR, Young Scientist medals of the Indian National Science Academy, Fellowship of Indian National Science Academy (INSA), Fellowships of the Indian Academy of Sciences, Fellowship of National Academy of Sciences, India (NASI), Fellowship of Indian National Academy of Engineering, Young Engineer award of Indian National Academy of Engineering, Gold Medal of the Society of Dyers & Colourists, UK, etc. Currently three faculty members of Chemical Engineering are fellows of INSA, which is a unique distinction in the country. The honour of rejuvenating and heading the IIChE in 2001 came to the author whe a record number of 51 national awards were created through endowments. All major awards of the Indian Institute of Chemical Engineers – Hindustan Lever Award, Herdillia Award, HL Roy Founders Lecturers, several Chemcon Distinguished Speaker Awards, Amar Dyechem Award, A.V. Ramarao Best Ph.D. thesis award, and awards and honours from other professional bodies have been bestowed on the ICT faculty. The Home Paper/Design project awards for chemical engineering have been bagged consistently since 1972 every year except one and it could be a record.

Prof. M.M. Sharma, an alumnus and former Director of ICT, was awarded Padma Vibhushan by the President of Indian in 2001, having already decorated with Padma Bhushan in 1987; he was the only serving faculty in Mumbai University then

to be so honoured for his work in the ICT and services to the profession. He also happened to be the second engineer from India, and first chemical engineer, to be elected to the prestigious fellowship of Royal Society. Another record was created when the Chairman of our Board of Governors and the highly accomplished Dr R.A. Mashelkar was elected to this fellowship. Dr Mashelkar's Ph D in chemical engineering is from the ICT and he is a public figure.

Our faculty and alumni have been presidents of several esteemed professional bodies such as Indian Institute of Chemical Engineers, Association of Food Scientists and Technologists, Oil Technologists Association, Colour Society; some of the regional centres of such bodies have been functioning from the premises of our institute.

Culture of Ph.D.s

The first ever Ph.D. degree in Engineering and Technology stream in India was awarded by the ICT in 1941; it was Dr Kudwa, a chemical engineer, who specialized in Polymers and Paints and was a revered paint technologist. Since then there is a continuous flow of doctorates and the UGC used to grant us 19 Ph D (Tech) fellowships per year up to 2005-06. During 1990s, the number of Ph Ds produced increased to about 40 per year. For several years the output of doctorates from the ICT remained about 55 per year, which is the highest in the country in Chemical Science, Engineering and Technology. During 2008-09, 104 Ph.D.s students were admitted whereas during 2009-10, a record of 161 full-time Ph D students and 138 Master's students, all with fellowships, were admitted. This will certainly place ICT in an enviable position as a research institute. **It has been our policy now that no PG or Ph D student will be admitted without fellowships.** This has been possible due to the award of meritorious fellowships under UGC-SAP, various Centres, individual research grants, industrial projects and endowments. We are pro-active and would like to attract talented students and teachers from various engineering colleges for the Ph.D. programmes under the UGC Networking Resource Centre in Chemical Engineering. The AICTE has now identified us for QIP for teachers. India needs a lot of Ph Ds in engineering and technology to remain at the forefront to be a developed nation; ICT's role is therefore of grandeur. Several colleges with teachers without Ph.D. will be detrimental for future of education. So, if you fall into this teacher's category, ICT should be on your radar. Further, those of you who fall into the category of 'Single Child–Girl', there is a scheme of super-numery Ph.D. fellowships in all our UGC SAP departments. The UGC has also introduced Rajiv Gandhi Fellowships for SC/ST, and Minority Students Fellowships. These fellowships amount to Rs 10,000 p.m. for non-GATE and Rs. 14,000 p.m.+30% HRA for GATE qualified students. Those who are desirous of post-doctoral fellowship should apply for the D.S. Kothari Fellowships of UGC. More information could be gathered from the UGC website.

Centres of Excellence and Courses

Upon achieving the deemed university status, we have revised all our curricula; a system of continuous evaluation with 60% of marks during the semester and 40% at the final examination has been adopted with CGPA; the repeat final examination is held within a month. There are tutorials for both UG and PG students.

All Ph.D. students with fellowships are mandatorily required to assist teachers in running labs, tutorials and grading of tests. Course work has been introduced at Ph.D. level. We offer 24 different programmes in the ICT with almost 1700 students on our roll. A large number of Ph.D. (Science) students also are supervised by faculty chemical engineering and chemical technology, in inter-disciplinary areas. If you are seeking admissions for a higher degree, you would be interested in knowing, if there are fellowships and facilities created in the institute to generate advanced knowledge.

The ICT functions through 11 full-fledged departments and several centres of excellence, which have a long track record of running quality courses at Master's and doctoral level:

1. Department of Chemical Engineering (1933)
2. Department of Dyestuff Technology (1944)
3. Department of Fibres and Textiles Processing Technology (1933)
4. Department of Food Engineering and Technology (1943)
5. Department of Oils, Oleochemicals and Surfactants Technology (1943)
6. Department of Pharmaceutical Sciences and Technology (1943)

7. Department of Polymer and Surface Engineering (1946) (Department of Polymer Engineering and Technology and Department of Surface Coating Technology were merged into one in March 2009)
8. Department of Chemistry (1952)
9. Department of Physics (1966)
10. Department of Mathematics (1966)
11. Department of General Engineering (1952)

Every major department of the ICT is recognized by the UGC under its Special Assistance Programmes (SAP) such as COSIST, DRS, DSA and Centre of Advanced Studies (CAS), which are as follows:

1. CAS in Physico-Chemical Aspects in Textiles, Fibres, Dyes, and Polymers (since 1963, currently in Phase VII)
2. CAS in Chemical Engineering (since 1990, currently in Phase IV)
3. Networking Resource Centre in Chemical Engineering (since 2008)
4. CAS in Food Engineering and Technology (since 2008)
5. CAS in Pharmaceuticals Sciences and Technology (since 2009)
6. DRS for Department of Chemistry (2009)

Meritorious fellowships are accorded to all SAP departments every year, which range from 5-15 fellowships per SAP department, depending on their track record of research. The ICT has received 77 such fellowships from the UGC during 2009-10, and will continue to get them during 2010-11.

Under the University with Potential for Excellence (UPE) programme of the UGC, the University of Mumbai had received support for establishment of Centre for Green Technology at the Kalina campus, which was mainly based on ICT's contributions and this Centre is now run in a joint collaboration. Similarly the National Centre for Nanomaterials & Nanotechnology, established as part of Sesqui-centennial Celebrations of the University of Mumbai, is jointly run with ICT.

Centres of Excellence were established in Energy Engineering due to the initiative of Department of Atomic Energy (DAE) and Department of Biotechnology (DBT), with a specific mandate in view of the expertise and accomplishment of the ICT.

1. DAE-ICT Centre for Knowledge Based Engineering (CKBE) (2002)
2. DBT-ICT Centre for Energy Bio-sciences (2007)
3. ICT-DAE Centre for Chemical Engineering Education and Research (Both BARC and IGCAR, 2008)

Indeed, the ICT has earned maximum number of collaborative projects with DAE establishments and the DAE acknowledges ICT's contribution to solving real problems, which cover (a) Chemical Engineering, (b) Process Technology, (c) Bio-technology, and (d) Materials Technology. Provision for an intake of 20 Ph.D. fellowships per year is an important feature of this Centre. There is a frequent exchange of scientists and students, leading to mutual benefit. A new building housing academic and energy engineering is planned and its construction will start soon to accommodate the state-of-the art high-end material characterization and instrumental laboratories, lecture and seminar halls, CAD–CAM laboratory and Computer Centre, research laboratories, pilot scale equipment, testing facility and services for the laboratories. We have also signed an MOU with the Homi Bhabha National Institute (HBNI), which is a DAE's deemed university, for academic and research collaboration.

The ICT's innovative work in the area of biofuels and downstream processing, leading to commercialization, has been highly appreciated by the Department of Biotechnology (DBT), to establish the DBT-ICT Centre for Energy Biosciences, with induction of several faculties in bio area and Ph.D. fellowships. The modernized building and advanced equipment are a main source of attraction for visitors from abroad and industry. Very recently an MOU was signed with International Centre for Genetic Engineering and Biotechnology (ICGEB) to foster collaboration among faculty, provide opportunities for students, scientists to gain global experience and to facilitate the advancement of knowledge on the basis of reciprocity.

Under the Funding for Infrastructure in Science and Technology (FIST) programme of Department of Science and Technology (DST), Govt. of India, we have received infrastructural support, to build advanced instrumental facilities in Departments of Chemical Engineering (Phase-I and Phase-II), Fibres & Textile Processing Technology (Phase-I),Food Engineering and Technology (Phase-I), Pharmaceutical Sciences and Technology (Phase-I), Polymer and Surface Engineering (Phase-I).

The DST's PURSE programme had reviewed the research contributions of all universities in India and declared University of Mumbai as one of top universities; the contributions of ICT were overwhelming in research and we have received grant under this programme which will be utilized for renovation of library, e-library and creation databases useful for research and for benefit of chemical and allied industries. Grants have also been received from the AICTE under their various grants-in-aid schemes to remove obsolescence and promote research.

Over the years, because of the above mentioned programmes or schemes, which are highly competitive in nature, our laboratories are equipped with state-of-the-art instruments. Some of the sophisticated equipment which have been acquired and used continuously are: GC-MS, LC-MS, SEM, TEM, AFM, IC, FTIR, HP-TLC, HPLC, GC, XRD, DSC, DTA/TGA, AAS, Laser-Doppler anemometer,, image analysers, pore and particle size analyzers, computer workstations, and many others. Advanced instrumental facilities have been created under industry sponsored projects as well. These instruments are operated by research students themselves, giving them a hands-on-training; this practice is greatly appreciated by the funding agencies and industries where they get employment. A central analytical solutions laboratory to house modern high-end characterization equipment is being created.

All our UG students have to undergo a six-week in-plant training at the end of the third year in a manufacturing facility, for which handsome stipend is offered by the industry. The value of research at UG level is also recognized and every SAP department can accommodate a few second year students as summer research fellows. Several students from other institutes are also accommodated by individual departments including the Summer Fellowship programme of national academies of sciences, operated by the Indian Academy Sciences, Bangalore under the Fellows tutelage.

Culture of Endowments

Right from the foundation of the ICT in 1933, several endowments have been created, through munificent donations by philanthropists, industrials houses and alumni, for supporting maintenance of faculty positions, welfare of support staff, fellowships, visiting faculty, infrastructure, domestic and foreign travel, research, library, scholarships, infrastructure, gardens and emergency services. This is an outstanding attribute of the ICT. There are now 45 visiting faculty/fellowship endowments which have helped us immensely in attracting the best professionals to the Institute from all over the world. Visiting faculty interact with UG and PG students, faculty and alumni. The honoraria range from Rs. 5000 to 1.25 lakhs for a period of one day to 15 days. Some eminent faculty from institutes such as Massachusetts Institute of Technology, Purdue University, University of Twente, Groningen University, Monash University, University of California, Berkeley, University of California, Santa Barbara, National University of Singapore, Montreal, University of Michigan, Michigan State University, University of Alberta, RMIT Australia, IIT-Chicago, Cambridge University, University of Manchester, IIT-Bombay, IIT-Kanpur, IIT-Madras, National Chemical Laboratory, have taught UG and PG courses in ICT under the aegis of these endowments. These lectures form part of audit and credit courses for research students. Besides, public lectures are organized under each endowment.

Affordability of Education and Financial Assistance

If you still haven't been convinced about joining this elite institute, not knowing what future it unfolds or you did not hear about us in today's publicity-hungry institutes which proclaim greatness, our proponents are our alumni and their employers who quietly promote our reputation. It has been more through the 'word-of-mouth' that our uniqueness is spread in student community. You might surely be wondering about extraneous factors such as cost of education and living facilities, among others. After all, how can such a world-class education be affordable? Some of you might be wondering about job opportunities once you have completed your education. Some might hold aspirations of joining

prestigious institutions abroad to further their education. Many of you might even be considering joining the ICT as post-graduate students. Those of you who are not residents of Mumbai might feel intimidated by the prospects of living in this megacity. Then there might be some who are wondering about the affordability of educational resources such as textbooks, technical publications, handbooks and other materials. What about the campus culture?

With regards to affordability of education, the Institute offers the best value for education in the nation. It is the cheaper than nearly all other engineering colleges in Mumbai and this is a remarkable fact given the high quality of the education that we offer. The fees are decided by the State Government and are the lowest for the quality of education and facilities provided by us. There are now 251 scholarships for UG students, ranging from Rs. 3000 to 75000 per student. During 2009-10, several scholarships were added to the repertoire. A few scholarships take care of all fees, lodging and boarding. A large reason for this is the generosity of the Institute's huge and accomplished alumni body that includes some of India's leading industrialists, entrepreneurs and businessmen. Their donations have helped create several **merit- and need-based scholarships** that have helped fulfill the dreams of many students. A few alumni are mentoring some students, not only with monitory support but also continuous monitoring. This number is ever growing. It is my personal desire that every student joining the institute should get some assistance. I am sure our students will in an enviable position in near future. In fact, many of our faculty members hold endowed chairs that have been solely instituted by the largesse of our alumni, philanthropists and industries. You may not believe a few great souls have bequeathed their property to the institute. Additionally, the high impact and original research being conducted in our laboratories has attracted the interest of many industries, funding bodies and government agencies, and research groups have been duly awarded **with sizable funds for attracting talented young researchers and graduate students** and **purchasing state-of-the-art equipment**. This has helped the Institute offer full merit- and need-based scholarships even at the post-graduate level and has greatly aided in keeping education costs at low levels. Once you become our student, sky is the limit for your goals; we have never shirked in our commitment to help students, who need assistance of any kind. This tradition has evolved over the years through the selfless services of our faculty and alumni. **No other institution in the nation matches the Institute of Chemical Technology in offering scholarships.** Almost 52% students admitted to the ICT are on freeships in tuition fees as per government norms. It has been our endeavour to provide assistance to all needy students. Once you become our student, we will help you. Our minimum expectation from you will be a clear pass, a desire to study and sincere efforts to overcome barriers. Where else will you find such a caring atmosphere the students? Many of alumni will vouch for my statement. It is not a mere rhetoric.

Training and Placement

There is no chemical and allied industry in the country that does not employ graduates of the ICT. Alumni are at the helm of affairs of large number of renowned chemical industries. A placement cell is now launched with the participation of the UDCT Alumni Association (UAA) to assist campus placement which begins in the month of July, and continues throughout the year, before the students graduate. **The Institute's graduates are highly-sought after by the Indian and global chemical industry** and their **salaries rank among the highest in the country**, even dwarfing the salaries of graduates of the premier branded institutes; placements achieved via campus interviews fetch emoluments ranging from Rs. 3.00 to Rs 14.00 lakhs per annum. What is most striking is that these placements are in hard-core industries relevant to the students training and education, and not in the software industry, which has been a major source for employment for graduates of some of the best institutes in India. With regards to post-graduate research opportunities, a good number of our students are offered admission by some of the world's best universities to pursue graduate studies. **The Institute is one of the few institutions in Asia that is regularly represented in the graduate student bodies of prestigious institutes such as the Massachusetts Institute of Technology, Stanford University, University of California, Berkeley**, **Caltech, UCSB, Princeton, University of Michigan, Ann Arbor, University of Texas, Carnegie Mellon University, Purdue University, University of Massachusetts, Cambridge University, Imperial College, Manchester University, Twente University, Monash University,** to name a few. All of them receive full financial support. Several universities write to us to recommend good students. Leading foreign universities have signed MOUs for student exchange through proper support for the exchange. This would not have been without the merit of the students, and reputation of faculty and institute. On an average, about 75 students from various degree programmes get such

fellowships. Quite a few Ph.D. holders go abroad for post-doctoral studies in reputed institutes; this is directly linked to the quality of research produced and personal standing of the faculty in international community.

Library and Internet

The Professor M.M. Sharma Library is a treasure house of books, leading journals, encyclopaedias, reports, theses, abstracts, reference books, microfilms, guides, text-books, and rare volumes, not found in most of the libraries in the country. Except four public holidays in a year, the library is always open for 12 hours on all working days and for 7 hours on public holidays. Several readers including industrialists are frequent visitors to the library and some of them have organizational membership. Although we have adequate intranet and internet facilities (both LAN and wi-fi) in the Information Processing Centre (IPC), we have recently undertaken a massive revamping exercise to enhance bandwidth and accessibility. The students have been provided with smart i.d. cards. to access library facilities. The INFLIBNET, DELNET, and INDEST consortia memberships are also accorded to our library, having access to the latest publications. Plans are afoot to renovate the library building aesthetically and provide faster e-accessibility for readers. In the IPC, as well as, in all UG and PG labs, we have provided computers with relevant software, numbering over 700. The entire campus is now wired and security surveillance is in place.

Distinguished Alumni and First Generation Entrepreneurs

The ICT has been cited as a role model for industry-institute-government relationship. Several first generation entrepreneurs in chemical and allied industries, numbering over 500 are the alumni of the institute. They have pioneered in setting up of many chemical industries in and around Mumbai and in Western India. A galaxy of world-renowned scientists, academics and industrialists including fortune-500 personalities –who's who- have been our alumni and some of these luminaries are our pride and proponents of the legacy:

- Shri. Manubhai Shah (Minister for Commerce in Pandit Nahru's Cabinet in 1950s),
- Prof. B.D. Tilak (Director, NCL, Pune),
- Shri. D.M. Trivedi (Famous Textile Technologist)
- Dr. R.A. Mashelkar (Chemical Engineering;FRS, Director General, CSIR; President INSA)
- Dr. Homi Sethna (Chairman, Atomic Energy Commission)
- Dr. Nitya Anand (Director, CDRI, Lucknow),
- Prof. M.M. Sharma (FRS, Director, ICT and President, INSA,),
- Dr. K.H. Gharda (Gharda Chemicals),
- Shri. Kishore V. Mariwala (Bombay Oil Industries, Marico Industries, Former President, ICMA/ICC)
- Dr. A.V. Rama Rao (Director, IICT, Hyderabad and Chairman, AVRA Labs),
- Shri. Mukesh D. Ambani (CMD, Reliance Industries Ltd),
- Shri. Nikhil R. Meswani (Tech. Director, Reliance Industries Ltd)
- Shri. Narotam Sekhsaria (Founder & Managing Director, Gujarat Ambuja Cement Ltd; Sekhsaria Chemicals)
- Dr. K. Anji Reddy (Chairman, Dr Reddy's Laboratory Ltd),
- Shri. V.G. Rajadhyaksha (Chairman, Hindustan Lever Ltd),
- Shri. Ashwin S. Dani (Vice Chairman and MD, Asian Paints Ltd),
- Shri. J.R.Shah (Former President, Plastindia Foundation; Chairman, Jayvee Organics and Polymers)
- Shri. C. J. Bhumkar (Chairman, Soujanya Chemicals)
- Prof. N.R. Kamath (Former Deputy Director, IIT-Bombay)
- Prof. Arvind Kudchadker (Former Deputy Director, IIT-Bombay)
- Prof. D. Ramkrishna (Distinguished Professor, Purdue University; Member US NAE),
- Prof. Arun S. Mujumdar (McGill University; National University Singapore)
- Dr. Haren Gandhi (Ford Fellow, Member US NAE and President's Medal, AIChE Top 100 of Century Awardee),
- Dr. John Kapoor (Industrialist and John Kapoor Foundation, USA)
- Shri. Vijay B. Samant (CEO and President, Vical Inc. USA)

- Prof. R. Krishna (Director, IIP, Dehradun and Distinguished Professor, University of Amsterdam),
- Shri. Chandrakant V. Gogri (Chairman, Aarti Industries and Aarti Group of Companies)
- Shri. Rajendra V. Gogri (Managing Director; Aarti Industries and Group of Companies)
- Shri. Prakash Patil (Managing Director, Aarti Drugs Ltd)
- Shri. Parimal Desai (Managing Director, Aarti Healthcare Ltd)
- Shri. S.M. Mokashi (Managing Director, Xytel India)
- Shri. J.R. Vyas (CMD, Dishman Pharmaceuticals and Chemicals).
- Dr. Dinesh Patel (Chairman, Themis Pharmaceuticals)
- Shri. Narendra Parekh (Chairman, Pidilite Industries)
- Shri. Madhukar B. Parekh (Managing Director, Pidilite Industries)
- Shri. U. Shekhar and Shri Sudhir Patil (Galaxy Surfactants Ltd)
- Shri. Prakash Kamat (Managing Director, Fine Organics Ltd)
- Shri. Yogesh M. Kothari (CMD, Alkyl Amines Chemicals Ltd)

This list is partial and there are many more who have added to our reputation. Several of our alumni have come from abject poverty, with limited resources, born of illiterate or semi-literate parents, and having studied in vernacular media; they have excelled themselves in life, attained positions of prominence and made us proud by their stellar achievements. Many have created unprecedented value for their companies through their ingenuity and hard work, and some of our alumni are famous CEOs or managing directors of the nation's and world's mega companies and organizations. The reputation of the Institute of Chemical Technology and its graduates is unparalleled in India and abroad and it is not all that surprising to find that **our alumni body boasts several Padma awardees** (*Padma Vibhushan, Padma Bhushan and Padmashri*) in its ranks.

On an average, until 1980s, 20-30% of graduates from every class have started their own industries as SME or MMEs; consultancy and design companies. Most of them did not have any family background in business and have literally created empires out of nothing. The ICT has continued to be an oasis of generating new knowledge and creating wealth. In order to sustain the entrepreneurship culture, a part-time 3-semester certificate course in Chemical Technology Management for Ph.D. students was started in 2001 with the participation and support of the UDCT Alumni Association; it has been converted into a 2-year Diploma course from January 2010. Indeed, we have also established an Entrepreneurship Development Cell very recently.

The UDCT Alumni Association

The UDCT Alumni Association (UAA), founded in 1989, with a current membership of over 3500, not only has past students as members but also several others who are our well wishers, without being formal graduates. Some alumni chose to come to us due to the influence of acquaintances and hearing their success stories, whereas some have landed by a passion to do a course offered by us. Once they become our students, we take care of them by standing with them in times of thick and thin. They have reciprocated to the institute in ample measures. The alumni are one of our greatest strengths. Without their support, love and affection for the institute, the ICT would not have been where it is today. When the alumni of different vintage meet for the first time and come to know they are UDCT alumni, a very affectionate bond is developed instantaneously. The older they grow, the more eager they are to visit the campus and peep through the classrooms and sit on the benches where they sat and had their moorings. They reminisce and enjoy; some have eyes in their tears in gratitude. You have to a UDCTian or ICTian to unravel the power of my thought. Some visit the hostels to have nostalgic memories of the mess food and the rooms where they dwelled; some bring their families and meet 'old' professors to catch with time. Some have changed their attires and accents, look prosperous and happy, whereas some are the same simpletons still fearing the grades they would perhaps get! Let me assure, the value of being an alumnus of this great institute is beyond description. Our class reunions of decades, two decades, silver jubilee, golden jubilee during the month of December is a chance to meet and have fun and frolic. You have to be an alumnus to witness such a great camaraderie. In fact, many current students have sought admission to the institute due to advice of our alumni. All current students can enroll into the membership to carry on the legacy. The UAA has been our constant source of help and

inspiration. Financial assistance provided by the UAA in training, placement, factory visits, scholarships, prizes, field trips, sports, intercollegiate festivals and social service is beyond words.

Splendour and Serenity of Campus

The campus is **located in one of the best, quietest, and beautiful neighbourhoods of Mumbai** and is in the vicinity of some other prestigious Mumbai schools and institutions. Living in Mumbai is an unforgettable experience and the very fact that it is considered one of the most vibrant cities in the world is testament to this. No city this large is as safe and hospitable. The **hostels of the Institute are among the best equipped in the nation** and students have access to **computing, internet, television and laundry facilities**. The Institute has hostels for boys, girls as well as post-graduate students. In addition, we believe that a healthy body is essential for a fertile mind and our campus also boasts of **several athletics facilities**. A few courses/workshops are conducted for the benefit of the students like yoga, stress management, time management, interpersonal skills, communication skills, presentation skills and interview skills. The Bombay Technologist is an annual technical journal of the Technological Association, started in 1951. The journal publishes technical articles written by the students and the faculty of the Institute. The Institute publishes in-house student magazine, 'The Spirit', in which students contribute on non-technical topics. Dr. B.P. Godrej Students' Centre provides facilities for indoor games. The necessary sports materials as well as music instruments for cultural activities are provided.

The vibrancy of Mumbai rubs onto our students and the **cultural events on campus that are organized and coordinated entirely by our students have become local attractions**. Our faculty members strongly encourage our students to **think creatively** and one of the requirements for creative thinking is the ability **to express oneself creatively**, be it in the classroom, on the playfield or on the stage.

The entire campus will be given a face lift in near future to reflect ICT's world-class status. Construction of a new faculty tower, academic and energy engineering block has just begun. A new ladies hostel will also be built. Classrooms, lecture halls and offices are being renovated. To make effective use of the infrastructure, a staggered time table for classes and laboratories will be implemented. A concept of eco-campus incorporating use of solar powered lights and air-conditioning, biogas generation, treatment and reuse of gray water, rain-water harvesting, and LED lighting is being worked out to minimize water and energy usage. If you had visited a year earlier, you would see that the campus has undergone a sea-change.

Is the Future as Bright?

Reaching the zenith is one part of story but remaining there without being complacent is the most difficult part and challenging. Unless we innovate in all aspects of academic, research, administrative and industrial activities, we will not be able to make a dent in future. Technology is a capital and ICT has been fully geared to develop new technology in its sphere of activities to sustain the growth and glitter. You could be part of this process.

I would like to give a glimpse of some the plans which we have made. Thus frontiers of research where we have now focused are:

- Biotechnology & biomedicine
- Nanotechnology and materials science
- Energy science and engineering
- Process systems engineering
- Green chemistry and engineering
- Environmental protection and Hazardous waste management
- Product Engineering

Under the aegis of these areas, our research will focus on:

- Developing greener chemical processing platforms producing a much wider range of products; green technology; product engineering.
- Developing technologies for generating, storing and transporting unlimited and inexpensive energy sources; energy engineering
- Developing therapy strategies for incurable diseases; pharma and healthcare.
- Designing better materials whose properties can be predicted, tailored and tuned; materials engineering; nanotechnology

Plans for future expansion have been made for creation of centres of excellence::

1. Entrepreneurship resource centre
2. Interactive student services portal
3. Centre for Undergraduate Research In Engineering (CURIE)
4. Centre for Process Intensification and Innovation
5. Centre for Product Engineering
6. Centre for Infectious Disease Control and Prevention
7. Technology Incubation Centre
8. Technology Transfer Cell
9. Creation of Visiting Professorships endowments
10. Distinguished Adjunct Professors
11. Group consultations: Adoption of sick industries.
12. Increasing international collaborations (Joint projects with leading institutes (Joint degrees , UG exchange, PG exchange)
13. Creation of institute professorships

New courses are planned in the following areas from 2010-11, awaiting approval of the authorities: M. Sc. (Chemistry, Physics, Engineering Mathematics, Textile Processing) and M. Tech. in Green Technology (multi-disciplinary; 4-semester full time; part-time 6-semester for industrial practitioners).

Closing Remarks

I am sure by now you would have realized as to why the ICT is held in high esteem and its uniqueness and heritage among all institutes of higher learning in India. Great institutes are not built overnight. My experience as an academic, researcher, consultant to industry, member of several important professional bodies and government committees, and my interactions with alumni, government officials, faculty from leading institutes in India and abroad, have revealed a trend- that is- quality of education, the brand name of institute and future prospects, far outweigh any other consideration on the minds of students and employers alike, while choosing an institute, than the cost of education. Indian parents sacrifice many things to educate their off-springs in the best of schools and colleges; many times not fully knowing about the institute or course. There is too much of peer pressure. The purpose of my writing this long prologue is thus to communicate with you directly and place statistics and standing of ICT before you, since several of your questions and doubts would not be answered by an impersonal compilation in this handbook.

If you get selected through our admission process, which is transparent and strictly on merit, with all government policies in place, my congratulations and best wishes to you. I hope I have convinced you, to join my institute. The opportunities that lie in store for you during your years with us and once you graduate will truly exponentiate. If you are unlucky this time because you fail short of the cut-off criteria, try again for master's and Ph.D. programmes after your graduation. Should your destination be some other place for whatever compelling reasons, let me wish you the very best for all your future endeavors.

1. INDIAN CHEMICAL ENGINEERING SCHOOLS DURING 2005-2009

(Surveys of World Chemical Engineering Schools: Professor Jude Sommerfeld, Georgia Institute of Technology, USA, 10 April10)

School	Location(S)	Pubs. 2008	Totals 04-08	Rank 04-08	Pubs. 2009	Totals 05-09	Rank 05-09
Mumbai (UDCT)/ICT	**Mumbai**	**144**	**635**	**1**	**106**	**646**	**1**
Kanpur (IIT)	Kanpur	72	323	2	57	327	2
Bombay (IIT)	Bombay, Mumbai	59	288	3	74	323	3
Kharagpur (IIT)	Kharagpur	61	226	4	65	265	4
Anna U.	Chennai	50	216	6	54	252	5
Madras (IIT)	Chennai	60	218	5	49	233	6
Bangalore (IIS)	Bangalore	35	197	7	50	198	7
Roorkee (IIT)	Roorkee	57	131	9	45	169	8
Delhi (IIT)	Delhi, New Delhi	33	140	8	27	151	9
Aligarh Muslim U	Aligarh	22	100	10	23	109	10
Jadavpur U	Calcutta, Calicut	24	82	11	31	107	11
Panjab U, Chandigarh	Chandigarh	15	62	12	18	79	12
M. S. U	Baroda, Vadodara	11	60	13	16	72	13
Tiruchchirappalli (NIT)	Tiruchchirappalli	12	44	16	28	69	14
Guwahati (IIT)	Gauhati	19	35	19	30	65	15
Calcutta U	Calcutta, Calicut	14	45	15	23	63	16
Andhra U	Visakhapatnam	11	50	14	9	54	17
Rourkela (NIT)	Rourkela	19	41	17	15	52	18
S. V. (NIT)	Surat	16	33	21	20	52	18
Banaras Hindu U	Varanasi	11	38	18	14	51	20
Annamalai U	Tamil Nadu	7	28	22	15	42	21
Birla Inst. Tech. Sci.	Pilani	8	34	20	6	36	22
Durgapur (NIT)	Durgapur	9	14	28	17	29	23
S. Venkateswara U	Tirupati	3	21	23	5	25	24
Delhi Engg.	Delhi	3	21	23	5	24	25
Surathkal (NIT)	Surathkal	7	15	26	10	23	26

N.B.: The list is partial; in all 68 institutes are covered. This survey is being done every year since 1989. The ICT has always been found to be number 1; far ahead of the second ranked school; there is a variation in the ranking of the next 9 schools. The quality of publications is not indicated in this survey but ICT has always been publishing papers in international peer reviewed journal with high impact factors' like all IITs and IISc. The ICT has the highest number of citation record in India. It is also number one among all non-USA universities and is in top 10 in the world.

2. Courses of Study in Nutshell

1. Bachelor of Chemical Engineering (B. Chem. Eng.)

2. Bachelor of Technology (B. Tech.) in
   (a) Dyestuff and Intermediates Technology
   (b) Fibres and Textiles Processing Technology
   (c) Food Engineering and Technology
   (d) Oils, Oleochemicals and Surfactants Technology
   (e) Pharmaceuticals Chemistry and Technology
   (f) Polymer Engineering and Technology
   (g) Surface Coating Technology

3. Bachelor of Pharmacy (B. Pharm.)

4. Master of Chemical Engineering (M. Chem. Eng.)

5. Master of Technology (M. Tech.) in
   (a) Dyestuff and Intermediates Technology
   (b) Fibres and Textiles Processing Technology
   (c) Food Engineering and Technology
   (d) Oils, Oleochemicals and Surfactants Technology
   (e) Pharmaceuticals Chemistry and Technology
   (f) Polymer Engineering and Technology
   (g) Surface Coating Technology
   (h) Perfumery and Flavour Technology
   (i) Bioprocess Technology (with special emphasis on Downstream Processing)
   (j) Food Biotechnology

6. Master of Pharmacy (M. Pharm.) in
   (a) Drug Delivery Technology
   (b) Medicinal Chemistry
   (c) Medicinal Natural Products

7. M.E. (Plastics Engineering)

8. Ph.D.(Tech.) in Chemical Engineering, all branches of Chemical Technology, Green Technology, Nanotechnology and Pharmacy

9. Ph.D.(Sci.). in
   (a) Chemistry (Inorganic, Organic and Physical)
   (b) Physics
   (c) Applied Mathematics
   (d) Biotechnology

10. Integrated Ph.D. (Tech.) after Bachelors Degree in Faculty of Technology

11. Diploma in Chemical Technology Management

12. Planned from 2010-11: M.Sc. by papers (two years- four semester) (Chemistry, Physics, Engineering Mathematics, Textile Processing) all after B. Sc.

13. Planned from 2010-11: M.Tech. in Green Technology (4-Semester full time; 6-semester, part time for practitioners from industry)

All Ph D programmes are now redesigned with course work as per UGC regulations.

3. INSTITUTE AUTHORITIES

Professor G. D. Yadav

- Director (Vice Chancellor)
- R.T. Mody Distinguished Professor
- J.C. Bose National Fellow (DST-GOI)
- President, Technological Association

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- Dean, Students Affairs and Human Resource Development ,
- Vice President, Technological Association

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- Controller of Examinations

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control.exam@ictmumbai.edu.in
pr.vavia@ictmumbai.edu.in

4. HEADS OF DEPARTMENTS AND COORDINATORS OF CENTRES

Professor V. G. Gaikar
- Head, Department of Chemical Engineering
- Coordinator, UGC Networking Resource Centre in Chemical Engineering
- Coordinator UGC Advanced Studies in Chemical Engineering

T: 91- 22- 3361 2013
vg.gaikar@ictmumbai.edu.in

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- Head, Department of Dyestuff Technology

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pm.bhate@ictmumbai.edu.in

Professor R. V. Adivarekar
- Head, Department of Fibres and Textile Processing Technology

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- Head, Department of Food Engineering and Technology
- Coordinator, UGC Centre for Advanced Studies in Food Engineering and Technology

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Professor (Smt.) S. A. Momin
- Head, Department of Oils, Oleochemicals and Surfactants Technology

T: 91- 22- 3361 2551
sa.momin@ictmumbai.edu.in

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- Head, Department of Pharmaceutical Sciences and Technology
- Coordinator, UGC Centre for Advanced Studies in Pharmaceutical Sciences and Technology

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pv.devarajan@ictmumbai.edu.in

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- Department of Polymer and Surface Engineering

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rn.jagtap@ictmumbai.edu.in

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- Coordinator, UGC DRS

T: 91- 22- 3361 2601
bm.bhanage@ictmumbai.edu.in

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- Head, Department of Physics

T: 91- 22- 3361 2651
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- Head, Department of Mathematics

T: 91- 22- 3361 2676
ak.sahu@ictmumbai.edu.in

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- Head, Department of General Engineering

T: 91- 22- 3361 2751
sp.deshmukh@ictmumbai.edu.in

Professor A. B. Pandit
- Co-ordinator, ICT-DAE Centre for Chemical Engineering Education and Research

T: 91- 22- 3361 2017
ab.pandit@ictmumbai.edu.in

Professor A. M. Lali
- Coordinator, DBT-ICT Centre for Energy Biosciences
- Coordinator, M. Tech. Course in Downstream Processing

T: 91- 22- 3361 2014
am.lali@ictmumbai.edu.in

Professor N. Sekar
- Coordinator, UGC CAS in Physico-Chemical Aspects of Textiles, Fibres, Dyes and Polymers

T: 91- 22- 3361 2707
n.sekar@ictmumbai.edu.in

Shri Amogh Lokhande
- Librarian

Prof. M.M. Sharma Library
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5. IMPORTANT FUNCTIONARIES AND SUPPORT STAFF

Shri C. S Sawant
- Assistant Registrar (Academic)

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- OSD (F &A), Information Officer

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- Assistant Registrar (Administration)

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Superintendent,(Acad.)

- All admissions, registration, thesis matters

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ss.chavan@ictmumbai.edu.in

Shri N. S. Lakhan
Head Clerk (Acad.)

- Admissions, examinations and all other work

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ns.lakhan@ictmumbai.edu.in

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Receptionist

- General Inquiries, Railway Concession, Distribution Exam. Forms and Mark sheets to the Students, True Copies, etc.

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Sr. Clerk, (Acad.)

- P.G. Roll Call, Synopsis/ Thesis, P.G. Re-admission, P.G. Registration, Transcripts, etc.

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pg.mohite@ictmumbai.edu.in

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- Thesis submission and examination

T: 91- 22- 3361 1204
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Shri S. V. Pawar
Jr. Clerk, (Acad.)

- Scholarships, Freeships, Bonafide Certificate, Attestation, Rank Certificate etc.

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Shri A. B. Rane
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- Admission, Eligibility, Enrolment, Fellowships, Internet related work, Handle IPC Programme.

T: 91- 22- 3361 1209
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Shri P.S. Patole
Hostel Officer

- Hostel Accommodation

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Kum. Sanghamitra A. Bhavsar,
P.A. to Director
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Smt. Anushka A. Bhandare
Jr. Typist cum Clerk (scholarships, fellowships, endowments)
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Smt. Rekha S. Patil
Jr. Typist cum Clerk
T: 91- 22- 3361 1001
director@ictmumbai.edu.in

Shri Sachin B. Kadam
Jr. Typist cum Clerk
T: 91- 22- 3361 1001
registrar@ictmumbai.edu.in

6. FACULTY OF INSTITUTE AND DISTINGUISHED VISITING FACULTY

6.1. THE DIRECTOR (VICE CHANCELLOR)

PROFESSOR G. D. YADAV

B. Chem. Eng.(Mumbai, 1974). Ph.D. (Tech.) (1980), F.N.A., F.N.A.Sc., Ch.E., F.I.Chem.E.(UK), F.M.A.Sc., F.I.I.Ch.E.,F.I.C.S.

R. T. Mody Distinguished Professor

Jagdish Chandra Bose National Fellow (DST-GOI**)**

Subjects Taught: Chemical Reaction Engineering, Catalytic Green Science and Engineering, Green Chemistry and Engineering, Perspectives of Society, Science and Technology

Research Interests: Green Chemistry and Technology (Fundamental and applied aspects of green chemistry and engineering, particularly in the design and development of benign and eco-efficient processes in the chemical and allied industries such as bulk chemicals, intermediates, pharmaceuticals, fine chemicals, perfumes and flavours, and inorganics); Catalytic Science and Engineering (New catalytic materials, phase transfer catalysis, ionic liquids, reactions in supercritical carbon dioxide, catalysis modelling and simulation, biocatalysis in non-aqueous media, synergism of chemical catalysis with microwaves and ultrasound, and cascade engineered catalysis, renewable materials as feedstock for value added chemicals, biorefinery); Nanomaterials and nanocatalysis (Solid acids, superacids and bases, supported metals as nanocatalysts, sulphated zirconia, UDCaT series of novel catalysts, ion exchange resins, heteropoly acids, clays, and zeolites, novel redox materials, carbon nanotubes); Biotechnology (Enzyme catalysis in pharmaceutical transformations in non-aqueous media, chiral separations, biomass conversion, biorefinery, Synergism of Microwaves and Enzymes); Energy Engineering (Petroleum Engineering, Flow through porous media, Network modelling, Novel methods of enhanced oil recovery; Coal conversion, Hydrogenation generation and storage, Bioethanol and biohydrogen)

Research Students: Guided (single supervisor): Ph.D.- 56, Masters- 52
Ongoing: Ph.D. 19- , Masters- 12
Research Publications: International- 231 **Patents** (National and International**): 37**
Sponsored Projects: Government: Completed – 41, Ongoing - 03
Private industries: Completed - 15

6.2. DEPARTMENT OF CHEMICAL ENGINEERING

Head: PROFESSOR V. G. GAIKAR

1.

Professor B. R. Bakshi
B. Chem. Eng. (Mumbai, 1986), S.M. (Chem.Eng. Practice) (M.I.T., USA 1989) (Ph.D. (M.I.T., USA 1992)
Professor of Chemical Engineering

Subjects Taught: Separation Processes, Instrumentation and Process Control, Process Systems Engineering, Green Engineering
Research Interests: Sustainability Science and Engineering, Process Systems Engineering, Applied Statistics, Complex Systems
Research Students: Guided: Ph.D.- 09, Masters- 05
Ongoing: Ph.D.- 10, Masters- 04
Research Publications: International- 128

2.

Professor S. S. Bhagwat
B. Chem. Eng. (Mumbai, 1984), M.Chem.Eng. (Mumbai, 1986)

Ph.D. (Tech.) (Mumbai, 1989)

Professor of Chemical Engineering

Subjects Taught: Material and Energy Balance Computations, Chemical Engineering Thermodynamics I, Chemical Engineering Thermodynamics II, Interfacial Science and Engineering, Thermodynamics of Phase Equilibria
Research Interests: Interfacial Science and Engineering, Microemulsions, Energy and Exergy Engineering, Absorption Cycles, Utilization of low grade energy.
Research Students: Guided: Ph.D- 14, Masters- 52
Ongoing: Ph.D- 15, Masters- 09
Research Publications: International- 32, National- 03
Sponsored Projects: Government: Completed - 02, Ongoing- 01
Private: Completed- 05, Ongoing- 03

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3. 

Professor V. G. Gaikar
B.Chem.Eng (Mumbai, 1982), M.Chem.Eng. (Mumbai, 1984), Ph.D. (Tech.) (Mumbai, 1986), F.N.A.E.

Bharat Petroleum Professor of Chemical Engineering

Subjects Taught: Biochemical Engineering, Chemical Reaction Engineering, Process Engineering, Advanced Separation Processes
Research Interests: Biodiesel, Biofuels and Biolubes, Reactive Separation Processes, Molecular Simulation for Reactive Sorption and Metal Ion Complexation, Interfacial Engineering and Hydrotropy, Complex Fluid Behaviour, Renewable Energy Resources
Research Students: Guided: Ph. D. - 26, Masters - 63
Ongoing: Ph. D. – 14, Masters - 05
Research Publications: International- 101, National- 03
Sponsored Projects: Government: Completed – 12, Ongoing - 04
Private: Completed - 02

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4. 

Dr. P. R. Gogate
B.Chem.Eng. (Mumbai, 1996), M.Chem.Eng. (Mumbai, 1998), Ph.D. (Tech.) (Mumbai, 2002)
Lecturer in Chemical Engineering

Subjects Taught: Advanced Mass Transfer Operations, Process Simulations Computer Simulation Laboratory
Research Interests: Cavitational Reactors, Process Intensification, Wastewater treatment, Advanced Oxidation Processes
Research Students: Guided- Masters - 03,
Ongoing- Ph.D.- 04, Masters- 06
Research Publications: International: 71, National: 16
Sponsored Projects: Government: Completed – 03, Ongoing- 01

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5. 

Professor A. M. Lali
B.Chem.Eng. (Mumbai, 1980), M.Chem.Eng. (Mumbai, 1984), Ph.D. (Tech.) (Mumbai, 1988)

Professor of Chemical Engineering

Subjects Taught: Downstream Processing in Biotechnology, Advances in Adsorptive and Chromatographic Separations, Bioprocess Simulation Modelling and Bioreactor Design, Separation Technology, Biochemical Engineering
Research Interests: Development of new technologies for lignocellulosic biomass to Ethanol/ Butanol as biofuels, Design, Expression and Biotransforamtion of novel polysaccharide depolymerases, lipases, proteases and oxidases, Design of microbial systems for expression of metabolites, Separation of proteins, minor APIs and nutraceuticals from natural sources, Selective separations for synthetic/recombinant biopharma/proteins, Design and development of scalable separation equipment/operations, Algal Biotransformations, Metabolic Engineering and Metabolomics
Research Students: Guided: Ph. D.- 29, Masters- 53
Ongoing: Ph. D.- 21, Masters- 06
Research Publications: International- 30
Sponsored Projects: Government: Completed- 10, Ongoing- 02
Private: Completed- 11, Ongoing- 05

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6. 

Professor V. V. Mahajani
B. Chem. Eng (Mumbai, 1971), Ph.D. (Tech.) (Mumbai, 1979)

ICT-DAE Professor of Chemical Engineering (Emeritus)

Subjects Taught: Chemical Project Economics, Process Engg and Economics, Project Engineering, Environmental Engineering, Plant Utilities, Industrial and Engineering Chemistry, Applied Catalysis, Mass Transfer, Heat Transfer, Separation Processes.
Research Interests: Environmental Engineering (Advanced Oxidation Processes), Multiphase Reactions, Applied Catalysis (homogeneous and heterogeneous), Organic Process Development, Gas Sweetening Processes, Process Intensification, Advanced Extraction Processes. Bio fuels, Gas to liquid and solid to liquid fuels, Carbon Credit, Energy conservation.
Research Students: Guided: Ph. D. - 12, Masters- 58
Research Publications: International- 61, Indian- 16
Sponsored Projects: Government: Completed- 03
Private: Completed- 08

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7. 

Mrs. K. V. Marathe
B.E. (Nagpur, 1981), M.Tech. (Nagpur, 1983)
Reader in Metallurgical Engineering

Subjects Taught: Material Technology, Advanced Materials, Industrial Eng. Chem.
Research Interests: Membrane Separation, Waste Water Treatment, Corrosion, Development of Metal Matrix Composites.
Research Students: Guided - Masters -18,
Ongoing - Ph.D.- 01, Masters- 03
Research Publications: International- 11
Sponsored Projects: Completed – 01

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8. 

Dr. C. S. Mathpati
B. Chem. Eng.(Mumbai, 2004), M. Chem. Eng. (Mumbai, 2006), Ph.D. (Tech.) (Mumbai, 2010)
Lecturer in Chemical Engineering

Subjects Taught: Multiphase Reactors, Computer Programming, Chemical Engineering Laboratory
Research Interests: Computational Fluid Dynamics, Multiphase Flow, Reactor Design, Interface Heat and Mass Transfer
Research Students: Ongoing: Masters- 03
Research Publications: International- 06

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9. 

Professor A. B. Pandit
B.Tech. (B.H.U., 1980), Ph.D. (Tech.) (Mumbai, 1984), F.N.A., F.N.A.E., F N. A.Sc.

UGC Research Scientist C

Subjects Taught: Design of Multiphase Reactors, Chemical Project Economics, Environmental Engineering and Pollution Control
Research Interests: Multiphase Rector Design, Cavitation Phenomena, Pollution control, Bubble Dynamics, Acoustic signal processing, Mixing and Hydrodymanics and Cavitational Transformations
Research Students: Guided- Ph. D.- 28, Masters- 46
Ongoing- Ph.D.- 14, Masters- 04
Research Publications: International- 205, National- 47
Sponsored Projects: Government: Completed- 08, Ongoing- 06
Private: Completed- 04, Ongoing- 02

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11. 

Prof. A. V. Patwardhan
B.Chem.Eng.(Mumbai, 1983), M.Chem.Eng. (Mumbai, 1985)

Ph.D. (Tech.) (Mumbai, 1988)

Professor of Chemical Engineering

Subjects Taught: Chemical Engineering Operations, Momentum Transfer, Heat Transfer, Mass Transfer
Research Interests: Green Technology (utilization of non-edible oils, CO_2, and H_2S, use of ionic liquids); Steam Reforming of Petroleum Feedstock and Biofuels; Flue Gas Conditioning; Membrane Separation and Membrane Reactors; Non-Conventional ways of Hydrogen Production and Related Catalyst Development; Solvent Extraction Equipment
Research Students: Guided: Ph.D. - 05, Masters- 26
Ongoing: Ph.D. - 04, Masters- 06
Research Publications: International- 26, National- 01
Sponsored Projects: Government: Completed- 05, Ongoing- 01
Private: Ongoing- 01

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12. 

Dr. A. W. Patwardhan

B.Chem.Eng. (Mumbai, 1993), S.M. (M.I.T., USA 1995)
Ph.D. (Tech.) (Mumbai,1999)
Reader in Chemical Engineering

Subjects Taught: Material and Energy Balance Computations, Advanced Reaction Engineering, Process Modelling and Simulation
Research Interests: Transport Phenomena, Reaction Engineering, Computational Fluid Dynamics
Research Students: Guided: Ph. D.– 06, Masters– 30
Ongoing: Ph. D.– 06, Masters– 05
Research Publications: International- 52
Sponsored Projects: Government: Completed- 06, Ongoing- 05
Private: Completed - 01

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13. 

Dr. V. K. Rathod
B. Tech. (Nagpur, 1999), M. Tech. (Nagpur, 2001), Ph.D. (Tech.) (Mumbai, 2006)
Reader in Chemical Engineering

Subjects Taught: Heat Transfer, Advance heat transfer, separation processes, Fluid flow and Heat transfer, Multiphase Reactor, Material & Energy Balance calculation, pharmaceutical Engineering, Chemical Engineering Laboratory
Research Interests: Separation process, Extraction of Natural ingredients, Enzyme catalyzed reactions, Waste Treatment, Nuclear reprocessing
Research Students: Guided– Masters- 12
Ongoing- Ph. D.- 05, Masters- 12
Research Publications: International- 07
Sponsored Projects: Government: Completed- 03, Ongoing- 03
Private: Completed- 01

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14. 

Professor B. N. Thorat
B.Chem.Eng. (Mumbai, 1987), M.Chem.Eng. (1989), D.H.S.T. (BITS, 1991), Ph.D. (Tech.) (Mumbai, 2001)

Professor of Chemical Engineering

Subjects Taught: Advanced Transport Phenomena, Chemical Reaction Engineering, Instrumentation and Process Control, Unit Operations etc.
Research Interests: Drying Technology and Particle Handling, Process Development, Multiphase Reactors, Industrial Crystallization and Filtration, Food Processing etc.
Research Students: Guided: Ph. D.- 07, Masters- 32
Ongoing: Ph. D.- 13, Masters-03
Research Publications: International- 44, National- 03
Sponsored Projects: Government: Completed- 01, Ongoing- 02
Private: Completed- 04, Ongoing- 01

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15. 

Dr. P. D. Vaidya
B.E. (Chem.) (Mumbai,1998), M.Chem.Eng. (Mumbai, 2000)
Ph.D. (Tech.) (Mumbai, 2005)
V. V. Mariwala Lecturer in Chemical Engineering

Subjects Taught: Chemical Reaction Engineering, Advanced Mass Transfer, Environmental Engineering and Pollution Control, Separation Processes, Chemical Engineering Laboratory
Research Interests: Gas Purification, Steam Reforming, Catalytic Hydrogenation, Wet Air Oxidation
Research Students: Guided: Masters- 03
Ongoing: Ph.D.- 01, Masters– 06

---

16. 

Professor D. Ramkrishna
B.Chem. Eng. (Mumbai,1960), Ph.D. (Minnesota, 1965), D.Sc. (Minnesota, 2005), N,A,E.
M.M. Sharma Distinguished Professor of Chemical Engineering, ICT
(H. C. Peffer Distinguished Professor,
Purdue University, School of Chemical EngineeringWest Lafayette, IN, USA)
Research Interests: Dispersed phase systems, Biochemical Engineering, Applied Mathematics
http://cobweb.ecn.purdue.edu/~drops/abstract.html

6.3. DEPARTMENT OF DYESTUFF TECHNOLOGY

Head: PROFESSOR P. M. BHATE

1. 

Professor P. M. Bhate

B.Sc. (Mumbai, 1974), B.Sc. (Tech.) (Mumbai, 1977),

Ph.D. (USA, 1984)

Professor of Dyestuff Technology

Subjects Taught: Mechanism of Organic Reactions – M Tech and Ph D
Technology of Intermediates & Colorants – IV – B Tech
Chemistry of Intermediates & Colorants – I and II – B Tech
Research Interests: Fibre reactive dyes, vat dyes, carbohydrate chemistry.
Research Students: Ongoing- Ph. D- 01.
Research Publications: International- 04
Sponsored Projects: Government: Ongoing- 01

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2. 

Professor N. Sekar
B.Sc.(Madras, 1979), B.Sc. (Tech.) (Mumbai, 1982), Ph.D. (Tech.) (Mumbai, 1987)

Professor in Tinctorial Chemistry

Subjects Taught: Chemistry and Technology of Intermediates and Colorants, Analytical Instruments in Colorants Chemistry, Chemistry and Technology of Agrochemicals and Petrochemicals
Research Interests: Synthesis of High Performance Textiles Colorants, Functional Textile Colorants, Colorants in the area of energy, environment and nano-bio-electronics. Synthesis of fused heterocyclic compounds having fluorescence. Multicomponent synthesis in generating heterocyclic fluorophores. Nano-dispersible organic functional materials. Function of colors in biology and bio-compatible colorants.
Research Students: Guided: Masters- 15,
Ongoing - Ph. D.– 11, Masters- 02
Research Publications: International- 21, National- 06
Sponsored Projects: Government: Ongoing– 04, Private: Completed- 01

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3. 

Dr. G. S. Shankarling
B. Sc. (Karnataka, 1991), B. Sc. (Tech.) (Mumbai, 1994),

M. Sc. (Tech.)(Mumbai, 1997), Ph. D. (Tech.) (Mumbai, 2000)

Reader in Dyestuff Technology.

Subjects Taught: Chemistry of Intermediates and Colorants, Technology of Intermediates and Colorants, Chemistry Perfumes and Flavours, Chemistry of Natural Colorants, Advanced Dyestuff Chemistry
Research Interests: Functional colorants for Solar cells, Optoelectronics, Security, polymers, medicinal and biological applications, Near IR colorants, Textile dyes, High performance Pigments, Heterocyclic compounds, Green chemistry and Technology.

Research Students: Guided: Masters- 02,
Ongoing- Ph.D.- 08. Masters- 03
Research Publications: International- 07, National- 02
Sponsored Projects: Government- 04
Private: Completed- 03, Ongoing- 01

6.4. DEPARTMENT OF FIBRES AND TEXTILE PROCESSING TECHNOLOGY

Head: PROFESSOR R. V. ADIVAREKAR

1. 

Professor R. V. Adivarekar
B.Sc. (Mumbai, 1985), B.Sc. (Tech.) (Mumbai, 1988), M.Sc. (Tech.)(Mumbai, 1990), Ph.D. (Tech.) (Mumbai, 1995)

Professor of Fibre Chemistry

Subjects Taught: Technology of Printing, Techniques and Theory of Textile Colouration, Energy and Water Conversion in Textile Industry, Testing of Textiles Dyes and Auxiliaries, Textile Process House Management
Research Interests: Natural Dyes and Mordants; Dyeing of Textile; Printing of Textile; Mass Production and extraction of Microbial colourants; Manufacturing of Enzymes for textile Processing; Medical Textile; Colour fastness of textile materials; Detergency of Textiles etc.
Research Students: Guided: Masters-10
Ongoing- Ph. D- 01, Ph.D. (Tech.)- 05, Masters- 03
Research Publications: International- 04, National- 29
Sponsored Projects: Government Ongoing - 01,
Private: Completed- 01, Ongoing- 01

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2. 

Dr. V. A. Dorugade
B. Sc. (Shivaji, 1985), B. Sc. (Tech.) (Mumbai 1988),
M. Sc. (Tech.) (Mumbai, 1993), Ph. D. (Tech.) (Mumbai, 1998)
Scientist B

Subjects Taught: Technology of Textile Pretreatments; Chemistry and Application of Specialty Chemicals.
Research Interests: Development of auxiliaries; Combined scouring- Bleaching; Process modification; Right First Time Processing; Studies in natural dyes
Research Students: Guided: Masters- 02
Ongoing: Masters- 02
Research Publications: International- 02, National- 04
Sponsored Projects: Private Completed – 01

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3. 

Shri R. D. Kale
B.Sc. (Mumbai, 1993), B.Sc. (Tech) (Mumbai, 1996),
M. Tech. (Mumbai, 2005)
Lecturer in Textile Chemistry

Subjects Taught: Technology of Textile Polymers, Dyeing and Printing of Natural and Synthetic Fibres, Analysis of Textile Chemicals
Research Interests: Modification of Synthetic Fibres by Melt Spinning, Use of Polyelectrolyte Multilayers for imparting Novel Properties to Textile Polymers, Functional Finishes for Natural & Synthetic Fibres, Use of Alternate sources of energy in Textile Processing
Research Students: Guided: Masters- 01
Research Publications: National- 03
Sponsored Projects: Government: Completed- 01

---

4. 

Dr. (Mrs.) Usha Sayed
B.Sc.(Tech.) (Mumbai, 1977), M.Sc (Tech.) (Mumbai, 1980), Ph.D. (Tech) (Mumbai, 1997)
Reader in Dyeing and Printing

Subjects Taught: Technology of Fibers, Technology of Dyeing and Printing, **Technical** Textile, Technology of Finishing, Garment Processing, Preparation of Fabric, Testing of Textile.
Research Interest: Textile Processing, Recycling and Reuse of Dyes & Chemicals, Surfactants, Specialty Chemicals, Laundry Chemicals, Enzyme technology, Polymers, fibre science, Technical textiles, Photo fading studies, Leather Processing, Recycling of Papers, Laundering Recycling of Carpet, Recycling of Garments, Surface modification of Fibers, Natural finishes Dyeing With Natural Dyes, Studies of Bio-Polymers, Processing of Wool & Silk, etc., Synthesis of cationic fixing agent and specialty chemicals and dyes.
Research Students: Guided: Masters- 17
Ongoing: Ph.D.- 02, Masters- 01
Research Publications: International- 06, National- 06
Sponsored Projects: Government: Completed- 03
Private: Completed- 01

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5. 

Professor S. R. Shukla
B.Sc. (Hons.) (Shivaji, 1971), B.Sc. (Tech.) (Mumbai, 1974) Ph.D. (Tech.) (Mumbai, 1980)

Professor of Technology of Dyeing and Printing

Subjects Taught: Modification of Fibrous Polymer: M.Tech Advanced Textile Technology: B.Tech Environmental problems of textile processing: M.Tech
Research Interests: Use of UV radiations, ultrasonic's in textile processing. Natural dye applications, Enzyme technology in processing, Energy conservation, Physico-chemical studies in fibres, Effluent treatment, Colour removal, Heavy metal removal and recovery, Waste minimization. Depolymerization and recycling.
Research Students: Guided: Ph. D. - 11, Masters- 50
Ongoing: Ph. D. - 10, Masters- 02
Research Publications: International- 95, National- 19
Sponsored Projects: Government: Completed- 05, Ongoing- 01
Private: Completed- 03

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6. 

Professor M. D. Teli,
B.Sc. (Hons.) (Mumbai, 1973), B.Sc. (Tech.) (Mumbai, 1976)
Ph.D. (Tech.) (Mumbai, 1981)
Professor of Textile Chemistry,
Dean, Students Affairs and HRD

Subjects Taught: Technology of Fibres, Advanced Textile Chemistry/Technology, Modification of Fibrous Polymers, Technical Textiles
Research Interests: Chemical Processing and Modifications of all Natural and Synthetic Fibres and Thickeners, Wet and Melt spinning of Polymer Blend Fibres, Electro Kinetic studies, structure property relationships, Natural Dyes and their applications, Specialty Finishes with antibacterial and fragrance properties, Application of Nanotechnology and Biotechnology in Textiles, Sound absorbing and Medical textiles, Super absorbents and Plasma application for Coating and in Technical Textiles, Garment dyeing and finishing; etc.
Research Students: Guided: Ph.D. -15, Masters- 65
Ongoing: Ph.D.- 04, Masters- 05
Research Publications: International- 71, National- 117
Sponsored Projects: Government**:** Completed- 03, Ongoing- 01
Private: Completed- 09, Ongoing- 01

6.5 DEPARTMENT OF FOOD ENGINEERING & TECHNOLOGY

Head: PROFESSOR S. S. LELE

1. 

Dr. L. Ananthanarayan
B.*Sc. (Mumbai, 1978), B.Sc. (Tech.) (Mumbai, 1981), M.Sc. (Tech.) (Mumbai, 1983)*

Selection Grade, Lecturer in Applied Biochemistry

Subjects Taught: Food chemistry, Nutrition, Biochemistry, Food Packaging, Chemistry of Food Constituents, Technology of plantation products, Technology of fruits and vegetables, Current topics in Food Science and Technology
Research Interests: traditional foods, fermented foods, enzymes, microbial metabolites, protein purification, nutraceuticals, nutritional biochemistry
Research students: Guided – Masters: 43, Ongoing - Masters: 02
Research Publications: International- 12, National- 01

Sponsored Projects: Government: Ongoing: 01, Private: Completed-01

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3. 

Dr. U. S. Annapure
B.Tech. (Marathwada, 1993), M.Sc. (Tech.) (Mumbai, 1996),Ph.D. (Tech) (Mumbai, 2000)
Reader in Food Chemistry
Co-ordinator, Food Biotechnology

Subjects Taught: **Under Graduate Course:** Chemistry of Food Constituents, Processing, Principles of Foods Preservation and Food Engineering, Cereal and Legume Technology, Nutrition, Dairy Technology
Post-Graduate Course: Advances in Food Technology, Carbohydrate Chemistry and Technology, Fundamentals of Food Biotechnology, Advanced Food Biotechnology
Research Interests: Extrusion Processing – Process and Product Development, Frying - Chemistry and Technology, Carbohydrates - Chemistry and Technology of minor grains and tubers, Traditional Foods, Product and Technology development, Food Biotechnology, Plant tissue culture and Downstream processing of biomolecules.
Research Students: Guided: Ph.D. - 01, Masters-19
Ongoing: Ph. D. - 08, Masters- 12
Research Publications: International- 16, National-04
Sponsored Projects: Government: Completed- 01, Ongoing- 04
Private: Completed- 02

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2. 

Dr. S. S. Arya
B.Tech. (Marathwada, 2002), M.Tech. (Mumbai, 2004), Ph.D. (Tech) (Mumbai, 2010)

Lecturer in Food Technology

Subjects Taught: Food Packaging, Food Microbiology, Current Topics in Food Science and Technology
Research Interests: Indian traditional foods, chemistry and preservation of foods, product development and processing, staling studies in cereal and cereal products, starch chemistry and technology, preservation of foods, application of newer technologies in preservation of traditional foods
Research Students: Ongoing: Masters- 06
Research Publications: International- 9, National- 01
Sponsored Projects: Government: Completed- 01, Ongoing- 01

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4. 

Professor S. S. Lele
B.Chem.Eng. (Mumbai, 1977), M.Chem.Eng. (Mumbai, 1981),Ph.D. (Tech.) (Mumbai, 1990)

Professor of Biochemical Engineering

Subjects Taught: Food Eng. & Principles of Food Preservation, Fermentation Technology, Advances in Food Eng. and Tech., Biochemical Eng.
Research Interests: Food Products and Process Development, Fermentative production of enzymes from indigenous isolates, microalgae for metabolites, biological effluent treatment
Research Students: Guided: Ph.D.– 06, Masters- 36
Ongoing: Ph. D.- 16, Masters- 09
Research Publications: International- 41, National- 09
Sponsored Projects: Government: Completed- 05, Ongoing- 02

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5. 

Professor R. S. Singhal
B.Sc. (Hons.) (Mumbai, 1981), M.Sc. (Tech.) (Mumbai, 1986Ph.D. (Tech.) (Mumbai, 1990)

Professor of Food Technology

Subjects Taught: Chemistry of Food Constituents, Food Additives and Ingredients, Food Chemistry, Technology of Dairy Products, Modern Techniques in Food Analysis, Food Safety and Toxicology
Research Interests: Carbohydrate Chemistry and Technology, Food Product Development, Nutraceuticals, Chemistry and Technology of Traditional Foods, Biopolymers, Fermentative production and downstream processing of biomolecules

Research Students: Guided: Ph.D - 08, M.Tech- 52
Ongoing: Ph.D- 26
Research Publications: International- 172, National- 08
Sponsored Projects: Government: Completed- 03, Ongoing- 01
Private: Completed- 06, Ongoing- 02

6.6 DEPARTMENT OF OILS, OLEOCHEMICALS & SURFACTANTS TECHNOLOGY

Head: PROFESSOR S. A. MOMIN

1. 

Prof. D. N. Bhowmick

B.Sc. (Kanpur, 1970), B.Sc. (Tech.) (Kanpur, 1973), M.Sc. (Tech.) (HBTI, Kanpur, 1975), Ph.D. (IIT, Mumbai, 1987)

Professor of Oils, Fats and Waxes Technology

Dean (Academic Programmes)

Subjects Taught: Chemistry & Technology of Oils, Fats & Surfactants; Biochemistry
Research Interests: Membrane separation processes Waste utilization, minor constituents of oils and fats, oleochemicals
Research Students: Guided: Ph. D.- 13, Masters- 01
Ongoing: Ph. D.- 03
Research Publications: International- 15, National- 12
Sponsored Projects: Government: Completed- 07, Ongoing- 01
Private: Completed- 02, Ongoing- 01

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2. 

Professor S. A. Momin

B.Sc. (Hons.)(Pune, 1972), M.Sc. (Tech.) (Mumbai, 1983),
Ph.D. (Tech.) (Mumbai, 1987)
Professor of Oil Technology

Subjects Taught: Biochemistry of Oils and Lipids, Technology of Soaps and Detergents, Cosmetics Science I and II and Technology of essential oils and their applications, Advanced chemistry of Fats and Fatty acids.
Research Interests: The area of research interest is mainly Surfactants, Nutraceuticals, Cosmetics and Perfumery. The work involves development of surfactants, evaluation and formulation. The study of nutraceuticals involves the extraction of natural antioxidants and their applications to form the functional foods. The Cosmetics and Perfumery study deals with the formulation and the stability.
Research Students: Guided: Ph.D. – 4, Masters- 24
Ongoing: Ph.D. – 01, Masters- 01
Research Publications: International- 10, National- 08
Sponsored Projects: Government: Completed- 04, Private: Completed- 02

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3. 

Dr. A. P. Pratap
B.Sc. (Pune, 1996), B.Sc. (Tech) (Mumbai, 1999),
M.Sc. (Tech) (Mumbai, 2001), Ph.D. (Tech.) (Mumbai, 2006)
Lecturer (Senior Scale) in Oils, Fats and Waxes Technology

Subjects Taught: Technology of Oil and Fat Production, Processing of Oil bearing Materials, Processing of oils, fats and Waxes, Fat Based Products, Cosmetics and Perfumery, Processing of Oleochemicals and Cosmetics, Processing of Soaps, Detergents, Oleochemicals and glycerine, Trioboapplication Laboratory**,** Waxes, Lubricants and Greases**,** Technology of fat Based Products**,** Analysis of Oils, Fats and Waxes
Research Interests: Tribology of oils and fats, structural modifications of oils, fats and fatty acids, Petroleum products, lubricants, Additives and specialty products, Biosurfactants, microbial surfactants etc.
Research Students: Guided: Masters.- 03,
Ongoing: Ph.D. – 01, Masters – 02
Sponsored Projects: Government: Completed- 01, Ongoing- 01
Private: Completed – 02

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4. 

Dr. J. T. Waghmare
B.Sc. (Tech) (Mumbai, 1998), M.Sc.(Tech) (Mumbai, 2002), Ph. D. (Mumbai, 2010)
Lecturer in Oils, Fats, and Waxes Technology

Subjects Taught: Analysis of oils, oleochemicals and surfactants experiments, Analysis of oils, fats and fat based products experiments, Technology of fats and fat based products.
Research Interests: Nutraceuticals, Application of nutraceuticals in food products, oxidation studies, structural lipids.
Research Students: Guided: Master's- 01
Research Publications: International: 06, National: 01
Sponsored Projects: Government: Completed- 02, Ongoing- 01

6.7 DEPARTMENT OF PHARMACEUTICAL SCIENCES & TECHNOLOGY

Head: PROFESSOR P. V. DEVARAJAN

1.

Professor K. G. Akamanchi
B.Sc. (Mumbai, 1973), B.Sc. (Tech.) (Mumbai, 1976),
Ph.D. (Tech.) (Mumbai, 1985)
Professor in Pharmaceutical Technology
Dean, Research, Consultancy and Resource Mobilisation

Subjects Taught: Pharmaceutical and Medicinal Chemistry, Pharmaceutical Technology, Pharmaceutical Analysis
Research Interests: New Methodology and Reagent Developments, Process Chemistry and Technology for Drugs and Intermediates, Biotechnology with emphasis on membrane transport simulation and validation, Proteins, and enzyme inhibition, elucidation
Research Students: Guided: Ph. D.- 30, Masters- 62
Ongoing: Ph. D.- 13, Masters- 04
Research Publications: International- 50, National- 02
Sponsored Projects: Government: Completed- 12
Private: Completed- 15, Ongoing- 01

2.

Professor P. D. Amin
B.Pharm. (Mumbai, 1982), M.Pharm. (Mumbai, 1984),
Ph.D. (Tech.) (Mumbai, 1988)
Professor in Pharmacy

Subjects Taught: Pharmaceutics, Pharmaceutical Technology and Pharmacy, Hospital Pharmacy.
Research Interests: Design and Fabrication of Pharma machinery (R&D Models), Development and Evaluation of Novel herbal formulations, Studies on Extrusion Technology in Innovative Drug Delivery System, Formulation and Biological Evaluation of Novel Products, Development of Added Functionality Excipients
Research Students: Guided: Ph.D. - 12, Masters- 45
Ongoing: Ph.D.– 08, Masters- 04
Research Publications: International- 17, National- 27
Sponsored Projects: Government- Completed- 06, Ongoing- 06
Private: Completed- 10, Ongoing- 04

3.

Shri G. U. Chaturbhuj
B. Pharm. (Shivaji, 1998), M. Pharm. (Mumbai, 2000)
Lecturer in Pharmacy

Subjects Taught: Pharmaceutical Analysis
Research Interests: Synthesis of substituted Biphenyls, synthesis of drugs and drug intermediates by alternative, ecofriendly, industrially feasible routes, development of routes for synthesis of drug metabolites and analytical methods, Polymer synthesis and pharmaceutical applications thereof

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4.

Professor M. S. Degani
B.Pharm. (Mumbai, 1982), M.Pharm. (Mumbai, 1985),
Ph.D. (Tech.) (SNDT, 2001)
Sir Dorabjee Tata Professor in Pharmaceutical Chemistry

Subjects Taught: Pharmaceutical chemistry, Medicinal Chemistry, Organic Chemistry and Spectroscopy

Research Interests: Drug discovery chemistry including computer assisted design followed by synthesis of focused compound libraries and there *in vitro* evaluation. Process chemistry research including Green chemistry aspects using ionic liquids; development of innovative processes for drug intermediates and fine chemicals and biosynthetic routes.
Research Students: Guided: Ph.D.– 04, Masters - 31
Ongoing: Ph.D. – 09, Masters - 06
Research Publications: International-18, National- 05
Sponsored Projects: Government: Completed- 07, Ongoing- 03
Private: Completed- 04

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5. 

Professor P. V. Devarajan
B.Pharm. (Mumbai,1980), M.Pharm. (Mumbai, 1983)
Ph.D. (Tech) (Mumbai, 1989)
Professor in Pharmacy

Subject Taught: Pharmaceutics, Technology of Solid Dosage Forms, Advanced Pharmaceutics, Drug Delivery Systems, Speciality Excipients, Polymers in Pharmaceuticals
Research interests: Engineering of targeted nanoparticulate drug delivery systems for anti-infectives, anti cancer drugs, and peptides, proteins and nucleotides with focus on scale up, Screening for new targeting ligands, surfactant based innovative self assembled structures As Drug Delivery Systems(DDS), Controlled released DDS(NDA and ANDA), Nasal/ sublingual DDS as an alternatives to injections.
Research Students: Completed: Ph.D. – 21, Masters- 50
Ongoing: Ph.D.-17, Masters- 07
Research Publications: International- 25, National- 04
Sponsored Projects: Government: Completed- 05, Ongoing- 03
Private: Completed- 14, Ongoing- 03

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7. 

Professor A. R. Juvekar
B.Pharm. (Shivaji, 1979), M.Pharm. (Mumbai, 1984),
Ph.D. (Tech.) (Mumbai, 1995)
Professor in Pharmacology and Physiology

Subjects Taught: Anatomy and Physiology, Pharmacology, Clinical Pharmacy, Anatomy and Pathophysiology, Biochemistry, Topics in Pharmacology, Models for Drug Delivery system, Pharmacology Toxicology and Therapeutics.
Research Interests: Pre-clinical Pharmacodynamic activity evaluation in diseases related to Inflammation, pain, ulcer Immunomodulation, Hepatoprotective, Central Nervous System, Cardio Vascular System diseases. Toxicology studies - Acute, Sub-acute, Chronic
Research Students: Guided : Ph. D.- 07, Masters- 40
Ongoing: Ph. D.- 06, Masters- 04
Research Publications: International-15, National- 33
Sponsored Projects: Government: Completed- 03, Ongoing- 01
Private: Completed- 21

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8. 

Professor K. S. Laddha
B.Pharm. (Mumbai, 1982), M.Pharm. (Mumbai, 1985),
Ph.D. (Tech.) (Mumbai, 1994)
Professor of Pharmacy
Dean (ICD)

Subjects Taught: Pharmacognosy, Phytochemistry and medicinal Natural Product
Research Interests: Extraction, isolation and characterization of phytoconstittuents, Development of large scale extraction technologies, Standardization of herbal drugs and formulations, Development of herbal drug formulations, Chemical Modification of phytoconstituents.
Research Students: Guided: Ph. D.- 07, Masters- 40,
Ongoing:, Ph. D. – 04, Masters.- 05
Research Publications: International- 10, National- 30
Sponsored Projects: Government: Completed- 03, Ongoing- 02
Private: Completed- 10

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9. 

Professor V. B. Patravale
B.Pharm. (Mumbai, 1985), M.Pharm. (Mumbai, 1987),
Ph.D. (Tech.) (Mumbai, 1992)

Professor of Pharmaceutics

Subjects Taught: Pharmaceutics, Cosmeticology, Validation and regulatory requirements
Research Interests: Lipid and polymer based nano-therapeutics, Nanosuspensions, Colloidal drug delivery systems, Novel carriers and techniques for solubilization, Exploitation of indigenous excipients for novel applications, Fabrication of equipments for micro/nanocapsules, Medical devices.
Research Students: Guided: Ph.D - 07, Masters - 09
Ongoing: Ph.D– 12, Masters- 04
Research Publications: International- 34, National- 05
Sponsored Projects: Government: Completed- 04, Ongoing-05
Private: Completed- 11, Ongoing- 01

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10. 

Dr. S. S. Sathaye
B.Pharm. (Mumbai, 1983), M.Pharm. (Mumbai, 1986),
Ph.D. (Tech.) (Mumbai, 2006)
Reader in Pharmacy

Subjects Taught: Anatomy, Physiology, Pathophysiology, Pharmacology, Microbiology,
Research Interests: Toxicity evaluation as per regulatory guidelines. Developing phytoactives and enzymes as dietary health supplements, immunomodulators, hepatoprotectives, aphrodisiac, appetite stimulant, anti-diabetic, anti-convulsants (In- Vitro and In-Vivo evaluation). Biotechnological applications in isolating biomolecule. Evaluation of Drug Delivery Systems and synthetic drugs using In-Vitro and In –Vivo models (Efficacy and Toxicity).
Research Students: Guided: Masters – 21,
Ongoing: Ph.D.– 06, Masters – 08,
Research Publications: International- 05, National- 09
Sponsored Projects: Government: Ongoing- 03
Private: Completed- 22

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11. 

Dr. V. N. Telvekar
B.Sc. (Mumbai, 1992), B.Sc. (Tech) (Mumbai, 1995),
M.Sc. (Tech) (Mumbai, 1997), Ph.D. (Tech) (Mumbai, 2003)
Lecturer in Pharmaceutical Chemistry

Subjects Taught: Medicinal Chemistry, Pharmaceutical Chemistry, Pharmaceutical Engineering, Process Technology of Drugs and Intermediates
Research Interests: Development of novel reactions and methodology. Design of novel molecules using Computer aided drug design and finally synthesis of novel molecules by using novel methodology and there evaluation.
Research Students: Guided: Masters- 16
Ongoing: Ph. D.- 08, Masters- 05
Research Publications: International- 21
Sponsored Projects: Government: Completed- 01, Ongoing- 02
Private: Completed- 03

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12. 

Professor P. R. Vavia
B.Pharm. (Mumbai, 1985), M.Pharm. (Mumbai, 1987),
Ph.D. (Tech.) (Mumbai, 1991)
Professor of Pharmaceutics
Acting Controller of Examinations

Subjects Taught: Pharmaceutics, Advanced Pharmaceutics, Biopharmaceutics and Pharmacokinetics, Pharmaceutical Technology.
Research Interests: Cyclodextrins based drug delivery systems, Nanosponge based drug delivery system, Bioencapsultion, Multiparticulte drug delivery system, Transdermal drug delivery systems, Protein and peptide drug delivery system, Lipid based colloidal formulations, Polymer synthesis for drug delivery, Modified release films, abuse deterrent Narcotic drug delivery systems, Melt Extrusion Technology, Oral liquid dosage forms, Techniques in solubilization, Soft Gelatin Capsule.
Research Students: Guided: Ph.D. - 24, Masters- 26
Ongoing: Ph.D. -16, Masters- 07
Research Publications: International- 44, National- 17

Sponsored Projects: Government: Completed- 03, Ongoing- 03
Private: Completed- 16, Ongoing- 05

6.8. DEPARTMENT OF POLYMER and SURFACE ENGINEERING

Head: PROFESSOR R. N. JAGTAP

1. 

Professor R. N. Jagtap
B.Sc. (1989) B.Sc. (Tech.) (Mumbai, 1992), M.Sc. (Tech.) (Mumbai, 1996), Ph.D. (Tech). (Mumbai, 1998)
Professor of Paint Technology

Subject Taught: Paint Technology-II ,Technology of Printing Ink, Advances in surface coating Technology, Technology of Pigment, Paint Technology–I
Research Interests: Living Radical Polymerization for Tailor-made Polymers, Nanomaterials and Nanocomposite, Recycling of e-waste, Antimicrobial Paints, Heat reflective coatings, Corrosion, Ecofriendly coating.
Research Students: Guided: Ph.D.-01 Masters- 19
Ongoing: Ph.D.- 08, Masters-02
Research Publications: International- 06, National- 40
Sponsored Project: Government: Completed- 01
Private: Completed- 02

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2. 

Professor P. A. Mahanwar
B.Sc. (Hons.) (Shivaji, 1987), B.Sc. (Tech.) (Mumbai, 1991), M.Sc. (Tech.) (Mumbai, 1994), Ph.D. (Tech.) (Mumbai, 1999)
Professor of Polymer Technology

Sub gh Polymer Chemistry, Processing of Plastics, Technology of Pigments, Polymer Additives, Powder Coatings, Polymer Composites, Advance Polymer Science.
Research Interests: Green Chemistry, Nanomaterial synthesis, Polymer Nanocomposites, Green Coatings.
Research Students: Guided: Ph.D.- 03, Masters- 32
Ongoing: Ph. D.- 06, Masters- 04
Research Publications: International- 23, National- 10
Sponsored Projects: Government: Completed- 04, Ongoing- 03
Private: Completed- 04, Ongoing- 01

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3. 

Dr. S. T. Mhaske
B.Sc. (Amravati, 1996), B.Sc. (Tech.) (Mumbai, 1999), M.Sc. (Tech) (Mumbai, 2001), Ph.D. (Tech). (Mumbai, 2007)
Lecturer in Technology of Plastics & PPV.

Subjects Taught: Compounding and Polymer Processing – I, Polymer & Processing Technology – III, Analysis & Characterization of Polymers, Synthesis & Characterization of Polymers, Paints Processing
Research Interests: Novel approached synthesis of Nano particles, Polymer melt Rheology, Cellulose based Polymer Nanocomposites, Bio Nanocomposites, Synthesis of pigments using core shell and Sol gel techniques, synthesis of resins from renewable resources, Synthesis and Characterization of Resins, Water Borne Coatings, Insulating Varnishes, conductive coatings, anticorrosive coatings, Polymer Processing and Coloration and Colour Matching.
Research Students: Guided: Masters- 07
Ongoing: Ph.D. - 03, Masters- 06
Research Publications: International- 09, National- 05
Sponsored Projects: Government: Ongoing- 02
Private: Completed- 06, Ongoing- 02

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4. 

Shri A. R. Rao
B.Tech. (Amaravati, 1998), M.Tech. (Mumbai, 2007)
Lecturer in Polymer Technology

Subject Taught: Compounding and polymer processing, Technology of Thermoplastics Identification and Analysis of Polymer, Polymer Processing-II, Chemistry and Technology of Plastics, Synthesis and Characterization of Polymers

Research Interests: Polymer Blends and Alloys, Polymer Nanocomposites, Controlled radical Polymerization, Recycling of Polymers Biodegradable Polymers
Research Publications: International- 01, National- 03
Sponsored Project: Government: - 03
Completed: -01

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5. 

Dr. A. S. Sabnis
B.Sc. (Amravati, 1996), B.Sc. (Tech.) (Mumbai, 1999),
M.Sc. (Tech) (Mumbai, 2001), Ph.D. (Tech). (Mumbai, 2007)
Lecturer in Technology of Polymers and Paint

Subjects Taught: Technology of Thermoset Resins, Basics of paint formulation, Paint Rheology, Instrumental Techniques for Paint Evaluation, Paint Film Defects & Remedies etc.
Research Interests: Waterbased coatings, electrical insulation, waste recycling in Polymer industry, Polyurea coatings technology
Research Students: Ongoing: Masters- 01
Research Publications: International- 01, National- 01
Sponsored Projects: Ongoing- 01

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6. 

Dr. V. V. Shertukde
B.Sc. (1987), B.Sc. (Tech.) (Mumbai, 1990), M.Sc. (Tech.)
(Mumbai, 1993) Ph.D. (Tech.) (Mumbai, 1997)
Reader

Subjects Taught: Polymer Blends & Alloys,Polymer composites, Radiation curable coatings, Adhesion & Adhesives, Polyelectrolytes, High polymer chemistry, Polymer Science & Technology Technology of Elastomers, Advances in polymer science & Technology, Technology of Thermoset Resins, Polymer additives, Polymer Processing.
Research Interests: Polymer Composites/ Nanocomposites, Polymer Blends & Alloys, Recycling of plastics, Corrosion protection, Thermally stable polymers, Adhesives, Paper coatings etc.
Research Students: Guided: Ph.D.-01, Masters –18
Ongoing: Ph.D.-04, Masters - 02
Research Publications: International- 08, National- 22
Sponsored Projects: Government: Completed- 01
Private: Completed- 02

6.9 DEPARTMENT OF CHEMISTRY

Head: PROFESSOR B. M. BHANAGE

1. 

Professor B. M. Bhanage
B.Sc. (Pune, 1986), M.Sc. (Pune, 1988),
Ph.D. (NCL, Pune, 1996)
Professor of Industrial and Engineering Chemistry

Subjects Taught: Organic Chemistry, Inorganic Chemistry
Research Interests: Development of new method for organic synthesis such as sonochemistry, use of ionic liquids, Mechanistic studies; Catalysis – Homogeneous catalysis, Heterogeneous catalysis using modified silica, alumina, zeolites, metal oxides, etc.; Green Chemistry approaches to synthesis. Gas-liquid reactions like hydroformylation, hydrogenation, carbonylations, carbon dioxide fixation into valuable chemicals, asymmetric synthesis using catalysis.
Research Students: Guided: Ph. D.- 05
Ongoing: Ph. D.- 13
Research Publications: International- 108
Sponsored Projects: Government: Completed- 02, Ongoing- 05
Private: Completed- 02, Ongoing- 02

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2. 

Professor R.V. Jayaram
M.Sc. (Madras, 1979), Ph.D. (IIT, Madras, 1985)
Professor of Physical Chemistry

Subjects Taught: Physical chemistry, organic chemistry, analytical chemistry
Research Interests: eterogeneous catalysis in organic synthesis, green chemistry, structurally ordered materials, amorphous alloys, functional polymers, adsorption technique for removal of water pollutants
Research Students: Guided: Ph. D.- 10, Masters- 07
Ongoing: Ph. D.- 11, Masters- 02
Research Publications: International- 53, National- 04
Sponsored Projects: Government: Completed- 05, Ongoing- 03

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3. 

Dr. J. M. Nagarkar,
B.Sc. (1975), M.Sc. (1977), Ph.D. (Nagpur, 1986)
Reader in Chemistry

Subjects Taught: General Chemistry, Physical Chemistry, Physical Pharmacy
Research Interests: Heterogeneous and homogeneous Catalysis, Photocatalysis, Emulsification of oils, Electrochemical extraction
Research Students: Guided: Masters – 07
Ongoing- Ph. D. - 03, Masters- 02

Research Publications: International- 07, National- 01
Sponsored Projects: Government: Completed- 01, Ongoing- 01
Private: Completed- 06

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4. 

Professor S. D. Samant
M.Sc. (Mumbai, 1976), Ph.D. (Mumbai, 1980)
Professor of Organic Chemistry

Subjects Taught: Organic Chemistry, Analytical Chemistry
Research Interests **:** Mechanistic organic chemistry, Synthesis of Biologically interesting compounds, New methods of Organic Synthesis, Chemistry of surfactants, Sonochemistry, Catalysis.
Research Students: Guided - Ph.D.– 42, Masters– 03,
Ongoing- Ph.D.- 10
Research Publications: International- 67, National- 46
Sponsored Projects: Government: Completed- 10, Ongoing- 02
Private: Completed- 02

6.10 DEPARTMENT OF GENERAL ENGINEERING

Head: DR. S.P.DESHMUKH

1. 

Dr. S. P. Deshmukh
D.M.E. (Ratnagiri, 1983), B.E. (Prod.) (Mumbai, 1986),
M.E. (Prod.) (Mumbai, 1992), Ph.D. (Mumbai 2009)
Reader-cum –Workshop Superintendent

Subjects Taught: Equipment Design & Drawing I, Engineering Graphics, Mechanical Engineering,
Research Interests: Polymeric Composites, Engineering Materials, Plastic Processing, Design of Molds, Analysis of Plastic component using CAD, CAE tools.
Research Students: Guided: Masters- 07
Ongoing: Masters- 02
Research Publications: International- 02, National- 01

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2. 

Shri. V. R. Gaval
B.E. (Production) (Mumbai, 1987),
M.E. (Plastic) (Mumbai, 1989)
Lecturer in General Engineering

Subjects taught: Mechanical Eng., Equipment Design and Drawing, Eng. Graphics, Structural Mechanics, Processing of Plastics, Plastics Product Design and Testing.
Research Interests: Polymeric composites, Nanocomposites, Injection mold Design.
Research Students: Guided- 14, Ongoing- 02

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3. 

Kum. P. Goswami
B.E. (Elect.) (1980)
Lecturer in General Engineering

Subjects Taught: Electrical Engineering and Electronics
Research Interests: MATLAB simulations, Power systems and energy conservation.

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4. 

Shri M. A. K. Kerawalla
B.E. (Elect.) (Mumbai, 1981), M.E. (Elect.) (Mumbai, 1984)
Reader in Electrical Engineering

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5. 

Shri A. C. Rao
B.E. (Mech.) (Mumbai, 1975), M.E. (Mech. with Plastic Eng.) (Mumbai, 1977)
Reader in Mechanical Engineering

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6. 

Shri. R. S. N. Sahai
B.E. (Mech.) (1989), M.E. (Plastic Eng.) (Mumbai, 2004)
Lecturer in Mechanical Engineering

Subjects taught: Engg Graphics, GTMP, Processing of Plastics
Research Interests: Polymeric composites, Nanocomposites, Injection mold Design
Research Students: Guided: Masters- 03
Ongoing: Masters- 01

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7. 

Dr. D. D. Sarode
B.E. (Civil) (Mumbai, 1986), M.E. (Structural) (Mumbai, 1990), Ph. D. (I.I.T. Bombay, 2010), P. G. D. (Const. Management) (Mumbai, 1988),
D.C.S.T. (Mumbai, 1999)
Reader in Civil Engineering

Subjects Taught: Structural Mechanics, Process Equipment Design I
Research Interests: Construction Chemicals - Plasticisers, Anticorrosive coatings and inhibitors Hydration of cement and its structure, Concrete Technology – Mineral and chemical admixtures, Bacterial Concrete, Formwork for R.C.C. Structures. Composite Materials – Glass and Carbon fibre composites and its use in Engineering. Research in Geotechnical Engineering
Research Students: Guided: Masters – 04
Research Publications: International- 05, National- 10

6.11 DEPARTMENT OF MATHEMATICS

Head: DR. A. K. SAHU

1. 

Dr. A.K. Sahu
B.Sc. (Utkal, 1976), M.Sc. (Utkal, 1979),
Ph.D. (IIT, Mumbai, 1992)
Reader in Engineering Mathematics

Subject Taught: Appl. Math. I, II, III, Chem. Eng. Math., Computer Application (Lab.), Statistics and Simulation (Lab.).
Research interests: My basic interest is in Mathematical modeling, Momentum and Heat transfer in Laminar and Turbulent Flows. In general analytical solutions are not possible for the governing equations for complex flow geometry. Therefore the equations are solved numerically. For this Purpose, finite difference, control volume method and finite element methods are used.
Research Students: Guided: M. Phil.- 01
Ongoing: Ph. D.- 01
Research Publications: International- 06, National- 04
Sponsored projects: Government: Ongoing- 04

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2. 

Dr. Ajit Kumar
B.Sc. (Patna, 1995), M.Sc. (Mumbai, 1997), Ph.D. (Mumbai, 2004)
Lecturer in Mathematics

Subjects Taught: Applied Mathematics I, II & IV (B. Chem. Eng. Computer application, Computer Programming, Applied Mathematics I, & IV (B.Tech.)
Research Interests: Optimization Techniques, Statistical Analysis, Differential Geometry, Mathematical Padagogy
Research Publications: International- 02, National- 01
Sponsored Projects: Government: Ongoing- 02

6.12 DEPARTMENT OF PHYSICS

Head: DR. V.D. DESHPANDE

1. 

Dr. R.R. Deshmukh
B.Sc. (Pune, 1991), M.Sc. (NMU Jalgaon, 1994),
B.Ed. (Mumbai, 1995), Ph.D. (Mumbai, 2002)
Reader in Physics

Subjects Taught: Heat, Optics, Lasers and Fibre optics, Thin films, Chromatographic Techniques
Research Interests: Plasma Technology, Polymer Physics, Functionalization of nano-particles. Molecular tailoring of surfaces using plasma for biomedical applications, textile physics, Electro-optical properties of Polymer Dispersed Liquid Crystals. Polymer nano composites materials.
Research Students: Guided: Masters- 02
Ongoing: Ph.D.- 04,
Research Publications: International- 11, National- 02
Sponsored Projects: Government: Completed- 05

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2. 

Dr. (Smt.) V. D. Deshpande
M.Sc. (Delhi, 1978), M.Phil. (Delhi, 1980), Ph.D. (Delhi, 1986)
Reader in Colour Physics

Subjects Taught: Applied Physics, Colour Physics, Chemical Physics.
Research Interests: Polymer nanocomposites: Crystallization kinetics, structure-property relationship, Polymer blends : Orientation behaviour, Crystallization kinetics, Colour Physics: Textile dyeing, Polymer embedded nano-drug delivery, Renewable energy; Coatings for solar collector for various solar applications
Research Students: Guided: Masters- 05

Ongoing: Ph. D.- 06
Research Publications: International- 07, National- 04
Sponsored Projects: Government: Completed- 06

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3. 

Dr. M. Narayan
B.Sc. (Mumbai, 1988), M.Sc. (Mumbai, 1990), Ph.D. (Madras, 1999)
Reader in Physics

Subjects Taught: Quantum Mechanics, Thermal Physics, UG Physics Lab, Postgraduate Quantum Mechanics.
Research Interests: Theoretical High Energy Physics, Cavitation and Nucleation phenomena.
Research Publications: International- 14, National- 02

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4. 

Dr. S. M. Pawde
B.Sc. (Nagpur, 1980), M.Sc. (Nagpur, 1982), Ph.D. (Mumbai, 1994)
Reader in Physics

Subjects Taught: Chemical Physics, Optics, Electronics
Research Interest: Dielectric and piezoelectric properties of polymers, polymer blends and composites.
Research Student: Guided: Ph.D.- 01, Masters- 04
Projects: Government: Completed- 04
Research Publication: International- 11, National- 06

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5. 

Shri. S. Kasthurirangan
B.Sc. (Mumbai, 2005), M.Sc. (Mumbai, 2007)
Lecturer in Physics

Subjects Taught: Optics, Laser, Chemical Physics
Research Interests: Accelerator-based Atomic and Molecular Physics, Ion-Atom and Electron-Atom Collisions, Physics of Highly Charged Ions, Colour Physics

6.13 PROFESSOR M.M. SHARMA LIBRARY

Head: Shri A. S. Lokhande

1. 

Shri A. S. Lokhande
B. Sc. (Mumbai, 2001), B. L. I. S. (Pune, 2002), M. L. I. S. (Pune, 2003), Maharashtra SET, UGC -NET
Librarian

Subjects taught: Bibliometrics, Citation Analysis

3.14 DBT-ICT- CENTRE FOR ENERGY BIOSCIENCES

Co ordinator: PROFESSOR A. M. LALI

1. 

Dr. Annamma Anil
B.Sc. Mumbai 1999, M. Sc. Mumbai 2001, Ph.D. Mumbai 2008
Lecturer in Biochemistry

Subjects Taught: Biological Sciences, Enzyme kinetics, Protein Technology, Bioconversion and Downstream processing
Research Interests: Structural biochemistry, Biotransformation, Protein and Enzyme Engineering, Affinity ligand design and purification of proteins, peptides, API's and other small molecules
Research Publications: International- 01, National- 01

Sponsored Projects: Government: Completed- 01, Ongoing- 02
Private: Ongoing- 01

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2. 

Shri. M. L. Mokashi
B.Tech. (Nagpur, 1999), M. Chem.Eng. (Mumbai 2003), LL.B. (Mumbai,2008)

Lecturer in Intellectual Property Rights

Subjects Taught: Intellectual Property Rights
Research Interest: Intellectual Property policy-making and protection in Biotechnological Invention, Management of Intellectual Property in Universities and R & D Institutes, Market evaluation & Technology Transfer for Commercialization, IP Audit, Intellectual Property Contract Management, IP Infringements Analysis and Litigations, IP based *Entrepreneurship, IP based* Innovation management for better Industry-Institute interaction. Grass root Inventions and Inventions based on Rural Technology.

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3. 

Dr. S. B. Kale
B. Pharm. (Pune, 2001), M.Sc. (Bioprocess Tech.) (Mumbai, 2004), Ph. D. (Tech.) (Mumbai, 2008),
Lecturer in Bioprocess Technology

Subjects Taught: Downstream Processing in Biotechnology, Advanced topics in adsorptive and chromatographic separations, Advanced topics in membrane separation and electrophoresis
Research Interests: Separation and purification, Extraction, Analytical method development, Quality by design (QbD), Scale up and Technology transfer, Biocatalysis, Process integration and intensification
Research Students: Ongoing: Masters- 04
Research Publications: International- 05
Sponsored Projects: Government: Ongoing- 01
Private: Completed- 05, Ongoing- 04

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4. 

Dr. Gunjan Prakash
B.Sc. (Meerut, 1998), M. Sc. (Banathali Univ. 2000), Ph.D. (IIT Delhi, 2006)
Research Scientist in Microbiology

Subjects Taught: Microbiology, Biological Sciences
Research Interests: Microbial & plant cell fermentation, production of secondary metabolites/industrially important compound, Medium engineering for yield/productivity enhancement, Plant Biotechnology
Research Publications: International- 07, National- 02
Sponsored Projects: Private: Ongoing- 02

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5. 

Dr. R. Pandit
Research Scientist in Molecular Biology

Subjects Taught: Biochemistry, Biological Sciences
Research Interests: Algal biotechnology, Bioactive compound, Animal tissue culture
Research Publications: International- 02, Indian- 07

6.15 ADJUNCT FACULTY

1. 

Dr. N. C. Debnath
B. Sc. (Hons.) (Calcutta, 1970), M. Sc. (Delhi, 1973), Ph. D. (Calcutta, 1979)
Scientist C (Professor Grade)

Department of Physics

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2. 

Dr. N. J. DeSouza
B.Sc. (1953), M.Sc. (1956), Ph.D. (1962), AIIM (Geneva), OOE (Zurich)
Adjunct Professor
Department of Pharmaceutical Science and Technology
Co-Coordinator, Entrepreneur Development Cell

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3. 

Ms. Rita Doctor
B.A. (Mumbai, 1962), M.A. (Mumbai, 1965)
Adjuct Professor and Counsellor

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4. 

Dr. A. K. Kalkar
M.Sc. (Jabalpur, 1966), Ph.D. (Mumbai, 1972)
Adjunct Professor
Department of Physics

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5. 

Dr. S. V. Panse
M.Sc. (Mumbai, 1969), Ph.D. (Mumbai, 1996)
Adjunct Professor
Department of Physics

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6. 

Dr. A. L. Ravinmohan

B.Tech. (IIT, Mumbai, 1967), Ph.D. (California, USA, 1971)
Adjunct Professor

Department of Oils, Oleochemicals and Surfactants

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7. 

Dr. M. Sriram
Adjunct Professor of Chemical Engineering

6.16. HON. PROFESSORS

1. Prof. A. S. Mujumdar,
Hon. Professor of Chemical Engineering
(Department of Mechanical Engineering & Director,
Mineral, Metal & Materials Technology Centre(M3TC)
National University of Singapore)

Research Interests: Drying of Paper, Steam Drying, Computational Fluid Dynamics, Electro-Osmosis Dehydration, Time-Dependent Melting/Freezing

Phenomena, Novel Spout/Fluidized Bed Drying, Transport Processes of Impinging and Opposing Jets, Chemical Heat Pumps for Industrial Drying. Focus on innovative ideas. Approach: mission-oriented but based on fundamentals. New: Explosive boiling actuated micro-devices.

2. Professor J.B. Joshi
(J.C. Bose National Fellow)
Department of Chemical Engineering
(Homi Bhabha Professor, HBNI, Mumbai)

Research Interests: CFD, Multiphase Reactors

3.Shri S. B. Patel
M/s Shirish Patel and Associates
Department of Chemical Engineering

4. Dr. M. V. Karwe
Department of Food Engineering and Technology

5.Shri S. M. Mokashi
Former M.D., Xytel India Pvt. Ltd
Department of Chemical Engineering

6. Dr. H. C. Pradhan
Department of Physics

7. Dr. Shriram Manohar
Department of Chemistry

8. Dr. N.V. Iyer
Department of Oils, Oleochemicals and Surfactants

9. Dr. A. Sapre
Reliance Industries Ltd
Department of Chemical Engineering

6.17. ENDOWMENT POSITIONS : DISTINGUISHED VISITING FELLOWS, PROFESSORS AND LECTURERS 2009-2010

6.17.1. Institute Level

6.17.1.1. Professor B.D. Tilak Distinguished Lecturer

Professor R. P. Iyer
Ph.D. FRSC.
Vice President and Chief Scientific Officer
Co-founder, Spring Bank Pharmaceuticals
MA, USA.

6.17.1.2. Professor B.D. Tilak Visiting Fellowships

Dr. B Gopalan
Chief Scientific Officer and Executive
Director, Drug Discovery Research
Orchid Chemicals and Pharmaceuticals Ltd

Professor Jayarama Reddy
Former Vice Chancellor
Sri Venkateswara University
Hyderabad-500 017

Dr. Y.S. Rajan
Former Vice Chancellor, Central University,
Jalander.

Dr A. Dutta
Indian Institute of Petroleum (I.I.P)
Dehra Dun.

Professor S. Chandrasekaran
Senior Professor & Chairman,
Division of Chemical Sciences, Department of Organic Chemistry
Indian Institute of Science
Bangalore 560 012

Dr. Santosh K. Gupta
L&T Chair Professor of Chemical Engineering
Indian Institute of Technology Bombay

6.17.1.3. UDCT Golden Jubilee Visiting Fellowships

Professor Paul S. Weiss
Department of Chemistry & Department of Physics
The Pennsylvania State University,
University Park

Professor Prasad Kasibhatla
Associate Professor
Nicholas School of the Environment and Earth Sciences,
Duke University, USA.

Dr. Amol A. Kulkarni
Chemical Engineering and Process Development Division
National Chemical Laboratory,
Dr. Homi Bhabha Road,
Pashan, Pune - 411008

Shri Tarun Malkani
Managing Director,
Alcan India Pvt. Ltd.(Aluminum Business)
Mumbai.

Dr. Kamlesh Kushalkar
Global Regulatory Specialist,
Sabic Innovative Plastics
(General Electric Plastic), Mumbai

Mr. Anuj Sinha
Scientist, Planner and Engineer
Rashtriya Vigyan Evam Prodyogiki Sanchar Parishad,
Department of Science & Technology,
New Delhi – 110 016

Dr. Dilip Chaudhari
Indian Country Manager,
South American MNC

Professor Alan Hatton
Ralph Landau, Professor of Chemical Engineering Practice,
MIT, Cambridge,USA.

Dr D.V. Acharya
Process Engineering Manager,
Linde Engineering,
Murray Hill, USA

Professor S.N. Upadhyay
Director,
Institute of Technology
Banaras Hindu University
Varansi

Dr. Sudhir Tamne
General Manager,
Supply Chain and Technical
Yo! China

6.17.1.4. Dr. Balwant S. Joshi Distinguished Visiting Professorship in Chemical Engineering / Chemical Technology/ Applied Chemistry

Professor Gregory Stephanopoulos
Bayer Professor of Chemical Engineering,
Department of Chemical Engineering
Massachusetts Institute of Technology
Cambridge MA 02139 USA

6.17.2. Department of Chemical Engineering

6.17.2.1. Dr. G. P. Kane Visiting Professorship in Chemical Engineering

Professor R. V. Chaudhari
Deane E. Ackers Distinguished Professor CEBC,
The University of Kansas, Lawrence, KS 66049-1803, USA

6.17.2.2. The Dow Professor M.M. Sharma Distinguished Visiting Professorship in Chemical Engineering

Professor P.A. RAMACHANDRAN
Washington University,
St. Louis. MO, USA

6.17.2.3. Shri V.V. Mariwala Visiting Professorship in Chemical Engineering

Professor Shekhar Garde
Chairman,
Chemical & Biological Engineering
Rensselaer Polytechnic Institute
Troy, NY.USA

6.17.2.4. Shri G.M. (alias Dada) Abhyankar Memorial Distinguished Fellowship in Chemical Engineering

Professor Tapas K. Das
Washington State Department of Ecology,
Olympia, Washington 98504-7600, USA

Dr. Pradeep B. Deshpande
Professor Emeritus of Chemical Engineering
University of Louisville
And President and CEO
Six Sigma and Advanced Controls, Inc.
Louisville, KY, USA

6.17.2.5. Shrimati Kusumben and Shri Mathradas Kothari Visiting Professorship in Chemical Engineering

Professor Samir Mitragotri
Chemical Engineering Dept.

University of California, Santa Barbara,CA

6.17.2.6. Professor R.A. Rajadhyaksha Memorial Lecture

Prof. Suresh K. Bhargava
Dean of Applied Sciences,
College of Science, Engineering
and Technology, RMIT University,
Melbourne, AUSTRALIA

6.17.3. Department of Dyestuff Technology

6.17.3.1. Shri K.H. Kabbur Memorial Silver Jubilee Lectureship

Dr. Sanjiv Kamat
Chief Marketing Officer,
Pidilite Industries Ltd.
Andheri East, Mumbai-400059

6.17.3.2. Professor K. Venkatraman Lectureship

Dr. Bansi. L. Kaul
MCA Technologies GmbH
Biel-Benken, Switzerland

6.17.3.3. Pidilite Industries Limited Visiting Fellowship

Mr. Milan Ram Nikte
Atul Ltd.

6.17.4. Department of Fibres and Textile Processing Technology

6.17.4.1. Professor G.M. Nabar Endowment Lectureship

Mr. Raymond Ramrajkar
Director,
Premier Colourscan,
Navi Mumbai – 400 701

6.17.4.2. B.Sc. (Tech.) Class Of 1966 Visiting Fellowship

Mr. C.N. Guruprasad
General Manager (country head),
Marketing and Service

6.17.4.3. L.N. Chemicals – UICT Diamond Jubilee Visiting Fellowship

Smt. Lipika Nair
General Manager R & T India
Huntsman International (I) Pvt. Ltd.

6.17.5. Department of Food Engineering and Technology

6.17.5.1. Professor A. Sreenivasan Felicitation Lectureship

Dr. Vilas Shirhatti
Bombay College of Pharmacy
Mumbai -400098

6.17.5.2. Marico Industries Visiting Fellowship

Dr. K.M. Paknikar
Scientist-in- Charge,
Centre for Nanobioscience
Agharkar Research Institute,
Pune – 411 004

6.17.5.3.ICT- Lupin Visiting Fellowships for Bioprocess Technology

Dr. Veena Pande
Department of Biotechnology,
Kumaun University, Nainital – 263 001

Dr. Kalpana Joshi
Department of Biotechnology,
Sinhgad Institute,
Pune – 411 041.

6.17.6. Department of Oils, Oleochemicals and Surfactants Technology

6.17.6.1. Professor J.G. Kane Memorial Lectureship

Dr. Maya Joglekar
3/B Jay Shivam CHS,
Shiv Mandir Road, Ramnagar,
Dombivli (E) Dist: Thane
Pin 421201

6.17.6.2. Professor J.G. Kane Visiting Professorship in Chemical Technology

Dr. Sudha Raman
Gokuldham, Flat No. 4,
Plot No. 247 Sector 19-A,
Nerul, Navi Mumbai – 400 706

6.17.7. Department of Pharmaceutical Sciences and Technology

6.17.7.1 Professor (Mrs.) M.R. Baichwal Visiting Fellowship in Pharmaceutical Science and Technology

Dr. Manju Ray
i) Senior Professor,
Head, Dept. of Biol. Chem.
ii) Director (Actg.), Indian Association for the Cultivation of Science.
Kolkata 700 032.

Dr. Sugata Chatterjee
Senior Vice- President,
Process Development & Manufacturing, Sterling Biotech Ltd. Baroda, Gujrat.

6.17.7.2 Cipla Distinguished Fellowship in Pharmaceutical Science

Professor Goverdhan Mehta, *FRS, FNA*
CSIR Bhatnagar Fellow Department of Organic Chemistry,

Indian Institute of Science,

Bangalore 560 012

6.17.7.3 Professor S.K. Pradhan Endowment" in Pharmaceuticals Science & Technology

Professor Uday Maitra

Department of Organic Chemistry

Indian Institute of Science (IISc)

Bangalore – 560 012

6.17.7.4 Professor V. M. Kulkarni Endowment Fund

Dr. Joydeep Kant
Pfizer Pharmaseutical India Ltd.,
Veterinary Medicine R&D,
Pharmaceutical Sciences,
Navi Mumbai – 400 705

6.17.8. Department of Polymer Engineering and Technology & Department of Surface Coating Technology

6.17.8.1. K.S.S. Raghavan Chemical Weekly Visiting Professorship in Polymer Science & Technology

Dr. Sunil Sabharwal
Head of Radiation Technology Development
BARC

6.17.8.2. IPI - UICT Diamond Jubilee Visiting Fellowship in Polymer Processing

Professor S.K. Chakraborty
Acting Director and Head of Organisation
Indian Rubber Manufaturers

6.17.8.3. Chemimpex Rastogi-UICT Diamond Jubilee Visiting Fellowship in Surface Coating

Mr. P. B. Deshmukh

Chief Manager – Product Development,
Asian PPG Industries Ltd.
Mumbai 400 078

6.17.8.4. Synpol - UICT Diamond Jubilee Visiting Fellowship in Science and Technology of Pigments

Dr. Sudhir Pundalik Deshpande
Sr. Technical Manager,
Asian PPG Industries Ltd.,
Mumbai

6.17.8.5. Tipco - UICT Diamond Jubilee Visiting Fellowship in Thermosets

Dr. Prakash P. Wadgaonkar
Polymer Science & Engineering Division
National Chemical Laboratory,
Pune 411008

6.17.8.6. Jayvee Organics & Polymers (P) Ltd., Visiting Fellow in Polymer Additives and Compounding

Dr. Virendra Kumar Gupta
Head, & Vice President (R& T)
Reliance Industries Ltd.

6.17.8.7. Parmanand F. Parikh Endowment

Dr. C. V. Biyani
Supplier of MNC's , EASF,
Clariant Dr. Beck & Huntsman

6.17.9. Department of Applied Chemistry

6.17.9.1. Dharamsi Morarji Chemical Co. Visiting Fellowship in Chemistry

Dr. Shin-Ichiro Fujita
Division of Chemical Process Engineering,
Graduate School of Engineering,
Hokkaido University,
Sapporo, Japan.

6.17.9.2. Dai-Ichi Karkaria Ltd. Visiting Fellowship

Prof. Koteppa Pari
Senior Group Leader,
Piramal Life Sciences
Mumbai 400063.

6.17.9.3. Spinco Biotech-Ramnathan Lectureship

Dr. G. Ramakrishanan
Managing Director,
Thermo Fisher
Mumbai 400 076

6.17.10. Department of Physics

6.17.10.1. Dr. M.S. Patel Trust Visiting Fellowship in Polymer Physics

Dr. Ashish Lele
National Chemical Laboratory,
Pune 411 008

7. PROFILES OF DEPARTMENTS AND CENTRES OF EXCELLENCE

7.1 Department of Chemical Engineering [CHEM ENG]

7.1.1. What is Chemical Engineering?

Chemical engineering is the branch of engineering that applies scientific and mathematical principles to design and develop processes by which available chemicals can be converted into a variety of useful products. Chemical engineering is applicable to a wide range of technologies, including the production of energy, materials, electronics, and pharmaceuticals, the processing of food, and environmental protection and remediation. Development of the high-quality materials and large-scale processes characteristic of industrialized economies is an achievement of chemical engineering. Those chemical engineers involved in the design and maintenance of large-scale manufacturing processes are known as process engineers.

It is true that chemical engineers are comfortable with chemistry, but they do much more with this knowledge than just make chemicals. In fact, the term "chemical engineer" is not even intended to describe the type of work a chemical engineer performs. Instead it is meant to reveal what makes the field different from the other branches of engineering. Chemical Engineering is an ever evolving and fascinating branch of engineering having exceptionally high science orientation. It is highly science based and the most versatile disciplines. Chemical engineering enjoys a special and critical place in scientific and engineering disciples. It deals with world of atoms, molecules and molecular transformations and right from inception. As ecological sustainability takes on ever greater significance in the twenty-first century, there is likely to be a sustained demand for chemical engineers to collaborate with ecologists, mechanical engineers, electrical engineers, material scientists and others in planning eco-industrial projects. Such projects would integrate several different industrial and biological processes into synergistic complexes to produce materials and products needed by society.

7.1.2. Modern Chemical Engineering

The modern discipline of chemical engineering encompasses much more than just process engineering. Chemical engineers are now engaged in the development and production of a diverse range of products, as well as in commodity and specialty chemicals. These products include high performance materials needed for aerospace, automotive, biomedical, electronic, environmental, and space and military applications. Examples include ultra-strong fibers, fabrics, adhesives and composites for vehicles, bio-compatible materials for implants and prosthetics, gels for medical applications, pharmaceuticals, and films with special dielectric, optical, or spectroscopic properties for opto-electronic devices. Additionally, chemical engineering is often intertwined with biology and biomedical engineering. Many chemical engineers work on biological projects such as understanding biopolymers (proteins) and mapping the human genome.

A new paradigm of "borderless chemical engineering science" is emerging. The demands from the society on `cleaner' technologies rather `clean-up' technologies, the emergence of `performance chemicals and materials,' etc., is driving the profession towards achieving a symbiotic relationship with other disciplines. It has always been dealing with pollution prevention, atom economy, recycle, as the Solvay process would suggest. The term 'green chemical engineering' as a mantra for sustainable development and responsible care is at the centre-stage for all activities related to chemical engineering. Future course of an engineering discipline is reflected in current research areas within its folds. The expedition ahead for Chemical Engineering, based on the research profile of Chemical Engineering schools world over suggests that it is embracing biology, bio-engineering, tissue engineering, bio-processing, green chemistry and green engineering, and material science and nanotechnology in a big way and has been a truly working on scales from atom to atmosphere. Readily available computing power is changing the nature of research activity forever. A high level of mathematics and computational methods are intertwined with chemical engineering. The advent of new measurement techniques is reducing the length scale of investigation to nano and molecular scales irreversibly in many cases. Chemical

Engineering thus appears poised for a major expansion. Chemical engineers are getting directly involved in development of new products and new technologies which improve the quality of life which requires highly interdisciplinary work, new ways of treating diseases—a domain of medical practitioners only till very recently, and development of application specific materials and fluids with complex structure at various length scales. The recently concluded Centenary Celebrations of American Institute of Chemical Engineers (AIChE) had recognized 100 top chemical engineers for their outstanding contributions to the discipline, creation of new frontiers and society at large. A glimpse of the citations is a testimony to the prowess of Chemical Engineering (see *Chemical Engineering Progress,November,2008;http://www.aiche.org/ Uploaded Files/ About/Centennial/100moderneracheme.pdf*).

Chemical Engineering is not just Chemistry but a discipline itself with own characteristics. A proficiency in basic sciences such as Chemistry, Physics, Biology, Mathematics and their applications is necessary to effectively conduct the molecular transformations at scales varying from thousands of tonnes to few kilograms per day in economically attractive and environmentally safe manner. Each reaction with unique characteristics gives challenging opportunities to conduct it at profitable scale to produce increasingly purer products as per market demands with minimum energy input in shortest time without producing waste or by-products. Each combination of Reaction and Reactor is, therefore, a challenge to the Chemical engineer to make it faster, simpler and cheaper.

7.1.3. Borderless and Versatile Engineering Profession

Over the last 25 years, Chemical Engineering has evolved developing interfaces with newer areas, including Biochemical Engineering, Nano Technology, and Energy Engineering taking advantage of developments in High performance computations, Electronics and Instrumentations and Information Processing. Although the basic responsibility of a Chemical engineer remains in design, testing, scale-up, operation and control of chemical plants, the interface helps the Chemical Engineers to enter into these newer areas at ease. Large Manufacturing facilities such as cements, petroleum refineries, oil and natural gas exploration and semiconductor Industries, biofuels and biotransformations, nuclear reactors, all involve Chemical engineering operations. Chemical engineers find good job opportunities in a wide spectrum of industries involving speciality chemicals, pharmaceuticals, drugs, paints, dyes, vegetable oils and foods.

Because of excellent analytical skills Chemical Engineers(CE) can work in areas from chemoinformatics to bioinformatics, drug delivery systems, molecular modelling, to handling systems from nanoscales to global scales for environmental impact and climate change. The versatility of Chemical Engineering education, therefore, makes a wide choice of career options available to the CE candidates. There is a huge scope for higher studies in Chemical Engineering because of highly science based discipline and requirement of R&D in the country.

7.1.4. International Standing of Department

The Department of Chemical Engineering is the number one Chemical Engineering Department in the Country by all the standards: teaching, research and industrial relationship, as has been rated by the international surveys conducted by Professor Jude Sommerfield of Georgia Tech, USA since 1964 for every five year period as well as every year and also during the 5-year period during 2004-2009 which included all IITs and IISc. Besides it is among top 10 departments in the world and in terms of productivity as measured by papers per faculty per dollar spent, it is number one in the world. The number of papers published in peer reviewed journals per faculty is also the highest in India. The FIST programme of DST has revealed that the Chemical Engineering Department is the Best Department in all engineering departments in India. This is again the record which has been held due to the research contributions of faculty in international journals of repute. The value and impact of our research is reflected in highest number of papers per faculty member, highest impact factor per paper, and highest number of citations for papers of Chemical Engineering Department. The Department is recognized as the UGC Centre for Advanced Studies for a record time since 1989 and as UGC Networking Resource Centre in Chemical Engineering, since 2008; only one of its kind and further supported by DST-FIST programme with state-of-the-art research facilities.

7.1.5. Connectivity with Industry

The faculty has been acting as consultants to industry and the earnings are the highest for any engineering department in India. Collaborative Academic Programs have been initiated with international institutes such as Purdue University, Kansas University, University of Saskatchewan, ICGEB, and, CSIR labs. Many foreign universities have shown interest in collaborating with Chemical Engineering faculty, and the most striking is a string of Canadian Universities desirous of signing MOUs with this department.

7.1.6. Accolades and Awards

A number of awards have come to the faculty members in Chemical Engineering including Jagdish Chandra Bose National Fellowship, fellowships of Indian National Science Academy, Indian Academy of Sciences, National Academy of Sciences in India, Indian National Academy of Engineering and Indian Institute of Chemical Engineers. Not only faculty members but students also have bagged number of awards. Even home paper or design papers of the final year students have been repeatedly rated as the best by the Indian Institute of Chemical Engineers and the Ambuja Cements and Sir P.C. Ray Awards have come several times to ICT which itself is a record. All these awards recognize excellence in the field of Chemical Engineering.

7.1.7. Employment Opportunities

Our graduates, number over 30-35 per year are accepted with full fellowships in leading universities including MIT, Minnesota, UCB, Caltech, Wisconsin-Madison, Princeton, Stanford, Texas A and M, University of Texas, University of Delaware, Purdue University, and many more. All students are placed in some of the leading industries in India, with salaries ranging from Rs. 3.5 lakhs to Rs. 14.00 lakhs per annum and these are hard core industries and not the software companies. Several leading industrialists and owners of fortune-500 company owners are our graduates, including top planners and policy makers, who have been bestowed with Padma awards.

7.1.8. Research Interests of Faculty

The Chemical Engineering faculty has been well known for their publications in peer reviewed high impact factor journals, patents and industrial consultations in a variety of research interests.

Major Thrust of Research Areas

- Development of Novel Reactors, Reactions and Separation Processes
- Computational Fluid Dynamics for Multiphase Systems
- Analysis of Multiphase Phenomena
- Novel Catalytic Materials and Processes,
- Green Technology
- Surfactant Science and Hydrotropy
- Organic Chemical Processes Development
- Biotechnology and Downstream Processing
- Adsorptive and Chromatographic Separations
- Membrane Based Separation Processes
- Cavitation Phenomena, Sonochemistry

In the global context, the priority research areas as identified by the Chemical Engineering Department are:

- Multiphase reactions, multiphase reactors and separation processes
- Energy Engineering with an emphasis on the renewable energy resources
- Green Technology

- Bio-Technology and Bio-medicines.
- Environmental Protection and Safety
- Nanoscience and Nano-Technology
- Materials Technology

7.1.9. Laboratory and Research Facilities

All Chemical Engineering laboratories and faculty offices have been remodeled during past 3 years. The labs are equipped with state-of-the-art instruments and have gone a total face-lift. UG students are provided computational facility in the main laboratory, including latest software required for modeling and simulation. Some of the sophisticated equipment which have been acquired and used continuously are: GC-MS, LC-MS, SEM, TEM, AFM, IC, FTIR, HP-TLC, HPLC, GC, XRD, DSC, DTA/TGA, AAS, Laser-Doppler anemometer, image analysers, pore and particle size analysers, autoclaves of different sizes and MOCs, catalyst screening bench-top autoclave assembly, supercritical fluid phase monitor and reactor, microwave reactors, computer workstations, laminar flow apparatus, fermenters, and many others. Advanced instrumental facilities have been created under industry sponsored projects as well.

7.1.10. Fellowships

Fifteen Ph.D. fellowships are offered every year under UGC CAS in Chemical Engineering; besides there are 20 Ph.D. fellowships under ICT-DAE Centre for Chemical Engineering Education and Research. Several projects are secured by the faculty in the areas of expertise from central agencies such as DST,DBT, CSIR, including Indian and foreign companies; this number varies from year to year. Interested candidates must appear for the entrance examination for a Ph. D. degree, whether funded government or industry. For GATE qualified students the UGC fellowships are currently Rs 14000 p.m. plus 30% HRA, which are likely to be revised. For non-GATE students, they are Rs. 10,000 p.m. only. **There is a unique fellowship instituted by Dow Chemicals for Ph.D. (Tech.) in Chemical Engineering for a lady student at a value of Rs 25,000 p.m. with a contingency grant of Rs 1.00 lakh per year, for a period of 4 years. Thus, there will be 4 such lady students at a time. The candidate is required to participate in 10 hours of undergraduate lab./teaching per week. The grand purpose of this fellowship to induct woman chemical engineering faculty in Indian universities and institutes and it was started in 2009.** The Centre for Green Technology, which is established in joint collaboration with University of Mumbai also offers 15 UGC SAP Ph.D. fellowships for conducting research, some of which are available under the guidance of concerned Chemical Engineering faculty. Some fellowships will also be offered during 2010-11 under the Centre for Nanomaterials and Nanotechnology of University of Mumbai to work with faculty of chemical engineering.

Apart from Master of Chemical Engineering programme, the department also participates in two interdisciplinary M. Tech. courses - Perfume & Flavour Technology, and Bioprocess Technology. At least 19 Masters fellowships offered for GATE qualified students in the first round and typically this number is around 30+ when the admissions are closed. Besides, about 10-15 M. Tech. students in Bioprocess Technology (with a special reference to downstream processing) work under the guidance of Chemical Engineering faculty.

7.1.11. Interdisciplinary and Cross Disciplinary Programmes

Several faculty members guide Ph.D. students in all disciplines of Chemistry and Biotechnology, on inter-disciplinary topics and several chemistry graduates have benefitted by their training in the Department of Chemical Engineering.

7.1.12. Visiting Faculty Endowments

There are several endowments created to invite the best of professionals and academics to the ICT. Some eminent faculty from institutes such as MIT, Purdue, Cambridge, Monash University, University of California, Berkeley, University of

California, Santa Barbara, National University of Singapore, Montreal, University of Michigan, Michigan State University, University of Alberta, RMIT Australia, IIT-Chicago, Cambridge University, University of Manchester, IIT-Bombay, IIT-Kanpur, IIT-Madras, National Chemical Laboratory, have taught UG and PG courses in ICT under these endowments. These lectures form part of audit courses for research students. Besides, public lectures are organized under each endowment.

7.2. Department of Dyestuff Technology [Dyes]

All chemical technology programmes are designed to lay sound foundation in basic sciences and chemical engineering-such as separation processes, chemical reaction engineering, transport phenomena, chemical engineering economics, instrumentation and process control, The basic sciences syllabi is the same for both chemical engineering and chemical technology courses, including mathematics and computation. As a consequence, B.Tech. students from these 7 branches of chemical technology are treated on par with chemical engineering graduates for higher studies in western universities.

Department of Dyestuff Technology is unique in India providing UG and PG degrees in Intermediates and Dyestuff Technology. The department was borne out of the research interests and tradition of the ICT, particularly, the world-class research started by Prof K. Vekatraman, the first Indian Director of ICT, whose treatises on dyestuff chemistry are reference books translated into foreign languages. Leading organic chemical technologists and industrialists have been alumni of this department. Contrary to belief, there is a lot of excitement in courses offered by this Department including new eco-friendly dyestuffs, laser dyes, and biotechnological aspects of dyes, nanotechnology and green chemistry. This department has a tradition of creating several first generation entrepreneurs, and many dyestuff companies have origins in research conducted in this department. Since this course combines high level chemistry with technology, and downstream processing, the graduates are accepted in other industries including pharmaceuticals and fine chemicals. This department is also part of the UGC Centre for Advanced Studies in Physico-chemical Aspects of Textiles, Fibres, Dyes and Polymers, which was the first Centre in ICT, established in 1963. Three fellowships are allotted under this Centre for Ph.D. including those under research schemes.

This B. Tech. (Dyestuff) course is an organic chemistry accented course. The main focus is on the training towards the laboratory as well as large-scale synthesis of colourants (dyes and pigments). Colourants can be prepared either through synthesis or from natural sources. The synthetic colourants are prepared through multi-step synthesis, which requires insight into synthetic organic chemistry. The colourants thus prepared are used for textiles, foods pharmaceuticals, and for hi-tech applications. The education provided to the undergraduate students is a perfect blend of chemistry and engineering. The research at this department is focused on many high technology areas such as lasers, ink jet printing, optical recording devices and high performance pigments for various end uses. The department also participates in an interdisciplinary Masters course in Perfume and Flavour Technology.

7.3. Department of Fibres & Textile Processing Technology [Textile]

Started in 1934 with the inception of the UDCT, this department has provided some of the leading textiles technologists in the country; the main focus of training being textiles processing. It has been recognized by the UGC as a ‘Centre of Advanced Studies’ along with three other departments, right from 1963 when the UGC started this programme. The textile industry is now rejuvenating with only sky as limit to its multifaceted progress. The B. Tech. (Textiles) course content focuses primarily on the wet processing of a variety of textile materials and encompasses fibre-to-finish approach with emphasis on the latest technology, industrial requirements, environmental impact, polymer science, specialty chemicals, technical textiles and smart textiles, marketing, etc. It covers a complete spectrum of natural and man-made fibres, with special reference to their chemistry, procurement/synthesis, structure - properties relationship and applications in various fields. The technology and the chemical processing are studied in depth which include pre-treatment, coloration and finishing with speciality applications in mind. Chemistry, synthesis and applications of dyes and pigments are also studied.

The courses are taught in terms of the chemistry and applications of the colorants and auxiliary chemicals. An introduction to garment manufacturing, processing, merchandising, the testing of all the fibres, specialty chemicals and dyes is given in the theory and practical courses. Besides the apparel, the hi-performance fibres and super fibres for use in technical and industrial textiles are also introduced. Being Application Technology, the graduates grab variety of positions that include hard core textile industry, process houses, garment industry, dyestuff and specialty manufacturers and suppliers, and testing houses; in their departments such as production, R & D, and marketing.

The Textiles Chemistry graduates have been luminaries in their fields in India and have also started their own industries. Three Fellowships are allotted under this Centre for Ph.D. including those under research schemes.

7.4. Department of Food Engineering and Technology [Foods]

This department is the first in our country to offer specialized education in Food Technology. The B. Tech. (Food Eng. And Tech.) course trains the students in chemical, biochemical and microbial aspects of foods. Students are also taught how high quality products can be prepared and preserved for storage and how the storage conditions might affect the quality. The course gives adequate engineering inputs for large-scale production. The training also includes development of food products, manufacturing processes, design of factory with proper quality assurance system established. Economic feasibility of marketing such products is also taught during the course. The major research interests include carbohydrate chemistry and technology with focus on Indian traditional foods; and food microbiology related to quality, safety and application of new technology. Prof. D.V. Rege Centre has been founded to cater to the needs of Food Technology Research.

The UGC has recognized the Department as Centre of Advanced Studies in Food Engineering and Technology, under which 15 SAP fellowships are awarded per year. A new course assisted by DBT in Food Biotechnology has been in place since 2009-10 with 10 M. Tech. GATE fellowships. The department also participates in two interdisciplinary M. Tech. courses - Perfumery & Flavour Technology, and Bioprocess Technology.

7.5. Department of Oils, Oleochemicals and Surfactants Technology [Oils]

After WW-II, the Department for Technology of Oils, Fats and Waxes was started, which was headed by Professor J.G.Kane, whose work on non-edible oils was exceptional. The department has been in forefront for its quality education. Several of its alumni have been industrialists and reputed educationists.

7.5.1. What is this Technology?

The lipids are a class of biochemical compounds, many of which occur naturally in plants and animals. The lipids constitute a very large class of compounds, many of which play essential roles in organisms. Among the most important lipids are fats and oils, waxes, steroids, terpenes, fat-soluble vitamins, prostaglandins, phosphoglycerides, sphingolipids, and glycolipids. Phospholipids, for example, occur in all living organisms, where they are a major component of the membranes of most cells. The main use of fats commercially is in the production of soaps and other cleaning products. Oleochemicals are chemicals derived from biological oils or fats. The hydrolysis or alcoholysis of oils or fats form the basis of the oleochemical industry. The formation of basic oleochemical substances like fatty acids, fatty acid methyl esters (FAME), fatty alcohols, fatty amines and glycerols are by various chemical and enzymatic reactions. Intermediate chemical substances produced from these basic oleochemical substances include alcohol ethoxylates, alcohol sulfates, alcohol ether sulfates, quarterner ammonium substances, monoacylglycerols (MAG), diacylglycerols (DAG), structured triacylglycerols (TAG) and sugar esters. The importance of these chemicals is thus evident.

This Department has been pioneering in the field of Oil Technology. The curriculum has been designed to provide an in-depth knowledge of chemistry and technology of oils and fats, and their industrial applications. Career opportunities exist

in oils mills and refineries, oleochemicals, soap and detergent manufacturing industries, surfactants and specialty chemical manufacture producing auxiliary chemicals, Paints. Cosmetics, Perfumery and raw materials used in the above industries. Several short and long term projects instituted by sponsoring bodies for process/product development have been supervised by the faculty as part of their routine research activity.

This Department offers 2 Ph.D. fellowships per year under non-SAP status by UGC. It also participates in M. Tech. in Perfumery and Flavour Technology course.

7.6. Department of Pharmaceutical Science and Technology [PHARMA]

This department runs two different distinct programmes – Pharmaceutical Technology and Pharmacy.

The Pharmaceutical Technology course is part of the B. Tech. programme, earlier B.Sc. (Tech.), dealing with manufacture of pharmaceuticals and drugs, and has all the ingredients of solid foundation in basic sciences, mathematics, computation and chemical engineering. B. Tech. (Pharmaceuticals and Fine Chemicals) was started in 1940s, when the B. Sc. (Tech.) course was expanded. Several distinguished alumni had their training in this discipline. Strong background knowledge of chemical engineering including chemical reaction engineering, unit operations, separation processes, instrumentation and process control, and stoichiometry is imparted. Basic science subjects like chemistry, mathematics, and physics are dealt with in depth, while students are introduced to subjects of biochemistry, microbiology, medicinal natural products and pharmacology. Apart from technology, research in medicinal chemistry also brought laurels to this department. Many first generation renowned industrialists received their lessons in this department. The aim of the B. Tech. (Pharma.) course is to develop complete professional technologists /entrepreneur for the Active pharmaceutical ingredients (API) and pharmaceutical industry. The focus is on the manufacturing process technology and chemistry of API, intermediates and fine chemicals and development of dosage forms.

On the contrary, the B. Pharm. Course at the ICT, started in 1959, was the first course of this kind in the state of Maharashtra. The course involves a detailed study of Pharmaceutics, Medicinal chemistry, Pharmacology, Pharmaceutical Analysis and Pharmacognosy. The goal is to enable an understanding of the science of drug. The course is supported with in depth courses in basic sciences namely, organic chemistry, physical chemistry, biochemistry, microbiology and other relevant subjects like biotechnology, forensic pharmacy, management. The focus is on development of an expertise in the chemistry of drugs, their formulations, their effects, dosage regimen, drug toxicity and interactions with adequate knowledge of the manufacturing of drugs and dosage forms and regulatory requirements.

The UGC has recognized the Department as Centre of Advanced Studies in Pharmaceutical Science and Technology, under which 15 SAP fellowships are awarded per year. Many industrial projects, both Indian and foreign, are currently in progress. All modern equipment and instruments are available for research. The faculty is highly active and has filed patents in a variety of areas including formulation and drug delivery. Besides, fellowships are also accorded under various projects with individual faculty.

7.7. Polymer and Surface Engineering [Polymer] [Coatings]

The department of Polymer and Surface Engineering, has undergone changes in its nomenclature and was established in 1946. Earlier it was known as Paints, Pigments and Varnishes (PPV) Section and was steered in the beginning by none other than Professor N.R. Kamath, a famous chemical engineer, graduate of first batch of B.Sc. (Tech.), in 1936, who later migrated t IIT-Bombay as Head of Chemical Engineering and Deputy Director. The B.Sc. (Tech.) courses in plastics and paints technologies were started in 1940s and have been popular throughout. Several small and medium industries covering plastics, paint, printing ink, adhesive and sealers have been founded by the graduates of the Department and maintained excellent connectivity with industry.

The Department runs two B. Tech. programmes: Polymer Engineering and Technology, and Surface Coating Technology.

7.7.1. What is Polymer Science and Engineering

Polymers are molecules that contain many atoms, typically tens of thousands to millions. While many polymers occur naturally as products of biological processes, synthetic polymers are made by chemical processes that combine many monomers, together in chains, branched chains, or more complicated geometries. Starch, cellulose, proteins, and DNA are examples of natural polymers, while nylon, Teflon, and polyethylene are examples of the synthetic variety. Both classes possess a number of highly useful properties that are as much a consequence of the large size of these molecules as of their chemical composition. Although most synthetic polymers are organic, that is, they contain carbon as an essential element along their chains, other important polymers, such as silicones, are based on noncarbon elements.

The rapid pace of advances in polymers, particularly after World War II, has been remarkable and the birth of this discipline in ICT in mid-1940s was timely. Synthetic polymers are so well integrated into the fabric of society that we take little notice of our dependence on them, whether it is health, medicine, clothing, transportation, housing, defense, energy, electronics, employment, and trade. Without a doubt, synthetic polymers have large impacts on our lives.

Although progress in polymer science and engineering can be considered ground-breaking, opportunities are abundant for creating new polymeric materials and modifying existing polymers for new applications; depolymerization and polymer recycling; biodegradable polymers; nano-composites, and the like. Scientific understanding is now replacing empiricism, and polymeric materials can be designed on the molecular scale to meet the ever more demanding needs of advanced technology. The possible control of synthetic processes by biological systems is promising as a means of perfecting structures. New catalysts offer the opportunity to make new materials with useful properties, and the design of new specialty polymers with high-value-added applications is an area of rapidly increasing emphasis. Theory, based in part on the availability of high-speed computing, offers new understanding and aids in the development of improved techniques for preparing polymers as well as predicting their properties. Analytical methods, including an array of new microscopic techniques particularly suited to polymers, have been developed recently and promise to work hand-in-hand with theoretical advances to provide a rational approach to developing new polymers and polymer products. The field of polymer science and engineering therefore shows no sign of diminished vigor, assuring new applications in medicine, biotechnology, electronics, and communications that will multiply the investment in research many times over in the next few decades.

The education provided to the students is the blend of practice and theory related to polymer science and engineering. The students learn to develop systems which are economically feasible and environmentally acceptable.

7.7.2. What is Surface Coating Technology?

A substance applied to other materials to change the surface properties, such as colour, gloss, resistance to wear or chemical attack, or permeability, without changing the bulk properties is a coating material. Surface coatings include such materials as paints, varnishes, enamels, oils, greases, waxes, concrete, lacquers, powder coatings, metal coatings, and fire-retardant formulations. In general, organic coatings are based on a vehicle, usually a resin, which, after being spread out in a relatively thin film, changes to a solid. This change, called drying, may be due entirely to evaporation (solvent or water), or it may be caused by a chemical reaction, such as oxidation or polymerization. Opaque materials called pigments, dispersed in the vehicle, contribute colour, opacity, and increased durability and resistance. Organic coatings are usually referred to as decorative or protective, depending upon whether the primary reason for their use is to change (or preserve) the appearance or to protect the surface. Often both purposes are involved.

The physical, chemical and mechanical properties of a material surface determine its applicability in many technical devices. Numerous applications could not be realized without the use of surface modifications, coatings and thin film

technology. Therefore, the need for efficient and effective methods of surface modification is becoming increasingly evident to allow the production of far superior products in terms of wear resistance, corrosion protection, enhanced biocompatibility, thermal insulation, improved optical and altered electronic properties. Coating technologies of particular interest include physical and chemical vapor deposition, thermal spraying, electrochemical deposition, sol-gel-syntheses, and plating. Surface modification includes directed energy techniques such as ion, electron and laser beams as well as etching procedures and thermo-chemical diffusion. Beyond that, mono-layers (e.g. SAM, Langmuir-Blodgett) have attained high significance in preparing thin films to modify biomedical surfaces. Recent novel techniques to prepare patterned surfaces (e.g. nano-imprint lithography, micro-contact printing) have proven their potential for the fabrication of integrated circuits and bioactive implants. Thus, this course offers an exciting field of study.

New trends related to surface engineering and coating technology for the synthesis of functional materials surfaces including novel fabrication methods, materials and applications, new characterization techniques as well as numerical simulation and modeling are some of the areas of research.

The department is part of UGC Centre for Physico-chemical Aspects of Textiles, Fibres, Dyes and Polymers. It is well equipped and offers 3 Ph.D. fellowships under the UGC SAP meritorious fellowship scheme.

7.8. ICT-DAE Centre for Chemical Engineering Education and Research

7.8.1 Preamble:

The Institute of Chemical Technology (ICT) and the Department of Atomic Energy (DAE) signed a Memorandum of Agreement (MOU) in 2006 having far reaching benefits for Indian S and T, which was based on the excellent relation between these two organizations and successful completions of projects by ICT faculty of Chemical Engineering. The MOU covers the following activities.

(A) Instituting an interdisciplinary Ph.D. programme in Chemical Engineering.

(B) Undertaking R&D projects in the areas of common interest and related to nuclear, fuel cycle and advanced technologies.

DAE Research Institutions, namely, Bhabha Atomic Research Centre (BARC) and Indira Gandhi Centre of Atomic Research (IGCAR) are premier multidisciplinary R&D organizations engaged in research with the objective of generating knowledge and techniques for nuclear power production, advancement of science, use of radioisotopes in industry, health and agriculture as well as research in frontier areas of science and technology. BARC and IGCAR have multi-disciplinary groups of experts who have used as well as contributed to the development of processes and technologies related to thermal and fast nuclear reactors, fuel cycle and related areas. BARC and IGCAR have pursued research and development in chemical engineering in a rigorous way for many years in the areas defined by DAE's mission oriented programmes as well as projects of national interest. BARC and IGCAR support academic programmes within the DAE and also in the academic institutions and research centres in various parts of the country.

ICT is one of the foremost academic institutions in India, and has the entire necessary infrastructure in terms of trained manpower (including students) and a long tradition of research and development in the field of Chemical Engineering and Chemical Technology. ICT has also had long and fruitful experience of working with BARC and other units of DAE on research projects related to Chemical Engineering and process technologies and have completed them meeting the high standards expected by DAE. On the national level, ICT is a major resource Institution in terms of technology development and fundamental research at the cutting age on the global scale. They have also entered into an MoU with Homi Bhabha National Institute (HBNI) for collaborating on academic programs especially suited to the requirements of DAE institutions.

In the X^{th} and XI^{th} Five Year Plan, BARC and ICT had undertaken a joint research programme encompassing several DAE research projects in the Chemical Engineering field. Through the Virtual Centre, called, DAE-ICT Centre for Knowledge Based Engineering, BARC scientists and ICT faculty have collaborated and very successfully completed several projects. In view of the success of the collaborative programme through the Centre for Knowledge Based

Engineering, BARC and IGCAR proposed to enlarge the scope of collaboration by establishing a DAE-ICT Centre for Chemical Engineering Education and Research that will synergise the strengths of both these organisations; on the one hand, ICT has proven track record in training high quality manpower and in conducting research in Chemical Engineering and technology, on the other hand BARC and IGCAR have demonstrated over decades their ability to conduct multi-disciplinary, mission oriented R&D leading to a large number of indigenous and innovative chemical engineering processes, equipment and instruments, and technologies.

DAE has to develop several innovative technologies to tackle the problems of efficient nuclear fuel utilisation in the second and third stages of nuclear power programme. This requires a pool of qualified, motivated and talented young research scientists with multidisciplinary expertise. The number of Ph.D. level chemical engineers is small in this country and the number of chemical engineers entering DAE is even less. Thus, the number of Ph.D. scholars working on energy related programmes needs to be increased. Further, these scientists need to have wider knowledge of both basic sciences and allied engineering subjects besides chemical engineering, which is essential for the development of innovative technologies. However, the present education system imparts expertise only in selected areas. To satisfy the need of greater number of Ph.D. scholars well versed in basic sciences and chemical engineering, DAE and ICT wish to take an initiative for imparting doctoral education in chemical engineering with multidisciplinary character.

7.8.2. Scope of Collaboration

1. To provide doctoral degrees to promising candidates with talent and aptitude for carrying out advanced research and development activities in science and technology.
2. To furnish a multidisciplinary, flexible and innovative Ph. D. research programme in Chemical Engineering with special emphasis on :
   (a) Acquisition of proficiency in research, knowledge, data generation and analysis, mathematical modeling, and management with sharpening skills in innovative experimental methods and problem-solving capabilities;
   (b) Creation of a pool of young talented, dedicated and committed individuals with passion and involvement in pursuing research and development as a career;
   (c) Inculcation of attitude, temper, and outlook for developing social commitment as well as high level of scientific ethics and integrity.
3. To evolve a symbiotic relationship between the UICT and DAE Institutions in such a way that it enables the Collaborative Programme to grow and develop, and in turn ensures that research projects of relevance to the objectives of DAE research institutions are integrated with creative and innovative content.
4. To select students on the basis of an all-India test and subsequent interview jointly conducted by ICT and BARC/IGCAR.
5. To promote effective linkages on a continuing basis between ICT, BARC and IGCAR and the Industry for joint research projects and training programmes and other academic activities related to these Institutes. The expertise and experience so gained shall be shared with other Universities in the country at large.
6. To disseminate the new knowledge in the form of publications, theses, seminars and conferences.

7.8.3 Ph. D. Programme in Chemical Engineering

7.8.3.1. Induction of Students

It is proposed to introduce a PhD programme with an initial intake of about 20 students per year, drawn from Chemical Engineering, Metallurgical and Mechanical Engineering disciplines at the Bachelors and Masters Levels, and also from Chemistry, Physics, Biology and Mathematics streams with Masters degree. The Masters Degree holders in Engineering will have to spend a minimum duration of 3 years, the Bachelors degree holder in Engineering 4 years and M.Sc. degree holder in science stream 5 years for earning the Ph.D. degree. The students will be selected on the basis of all India written test and interview conducted jointly by ICT and DAE.

7.8.3.2. Course Work, In-Plant Training and Research

a) Course Work

The proposed curriculum will have a fine balance of basic and engineering sciences. The curriculum will contain adequate fundamental and core courses to equip the students adequately to make them practising chemical engineers, as enumerated below. At the same time, they will have a background for starting independent research career.

7.8.3.3. Areas of teaching and research

(a) Chemical Engineering

(b) Process Technology

(c) Bio-technology

(d) Materials Technology

7.8.3.4. Typical List of courses to be taken by the Post Graduates in Science

(a) Material and Energy Balance Computations
(b) Industrial and Engineering Chemistry
(c) Generation and Transmission of Power
(d) Electrical Engineering and Electronics
(e) Applied Mechanics and Strength of Materials.
(f) Momentum Transfer
(g) Heat Transfer
(h) Mass transfer
(i) Unit Operations
(j) Chemical Reaction Engineering
(k) Engineering Graphics
(l) Project Engineering Management and Economics
(m) Biochemical Engineering
(n) Advanced Separation Processes
(o) Process simulations
(p) Materials Processing and fabrication technology
(q) Nuclear Reactor Theory
(r) Nuclear Chemical Engineering
(s) Statistical Methods of Analysis
(t) Instrumental methods of analysis
(u) Nuclear chemistry
(v) Radiation chemistry
(w) Chemical Engineering Thermodynamics
(x) Process Hazard Analysis and Safety

7.8.3.5. Typical List of courses to be taken by the Engineering Graduates/ Post Graduates

(a) Quantum Mechanics
(b) Structure – Property Relationships
(c) Materials Physics and Chemistry
(d) Advanced Chemical Engineering Thermodynamics
(e) Nuclear Reactor Theory
(f) Nuclear Chemical Engineering
(g) Process simulation and optimization
(h) Transport phenomena
(i) Advanced Reactor Engineering
(j) Advanced Mass Transfer

(k) Statistical methods of analysis
(l) Instrumental methods of analysis
(m) Nuclear chemistry
(n) Radiation chemistry
(o) Process Hazard Analysis and Safety

7.8.3.6. In-Plant Training

All the students before starting PhD research will undergo in plant training for a period of one to three months in the process industry. Some students will undergo training in DAE.

7.8.3.7. Research Projects

The Ph.D. scholars will take up research projects primarily defined by BARC and IGCAR. However, there will be a certain degree of flexibility for selecting research projects outside the areas of relevance to DAE. To take advantage of the excellent laboratory and library facilities at the DAE institutions, the faculty and students will be provided access to conduct experiments and use of the library and computational facilities at the DAE institutions.

7.8.4. COLLABORATION WITH HOMI BHABHA NATIONAL INSTITUTE (HBNI)

7.8.3.1. Preamble:

There was a dire need to recognize the common interests of ICT and HBNI constituent institutions (CIs) in pursuit of knowledge through doctoral and master's programmes. There is a possibility of the candidates admitted in some of the CIs of HBNI may study at the ICT and carry out the projects under the joint supervision of the faculty members from the ICT and the scientists and faculty members from the CIs of HBNI. It will be mutually beneficial to have lectures by the ICT faculty members at the HBNI, and by the HBNI faculty members and scientists at the CIs of HBNI at the ICT. For the purpose of academic programmes, the following units of DAE are the Constituent Institutions (CIs) of the HBNI are included:

1. Bhabha Atomic Research Centre (BARC), Mumbai
2. Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam
3. Raja Ramanna Centre for Advanced Technology (RRCAT), Indore
4. Variable Energy Cyclotron Centre (VECC), Kolkata
5. Saha Institute of Nuclear Physics (SINP), Kolkata
6. Institute of Plasma Research (IPR), Gandhinagar
7. Institute of Physics (IOP), Bhubaneshwar
8. Harish-Chandra Research Institute (HRI), Allahabad
9. Tata Memorial Centre (TMC), Mumbai
10. Institute of Mathematical Sciences (IMSc), Chennai

The two Institutes shall recognize each other's research guides in the disciplines of common interests. The identified faculty members of each Institute may function as Honorary Professors of the other Institute and may participate in the teaching programmes of the other Institute in honorary capacity, as per the Rules of the respective institute. The Honorary professors will enjoy the library facilities of each other's institutes like regular faculty. However, a separate request must be made to avail of book-borrowing facilities. In order to share expertise, some seats may be given on priority basis to the faculty and students of the other Institute in the academic/research programmes of one Institute, which are mainly for the in-house persons and where limited access is available for persons coming from outside, such as training programmes, seminars, workshops, etc. The research facilities at one Institute should be made available to the students/scientists/faculty of the other Institute through the involvement of research supervisors or the technology advisors, as per the norms of the respective institute, as follows:

1. A student registered for a post-graduate course in one Institute shall be governed by the Rules of that Institute and will earn the credits of the course as per the prescribed norms. However, a student from one Institute will be permitted to enroll for equivalent courses in the other Institute and earn the credits by attending the courses and clearing the respective evaluation procedures, provided such courses are duly approved by the parent Institute. Thus, the two Institutes shall recognize the credits earned by the students in the institute other than the one where they are enrolled.

2. To facilitate the process of a student attending the course work in the partner Institute, the supervisor of the student in the Parent Institute shall put up a proposal (in consultation with the appropriate academic bodies of the Institute concerned) to the Dean (HBNI)/Dean(ICT), as the case may be.

3. A research guide in one Institute may select a faculty member from a partner institute as a co-guide for guiding a Master's or doctoral student working under his/her guidance; provided such a declaration is recorded at the time of registering the student, with consents from the Heads of both the Institutes. However, collaboration among faculty of each institute, without any such formal arrangement will be within the frame-work on the MOU. This may be required for joint publications.

4. A student with a co-guide should be permitted to work in the specified laboratories of the organization to which the co-guide belongs and avail the facilities there from, and the organization should have no objection to the inclusion of the outcome of the research under this programme in the thesis of the student.

5. Any liability arising out of the work done by a student in the co-guide's organization shall be the responsibility of the co-guide and the parent Institute of the student shall not be responsible for the same.

6. Any patent emerging out of the research work under such a programme shall be with the authorship of candidate, guide, co-guide, and the parent Institute and shall be filed as per the respective ordinances, regulations and rules of the Institute.

7. In case the co-guide leaves his organization, or retires the guide may accept a co-guide from the same organization, provided the new co-guide is recognized. In case such a co-guide is not available, the entire responsibility of successful completion of the programme shall lie with the guide. If the retired person remains with the institute or with other institute of HBNI, as an emeritus scientist, he/she will be permitted to continue as co-guide till the period of his/her new assignment.

8. In addition to the recognized research supervisor, a student may be advised by a Technology Advisor, who need not be recognized Ph.D. Guide, from the other Institute. The Technology Advisor shall be a person of high repute in the area of research being pursued by the student. The Technology Advisor shall be chosen by a research guide, with consent of the Director, ICT and Director of the respective constituent Institution of the HBNI.

7.8.5. Qualification Criteria for Admission and Registration for Ph.D. (Tech.) in Chemical Engineering and the Course Requirements

Category	Basic Qualification for Admission	Course requirement
1	B. E. in Chemical Engineering / B. Tech in Chemical Engineering / B. Chem. In Chemical Engineering / B. Tech. in Chemical Technology (ICT) in first class or equivalent	Course work for M. Chem. Engg. (credit courses).(to be completed in 2 semesters from the date of admission)courses related to nuclear Engineering (to be completed in 3 semesters from the date of admission) • Nuclear and Reactor Physics • Nuclear Chemical Engineering • Chemistry of Radionuclides • Material Science in Nuclear Engineering

2	Bachelors degree in Chemical Engineering or Chemical Technology in first class or equivalent + Course work in BARC training school	4 – 5 courses including one seminar in Chemical Engineering to be decided by the supervisor and approved by the coordinator followed by PGPC. (to be completed in 2 semesters from the date of admission)
3	Bachelors degree in any branch of Engineering (except Chemical Engineering / Technology) I first class or equivalent + Course work in BARC training school	8 – 10 courses and one Seminar in Chemical Engineering to be decided by the supervisor and approved by the coordinator followed by PGPC. (to be completed in 4 semesters from the date of admission)
4	Masters degree in Chemical Engineering / Masters degree in Chemical Technology (ICT) in first class or equivalent	courses related to nuclear Engineering (to be completed in 2 semesters from the date of admission) • Nuclear and Reactor Physics • Nuclear Chemical Engineering • Chemistry of Radionuclides • Material Science in Nuclear Engineering
5	M. Tech. Degree in Chemical Engineering from HBNI + Course Work in BARC training school	Minimum number as required by UGC guidelines.
6	M. Tech. Degree in any branch of Engineering (except Chemical Engineering / Chemical Technology) from HBNI + Course Work in BARC training school	4 – 5 courses and one seminar in Chemical Engineering to be decided by the supervisor and approved by the coordinator followed by PGPC. (to be completed in 2 semesters from the date of admission)
7	M. Sc. Degree in Physics / Chemistry / Mathematics in first class or equivalent + Course work in BARC training school	8 – 10 courses and one seminar in Chemical Engineering to be decided by the supervisor and approved by the coordinator followed by PGPC.(to be completed in 4 semesters from the date of admission)
8	B. Sc. Degree in Physics / Chemistry / Mathematics in first class (Rank in top 3 in University)	(i) Typically 20 courses related to comprising of: (to be completed in 4 years from the date of admission) *B. Chem. Eng. Level courses (Credit courses)* • Applied Mathematics – I, II and III • M. E. B. C. • Momentum and Mass transfer • Energy Engineering • Chemical Engineering Operations • Heat Transfer • Chemical Reaction Engineering • Design and Analysis of Experiments *M. Chem. Eng. Level Courses* (Credit courses) • Advanced Momentum transfer • Advanced Heat Transfer • Advanced Mass Transfer • Advanced Reaction Engineering • Thermodynamics of Phase Equilibrium • Advanced Separation Processes • Advanced Reactor Engineering *Nuclear Engineering Level courses (courses)* • Nuclear and Reactor Physics • Nuclear Chemical Engineering • Chemistry of Radionuclides • Material Science in Nuclear Engineering

Any candidate who completes the above course work and completes minimum of 1 year of Research project can be considered for award of M. Tech. degree in Chemical Engineering

7.9. UGC Networking Resource Centre in Chemical Engineering

7.9.1. Preamble

The spectacular and consistent performance of the Department of Chemical Engineering, having been rated as number one for past several decades, including 2009-10, which has been revealed by the international surveys, has earned it much recognition, accolades and awards. Apart from the Centre of Advanced Studies, the UGC has recognized it further by awarding the first ever Networking Resource Centre in Chemical Engineering, in October 2008, to undertake following activities:

1. Research, training and skills development of the faculty and research scholars through periodic discussion, workshop and summer/winter schools
2. Capacity building by adopting faculty and departments for augmenting their research skills and to mentor them
3. Hosting and facilitating researcher from other institutes/universities to carry out key experiments
4. Augmentation of information resource facility of the department to provide quality research information to other institutes/researchers
5. To enhance and build state of the art in-house research infrastructure and other research facilities in the department.

The rapidly changing face of research in chemical engineering offers new opportunities for integrating new research areas within its fold and several workshops, courses, demonstration experiments, regular experiments and seminars have been organized by the Centre. The objective of many of these activities is to acquaint the Chemical Engineering community especially from academic institutions with the emerging face of our discipline, and the how to meet the new challenges that it poses to contribute at the leading edge. The idea is also to train the academic fraternity so that overall research and development in chemical engineering is promoted. The interactive workshops also aim at initiating a dialogue on how the new face of Chemical Engineering can be used to address problems, specific to us as a growing nation. The vacation periods, long weekends and week-long programmes are undertaken which are publicized on the homepage of the institute and also communicated to all chemical engineering departments. Not only the ICT faculty but experts from other institutes, industries, and visiting professors from foreign universities have delivered lectures and interacted with young faculty.

7.9.2. Rules & Guidelines for Registration of Teachers from UGC and/ Or AICTE Approved Colleges for Ph. D.

Under this programme the Centre is required to generate human resource and keep on organizing seminars, workshops, and laboratory sessions for the benefit of teachers and students. One of the primary requirements is to create qualified doctoral degree holding teachers who in turn will generate quality students. Following are the salient points of this programme proposed by the Centre.

1. Teachers who have been in the services of any Engineering and Technology Colleges approved by the UGC/AICTE are entitled for registration for Ph D with Chemical Engineering faculty of the ICT.
2. A minimum service of two years and permanent placement in the concerned college will be the basic criterion.
3. The teacher must have a consistently good academic record with minimum first class in bachelors and/or masters degree from a reputed university.

4. The college management should undertake the responsibility of releasing the person for experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the

concerned teacher and his supervisor, which will be approved by the Co-coordinator of the Centre. A bond in this regard should be signed and approved by the Director, ICT.

5. Teachers can work in the ICT labs during vacations and holidays and after their office hours if they come from colleges in the city or nearby. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the Coordinator of the Centre.
6. A maximum period of 5 years extendable by 1 year will be allowed in case of teachers who are part time but put in at least 3 months full time work in a year in the labs. In such cases, part of the experimental work could be allowed to be done in their premises for which their management will provide them with necessary facilities. The characterization and other sophisticated analysis must be done in ICT. Exclusive theoretical work should be discouraged as much as possible to give the teacher a hands-on experience and bringing them into an environment of research. However, this will be left to the individual supervisor's discretion, who should take abundant precaution to avoid unethical practices.
7. The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in international journals with decent impact factors. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.
8. The registered teachers as Ph D students should not register any Masters students with themselves in his/her own college to avoid research by proxy. The candidate as well as his/her supervisor must give an undertaking, with a counter signature of the concerned principal to this effect to avoid degeneration of this novel concept into a Ph D by unscrupulous means.
9. If the teacher intends to join the ICT on leave without pay for a period of three years, then the candidate could be eligible for the UGC fellowship under our SAP programme.
10. Teachers with Masters Degree will be allowed to undertake benefit of this scheme. Those who have got Bachelor's Degree ought to take leave from their colleges in order that they complete the theory part of the Masters Programme for direct Ph.D.

11. All regular admissions criteria are applicable to these candidates and they must also do the course work required for Ph.D. programme.

7.10. DBT-ICT Centre for Energy Biosciences

7.10.1. Preamble

Growing concerns over global warming and depleting fossil fuels have necessitated large scale efforts to develop alternative and renewable fuel technologies. Biological sciences in coordination with applied and engineering sciences have a key role to play in discovering and inventing biofuel options for the country and world at large. Several biofuel options hold potential for an agricultural country like India. While these options are extensively being explored around the world, India presents its own unique characteristics that need to be considered while devising technologies that are sustainable in the Indian context. Low cultivable land per capita and rising needs for water, energy and food of growing population present challenges that are of different kind than elsewhere in the world. As a result there is need to focus on development of India specific biofuel technologies and/or suitable adaptation of available technologies.

In order to carry out focused molecule-to-plant research and development for short term and long term biofuel technologies, the Department of Biotechnology, Ministry of Science and Technology, Government of India has funded and established a centre of excellence as DBT-ICT Centre for Energy Biosciences on our premises.

The Centre aims at developing sustainable biofuel technologies in the following areas:

Sustainable technologies for cellulosic alcohols (ethanol and higher alcohols like butanol) using non-food non-fodder agricultural lignocellulosic residues like rice straw, wheat straw, cotton and castor stalk etc.

1. Algal biotechnology and algal biofuels
2. Biohydrogen from agricultural or other biomass
3. Bio-Oil from biomass and its conversion to biofuel

To result in an economically viable and environmentally sustainable set of technologies, extensive models of the economic and environmental life cycle impacts of each technology will be developed. These models will be used to guide the research.

The Centre has been established as a state-of-the-art facility to carry out multidisciplinary research and development in the following disciplines:

- Molecular Engineering at the interface of Biology, Chemistry and Engineering
- Synthetic Biology
- Recombinant DNA technology
- Protein Engineering and Microbial Proteomics
- Metabolomics and Metabolic Engineering
- Fermentation Technology
- Enzyme Technology
- Downstream processing and Separation Technologies
- Bioinformatics and Molecular modeling

The Centre undertakes to carry out different biofuel and industrial biotechnology projects in a mission mode. Integration of various disciplines makes this project very unique and at the cutting edge of global research activities.

The Centre employs research scientists from different disciplines from molecular biology, fermentation technology to chemical engineering, who work together in a unique integrated fashion to take science and technology from bench scale to plant scale. However, while ICT possesses uniquely integrated capabilities to engineer efficient processing and bioconversion steps required in the projected technologies, it is desirable that it also collaborates with other Institutes and Organizations that have proven experience in science and technology of strain improvement, crop improvement, fermentation engineering and enzyme production, as well as life cycle and sustainability evaluation of the technologies being developed. Thus, collaborations are being forged with some of the leading and established Research Institutes and Companies in the world. The following Collaborations are already in place at this time and more Institutes may become part of this exercise in time.

1. School of Chemical Engineering, Purdue University, Indiana, USA
2. Department of Chemical Engineering, University of Saskatchewan, Canada
3. International Centre of Science and High Technology, UNIDO, Trieste, Italy
4. International Centre for Genetic Engineering and Biotechnology, New Delhi
5. Novozymes A/S, Denmark
6. MAHYCO Research Centre, Jalna, India
7. Advanced Enzyme Technologies Ltd., India
8. India Glycols Ltd., India

The Centre was formally inaugurated on 30th of May 2009. Having been functional for more than a year, the concerted efforts at the Centre have resulted in a technology for lignocellulosic ethanol which is expected to make production of ethanol more competitive than by any other known technology. The necessary intellectual property protection has been ensured and MoU has been signed with India Glycols Ltd, India to set up a 10 ton biomass/day plant at their Kashipur site in Uttarakhand by mid 2010.

Focused work on algal biotechnology has also been initiated at the Centre with adequate emphasis on all three aspects of algal biofuel technology namely, cellular engineering, growth & reactor engineering and downstream process technology.

7.11. Centre for Green Technology

7.11.1. Preamble

When the ICT was part of the University of Mumbai, a proposal was submitted by the University of Mumbai to the UGC, under the scheme of University with Potential for Excellence (UPE). The proposal for the above Centre was presented to the UGC on 4th August, 2005, the University had promised to introduce the subjects related to Green Chemistry in the undergraduate curricula of different branches of chemical engineering and chemical technology as well as the new programmes at the PG and Ph D level. The proposal was accepted in totality and the University of Mumbai received a grant of Rs. 30 crores, in which the Centre for Green Technology was to be established with Rs 9.00 crores with specific objectives and milestones. Meanwhile, the ICT was converted into a deemed university and the UGC agreed to have the Centre as a joint ownership of ICT and University of Mumbai, with co-ordination to be done by the ICT.

The idea of this Centre has been in the long tradition of research conducted at the ICT and the world wide recognition given to the faculty there. The direct linkages with the industry of the ICT is recognised by the all leading academics and practitioners in the industry, who have felt a need for the national centre of excellence in Green Technology. Synthetic chemicals are used to make virtually every man-made product and play an important role in the everyday life of people around the world. Such products can protect crops and increase yields, prevent and cure disease, result in longevity, allow faster modes of communication and transport, entertain, provide insulation to reduce energy use and offer countless other benefits that make life better for people. Many of these benefits are subtle and not connected to the chemical industry by general public. As with other large manufacturing industries, the chemical industry (CI) can also have a negative impact on human health and the environment when the production and use of chemicals are not managed responsibly. From the use of non-renewable resources for fuel and feedstocks (e.g. oil and gas), to the release of pollutants from factories during production, to the disposal of final products that contain hazardous waste, each stage of the lifecycle of a product produced by the CI can affect man and the environment.

The material and energy demands of modern society hinge critically on the viability and progress of the chemical and allied industries that are central to many other sectors. The world chemical industries are experiencing massive changes as we enter the 21st century. Commodity chemical manufacture is migrating increasingly towards developing countries, where labour and raw material costs are lower. For both commodity and specialty chemicals there is growing demand worldwide that production ought to have less impact on the environment and that it moves toward long-term sustainability. Various treaties, legislations and programmes are directed at energy efficiency and efforts to reduce waste and develop sustainable production.

The focus on environment and sustainability has popularised terms such as "atom economy", "eco-efficiency", "E factor" and in particular "green chemistry" that define strategies and methods to develop sustainable processes, quantify waste generation, and implement the use of alternate resources. Although chemical engineering programs have been teaching material and energy balance right from the inception of the discipline, the emphasis on resource conservation, waste minimization and hazard reduction was not apparent. During the last two decades, spectacular progress has been made in understanding chemicals as molecules and the structure- activity relationships with reference to their properties which are exploited for specific end uses. As these concepts and their applications – which are termed as "green chemistry, green technology, green engineering"- infiltrate the chemical and allied industry, today's engineering graduates must gain familiarity with and be able to apply them. Further, the paradigm shift from commodities to specialties requires a broader perspective of process chemistry and global aspects of the industry than has traditionally been part of an engineering education.

The dozen principles of green technology are :

1. Pollution Prevention at Source 2. Atom Economy 3. Less Hazardous Chemical Synthesis 4. Designing Safer Chemicals 5. Safer Solvents 6. Design for Energy Efficiency 7. Use of Renewable Feedstocks (Biomass,

Biowaste) 8. Reduce Derivatives 9. Catalysis – Chemical and Biological 10. Design for Degradation 11. Real-time Analysis for Pollution Prevention 12. Inherently Safer Chemistry for Accident Prevention

2.

The manufacturing activity of specialty chemicals is conveniently classified into several unit processes such as, hydrogenation, oxidation, nitration, esterification, halogenation, alkylation and acylation, sulphonation etc. All these unit processes will be carefully investigated for a large number of real applications in terms of chemistry, mechanism, alternative routes and solvents, catalysts and kinetics. These are highly polluting processes. At least one of processes is used in a chemical plant and thus the use of principles of green chemistry and technology become very important in making them eco-friendly.

The methodology that would be followed for this part of the project consists of the following steps:

a. In each category a few industrially important processes will be selected for investigation. The reactions will be studied with respect to the mechanism and the various parameters affecting it. On a laboratory scale, new starting materials, reagents, catalysts, solvents, etc., will be tried. Processes involving water as a solvent will be developed.

b. Alternative energy sources: Energy is costlier and scarce in India. Hence, alternate eco friendly energy sources such as solar energy, UV light, ultrasound, microwaves, shall be tried to get certain benefits.

c. Computational work: Theoretical studies based on computational work and molecular modeling for the above.

Multi-step synthesis for manufacture is a characteristic feature of intermediate, drug and fine chemicals. Added to this is the structural complexity. Under process intensification program the main aim is to develop new and more efficient reaction systems to reduce number of steps by way of developing tandem reaction sequence to be carried out in one pot. To develop new catalytic system towards developing for single step modification to merge multiple transformation steps to a single step transformation. This will not only give an advantage of short production cycle, less consumption of chemicals, less utility requirement and above all, overall yields will be higher.

Nano materials are used for making catalysts, composites, newer construction materials, storage devices, electronics, etc. The composites can be prepared from clays and polypropylene, nylon, polyester and styrenics especially, HIPS, SAN and ABS. The bond between clay and matrix is enhanced by chemical/physical modification of clay. The incalation between clay and polymer matrix will be established in this study through physicochemical analysis. Similarly use of nano tubes for controlled permeability can also be established. Green processes can be developed in this area.

The research activity of the Centre will be focused on a number industrial segments relevant to the ICT expertise as well as emerging areas:

1. Green synthesis of bulk chemicals
2. Refinery processes – Novel catalysts and energy efficient process development
3. Synthesis of nanomaterials- catalysts and composites
4. Pharmaceuticals and drug synthesis – chirality
5. Multi-step intermediate synthesis to be converted into cascade engineered synthesis
6. Synthesis of fine and superfine chemicals.
7. Synthesis of biodegradable chemicals
8. Synthesis of safer and benign chemicals having minimum impact or zero impact on environment.
9. Process equipment design and operation to support the above activities.
10. Carbohydrate based feedstock for catalytic processes

8. COURSES OF STUDIES, ADMISSION CRITERIA AND CAPACITY

8.1. UNDERGRADUATE COURSES: BACHELOR'S Degree Programmes

All UG courses are post - HSSC / XIIth Std. Four- Year Semesterized Degree Courses.

a) Bachelor of Chemical Engineering (B. Chem. Eng.)

Intake capacity: Total 75 Seats (See **Table 8.1** for seat distribution)

b) Bachelor of Technology (B. Tech.) (seven branches of Chemical Technology)

Intake capacity : Total 136 Seats (See **Table 8.1** for seat distribution)

c) Bachelor of Pharmacy (B. Pharm.)

Intake capacity :Total 30 Seats (See **Table 8.1** for seat distribution)

TABLE 8.1: Seat Distribution of UG Courses according to Branch, Type and Category

Admission Type and Category	B.CHEM. ENG.	B.PHARM*	B.Tech. Branches							
			DYES	TEXTILE	FOODS	OILS	PHARMA	POLYMER	COATINGS	Total B.Tech.
AIEEE based Open Seats#	18	--	05	07	04	04	05	04	04	**33**
AIEEE based Reserved (SC/ ST) Seats#	04	--	01	02	01	01	01	01	01	**08**
Total AIEEE Seats (A)	**22**	**--**	**06**	**09**	**05**	**05**	**06**	**05**	**05**	**41**
MHT-CET based Open seats@	27	15	07	13	06	05	06	06	05	**48**
MHT-CET based Reserved Seats@	26	15	07	12	05	06	06	05	06	**47**
Total MHT-CET Seats (B)	**53**	**30**	**14**	**25**	**11**	**11**	**12**	**11**	**11**	**95**
TOTAL SANCTIONED SEATS (A+B)	**75**	**30**	**20**	**34**	**16**	**16**	**18**	**16**	**16**	**136**
Gulf Seats-5%	4	--	1	2	1	1	1	1	--	07
FN Seats-10%	7	--	2	3	2	1	2	1	2	13
Total Additional NRI Seats$	**11**	**--**	**03**	**05**	**03**	**02**	**03**	**02**	**02**	**20**

These seats are based on AIEEE valid score and shall be filled up by and at ICT directly. See website www.ictmumbai.edu.in OR www.udct.org

@ These seats are based on a valid MHT-CET score and for B. Chem. Eng. & B. Tech. and shall be filled up as per the separate and Centralized Admission Process by Counselling for Autonomous Institutes/Deemed University (CAPCAI) by and at the College of Engineering, Pune (COEP) [See website www.coep.org.in/fyadm]

AND

A separate Common Brochure of Autonomous Institutes (including ICT) and application form are prepared for MHT-CET based B. Chem. Eng. and B. Tech. admissions. It will be made available at the Application Receiving Centres (ARCs) in Maharashtra at the time of sale of application forms.

* These seats are based on valid MHT-CET score for B. Pharm. and shall be filled up as per the separate Common Admission Process (CAP) conducted by the DTE [See website www.dte.org.in

$ The additional seats for Non-resident Indians (NRI) are 15% over and above the sanctioned intake (MHT-CET and AIEEE seats taken together) and are available for admission to B. Chem. Eng. and B. Tech. courses at ICT. These seats will be filled up by and at College of Engineering, Pune (COEP). See website www.coep.org.in

The sanctioned seats at types **A** and **B** below are meant for Indian Nationals only and these are distributed as shown in Table 8.1.

A. AIEEE score based seats (30% of total sanctioned intake capacity)

Additional Eligibility Criteria - AIEEE- 2010 Score card with non-zero score (e-statement may be submitted in place of attested photocopy of the original, if the original score card is not received by the last date of submission of application form at the ICT). However, at the time of counseling round at the ICT, original Score Card must be submitted, failing which, a seat may not be offered to the candidate even if eligible otherwise. These seats will be filled up by and at the ICT. See procedure in **Section 10** and on website www.ictmumbai.edu.in OR www.udct.org for the schedule.

B. MHT-CET score based seats (70% of total sanctioned intake capacity)

Additional Eligibility Criteria - MHT-CET 2010 score card with minimum 55% marks i.e. 110 marks out of 200 marks (minimum 50% marks i.e. 100 marks out of 200 marks in case of candidates of Backward class categories belonging to Maharashtra state only) in the subjects Physics, Chemistry and Mathematics at the **MHT-CET 2010**. These seats will be filled up by and at the College of Engineering, Pune (COEP).

C. Foreign Nationals (FN) and Persons of Indian Origin (PIO), Indians Working in the Gulf

Additional 15% seats are available over and above the total sanctioned intake (MHT-CET and AIEEE quota taken together) with a break-up of 10% for Foreign Nationals/Foreign Students/Persons of Indian Origin (FN) and 5% for Children of Indian workers in the Gulf countries (Gulf). These seats will be filled up by and at the College of Engineering, Pune (COEP). For details see Common Brochure of the Autonomous Institutes and the website www.coep.org.in

D. AICTE Tuition Fee Waiver seats (maximum 10% of sanctioned intake and within the sanctioned intake):

D.1) Those candidates who receive any type of freeship/ scholarship/fellowship from the Government are not eligible for this Tuition Fee Waiver.

D.2) This scheme is applicable to the students admitted to B. Chem. Eng., B. Pharm. and B.Tech. courses at the ICT and is limited only to the Waiver of Tuition Fees. **Development fees and other fees must be paid in full.** Since the scheme is applicable only to the students admitted in the UG courses at the ICT, they need to pay full fees at the time of admission. In due course of time, the freeship will be offered to students under this criterion, as per the norms provided by AICTE, and their tuition fees will be refunded.

D.3) This scheme is applicable to the students admitted to ICT through MHT-CET quota only from the State of Maharashtra belonging to a) Economically Weaker Section (EWS) having income up-to Rs. 2.5 lakhs per year, b) Physically handicapped (PH), and c) Women (W) categories. The names will be declared only after regular start of the course and after receiving the approval from the competent authority of the MHT-CET based admissions.

D.4) The break-up of seat distribution will be available in the Common Brochure of the autonomous institutes. If students from a particular category (EWS, PH, and W) are not available, the seats are interchangeable. The names of students receiving this fee waiver will be displayed on the notice board of the ICT.

IMPORTANT NOTES

1. **Candidates admitted through AIEEE are neither eligible to take any seat through the Common Admission Process (CAPCAI) conducted by COEP for the Autonomous Institutes (which also includes the ICT) nor they are eligible to participate in the online CAP round conducted by DTE for all other Engineering/Technology colleges in Maharashtra.**

2. **Further, candidates admitted through CAPCAI conducted by COEP for the Autonomous Institutes (which also includes the ICT) are not eligible to participate in the online CAP round conducted by DTE for all other engineering/technology colleges in Maharashtra.**

3. **In Eligibility Criteria for all UG and PG courses, RECOGNIZED UNIVERSITY means that University which is recognized by the UGC as per Section 12 F of the UGC.**

8.1.1 Eligibility Criteria for the Admission (Indian Nationals):

A. F. Y. B. Chem. Eng. and F. Y. B. Tech. (all branches):

A candidate should have passed the HSSC/Std.XII Examination of Maharashtra State Board of Secondary and Higher Secondary Education, or its equivalent examination with English, Physics, Chemistry, and Mathematics subjects and secured not less than 50% marks (i. e., 150 out of 300), [45% marks (i.e. 135 out of 300) for the backward class candidates only from Maharashtra State] in the subjects of Physics, Chemistry and Mathematics taken together **at one and the same sitting**.

OR

The candidate should have passed the Indian School Certificate (Std. XII) Examination or any other equivalent Higher Secondary (Std. XII) Examination of a Council Board outside Maharashtra State with English, Physics, Chemistry, and Mathematics subjects and secured not less than 50% marks (150 out of 300), [45% marks (i.e. 135 out of 300) for the backward class candidates only from Maharashtra state] in the subjects of Physics, Chemistry and Mathematics taken together **at one and the same sitting.**

AND

For AIEEE based seats: AIEEE- 2010 Score card with non-zero score (e-statement may be submitted instead of attested photocopy of the original, if Original score card is not received by the last date of submission of application form at the ICT). However, at the time of counseling round at the ICT, original Score Card must be submitted, failing which, the seat may not be offered to the candidate, even if eligible otherwise.

For MHT–CET based seats: MHT-CET 2010 Score card with **minimum 55% marks** i.e. 110 marks out of 200 marks **(minimum 50% marks** i.e. 100 marks out of 200 marks in case of candidates of Backward class categories belonging to Maharashtra state only) in the subjects Physics, Chemistry and Mathematics at the MHT-CET 2010 examination.

B 1. F.Y. B. Pharm. (for MS and OMS candidates)

Candidate should have passed the HSSC/Std.XII examination of Maharashtra State Board of Secondary and Higher Secondary Education or its equivalent examination with subject English, Physics, Chemistry and Biology/ Mathematics **AND** secured not less than 50% marks (i.e. 150 out of 300) [45% marks (i.e. 135 out of 300) in case of candidates of Backward class categories belonging only to Maharashtra State] in the subjects Physics, Chemistry and Biology/Mathematics added together (Maximum of marks obtained in Biology or Mathematics shall be considered for the purpose of addition) **AND** obtained a non-zero score at MHT-CET 2010.

B 2. F.Y. B. Pharm. (for candidates possessing Diploma in Pharmacy)

The candidate should have passed the Diploma course in Pharmacy with minimum of 50% marks and medium of instruction as English from the Polytechnics affiliated to Board of Technical Education, Maharashtra State or AICTE approved autonomous Polytechnics in Maharashtra State (for MS Candidates) or such polytechnics situated inside / outside the State of Maharashtra (for OMS Candidates). See the website www.dte.org.in for details.

AND

The candidates who have passed the final examination leading to the Diploma in Pharmacy conducted by the Board of Technical Education, Maharashtra State or equivalent examination from an Institute approved by the Pharmacy Council of India and with a minimum first class (60%, i.e., 600 out of 1000 at part II examination for the Diploma in Pharmacy) as per ER-91 (i.e. Post HSSC 2 year Diploma Course) be held eligible for admission to S.Y. B. Pharm. Class (Subject to the availability of seats and maximum 3 seats). See the website www.dte.org.in for details.

8.1.2 Eligibility Criteria for the admission (Foreign National/ Foreign student/ PIO/ Children of Indian workers in the Gulf countries/ Children of NRI)

[Only applicable for F.Y. B. Chem. Eng. and F. Y. B. Tech. (all Branches)]

Candidate should have passed the HSSC/ Std. XII examination of Maharashtra State Board of Secondary and Higher Secondary Education or its equivalent with Physics, Chemistry, and Mathematics and having either studied English as one of the subjects or as a medium of the instruction. The candidates should have secured minimum 50% marks (i. e., 150 out of 300) in the subjects Physics, Chemistry and Mathematics.

- The eligibility of the candidates passing the HSSC/ Std. XII or equivalent examination from a school/ college/ Examination Board situated outside India shall be further decided by the ICT. Hence such candidates are advised to get their eligibility verified by the ICT before seeking admission.
- The candidate belonging to this type is not required to appear for the MHT-CET examination.
- Candidates once admitted under this category, will continue to be governed by the rules in force for this category only.

- **IMPORTANT NOTES**

- **Candidate's status for fee-structure will remain constant till he/ she completes the course.**
- **No refund of fees is admissible on cancellation, once the admission is taken.**
- **The admission shall be carried out by Director, College of Engineering, Pune, Maharashtra State. Hence the candidate should contact the Office of the Director, College of Engineering, Wellesley Road, Shivaji Nagar, Pune 411 005 [Phone 91-20-25507000, 91-20-25507014; e mail: admission@coep.org.in] and follow their instructions. Also see website www.coep.org.in**

8.2. POST-GRADUATE COURSES : MASTER'S DEGREE PROGRAMMES

The Master's courses- M. Chem. Eng., M. Pharm., M. Tech. (all branches) and M. E. (Plastics Engg.) are Two-Year Semesterized programmes (partly by papers (TWO SEMESTERS) and partly by thesis (One year).

All M. Sc. courses are Two- Years Semesterized programmes only by papers.

The post-graduate diploma in Chemical Technology Management is meant for candidates registered for Doctoral degree from the ICT or other institutes/Universities as well as for industry personnel with experience.

(See **Table 8.2** below for different courses)

TABLE 8.2: MASTERS DEGREE COURSES

SR.NO.	DEGREE/BRANCH		INTAKE[$]		
			OPEN	SC	ST
1.	M. Chem. Engg. (full-time 2-years)		18*	03*	01*
2.	M. Tech. (full-time 2-years)	Dyestuff Technology	04*	06*	04*
3.		Fibres and Textile Processing Technology	09*		
4.		Food Engineering and Technology	04*		
5.		Oils, Oleochemicals and Surfactants Technology	04*		
6.		Pharmaceutical Sciences & Technology	04*		
7.		Polymer Engineering and Technology	04*		
8.		Surface Coating Technology	04*		
9.	M. Pharm. (full-time 2-years)	Drug Delivery Technology	03*		
10.		Medicinal Chemistry	03*		
11.		Medicinal Natural Products	02*		
12.	M.E. (Plastics Eng.) (full-time 2-years)	General Engineering	05*		

13.	M. Tech. (full-time 2-years)	Bioprocess Technology	23[#]	05[#]	02[#]
14.		Food Biotechnology	07[#]	02[#]	01[#]
15.		Green Technology	20[β]		
16.		Perfumery & Flavour Technology	5[¥]		
17.	M.Sc. (full-time 2-years) (by papers)	Chemistry	20		
18.		Engineering Mathematics	20		
19.		Physics	20		
20.		Textile Processing	20		
21.	M. Tech. [£] (part-time 3-years)	Green Technology	30		
22.	PG DIPLOMA[Ω]	in Chemical Technology Management	30[Ω]		

***** The tentative seat distribution given is for intake (Sr. No. 1 -12 in Table 8.2) of GATE qualified candidates eligible to receive UGC scholarship (*Subject to sanction*).

The Director, ICT reserves the right to change the course/ branch wise distribution of these fellowships, based on availability of the candidates. The selection for the UGC scholarships shall be based on the GATE score and the performance in the Institute's written test.

Additionally, two scholarships (JRFs) are available as GE scholarships for M. Tech. courses (all branches).

[#] The seat distribution given is for intake (Sr. No. 13 and 14 in Table 8.2) of GATE qualified candidates eligible to receive DBT scholarship.

[$] Additionally, 15 % seats to the above-shown sanctioned intake for the PG courses (Sr. No. 1 -11) are available for Foreign Nationals/Foreign Students/Persons of Indian Origin/Children of Indian workers in the Gulf countries.

[¥] subject to availability of fellowships from FAFFI and ICEOFF.

[β] No fellowships will be made available to M. Tech. Course in Green Technology from the current number (Full- Time Two- Years Semesterized Course (Partly by papers and partly by thesis) (Sr. No.15). Efforts are underway to get fellowships sanctioned. At the moment, the ICT will not guarantee any fellowship for this programme.

[£] M. Tech. Course in Green Technology (Part- Time Three- Years Semesterized Course (Partly by papers and partly by thesis) (Sr. No.21) is for industry- sponsored candidates and no fellowships are available to these candidates. No fellowships are available for the part-time M. Tech. (6-semester) course which is fully sponsored.

No fellowships are available to M. Sc. Courses by papers (Sr. No. 17-20) and for the PG Diploma in CTM (Sr. No. 21).

[Ω] PG Diploma in CTM has 30 seats equally distributed between ICT registered Ph.D. students, Other than ICT registered Ph.D. students and Industry sponsored candidates.

8.2.1 Eligibility Criteria for the Admission (Indian Nationals)

8.2.1.1 M. Chem. Eng., M. Tech. (seven branches) (Sr. Nos. 1-8 in Table 8.2)

The candidate should have passed any one of the following Bachelor degrees of ICT or any equivalent examination of a post-HSSC four-year degree course of IIT/NIT or a University recognized by the UGC as per section 12F of the UGC, with first class (i.e., 60% of the marks in aggregate or equivalent grade average). [55% of the marks in aggregate or equivalent grade average for the backward class candidate only from Maharashtra State].

i. B. Chem. Eng. or B.E. / B.Tech. in Chemical Engineering/ Biotechnology/ Biochemical Engg.

ii. B.Sc. (Tech.) (Technology of Intermediates and Dyestuff) / B. Tech. (Dyestuff Technology).

iii. B. Tech. (Textile Processing/ Textile Chemistry), B.Sc. (Tech.) (Textile Processing / Chemistry), B. Text. (Textile Chemistry), B.E. (Textile Chemistry or Textile Technology), B. Tech. (Textile Chemistry or Textile Technology), B. Tech. (Fibres and Textile processing Technology/ Fibre Technology) with significant emphasis on chemical processing of textiles.

iv. B. Tech. (Food Engineering and Technology) or B.E./ B.Tech. in Food Engineering/ Food Technology/ Food Science/ Food Process Technology/ Food Process Engineering, or B.Sc. (Tech.) (Food Technology).

v. B.Sc. (Tech.) (Oils Technology) or B. Tech. (Oils, Oleochemicals and Surfactants Technology).

vi. B.Sc. (Tech.) (Technology of Pharmaceuticals and Fine Chemicals) or B. Tech. (Pharmaceutical Chemistry and Technology).

vii. B. Tech. (Polymer Engineering and Technology /Surface Coating Technology); B. Sc. (Tech.) (Technology of Plastics or Technology of Paints), B.Sc. (Tech.) (Rubber Technology), B.E. (Polymer Engg. / Plastic Engg.), B. E. (Petrochemical Engineering/ Technology).

viii. B. Sc. (Tech.) (Paints Technology / Plastics Technology), B. Tech. (Paints Technology / Polymer Engineering and Technology), B. Chem. Tech. (Paints Technology / Polymer Engineering / Polymer Technology / Plastic Technology), B. E. (Paints Technology / Polymer Engineering / Polymer Technology / Plastic Technology / Plastic Engineering) of Mumbai University or any other equivalent degree of any recognized University.

8.2.1.2 M. Pharm. (Sr. Nos. 9-11 in Table 8.2)

The candidate should have passed the Bachelor degree in Pharmacy (B. Pharm.) of ICT or any other equivalent degree of a University recognized by the UGC as per section 12F of the UGC, with first class (i.e., 60% of the marks in aggregate or equivalent grade average). [55% of the marks in aggregate or equivalent grade average for the backward class candidate only from Maharashtra State].

The following THREE specializations are offered-

- Drug Delivery Technology (Sr. No. 9 in Table 8.2)
- Medicinal Chemistry (Sr. No. 10 in Table 8.2)
- Medicinal Natural Products (Sr. No. 11 in Table 8.2)

For specialization, option form will be given at the time of admission offered. Once a candidate is offered a seat in any one specialization, according to the availability of seats at the time of allotment and in the order of preference given by the candidate, no request for any transfer or change of preference shall be entertained. However, if seat falls vacant, the candidate shall be transferred to the higher preference and it shall remain binding on the candidate.

8.2.1.3 M. E. (Plastics Engineering) (Sr. No. 12 in Table 8.2)

The candidate should have passed the Bachelor''s degree (B.E. or B.Tech.) in Mechanical engineering/ Plastics engineering / Polymer engineering / Production Engineering /Chemical Engineering/ Chemical Plant Engineering of any post-HSSC for four year degree course of IIT/NIT or a University recognized by the UGC as per section 12F of the UGC, with first class (i.e., 60% of the marks in aggregate or equivalent grade average). [55% of the marks in aggregate or equivalent grade average for the backward class candidate only from Maharashtra State].

8.2.1.4 M. Tech. (Bioprocess Technology) (Sr. No. 13 in Table 8.2)

The eligibility criterion for the admission to this course is as mentioned in 8.2.1.1 above. In addition, candidates with B.Pharm. degree of the ICT or any other equivalent degree of a recognized University, of four-year degree course after HSSC/Std. XII, with first class (i.e., 60% of the marks in aggregate or equivalent grade average). [55% of the marks in aggregate or equivalent grade average for the backward class candidate only from Maharashtra State] are eligible.

8.2.1.5 M. Tech. (Food Biotechnology) (Sr. No. 14 in Table 8.2)

The candidate should have passed B. Tech. degree in Food Engineering and Technology of the ICT or any other equivalent degree of a recognized University, **of four-year degree** course after HSSC/Std. XII, with first class (i.e., 60% of the marks in aggregate or equivalent grade average). [55% of the marks in aggregate or equivalent grade average for the backward class candidate only from Maharashtra State].

OR

B. Tech./ B.Sc.(Tech.) /B.E. in Food Engineering and Technology /Food Engineering /Food Technology /Food Science /Food Process Technology /Food Process Engineering/ Dairy Technology/ Biotechnology/ Chemical Engineering/ Biochemical Engineering/ Pharmaceutical Technology/ Oil Technology or any equivalent degree of full four-year's duration. Three year degree programmes in these disciplines are not recognized for admission.

8.2.1.6 M. Tech. (Perfumery and Flavour Technology) (Sr. No. 16 in Table 8.2)

The candidate should have passed the Bachelor degree B. Sc. (Tech.)/ B. Tech. in Dyestuff Technology/ Food Engineering & Technology / Food Engineering/ Oils, Oleochemicals & Surfactants Technology/ Pharmaceuticals Technology of the ICT or any equivalent examination of a post HSSC of four-year degree course after HSSC/Std.

XII, with first class (aggregate of 60% of marks and above or an equivalent grade average). [55% for the backward class candidate only from Maharashtra State].

Kindly note that the following programmes, from 5.2.1.7-5.1.2.12 are proposed to commence from 2010-11 and an approval authorities is in the process. It is expected to materialize before June 30, 2010. An announcement to this regard will be made on the homepage www.ictmumbai.edu.in OR www.udct.org

8.2.1.7. M. Tech. (Green Technology) [Full-Time Two-Years] (Sr. No. 15 in Table 8.2)

The candidate should have passed any one of the following Bachelor's/Master's degrees of ICT or any equivalent examination of IIT/NIT or a University recognized by the UGC as per section 12F of the UGC, with first class (i.e., 60% of the marks in aggregate or equivalent grade average). [55% of the marks in aggregate or equivalent grade average for the backward class candidate only from Maharashtra State].

B.Chem. Eng./ B. Sc.(Tech.)/B.Tech (in any branch of chemical technology)/ B. Pharm.

OR

M. Phil. (Chemistry, Biology, Microbiology, Biotechnology, Biochemistry).

OR

M.Sc. (Chemistry, Biology, Microbiology, Biotechnology, Biochemistry)
with two years industrial experience in production of chemicals, materials, drugs, intermediates, etc. or R and D of the said industries in case of sponsored candidates.

8.2.1.8. M. Tech. (Green Technology)[Part- Time Three- Years] (Sr. No. 21 in Table 8.2)

This is a course meant only for industry- sponsored candidates.

The candidate should have passed any one of the following Bachelor's/Master's degrees of ICT or any equivalent examination of IIT/NIT or a University recognized by the UGC as per section 12F of the UGC, with first class (i.e., 60% of the marks in aggregate or equivalent grade average). [55% of the marks in aggregate or equivalent grade average for the backward class candidate only from Maharashtra State].

B.Chem. Eng./ B. Sc.(Tech.)/B.Tech (in any branch of chemical technology)/ B. Pharm.

OR

M.Sc. (Chemistry, Biology, Microbiology, Biotechnology, Biochemistry)
with two years industrial experience in production of chemicals, materials, drugs, intermediates, etc. or R and D of the said industries in case of sponsored candidates.

8.2.1.9. M. Sc. (Chemistry) by papers (Sr. No. 17 in Table 8.2)

The candidate should have passed with post-HSSC 3-year degree course of Bachelor of Science with Chemistry at the third year of the course of University of Mumbai or of any other recognized University; and passed the qualifying examination with at least 55% of the marks in aggregate or equivalent grade average (50% for the backward class candidates only from Maharashtra State) are eligible to apply. The candidates who have cleared the qualifying examination in one sitting will be preferred.

8.2.1.10. M. Sc. (Engineering Mathematics) by papers (Sr. No. 18 in Table 8.2)

The candidate should have passed with post-HSSC 3-year degree course of Bachelor of Science with Mathematics at the third year of the course and any two of chemistry, physics and statistics as the two other subjects at the first and second years of University of Mumbai or of any other recognized University; and passed the qualifying examination with at least 55% of the marks in aggregate or equivalent grade average (50% for the backward class candidates only from Maharashtra State) are eligible to apply. The candidates who have cleared the qualifying examination in one sitting will be preferred.

8.2.1.11. M. Sc. (Physics) by papers (Sr. No. 19 in Table 8.2)

The candidate should have passed with post-HSSC 3-year degree course of Bachelor of Science with Physics at the third year of the course of University of Mumbai or of any other recognized University; and passed the qualifying examination with at least 55% of the marks in aggregate or equivalent grade average (50% for the backward class candidates only from Maharashtra State) are eligible to apply. The candidates who have cleared the qualifying examination in one sitting will be preferred.

8.2.1.12. M. Sc. (Textile Processing) by papers (Sr. No. 20 in Table 8.2)

The candidate should have passed with post-HSSC 3-year degree course of Bachelor of Science with Chemistry at the third year of the course of University of Mumbai or of any other recognized University; and passed the qualifying examination with at least 55% of the marks in aggregate or equivalent grade average. [50% for the backward class candidates only from Maharashtra State] are only eligible to apply.
The candidates who have cleared the qualifying examination in one sitting will be preferred.

8.2.2. Graduate Aptitude Tests (GATE/ GPAT) for the Post- Graduate Courses and the UGC Scholarships

(1) The candidates seeking admission to the degrees of M. Chem. Eng./ M. Tech./ M. E.(Plastics Engg.) are required to qualify the **Graduate Aptitude Test in Engineering (GATE**) conducted at the national level.

(2) The candidates seeking admission to the degrees of M. Pharm., are required to pass the **Graduate Pharmacy Aptitude Test (GPAT**) conducted at the national level.

a. The Scholarships (subject to sanction and availability) are awarded only to the candidates who have passed the GATE/GPAT examination with valid score and on the basis of merit. NON-GATE/NON-GPAT candidates, if admitted, are not eligible for these scholarships.

b. The student must give an undertaking to the effect that he/she would not leave the course midway or appear at any competitive examinations, etc., even those not related to Engineering and Technology, in order to be eligible to receive this scholarship. During the course of studies, the student shall not receive any emoluments, salary, stipend, etc., from any other source.

c. The student receiving the fellowship must secure minimum FIRST CLASS OR CGPA of 6.00 during the first and the second semester examinations to become eligible for continuation of the scholarship at the existing rate during the second, third and fourth semesters, respectively.

d. According to UGC rules, a student who secures below First Class OR CGPA OF 6.00 in the first and/or second semester examination shall be eligible to get a reduced fellowship at the rate of Rs. 1,000/- p.m. only.

e. In case of failure at the semester I examination, the fellowship shall be discontinued during the remaining period of the course. The fellowship may also be discontinued at any kind of misconduct by the student receiving the same. The fellowship once discontinued shall not be restored, even if a student secures First Class marks or CGPA of 6.00 at the second semester.

f. The scholarship amounts are normally disbursed every month after starting the scholarship, subject to receiving the grant from the UGC. The fellowship amount shall be disbursed only after receiving the appropriate grant from the UGC.

- **The Institute shall not be responsible for non-receipt of fellowship grant from UGC in time. The students will be required to give an Undertaking in writing to this effect.**

8.2.3. Admission Criteria

- Admission to the Master's courses are available to a course/branch (Sr. No. 1- 15 in Table 8.2) subject to the rules given below:
- The admission to a course/ branch will be based on GATE/GPAT score, as applicable.
- The first preference for admission to a course/ branch will be given to the candidates qualifying Bachelor's course with valid GATE/GPAT score, as applicable from the respective discipline (Level 1 - Table 3). Only after filling the vacancies by such candidates, candidates possessing a qualifying Bachelor's degree with valid GATE/GPAT score from any other course/branch will be considered for admission. (Level 2 - See Table 8.3)
- Preparation of the merit list will be done at two levels

Level 1: Merit list will be prepared on valid GATE score in the specified subject and no written test will be conducted. In this case, Level 2 can be taken up only if any seats remain vacant after exhausting the merit list from Level 1.

Level 2: Merit list will be prepared on the basis of valid GATE score (in any subject) and written test (based on the syllabus specified by the Department for the course in which the candidate is seeking admission) on the basis of **70:30**.

Table 8.3: Criterion for Preparation of Merit List

Department	Course in which the candidate is seeking admission	Preparation of first Merit list
Chemical Engineering	M. Chem. Eng.	Level 1
	M. Tech. in Bioprocess Technology	Level 2
Dyestuff Technology	M. Tech. in Dyestuff Technology	Level 2
Fibres & Textile Processing Technology	M. Tech. in Fibres & Textile Processing Technology	Level 2
Food Engineering & Technology	M. Tech. in Food Engineering & Technology	Level 1
	M. Tech. in Food Biotechnology	Level 2
Oils, Oleochemicals & Surfactants Technology	M. Tech. in Oils, Oleochemicals & Surfactants Technology	Level 2
-----	M. Tech. in Perfumery & Flavour Technology	Level 2
Pharmaceutical Sciences & Technology	M. Tech. in Pharmaceutical Science and Technology	Level 2
	M. Pharm.	Level 1
Polymer & Surface Engineering	M. Tech. in Polymer Engineering & Technology	Level 1
	M. Tech. in Surface Coating Technology	Level 2
General Engineering	M. E. in Plastic Engineering	Level 2
-----	PG Diploma in Chemical technology Management	Level 2
------	M. Tech. in Green Technology	Level 2

- The admission procedure for Master's courses will be conducted after declaration of GATE/GPAT results, as required, but before the final semester examinations of the qualifying Bachelor's course for that year. The candidate must have obtained aggregate 60% of the marks or equivalent grade average [55% of the marks or equivalent grade average for the backward class candidate only from Maharashtra State] at the end of 6th semester of the qualifying Bachelor's course. Only a provisional admission will be offered. For confirmation of admission, at a later date, however, overall 60% of the marks in aggregate or equivalent grade average [55% of the marks in aggregate or equivalent grade average for the backward class candidate only from Maharashtra State] is necessary at the qualifying examination.

- In case the candidate in admitted to a course/ branch other than the one in which he/ she has obtained qualifying Bachelor's degree, he/she will have to undergo at least **Three Make-Up Credit Courses** (to be decided by the department admitting such candidate).

- Non–GATE/Non-GPAT candidates may also apply, for which admission is not guaranteed. The first preference for admission will be given to GATE/GPAT qualified candidates. The merit of Non–GATE/Non-GPAT candidates will be totally based on the written test. The entrance test will be designed on the basic course, the syllabus of which shall be provided by each Department and displayed on the ICT website.

- Design of written test would be such that basic knowledge in the discipline in which the candidate is seeking admission is tested in Section-I, while Section-II will test for analytical skills of the candidate.

- The final merit lists would be prepared on the basis of the criteria given above.

- The group of selected candidates, unless selected on a specific project, will be given a presentation for all research activities in the department and available projects for selection of project / guide. The final allotment of the research guides will be done by the Departmental committee based on the merit and preferences given by the candidate and admissible rules / regulations.

- All these rules also apply to the candidates who shall be conducting their research work leading to a Degree under any type of sponsored projects (Govt. or Private)

9. Doctor of Philosophy (Ph. D.) Programmes

9.1 Doctor of Philosophy in Technology – Ph. D. (Tech.)

Table 9.1 shows the various doctoral programmes (by research) in various disciplines in Science and Technology. Apart from original research, all Ph.D. programmes have a course work component effective from September 2009.

TABLE 9.1: DOCTORAL (Doctor of Philosophy) DEGREE COURSES

No.	Degree	Course
1.	Ph. D. (Tech.) in Chemical Technology	Bioprocess Technology
2.		Chemical Engineering
3.		Dyestuff Technology
4.		Fibres and Textile Processing Technology
5.		Food Biotechnology
6.		Food Engineering and Technology Green Technology Nanotechnology
7.		Oils, Oleochemicals & Surfactants Technology
8.		Pharmacy
9.		Pharmaceutical Technology
10.		Polymer Engineering and Technology
11.		Surface Coating Technology
12.		Plastics Engineering
13.	Ph. D. (Sci.)	Biotechnology
14.		Chemistry (Inorganic/Organic/Physical)
15.		Physics
16.		Mathematics

Intake Capacity: There is no prescribed intake capacity since the number of fellowships varies every year. Several research projects, either funded by various government agencies or private industries, have provisions for fellowships. No admission to a Ph.D. course is done without fellowship, although the amounts vary depending on the source of funding and the candidate's qualifications. The tentative break up of fellowships and the amounts of fellowship are as follows:

9.2. UGC-SAP Meritorious Fellowships for Ph.D. Programmes:

The Empowered Committee of the UGC has taken several innovative steps to encourage S and T research and building of infrastructure in universities and colleges. Thus, UGC has been providing these fellowships to all Departments recognized as Departments of Special Assistance (SAP) or non-SAP departments. The number of fellowships sanctioned by UGC for a particular department depends on its track record of producing Ph.D.s, number of publications in peer reviewed journals, and the SAP status. Those qualified with a GATE score receive fellowship with HRA, whereas non-GATE students get a consolidated amount.

1. 15 **UGC-SAP** fellowships in Department of Chemical Engineering
2. 15 **UGC-SAP** fellowships for the Centre for Physico-chemical Aspects of Textiles, Fibres, Dyes and Polymers to be distributed among the concerned departments.
3. 15 **UGC-SAP** fellowships in Department of Food Engineering & Technology

4. 15 **UGC-SAP** fellowships in Department of Pharmaceutical Sciences & Technology

5. 5 **UGC-SAP** fellowships in Department of Chemistry

6. 2 **UGC-SAP** fellowships in Department of Oils, Oleochemicals & Surfactants Technology

7. 15 **UGC-SAP** fellowships for Green Technology (with U of Mumbai)

During the year 2009-2010, a record number of 161 full-time Ph.D. candidates joined the ICT with full fellowships.

Eligibility Criteria for the Admission:

Candidates who have passed the Master's degree in Chemical Engineering/ Chemical Technology/ Pharmacy/ Plastics Engineering of ICT or an equivalent degree from any other recognized University in First Class or Equivalent shall be eligible for admission to the Ph.D. (Technology).

Following conditions apply for the admission and registration of a candidate for the degree of Doctor of Philosophy (Technology):

1. The candidate must have passed the Master's degree examination in the Chemical Engineering / Technology of ICT or any other recognized University as equivalent thereto with First Class (60% marks or equivalent CGPA (55% marks in case of backward class category or equivalent CGPA).

OR

2. The candidate is qualified in NET/SET/CSIR/DBT/GATE – JRF examinations or other equivalent examinations.

OR

3. The candidate is a teacher having full time teaching experience of at least two years in Degree College or five years in Junior college and should have first class or equivalent CGPA.

OR

4. The candidate is a person who is a graduate of this or any other recognized university and is working in National laboratories/ Institutes/ Government/ Private Organization/nominated/ sponsored by the respective employer on the condition that he/she shall clear an **Aptitude test** and also holds a first class Masters degree.

OR

5. The candidate must have passed the Bachelor's degree examination in the faculty of Technology of ICT or of any other recognized university, in first class or equivalent thereto. This will be called **Integrated Ph.D. (Tech.).**

   For B.Chem.Eng./ B.Pharm./ B.Tech. to **Integrated Ph.D.(Tech.)**, the ICT may form appropriate makeup course work, which the candidate has to take and clear the respective examinations as per the norms. The admissions to Integrated Ph.D.(Tech.) are subject to approval**.**

   Aptitude Test:- Candidates who desire to pursue the Ph.D. degree are required to clear an Aptitude Test conducted by the Institute. However, Persons qualified in NET/SET/CSIR/DBT–JRF or an examination equivalent thereto are exempted from the Aptitude Test.

NOTE:- The selection of all the candidates for Ph.D. (Tech) including NET/SET/GATE/GPAT/JRF qualified candidates shall be based on the above criteria as well as the score in the qualifying examination, performance in the written test (if applicable) and interview (if short listed in written test) conducted by a panel.

These rules also apply to the candidates who conduct research on sponsored projects (Govt. or Private). leading to a degree

9.3. Doctor of Philosophy in Science – Ph.D. (Sci.) (by research) (See Table 8.2)

Eligibility Criteria for the Admission: Following conditions apply for the admission and registration of a candidate for the degree of Doctor of Philosophy (Science):

1. The candidate must have passed the Master's degree examination in the faculty of Science of any University recognized by UGC with minimum of 60% marks or equivalent CGPA (55 % for backward class category).

OR

2. The candidate must have passed the Master's degree by research of ICT or of any other recognized University.

OR

3. The candidate is a teacher having full time teaching experience of at least two years in Degree College or five years in Junior college and should have first class or equivalent CGPA.

OR

4. The candidate is a person who is a graduate with first class of any recognized university and is working in National laboratories/ Institutes/ Government/ Private Organization/ nominated/ sponsored by the respective employer.

OR

5. The candidate is qualified in CSIR/NET/SET/GATE – JRF examinations or other equivalent examinations.

Aptitude Test:- Candidates who desire to pursue the Ph.D. degree required to clear an Aptitude Test conducted by the Institute. Persons qualified in NET/SET/CSIR/DBT–JRF or an examination equivalent thereto are exempted from the Aptitude Test.

NOTE:- The selection of all the candidates for Ph.D. (Sci.) including NET/ GATE/ CSIR-JRF qualified candidates shall be based on the above conditions as well as score in the qualifying examination and performance in the written test (if applicable) and interview (if short listed in written test) conducted by a panel at the ICT.

These rules apply also to the candidates who shall be conducting their research work leading to a degree under any type of sponsored projects (Govt. or Private).

9.4. Admission of Externally Employed candidates (from non government organisations) to Ph.D. (Tech. /Sci.)

The procedure is as follows:

1. Eligibility as per normal criteria set out by ICT in Sections 9.2 and 9.3 and a minimum 2 years industrial experience.

2. Research organization/ Industry/ R & D Centers/ Industrial R and D labs/ QA Laboratory/ Eco-laboratory/ Testing Laboratory, which are recognized by DSIR, are also required to get recognition by the ICT for doing Ph.D. (Tech.) / Ph.D. (Sci.) work related to the specific topics from ICT. No individual can sponsor a candidate for the Ph. D. programme.

3. The sponsoring industry must give an undertaking on a stamp paper of Rs. 100/- that the candidate is their permanent employee with 2 years continuous service and is being sponsored by them for Ph. D. programme at the ICT, they will pay all fees in advance and that they have adequate research facilities including modern instrumentation required to do research for which the candidate is going to be registered. Industry must also agree to grant leave to the candidate to fulfill the course requirements at ICT.

4. Recognition of sponsoring industry by DSIR, DST, DBT or any central agency like ministry and by ICT is necessary.

5. ICT has a separate mechanism to grant recognition to industry upon payment of prescribed fees and recommendation by a team of experts.

6. For obtaining recognition by ICT, the industry will have to make application in specific format giving details of equipment/ machinery/ instruments available for research, along with an application fee of Rs. 1 lakh.

7. An appropriate committee will be constituted by ICT to visit the laboratory and to make recommendation to the Director for the recognition. All the expenses in connection with the visit by the committee will be borne by the industry.

8. The recognition will be valid for duration of 3 years with fees of Rs. 10 lakhs and will not be candidate specific. A maximum 2 students may be allowed to register under the ICT faculty during the first year. Continuation laboratory of recognition beyond 3 years will be subject to a fresh review and an amount of Rs. 3 lakh per annum will be payable thereafter. The industry must ensure that the total period of recognition is consistent with the normal period of completion of Ph. D. programme by the candidate.

9. The rest of the procedure, i.e. institutional tests for admission, fee structure, course requirements etc. will remain the same. The candidate/s will be permitted to work in the ICT recognized laboratory and will be governed by all rules and regulations applicable to regular ICT students.

10. ICT is not responsible if the candidate wishes to change his/her job and the liabilities of the candidate towards the original sponsor. In that event, if the candidate changes his job during the period of registration, he/she should produce a "**No Objection Certificate"** from the previous as well as new employer, for continuation of registration as a student. Recognition of the new organization where the candidate wishes to join is governed by Rule 4 above.

11. During the programme of Ph. D. the candidate must spend at least two months every year at the ICT. A proper log book of candidate's attendance should be maintained by the supervisor (guide) of the candidate, authenticated by the HOD.

12. The sponsor will also pay a contingency grant of Rs. 1.00 lakh (to be equally shared between Department and guiding teacher).

9.4. Ph. D. Programmes under ICT-DAE Centre and UGC Netowrking Centre in Chemical Engineering

Candidates are advised to read the concerned sections for specific details. The admission criteria remain the same.

9.5. PART-TIME POST GRADUATE DIPLOMA IN CHEMICAL TECHNOLOGY MANAGEMENT

9.5.1. Preamble

The ICT has a rich tradition of first generation entrepreneurs as its graduates. In order to groom our Ph.D. students into etiquettes of business management, a part-time certificate course in Chemical Technology was started for the ICT students. This popular course is now converted into a PG Diploma Chemical Technology Management to give Ph.D. research students and industry personnel, an orientation in business and technology management of chemical industry and to sharpen entrepreneurship skills.

The course covers topics such as Chemical Technology Management, Product/Process Design and Development, Finance Management, Marketing management, Intellectual Property Rights (IPR) and other laws, Communication, HRD, Project Management, Team and Organization Management.

The course is run with the assistance of the UDCT Alumni Association, with several alumni and other experts from within and outside ICT, having vast experience .

This is a two-year semesterised course conducted on Saturdays and Sundays.

The course commences in January, every year and the admission procedure may commence from October, every year (see website www.ictmumbai.edu.in).

9.5.2. Eligibility Criteria for Admissions

Candidates registered for Ph.D. (Science or Technology) in the ICT itself, who have completed the course work required for Ph.D. and have spent at least a year in their Ph.D. programme

or

Those Ph.D. (Science or Technology) candidates registered in institutes other than the ICT

or

Industry- sponsored candidates working for not less than 3 years, having Master's degree in Chemical Technology/ Chemical Engineering/ Sciences/ Pharmacy/ Mathematics or any other equivalent course

9.5.3. Admission Procedure

A written test & interview (equal weight age) will be conducted and the merit list will be generated.

9.5.4. Fees structure: For Registered Ph.D. candidates: Rs 15,000 per year and for Industry Sponsored candidates: Rs 45,000 per year to be paid at the beginning of January each year:

9.5.5. Intake Capacity : 30 students per year:

- Research scholars from ICT registered for Ph.D. in any of the above subjects. = 10
- Research scholars from Institutes other than ICT, registered for Ph.D. in above subjects = 10
- Persons working in Industry for not less than 3 years with Minimum qualification as above (Sponsored candidates) = 10

There will not be any reservation for sponsored (self or industry) candidates. The rest will be admitted as per ICT norms.

9.5.6. Course Duration

The course comprises of Four Semesters covered over two calendar years.

10. ADMISSION PROCEDURE

10.1 General

- The admissions to AIEEE score based quota (30%) for F. Y. Chem. Eng. and F. Y. B. Tech. (all branches) will be done by and at ICT.

- The admissions to MHT-CET score based quota (70%) for F. Y. B. Chem. Eng. and F. Y. B. Tech.(all branches) and NRI quota (15% over and above the total sanctioned intake) will be done by and at COEP, Pune.

- The admissions to B. Pharm. will be done by DTE in their CAP rounds (see Table 8.1)

- All PG level admissions, M. Chem. Eng., M. Pharm., M. Tech. (all branches), M.E. (Plastics Engg.), M.Sc., Ph.D. (Tech.) and Ph.D. (Science) will be done by and at ICT (see Tables 8.2 and 8.3)

10.2. Application Procedure

(a) For admissions done directly at the ICT such as AIEEE score based seats for F. Y. B. Chem. Eng. and F. Y. B. Tech. and all the Masters and Doctoral courses, a candidate should obtain appropriate application form for the course to which he/she is seeking admission; along with prospectus (See page ii for details).

(b) Separate forms should be filled up for different courses to which the candidate is seeking admission, namely,

- B. Chem. Eng. and B. Tech. (all branches) (single form) while applying at ICT for AIEEE quota.
- B. Chem. Eng. and B. Tech. (all branches) students need to fill up the form after the admission to ICT through MHT-CET quota is allotted at CAPCAI rounds at COEP.
- B. Pharm. students need to fill up the form only after the admission to ICT is allotted by DTE.
- M. Chem. Engg.
- M. Pharm.
- M. Tech. (each branch separately)
- M. E. (Plastics Engg.)
- M. Sc. (each branch separately)
- Ph. D. (Tech.) (each branch separately)
- Ph. D. (Tech.) (Integrated) (each branch separately
- Ph). D. (Sci.) (each branch separately)
- Post graduate diploma in CTM

(c) The duly filled in application form must be submitted along with the appropriate Pay Order/Demand Draft (see page ii). Any application downloaded and submitted either in person or by post, not accompanied by appropriate Pay Order/DD will not be entertained and no correspondence will be made in this regard.

(d) All the relevant entries in the application form must be completed in legible handwriting or may be typewritten. Incomplete forms will be rejected and no correspondence will be made in this regard. **Writing Mobile No./ Telephone No. and email addresses in the application form is essential.**

(e) The candidates seeking admission at the ICT must submit attested photocopies of all the documents as given in **Table 10.1** along with the application forms. No originals should be submitted.

(f) The application form has a tear-off receipt at the bottom with the application number. The receipt should be filled in by the candidate and shall be signed by the clerk at the counter while accepting the form. This receipt should be preserved and the application number must be stated for future correspondence. In case the form is submitted by post, the candidate shall be informed about the receipt of his/her application form by e-mail only.

(g) All Rights regarding the admission process at the ICT are reserved with the Director, ICT.

TABLE 10.1. : Documents to be Attached with the Application form

Sr.	Type of Candidate	Attested true copies of documents to be attached along with

No.		application form
1	All Candidates	**A.** SSC (Std. X) mark sheet, HSSC (Std. XII) mark sheet, School Leaving certificate after passing HSSC (Std. XII), Certificate of Indian Nationality of the candidate. **B.** For AIEEE quota admissions additionally AIEEE- Score card should be submitted. (e-statement may be submitted instead of attested Xerox of the Original score card is not received by the last date of submission of application form at the ICT) **C.** For PG admissions additionally all mark sheets (Std XII onwards), the degree certificate(s) and GATE/NET/JRF score card should be submitted.
2	Backward class Category Candidates belonging to SC/ ST	Caste certificate, Caste/ Tribe Validity certificate (In addition to the documents mentioned in Sr. No. **1**)
3	Reserve Category Candidates belonging to VJ/ DT/ NT1/ NT2/ NT3/ OBC/ SBC categories	Caste certificate, Caste/ Tribe Validity certificate, Non Creamy Layer Certificate valid up to 31st March 2010. (In addition to the documents mentioned in Sr. No. **1**)
4	Physically Handicapped Candidates	Certificate in the Proforma B/ B-1. (In addition to the documents mentioned at Sr. No. **1**)

10.3. Certificate of Indian Nationality

The certificate of Indian Nationality is part of the Domicile Certificate, which is usually issued by the Tehasildar/ Executive Magistrate/ Deputy Collector of the concerned Taluka/ District wherein the candidate ordinarily resides. In lieu of the "Certificate of Indian Nationality", any one of the following certificates/ documents will also be acceptable-

- Indian passport in the name of the candidate, issued by the appropriate authorities.
- The School Leaving Certificate indicating the nationality of the candidate as 'Indian'.

10.4. Rules and Regulations about Reservation

1. Candidates belonging to SC, ST, VJ/DT(A), NT-B, NT-C, NT-D, OBC and SBC categories shall be admitted to the courses in the ICT in accordance with the rules of the Govt. of Maharashtra and the DTE rules.

2. Reservation in admission for all backward class categories is applicable to F.Y. B.Chem.Eng., F.Y.B.Pharm., and F.Y.B.Tech. (all branches) admissions based on MHT-CET results.

3. Reservation in admission for SC/ST categories is applicable to F.Y.B.Chem.Eng. and F.Y.B.Tech. (all branches) admissions based on AIEEE results, as well as for the post graduate courses M.Chem.Eng., M.Pharm., M.Tech.(all branches) and M.E.(Plastics Eng.) M.Sc., Ph.D.(Tech.) and Ph.D. (Sci.), CTM as per the government norms.

10.5. The Caste Certificate and the Caste/ Tribe Validity Certificate

a) **The Caste Certificate:** The candidates belonging to the backward class categories will be required to submit the Caste Certificate at the time of counselling for admission, failing which the category claimed will not be granted and the candidate will be treated as a General Candidate.

b) **The Caste Validity Certificate**: The candidates belonging to the ST category will be required to submit the Caste Validity Certificate at the time of counselling for admission, failing which the category claimed will not be granted and the candidate will be treated as a General Candidate.

c) **The Caste Validity Certificate:** For candidates belonging to the SC, VJ/DT-A, NT-B, NT-C, NT-D, OBC, SBC categories, an extension for submission of the Caste Validity Certificate up to 31st August 2010 will be granted, failing which the admission shall stand cancelled.

10.6. Non-Creamy Layer Certificate

A candidate claiming benefit of reservation under the categories VJ/DT(A), NT-B, NT-C, NT-D, OBC and SBC will be required to produce "Non-Creamy Layer Certificate", valid up to 31st March 2011, at the time of counselling for admissions, failing which the category claimed will not be granted and the candidate will be treated as a General Candidate.

10.7. Documents for supporting the reservation claim for Backward Class

- The documents required for supporting the backward class reservation claim made by the candidate are as per the details in **Table 10.2**.

- The candidates shall not attach a copy of any other certificate which is not asked for such as certificates for participation in sports, cultural activities, etc.

- The photocopies of certificates or documents attached to the application form should be attested by the Principal of the College from which the candidate has passed qualifying examination or Gazetted Officer or Special Executive Magistrate or Head Master of a Secondary School or teaching staff of a Government /Govt. Aided College / Polytechnic not below the rank of a Lecturer.

- **Original certificates should not be attached with the application form. Those should be made available at the time of counselling/ admission offer.**

TABLE 10.2: Documents in Support of Reservation as Backward Candidate

Sr. No.	Category of Reservation	Documents required for supporting the Backward class reservation claim	Authority issuing the document
1.	SC/ ST	1. Caste Certificate stating that the caste is recognized under Backward class category in Maharashtra State.	Executive Magistrate in Maharashtra State
		2. Caste Validity Certificate	Divisional Caste Certificate Scrutiny Committee of the respective Divisional Social Welfare Office.
2.	VJ/DT(A)/ NT-B / NT-C/ NT-D / OBC /SBC	1. Caste Certificate stating that the caste is recognized under Backward class category in Maharashtra State.	Executive Magistrate in Maharashtra State
		2. Caste Validity Certificate	Divisional Caste Certificate Scrutiny Committee of the respective Divisional Social Welfare Office.
		3.Non-Creamy Layer Certificate valid Up to 31st March 2011	Sub Divisional Officer/ Deputy Collector/ Collector of the district.

10.8. Reservation for Physically Handicapped candidates:

Three per cent seats of sanctioned intake capacity shall be reserved for Physically Handicapped candidates of categories P1, P2 and P3 taken together. The percentage of handicap should not be less than 40% for claiming PH reservation.
(Refer Proforma – B/ B1 for claiming this provision.)

P1 - Visually impaired (Blind) candidates
P2 - Speech & hearing impaired (Deaf & Dumb) candidates
P3 -Candidates with Orthopaedic disorders, learning disabilities, Dyslexia, Dyscalculia, Dysgraphica, Spastic.

Note: It should be noted that the Physically Handicapped candidates on admission to Engineering/ Technology degree courses will not be given any exemptions or additional facilities in the academic activities.

10.9. All Maharashtra Quota Admissions to Undergraduate Courses Based on MHT-CET Score

At ICT, 70 % seats of the total intake capacity of First Year B. Chem. Eng. and B. Tech. courses are available as All Maharashtra quota seats based on MHT-CET 2010 score.

The Institutes in Maharashtra, which have been conferred autonomous status by the Govt. of Maharashtra [which also includes ICT] will hold admissions to all their undergraduate courses (In case of ICT, 70% seats of the sanctioned intake of First year B. Chem. Eng. and First Year B. Tech. courses) Separately and Collectively (CAPCAI) by and at COEP, Pune. The information about this admission process is given in a common brochure prepared by the above five autonomous institutes and available at the Application Receiving Centres (ARC) where the forms will be sold and accepted for submission. See common brochure of the autonomous institutes for details.

The information about the procedure of admissions and the schedule of admission rounds to these courses will be available on the website www.coep.org.in as well as in the Common Brochure of the autonomous institutes.

The candidates, who have secured a seat through the CAPCAI, must also fill up the ICT's admission form while taking admission at the ICT (available along with prospectus).

IMPORTANT NOTE:

Candidates admitted through CAPCAI conducted by COEP for the Autonomous Institutes (which also includes the ICT) are not eligible to participate in the online CAP round conducted by DTE for all other engineering colleges in Maharashtra.

10.10. All India Quota Admissions to Undergraduate courses Based on AIEEE Score

At ICT, 30 % seats of the total intake capacity of First Year B. Chem. Eng. and B. Tech. courses are available as All India quota seats (which also includes candidates from Maharashtra).

(a) The candidate should have appeared for the AIEEE examination 2010. Admissions to the All-India Seats at the First Year B.Chem.Eng. / B.Tech. courses will be done at the ICT directly by counselling rounds.

(b) Reservation in admission for SC/ST categories is applicable to F.Y.B.Chem.Eng. and F.Y.B.Tech. (All branches) admissions based on AIEEE results, as per the Govt. Of Maharashtra norms.

(c) It should be noted that the allotment of B. Chem. Eng. and the branches within B. Tech. is made at the time of counselling strictly by merit. Separate merit lists will be prepared for candidates of SC/ST categories.

(d) For the admission, the interested candidate must be present in person at the time of counselling. If the candidate is unable to attend the counselling round, he/she should authorize a person as per **Proforma A** to remain present for counselling.

10.11. Steps of AIEEE based Admission Process at ICT:

Step I – Sale of Prospectus and Receipt of Application form:

- The candidate seeking admission to F.Y.Chem.Eng. and F.Y.B.Tech. through AIEEE quota shall purchase/ download the application form and submit the duly filled application form at the ICT Accounts Section along with one attested set of all photocopies of the required documents (See Table 10.1) and the prospectus fees. Incomplete applications shall be rejected without entering into any correspondence with the applicant. Email and Mobile/landline phone number should be available for contact, if felt necessary.

- Fees for Prospectus along with Application form are non-refundable and non-transferable under any circumstances. (For details of fees for purchase and submission of application form along with prospectus, see page ii)

- If Original AIEEE score card if not received by the candidate by the last date of submission of application form, e-statement may be submitted instead of attested photocopy of the original.

Step II – Merit List Display

- Each eligible candidate who has submitted the duly filled application form, on or before the last date prescribed for the submission, will be assigned a Merit Number (Common merit lists for F. Y. B. Chem. Engg. and SEVEN branches of F. Y. B. Tech., separately for General and Reserved category) on the basis of marks scored at AIEEE 2010.

- For filled in applications sent 'by Post', the candidate should take care to despatch the form and documents well in time so as to reach ICT on or before the last date of submission. The 'inward stamp with date' of ICT will be the proof of receiving the form on a particular date.

- The provisional merit lists will be displayed on the Notice Board of the ICT and the website www.ictmumbai.edu.in OR www.udct.org any time after 4th working day from the closing date for submission of the admission forms.

- Candidate should carefully check his/ her information in the provisional merit list displayed on the website. If there is any grievance/ discrepancy/ mistake in the information, it must be pointed out along with all requisite proofs at the ICT either 'in person' or by e-mail at admission@ictmumbai.edu.in or by Fax 022-3361 1020 within TWO days. After due rectification, the final merit lists will be displayed on the website. Candidate has to ensure himself/herself about the change. No change will be entertained thereafter.
- **Allotment of a Merit number does not indicate or assure admission to any seat.**

- **Step III- Admission by Counselling for AIEEE candidates:**

  Admission will be given to a candidate as per the merit by **Counselling at the ICT** and the number of seats available at that point of time. The candidate has to confirm his/ her admission by submitting all the necessary **original documents** and paying the prescribed fees, by the date specified in the Offer Letter, by Demand Draft/ Pay Order of any Bank drawn in favour of **The Director, ICT,** payable at Mumbai. Subsequently, the list of admitted candidates will be displayed on the Notice Board of the ICT and the website www.ictmumbai.edu.in OR www.udct.org.

- The details of the admission by counselling list will be displayed on the Notice Board of the ICT and the website www.ictmumbai.edu.in OR www.udct.org

IMPORTANT NOTE:-

The candidates from state of Maharashtra confirming admission through AIEEE quota are neither eligible to take any seat through the CAPCAI conducted by COEP for the Autonomous Institutes (which also includes the ICT) nor they are eligible to participate in the online CAP round conducted by DTE for all other engineering colleges in Maharashtra.

10.12. AIEEE Based Admission Rounds

- All the eligible candidates who have been assigned Merit number shall be called in specified lots for admission in the counselling rounds (Round-I, Round-II, Round-III) for the seats available through the AIEEE quota. Call for attending a counselling round does not guarantee allotment of a seat to the candidate.

- The number of candidates to be called for counselling round is always higher, generally about 3-4 times of the seats available and it will be displayed on the Notice Board and the ICT website at least 3 days before the date of a counselling round.

- Every eligible candidate who is desirous of seeking admission shall remain present strictly as per the schedule at the ICT and will get an opportunity to select a seat of his/ her choice from the available seats at the point of calling his/ her merit number.

- If a candidate is unable to attend the counselling round, he/she should authorize a person as per **Proforma A** to remain present for counselling. Candidates who report late during a counselling round will be considered for seats available at that time.

10.12.1 AIEEE Based Admission Round - I

- All the candidates, who have been called for counselling, through website and ICT Notice Board, and having valid Merit number, shall be considered for admission for the available seats.

- If a candidate fails to attend a counselling round for admission for some reason and intimates in writing/ by post/ by fax/ by email his/ her intention to join the next possible counselling round, he/ she may attend the next round for seeking admission to one of the available seats at that counselling round, as per his/her merit number.

- If a candidate is unable to produce original certificates at the time of his/ her counselling on account of admission already secured to some other institute/college, he/ she shall **produce a certificate from the respective Head of the Institute/college** on their Institute's letter head where he/ she has already taken admission indicating that he/ she has been admitted to a particular course in that institution on a particular date and hence original certificates (details to be provided on the letter) have been retained in that institution (See **Proforma C** for format). In such a case, the candidate shall produce the photocopies of the certificates that are duly attested by the Head of the concerned institution. Such candidates shall be required to pay the fees immediately at the time of admission and such candidates shall **be permitted to submit the required original certificates within 3 working days**. **Non-compliance will automatically lead to cancellation of the offer to a seat and the refund of fees will be made as per the cancellation rules.**

- If a seat is offered, the candidate will have to submit original certificates immediately and pay prescribed fees in full by the date given in the Offer Letter to confirm the admission.

- The original School/ College Leaving Certificate (after qualifying examination) of such candidates will be retained by the ICT. Also, all relevant original certificates will not be returned to any candidate once admitted to a course at the institute unless the candidate formally cancels his/ her admission through prescribed procedure.

10.12.2 AIEEE Based Admission Round - II

- Round -II is meant for filling the seats remaining vacant at the end of Round -I and seats vacated due to non-reporting/ non-allotment, cancellations up to the commencement of Round -II.

- For this provision, the two quotas, i.e., Admissions through the AIEEE merit and the admissions through the MHT-CET merit, shall be treated separately. The change of course of admission, from AIEEE based quota at the ICT, between B. Chem. Eng. and various courses of B. Tech. may be possible depending on vacancies available, if any.

- Vacancies in AIEEE quota available for Round - II will be displayed on the ICT website as well as on the Notice Board around THREE days before the scheduled date along with the time. Any additional vacancies created due to any cancellation of admission, before the actual start of Round - II will also be added and declared at the start of round II.

- Eligibility and Order for AIEEE Based Round II

  (A) Internal Round II:-
  - Candidates already admitted in the Round I shall be given first priority, according to their category and *inter se* merit, for getting a change to their preferences within B. Chem. Engg. and B.Tech. course (any branch).

  - Candidates are advised to observe website and the notice board of the ICT till the admission process is complete for possible change of preference to a course.

- This round will be held one day prior to the External Round II and the vacancies will be updated on the website and the notice board of ICT at or before 4.00 p.m. on the same day for information to candidates willing to join External Round II.

(B) External Round II:-
Those who have failed to attend counselling Round I at the ICT for admission and have intimated to the ICT prior to this counselling round in writing/ by post/ by fax/ by email about his/ her intention to join the next round, can attend this round for the seats available after Internal Round II.

(C) Those candidates from the merit list, who have attended Round I and rejected the offer of a seat available to them at their turn of counselling cannot attend External Round II.

(D) Depending on the number of vacant seats after Internal Round II, the merit numbers of sufficient number of candidates starting from the next number in the merit lists (as well as those who have intimated to the ICT prior to this counselling round in writing/ by post/ by fax/ by email about his/ her intention to join this round) will be displayed on the website and the ICT Notice Board to attend the External Round II. Candidates are advised to keep in touch of the schedule that will be displayed on the website and notice board of ICT. The availability of vacant seats from SC/ST categories, if any, will be filled up first by wait listed candidates of those categories.

(E) If no candidates are available from these reserved categories, then those seats will be filled up from General category candidates after completion of the External Round II.

10.12.3 AIEEE Based Admission Round - III

- Round -III is meant for filling the seats remaining vacant at the end of Round -II and seats vacated due to non-reporting/ non-allotment, cancellations up to the commencement of Round -III.

- For this provision, the two quotas, i.e. Admissions through the AIEEE merit and the admissions through the MHT-CET procedure, shall be treated separately. The change of course of admission, from AIEEE based quota at the ICT, between B. Chem. Eng. and various courses of B. Tech. may be possible depending on vacancies available, if any.

- Vacancies in AIEEE quota available for Round - III will be displayed on the ICT website as well as on the Notice Board around THREE days before the scheduled date along with the time. Any additional vacancies created due to any cancellation of admission, before the actual start of Round -III will also be added and declared at the start of Round III.

- Eligibility and Order for AIEEE Based Round III

(A) Internal Round III:-

- Candidates already admitted in the Rounds I and II shall be given first priority, according to their category and *inter se* merit, for getting a change to their preferences within B. Chem. Eng. and B.Tech. course (any branch).

- Candidates are advised to observe website and the notice board of the ICT till the admission process is complete for possible change of preference to a course.

- This round will be held one day prior to the External Round III and the vacancies will be updated on the website and the notice board of ICT at or before 4.00 p.m. on the same day for information to candidates willing to join External Round III.

(B) External Round III:-
Those who have failed to attend counselling Round I and II at the ICT for admission and have intimated to the ICT prior to this counselling round in writing/ by post/ by fax/ by email about his/ her intention to join the next round, can attend this round for the seats available after Internal Round III.

(C) Those candidates from the merit list, who have attended Round I and Round II and rejected the offer of a seat available to them at their turn of counselling cannot attend External Round III.

(D) Depending on the number of vacant seats after Internal Round III, the merit numbers of sufficient number of candidates starting from the next number in the merit lists (as well as those who have intimated to the ICT prior to this counselling round in writing/ by post/ by fax/ by email about his/ her intention to join this round) will be displayed on the website and the ICT Notice Board to attend the External Round III. Candidates are advised to keep in touch of the schedule that will be displayed on the website and notice board of ICT. The availability of vacant seats from SC/ST categories, if any, will be filled up first by wait listed candidates of those categories.

(E) If no candidates are available from these reserved categories, then those seats will be filled up from General category candidates after completion of the External Round III.

10.13. Admissions to the First Year B. Pharm. Course

These admissions will be done through CAP round conducted by DTE, for all the Engineering and Technology colleges other than the Autonomous Institutes.

Please refer to MHT-CET booklet and the DTE website, www.dte.org.in

10.14. Admissions to the Post-Graduate Courses (Master's and Doctorate)

1. For the admission to the Master's courses, GATE/GPAT results, and aggregate of marks or equivalent grade average at the end of 6th semester of the qualifying Bachelor's course are necessary, as per the norms as specified in **8.2.1** while submitting the application form. The result of the qualifying examination of Bachelor's degree will have to be submitted later after declaration of the result, along with all the relevant original documents for confirmation of admission, as per the criteria given in **8.2.1**

2. For the admission to the Doctoral courses, if the result of the qualifying examination of Master's degree is not declared before the last date notified for the submission of the application forms for admission, the candidates are allowed to communicate the results by telegram/ e-mail followed by sending all the relevant original documents by Registered Post. However, the applications of such candidates shall be considered only for seats, which shall remain/ fall vacant, in due course of time.

3. The candidates seeking admissions to the Master's courses, viz., M. Chem. Engg./ M. Tech./ M. E. (Plastics Engg.), must mention the GATE score (GPAT score in case of M. Pharm. Course) in their application forms. However, valid GATE/GPAT score does not automatically entitle a candidate for the admission.

4. All the candidates, eligible for admission to Master's and Doctorate degree courses shall be called for a selection procedure, consisting of Institute's written test (See Table # for Master's courses admissions), based on the syllabus of the qualifying examination related to Chemical Engineering/ Specific Chemical Technology/ Pharm./ Science, as the case may be. The written test, whereever applicable, shall be of 1 hour duration. Any one of these alone does not qualify the candidate for the selection. A list of eligible candidates for different degrees and courses shall be displayed on the notice board as well as on the website of ICT (See 8.2.3).

   Candidates seeking admission to Doctoral courses have to appear additionally for Institute's interview, if short listed in the written test.

   IMPORTANT NOTE: The dates of different written tests and interviews will be displayed on the website www.ictmumbai.edu.in OR www.udct.org by the last date of submission of the Application Forms. No separate communication shall be made in this regard.

   At the time of assigning the research supervisor, preference of the candidate shall be taken into account.

5. The last dates for receiving applications for Masters, Ph.D. (Tech) and Ph.D. (Sc.) are announced each year through an advertisement in a national (Indian Express) and a Marathi (Loksatta) newspapers and also put on the ICT website. Candidates who have submitted their Master's thesis and awaiting the results are also eligible to apply for doctoral courses. The results of qualifying Master's Courses taking admission to doctoral courses will be awaited till end of first term of the Academic Year after which the admission is likely to be treated as cancelled with refund of fees as per rules given in Table 10.3..

10.15. Fees and Concessions

The fees for 2009-10 for all courses were as follows. For this year, 2010-11, they are likely to be changed. Permission from the Govt. Of Maharashtra is awaited.

The new fee structure for 2010-11 will be displayed on the website and the ICT Notice Board, and will be applicable only to the students admitted during 2010-11.

The fees for 2009-10 for all courses were:

1. Tuition Fees	Rs. 15,000/-
2. Development Fees	Rs. 10,000/-
3. Other Course Fees	Rs. 8,000/-
4. Library Caution Money Deposit	Rs. 500/-
TOTAL	**Rs. 33,500/-**

NOTE: - Additional fees for syllabus, Enrolment, Disaster management fund, UAA well-wisher fees, etc. are separate for all UG and PG admissions.

- **Enrolment Fee:** At the time of taking admission to any undergraduate course, the students have to pay one-time Enrolment Fee of Rs. 220/- (which includes the cost of the application form). The same enrolment fee is also payable by the students from Universities other than ICT seeking admission to post-graduate courses. .

- Each student shall pay Rs. 150/- towards sports activities, Rs. 10/- towards the Disaster Relief Fund and Rs. 20/- towards Group Insurance, per year.

- **Registration fee:** The students enrolling for post-graduate courses have to pay Registration fee of Rs. 1025/- for Ph.D. (Tech) and Ph.D. (Sci) courses and Rs. 825/- for Master's courses. The Registration fee should be paid through a Pay Order/Demand Draft in favour of "*The Director, ICT",* payable at Mumbai.

- Hostel Fees in case of candidates opting for hostel accommodation will be separate. (See details under Section on Hostels)

- **Reimbursement of Tuition fee:** Candidates claiming concession under following categories (EBC concession, Concessions for sons and daughters of primary, secondary and higher secondary teachers, Concessions for sons and daughters of Ex-servicemen) shall pay full admission fee at the time of admission and subsequently candidates have to apply to the respective authorities for reimbursement of tuition fees. The quantum of reimbursement received by the institute from the concerned authorities shall be disbursed to the candidate as and when received.

- EWS, PH and W candidates benefitting from 10% Tuition fee waiver scheme of AICTE will get a refund of the Tuition fees component after the scrutiny and approval from the competent authority for CAPCAI admissions. At the time of admission, however, they will have to pay all the fees in full.

- For seats from Foreign Nationals/ Foreign students/ PIOs/ Children of Indian workers in the Gulf countries the fee structure for 2009-10 was, Tuition fees $3500 and Development fees $1500 totalling $ 5000 per year for every year till completion of the course. This is likely to change for 2010-11

10.15.1 General:

1. The above given fee structure for different courses is likely to change for the current year 2010-11. The candidates are expected to pay the fees at the beginning of the academic year in full in the specified time only.

2. The fee structure for MHT-CET based F.Y.B.Chem.Eng. and F.Y.B.Tech. admissions through CAPCAI process is at present as given above (likely to be enhanced for 2010-11). The candidates belonging to reserved category need to pay institutional fees and the fees that are not refunded by the Government and Library deposit at the time of admission as per the DTE and Govt. norms. The same rules will apply to the reserved category candidates admitted under AIEEE score quota to ICT, if they belong to the State of Maharashtra.

3. The SC/ST candidates from 'Other than Maharashtra State' (OMS) admitted to UG (AIEEE) and PG courses will have reservation in the admission quota only. They have to pay full fees at the time of admission to ICT. For getting any type of fee concession, they will have to apply and procure relevant fee concession form of their respective State Govt., fill it up in all respects and forward to the respective State Govt. along with necessary documents through ICT. The ICT will not be responsible for any denial/ delay in getting relevant fee concession from respective State Government.

4. The revised fee structure shall be applicable to the Fresh Admissions only, while the respective old fee structure shall be applicable to the students admitted in respective earlier years.

5. The fees shall be payable by two separate Pay Orders/Demand Drafts drawn in favour of ''The Director, ICT'' payable at Mumbai 1. for all fees and 2. for deposit. Cheques or cash are not accepted for the payment.

6. The Post graduate students admitted with or without any type of fellowship also must pay the fees in time. It may be noted that there is no connection between payment of course fees and timely receipt of scholarship. The student will have to give an Undertaking to that effect.

7. The post-graduate students are also required to pay their fees till the submission of their thesis.

8. The students unable to pay their fees till the last date specified for the same are liable to pay fine and the charges for the late fee payment will be as per the ICT rules.

9. No transference certificate shall be issued to the students unless they clear all the dues including hostel, laboratory, library fees, etc. It is issued subject to securing admission elsewhere.

10. If a candidate claiming any type of concession in fees leaves the course in-between, without his/her claim being sanctioned by the Social Welfare Department of the Govt., before he/she leaves, he/she will have to pay full fees and dues before to getting transference certificate, original certificates, etc.

11. The students admitted to any course shall have to take readmission for the second and subsequent years by paying the readmission form fee of Rs. 100/- for any undergraduate course and Rs. 200/- for any post-graduate course, in addition to the tuition fees and other fees every year and submitting the readmission form.

12. **Concession in Fees** The POSTMATRIC scholarship will be available to backward class students as per the Govt. of India rules. The scholarships for Physically Handicapped students will be available from the Govt. of Maharashtra.

10.16.Fees for various papers/ documents/ Certificates

Sr. No.	Certificate/ Document/ Letters	Fees
1.	Letter of Medium of Instruction Rank Certificate	100/-
2.	Certificate of any Testimonial i.e. Status, Ordinances, Rules, Syllabus etc.	300/-
3.	UG re-admission forms	200/-
4.	Transcript Certificate (Per Copy/ including Duplicate)	1000/-
5.	Bonafide Certificate	100/-
6.	Registration forms for PG/ Ph.Ds	500/-
7.	No objection Certificate	100/-
8.	Transfer Certificate	100/-
9.	Passing Certificate	100/-
10.	Mark Sheet	100/-
11.	Eligibility Fees and Verification 1. Other than Maharashtra Education Board 2. University in Maharashtra 3. University other than Maharashtra 4. NRI Students 5. Foreign National	500/-
12.	Topic approval fees	500/-

10.17. Various Govt. Concessions in Fees and Their Requirements

Following are the category-wise/ concession-wise requirements to be fulfilled by the students at the time of admission to the ICT.

The various types of application forms will have to be procured by the students at the time of admission and the duly completed forms along with necessary documents MUST BE SUBMITTED TO THE GENERAL OFFICE WITHIN FIFTEEN DAYS, failing which, the ICT will not be held responsible for getting the sanction of relevant concessions from the Govt.

10.17.1. Govt. of Maharashtra Freeship/ Govt. of India Scholarship

Reserved Category students from SC/ST/VJ/DT(A)/NT-B/NT-C/ NT-D/OBC/SBC can apply for Govt. of Maharashtra Freeship / Govt. of India Scholarship.

RULES:

Govt. of Maharashtra Freeship - Annual Income limit for **SC/ VJ/DT(A)/ NT-B/ NT-C/ NT-D/ OBC/ SBC** students should be **above** Rs.1,00,000/- p.a..and for **ST** students **above** Rs.1,08,000/- p.a. to submit claim for Govt. of Maharashtra Freeship.

Govt. of India Scholarship - Annual Income limit for **SC/ VJ/DT(A)/ NT-B/ NT-C/ NT-D/ OBC/ SBC** students should be **below** Rs.1,00,000/- p.a..and for **ST** students **below** Rs.1,08,000/- p.a. to submit claim for Govt. of India Scholarship.

NOTE:- UGC/ Private fellowship holders (only applicable to PG students) can submit claim for Govt. of Maharashtra Freeship only. They cannot apply for Govt. of India Scholarship.

The Application Form, should be obtained from the Academic Office at the time of candidate's admission and attested photocopies of the following documents must be attached while submitting the claim form.

1. Income Certificate of the parent for year 2009-2010 from Tehasildar.

- ✓ For Freeship – If Income Certificate for 2009-10 is not available, LATEST Form 16 A of the parent obtained from the employer may be submitted.
  AND
  Non Creamy Layer Certificate for the current year (Only for VJ/DT(A)/NT-B/NT-C/ NT-D/OBC/SBC, Not for SC/ ST) – valid up to 31st March 2011.

- ✓ For Scholarship – If Income Certificate for 2009-10 is not available, you may submit a declaration of Father/Mother on Twenty Rupees Stamp Paper may be submitted (See **Proforma E**).

2. For Fresh **ST** students other than Mumbai Board - Change of District Certificate (Zilla Badal Dakhala)

3. Caste Certificate - signed by Special Executive Magistrate.

4. Caste Validity Certificate

5. Ration Card

6. Mark sheet of the last annual examination passed.

7. Admission Fee receipt of 2010-11

8. In case of **GAP** period in education **GAP CERTIFICATE** must be submitted.

9. Hosteller claiming Govt. of India Scholarship should submit Hostel Certificate for the academic year 2010-11.

10.17.2. Hostel Allowance

Reserved Category candidates of SC/ ST/ NT-VJ/ SBC categories, staying in Hostel and applying for Govt. of India Scholarship can apply for Hostel allowance.

After admission to hostel, students should obtain the form from the General Office.
The attested copies of the following documents should be attached with the Application Form.

1. Income Certificate for year 2009-10 from Tehasildar. If Income Certificate for 2009-10 is not available, a declaration of Father/Mother on Twenty Rupees Stamp Paper may be submitted (See **Proforma E**).

2. Caste Certificate - signed by Special Executive Magistrate.

3. Caste Validity Certificate.

4. Mark sheet of the last annual examination passed.

5. Admission Fee receipt of 2010-11.

6. Hostel Certificate and Hostel fee receipt for the academic year 2010-11.

10.17.3. Govt. of Maharashtra Freeship to Sons & Daughters of Primary and Secondary School Teachers

The Application Form, should be obtained from the Academic Office at the time of candidate's admission and attested photocopies of the following documents must be attached while submitting the claim form.

1. Service Certificate of parent should be Countersigned by **Education Inspector** & **Date of Retirement** must be mentioned.

2. Ration Card.

3. Mark sheet of the last annul examination passed.

4. Admission Fee receipt for the academic year 2010-11.

10.17.4. Freeship to Economically Backward Class (EBC) Students

Income Limit for the EBC Students to claim this freeship is Rs. 1,00,000/- p.a.

The Application Form, should be obtained from the Academic Office at the time of candidate's admission and attested photocopies of the following documents must be attached while submitting the claim form.

1. Income Certificate from Tehasildar for the year 2009-10.
2. Ration Card.
3. Mark sheet of the last annual examination passed.
4. Admission Fee receipt for the academic year 2010-11

10.17.5. Freeship to Sons & Daughters of Ex-Servicemen

The Application Form, should be obtained from the Academic Office at the time of candidate's admission and attested photocopies of the following documents must be attached while submitting the claim form.

1. Ex-Serviceman Certificate.
2. Ration Card.
3. Mark sheet of the last annual examination passed.
4. Admission Fee receipt for the academic year 2010-11.

10.17.6. Merit cum Means Based Scholarship of Government of India
(Muslim, Sikh, Buddhist, Christian, Zoroastrians (Parsi)

For application form, eligibility criteria and and documents to be submitted, please see www.dte.org.in. After completing the form along with required documents, it should be submitted to the ICT Academic office.

10.17.7. Government of Maharashtra Scholarship for the Minority Communities Students Pursuing Technical and Professional Education
(Muslim, Sikh, Buddhist, Christian, Zoroastrians (Parsi) and Jain minority communities)

For application form, eligibility criteria and and documents to be submitted, please see www.dte.org.in. After completing the form along with required documents, it should be submitted to the ICT Academic office.

10. 18. Cancellation of admission and Refund of fees:

These rules are applicable to admission taken by Indian Nationals to any of the Undergraduate or Postgraduate courses at the ICT.

Refund of tuition fee, development and other fees after cancellation of admission at the ICT will be as per the AICTE guidelines No. AICTE / Legal/ 04(01)/ 2007, April 2007 and circular no.698 dt. 24/8/2007 issued by Pravesh Niyantran Samithi, Mumbai, which are as follows:

a) Candidate who has been admitted to any course at the ICT may cancel admission by submitting an application in duplicate, in the prescribed **Proforma - D** and request for refund of fees. The refund of fees as applicable shall be made in due course. It is made clear that such application for cancellations will be considered if and only if the admission is confirmed by paying the prescribed tuition fee, development fees and other fees in full and by submitting the original documents.

b) For candidates belonging to Backward class categories (from State of Maharashtra only) who have secured a seat by paying only a part of 'other fees' (not sanctioned by Maharashtra Govt.) total amount of cancellation charges as specified in Table 10.3 below will be levied on the candidates on cancellation of admission.

c) For admissions on the seats allotted to Foreign Nationals/Foreign Students/Persons of Indian Origin/Children of Indian workers in the Gulf countries, no refund of tuition fee, development fee and other fees on cancellation of admission is permissible.

d) For any candidate who desires to cancel the admission for whatever reason, the original certificates will be given back only after completion of the cancellation procedure.

e) In case a post graduate candidate does not fulfil the eligibility criterion of admission after the declaration of his/her result of qualifying examination, he/she will be refunded part of the total fees as per the same calculations given in Table 10.3 below.

f) In case a candidate fails to submit any of the original documents within the allowed time limit given in the letter of offer to the admission, the admission shall be treated as cancelled. Refund of fees shall not be applicable to such candidates.

NOTE:- The Masters candidates are said to be admitted PROVISIONALLY. The 'Provisional Admission' here means that the admission given prior to declaration of the qualifying examination result. Such candidates are deemed to have taken Provisional Admission by payment of full fees at their own risk of fulfilling necessary eligibility criteria.

Refund shall be made after deduction of cancellation charges as shown below –

TABLE 10.3: Cancellation of Admissions

Sr No	Situation	Refund
1	Request received before date of start of Academic session and seat could be filled by the institute before the cut off date	Entire fee less Rs.1000/-
2	Request received after the start of Academic session and seat could be filled by the institute before the cut off date	Entire fee less the total fee (Tuition, development, other and hostel fee) on Prorata basis.
3	Request received before / after the start of Academic session and seat could not be filled by the institute	No refund (except security deposit)

Note: The cut off dates for F. Y. Admissions are as follows:
For MHT-CET: will be decided by COEP
For AIEEE: 26^{h} July 2010

1) Entire amount of security / caution money deposit will be refunded back.

2) For calculation of amount on the pro-rata-basis, one month shall be treated as one unit e.g. if the candidate cancels the admission on third day after start of academic session and seat could be filled before the cut-off date, then cancellation charges will be the higher amount of (Total fees) /12 or Rs.1000/- .

10.19. Issue of College Leaving Certificate:

a) If during the course of studies, candidate desires to discontinue studies for any reason whatsoever, he/ she shall be allowed to do so and it shall be presumed that he/ she has cancelled admission at that stage. The Director, ICT shall issue Leaving Certificate and fees shall be refunded as per the rules.

b) If the admission is cancelled on or before 30 days from the last date of reporting of admission round, the original school or college leaving certificate on the strength of which a candidate was admitted shall be returned.

c) If the admission is cancelled after 30 days from the last date of reporting of admission round, the leaving certificate from the ICT will be issued. A true copy of the original school or college leaving certificate retained by the institute may be issued, if requested by the candidate, duly attested by the Director, ICT.

10.20.Refund of Library Caution Money Deposit:

Caution money deposits received from the students shall be refunded after successful completion of the course or after cancelling the admission. Unless there is any recovery, no deduction shall be made from the caution money deposit. However, the amount of caution money deposit shall be credited to institute, if the candidate does not apply for refund, within 3 complete financial years after the student actually leaves the institution; or, within 3 complete financial years after the date of successful completion of the course, whichever is earlier.

The claim for the Refund of the library caution money deposit should be made in the prescribed form (available with the Accounts Section of ICT) along with the original receipts of the deposit payment made.

The date of commencement of the First Semester of the Academic year 2009-2010 shall be 1st July 2010. For admissions to F.Y. Chem. Engg. and F. Y. B. Tech. the date of commencement of the First Semester will be decided by COEP and notified on the website and Notice Board of ICT.

11. ELIGIBILITY, ENROLMENT AND TRANSFER CERTIFICATES

(***Applicable only to the candidates who have been offered seats)***

11.1 Transfer Certificate

A student of the ICT is required to submit within a month from the commencement of the term a "Transfer Certificate" from the Principal of the College last attended by him/ her.

11.2. Provisional Statement of Eligibility

No student from other University/ Board can be admitted to any of the above mentioned courses without the production of a "Provisional Statement of Eligibility" from the ICT and the offer of admission is conditional upon its production. An application for a provisional statement of eligibility may be made only when a student is informed that he is allotted a seat in the ICT. However, candidates should keep all the necessary documents, such as statement of marks, passing certificate, migration certificate, etc., ready for obtaining the provisional statement of eligibility. The provisional eligibility will be confirmed only after due verification of the statement of marks and passing certificate from the candidate's parent University/ Board. The charges levied by the parent university for this will have to be borne by the candidate concerned. The information regarding equivalence of examinations may be obtained from the Assistant Registrar (Academic) of the ICT.

IMPORTANT INSTRUCTIONS

The ICT does not recognize degrees from overseas Universities/ Boards, on a regular basis. However, candidates desirous of seeking admission to the ICT, on the basis of qualifications obtained in overseas Universities/Boards may be considered for the admission on the merits of each individual case. For this purpose, passing certificates, transcripts of record and a copy of the syllabus, containing the details of the courses of studies pursued in the various subjects at the examination passed by the applicant (duly countersigned by the High Commissioner of India in the country or the officer authorized by him) and standard of passing laid down at the examination should be forwarded to the office well in advance. In case the certificates or transcripts are in a language other than English, these certificates and the English translation of the same, duly certified by a competent authority, should be sent. The candidate should enclose all the permissions stipulated by the concerned Government Departments.

11.3. Enrolment Certificate

The students admitted after passing the XII standard (HSSC) Examination are required to submit to the ICT the duly filled in enrolment form, along with a copy of Statement of Marks and the prescribed fee at the time of admission. The enrolment form can be obtained from the office of the ICT.

12. COMMENCEMENT OF ACADEMIC YEAR, CODE OF CONDUCT AND DISCIPLINE

12.1 Commencement of AcademicYear

The date of commencement of the first semester of the academic year 2010-11 shall be July 1, 2010.

All the Bachelor's (2nd Year Onwards) and Master's courses shall start from 1st July 2010.

12.2 Academic Calendar

The academic calendar for all the Undergraduate courses is divided into two semesters. The detailed calendar will be displayed on the website in the due course of time.

The post-Graduate students shall have no vacation, but are eligible for leave as per the UGC guidelines.

12.3 Requirement of Attendance

The attention of the students is drawn to the Regulation R-1 regarding the attendance of the student and Grant of Term.

As per R-1(2), the minimum attendance necessary for granting a term (Semester) in each subject shall be minimum of 75% of the lectures and practicals, taken separately, out of the total number of lectures and practicals conducted in a semester. The students **shall be deemed to have submitted the undertaking (as per 12.8.h)** about the attendance after the admission has been secured at the ICT.

12.4 Identity card

At the beginning of each academic year, a regular bonafide student is issued a smart Identity Card with his/her latest photograph printed it, on payment of the necessary charges. The students must wear the I-card while on campus. I-card is also necessary for appearing at all tests and examinations. If a student leaves the course halfway, after taking admission, he/she must surrender the I- Card in the Academic office.

12.5. Working hours

(a) Academic Timings: The academic working hours of the institute are between 8.30 a.m. to 5.30 p.m., with lunch break from 12.35 to 1.30 p.m.

(b) Office Hours:

* 10.30 a.m. to 6.00 p.m., with lunch break from 1.00 to 1.30 p.m. – on all working days.
* Cash Counter: 11.00 a.m. to 1.00 p.m. and 1.30 p.m. to 2.30 p.m.

The office will remain closed on second and fourth Saturdays of a month, in addition to Sundays and public holidays.

12.6. General

• The medium of instruction for all courses is English.

• Physical fitness: The Director at his discretion may refer any candidate to the appropriate medical authority for ascertaining the physical fitness of the candidate to undergo the requirements of the course. The report of medical authority and the action taken by the Director shall be submitted to the Regional Head of Technical Education for

information. It is to be noted that physically handicapped candidates are not provided with any additional facilities as far as the academic activities pertaining to the course is concerned.

• The Director may verify the antecedents of any candidate through the appropriate police authority. The report received from police authority and the action taken by the Director shall be submitted to the Regional Head of Technical Education for information.

• Notwithstanding anything contained in these Rules, if the Govt. / Institute takes any policy decision pertaining to F.Y. admissions, the same shall be brought in to effect at that point of time.

12.7.Conduct and discipline for all students:

Students while studying in any Institute, if found indulging in any anti-national activity contrary to the provisions of Acts and Laws enforced by Government or in any activity contrary to Rules of discipline, will be liable to be expelled from the Institute without any notice by the Director of the Institute.

Action against ragging: Maharashtra Prohibition of Ragging Act 1999 which is in effect from 15th May 1999 has the following provisions for Action against Ragging.

a) Ragging within or outside of any educational institution is prohibited,

b) Whosoever directly or indirectly commits, participates in, or propagates ragging within or outside any educational institution shall, on conviction, be punished with imprisonment for a term up to 2 years and/ or penalty, which may extend to ten thousand rupees.

c) Any student convicted of an offence of ragging shall be dismissed from the educational institution and such student shall not be admitted in any other educational institution for a period of five years from the date of order of such dismissal.

d) Whenever any student or, as the case may be, the parent or guardian or a teacher of an educational institution complains, in writing, of ragging to the head of the educational institution, the head of the educational institution shall, without prejudice to the foregoing provisions, **within seven days** of the receipt of the complaint, enquire into the matter mentioned in the complaint and if, prima facie, it is found true, suspend the student who is accused of the offence, and shall, immediately forward the complaint to the police station having jurisdiction over the area in which the educational institution is situated, for further action. Where, on enquiry by the head of the educational institution, it is found that there is no substance, prima facie, in the complaint received; he/ she shall intimate the fact, in writing, to the complainant. The decision of the head of the educational institution shall be final.

e) If the head of the educational institution fails or neglects to act in the manner specified in section “d” above when a complaint of ragging is made, such person shall be deemed to have abetted the offence and shall, on conviction, be punished as provided for in section “b” above.

If any of the statement made in application form or any information supplied by the candidate in connection with his or her admission is later on at any time, found to be false or incorrect, his or her admission will be cancelled, fees forfeited and he or she may be expelled from the Institute by the Director.

Note:

The orders issued by the Hon’ble Supreme Court/High Court/Government regarding Prohibition of Ragging Act, will be made applicable as and when issued. The same shall be binding on all concerned.

See detailed booklet appended including the undertakings in this Handbook (Section 19).

12.8.Undertaking

All candidates who have applied for admission shall be deemed to have submitted the following undertaking:

I have read all the Rules of Admission and after understanding these rules thoroughly, I have filled in the application form for admission for the current year. The information given by me in my application is true to the best of my knowledge and belief. I understand that if any of the statements made by me in the application form or any information supplied by me in connection with my admission is later on at any time, found to be false or incorrect, my admission will be cancelled, fees forfeited and I may be expelled from the ICT by the Director.

a) I have not been debarred from appearing at any examination held by any Government constituted or statutory examination authority in India.

b) I fully understand that the allotment of a course will be made to me depending on my inter se merit, order of preferences given by me and the number of seats available at that point of counselling.

c) I understand that no document after the last date of submission will be entertained for the purpose of claims or concessions, etc. in connection with my admission unless otherwise mentioned in the rules.

d) I am fully aware that the Director, ICT or his representative will not make any correspondence with me regarding admission. I am also aware that it is entirely my responsibility to see the notifications in the newspaper(s) and notices on the notice board and website of the ICT.

e) I am aware that any rule imposed by the Institute such as 'imposing limits on the number of attempts permissible to pass any examination' shall be binding on me.

f) I hereby agree to conform to any Rules, Acts and Laws enforced by Government and I hereby undertake that, I will do nothing either inside or outside the Institute which may result in disciplinary action against me under these rules, acts and laws referred to.

g) I fully understand that the Director, ICT has a right to expel me from the institute for any infringement of the rules of conduct and discipline prescribed by the Institute or Government and the undertaking given above.

h) I am fully aware that, I will not be allowed to appear for the examination if I do not attend **minimum 75 per cent** classes of theory, practical, drawing etc. separately. I am also aware that I will not be allowed to appear for the examination, if I fail to submit satisfactorily all the assignments, jobs, journals, drawings, reports as required within the stipulated period.

12.9 Additional Undertaking to be Given by Postgraduate Students

1. I, the undersigned, understand that confirmation of my admission is subject to passing the qualifying examination i.e._____ , which I have taken and awaiting the result with at least _____ % of the aggregate marks and hence the admission will be effective only when I submit the proof to that effect. If I fail to produce the result of the qualifying examination by the end of Semester I of the current academic year for any reason. I shall be declared ineligible for the said admission and all the fees which I have paid shall be forfeited.
2. I am required to attend the research from the first day of joining the institute and if I fail to do so my admission will stand cancelled.
3. I shall sign regularly the muster kept in the office of respective Department/ Research Supervisor.

4. I shall take prior permission of my research Supervisor for any leave.

5. I am aware that my fellowship commences from the date of confirmation of my admission or date of joining the course, whichever is later.

6. I am also aware that the Institute shall not be held responsible for non-receipt of the respective fellowship amount from the funding agency in time. I undertake that I shall pay all the Institute's fees, charges and deposits by the due date declared and in no case I shall give any excuse of non-receipt of the fellowship for non-payment of the same.

7. I am aware that the institute does not have any budgetary provision for the payment of either part of full fellowships. The Institute will disburse the fellowship when the Institute receives the same.

8. In case my Bachelors degree result is not declared by given date, I will be declared ineligible for the Master's admission and I shall not claim the seat offered to me. Also I shall not be entitled for refund of any of the fees paid.

9. After declaration of result of the qualifying examination, I shall apply for the Eligibility Certificate as per the Rules and submit the same to ICT. For M.Chem. Engg., M.Pharm and M.Tech. Courses the last date for applying for eligibility is 31st August (every year).

10. As a doctorate student, I am aware that I am required to contribute to the academic / administrative activities of the Institute as per the prescribed norms without expecting any remuneration and continuation of the fellowship will depend on my satisfactory participation and performance in such activities Also, I shall abide by the Safety Rules of the Institute and shall undergo required training for the purpose.

Course

Date: **Name & Signature of the Student**

13. EXAMINATION PATTERN

13.1 Semester Examinations

13.1.1. Scheduling of the Examinations: Semester–I examinations at B.Chem. Eng./ B.Pharm./ B.Tech./ M.Chem.Eng./ M.Pharm./ M.Tech./ M.E.(Plastics Eng.) shall be held in the month of December/January and Semester-II examinations in the month of April/May every year.

13.1.2. Application Forms: The forms of application for admission to the examinations, together with the prescribed fees, must be submitted before the specified dates, which are notified well in advance on the notice board. Examination forms will be accepted after the last date only up to one week with late fees. Thereafter, it is not obligatory for the institute to accept the forms.

13.1.3 Repeat Semester Examinations (Regulation R-14): To provide an avenue to improve the performance of the students a provision of repeat semester examination is made. These examinations for B. Chem. Engg., B. Pharm., B. Tech. are generally held within a month after declaration of the results of regular semester examinations. Those who want to take repeat examinations should apply for same with the necessary fee in a stipulated period; notice for the same shall be displayed on the notice Board.

13.1.4 No examination form shall be accepted unless the examination fee is fully paid in cash.

13.1.5 There is a provision of amendment of result of an examination (Regulation R-13) and verification of marks (Regulation R-12). For these, separate applications should be submitted to the office within the prescribed time.

13.2. Examination Pattern

The Institute is in the process of Examination Reforms. All the courses are semesterized and credit based from 2009-10. There is a continuous evaluation of the students on grade basis through internal assessment and mid-term examination (60%) and end semester examination (40%). The details will be notified to the students at the beginning of the courses.

13.3. Work Practice or In-Plant Training

The Regulations require that the B. Chem. Eng. and B.Tech. students work for at least six weeks, while the B. Pharm. Students work for at least four weeks, in approved industries at the end of the third year of the respective courses (i.e. at the end of the sixth semester) and to submit a satisfactory report to the Head of the department. The Heads of Department normally arrange for the placement of the students for the works practice.

13.4 Malpractice at the Examination (Regulation R-16)

Very strong action will be taken against students using, attempting to use, aiding, abetting, instigating or allowing using “unfair means” at the examination. This will be reported to the Unfair Means Inquiry Committee and the action taken by the Director shall be final.

14. Professor M.M. SHARMA LIBRARY

Established in the year 1933, it functions as the central library of the institute. In terms of the subject collection, it is one of the best Special Libraries in the country. It performs a dual role of an Academic Library as well as a Research Library, catering to the information needs of the in-house students and faculty, in particular, and, the academic and research community, in general. It is housed in a separate two-storey building and follows a completely open-access concept. It has a specialized collection in Chemical Engineering, Chemical Sciences, Chemical Technology and Pharmacy and their allied fields.

We have been assiduously working on creating a 'library culture' and took pains to generate endowments to support journals subscriptions and acquisition of books to some extent. Perhaps, ours is one of the rare universities in India where such type of endowments exist.

1. Indian Oil Corporation Endowment (Rs 5 lakhs)
2. Dr Mooljibhai Shivabhai Patel Trust (Rs 5 lakhs)
3. Colour Chem Ltd (Rs 5 lakhs)
4. Professor M.M. Sharma Library Endowment (Rs 75 lakhs)
5. UDCT Golden Jubilee Library Endowment (Rs 10 lakhs)
6. Polyolefins Industries Ltd. (Rs 5 lakhs)
7. BLA Industries (Rs 5 lakhs)
8. Hindustan Organics Chemicals Ltd. (Rs 5 lakhs)
9. Tata Electric Companies (Rs 10 lakhs)
10. Gharda Chemicals Ltd. (Rs 5 lakhs)
11. Associated Cement Companies Ltd. (Rs 20 lakhs)
12. Tata Chemicals Ltd. (Rs 5 lakhs)

Only 50% interest accrued on these endowments is utilized for the Library.

Specialty areas: Chemistry, Applied Chemistry, Chemical Technology, Chemical Engineering, Pharmacy, Energy & Environmental Engineering, Biotechnology, Food Technology & Fermentation , Polymer Science & Technology, Textile Science & Technology, Oils & Surfactants, Dyestuff Technology.

Library Collection: Number of volumes: 75766; Number of scientific and technical journals subscribed: 97 (Foreign:108 + Indian:21); Theses & Dissertations: 4039; CD-ROMs:1217; Online Journals (via IP) from Elsevier (Sciencedirect), Springer, Wiley and The Royal Society of Chemistry (RSC).

Facilities offered: The bona fide students and faculty of the institute has book-lending facility. Photocopying facility is available for all users, on payment. Internet and online journals access facility is available for the bona fide research students and faculty. Reference and Referral service is also provided. Book Bank facility is also provided. The library offers access to primary databases like SCIFINDER, through the UGC-INFLIBNET Consortium, and, Scopus and Food Science and Technology Abstracts (FSTA). The Library is working towards getting the access to journals from publishers like The American Chemical Society (ACS), The Royal Society of Chemistry (RSC), Taylor and Francis and Springer through the UGC-INFLIBNET Consortium.

Book Bank: Under this scheme, students belonging to the backward classes receive the benefits of Book bank scheme. Two books shall be issued per student under the scheme, in addition to the two normal books issued from the library. The due date shall be stamped on the book(s) issued. In case of damage or loss of book(s), all the rules applicable to the loss of library book will apply to these books also.

Library Timings: The library is open from 8.30 A.M. to 8.30 P.M. on all working days and from 11.00 A.M. to 6.00 P.M. on Sundays, Holidays and the 2nd and the 4th Saturdays of every month.
The photocopying facility is extended for users between 10.30 A.M. and 6.30 P.M. on all working days, except the Sundays, the 2nd and 4th Saturdays and the Public Holidays.
The library remains closed on the Independence Day, the Republic Day, Ganesh Chaturthi and Dasara.

15. HOSTELS AND COUNSELLING SERVICES

15.1. Preamble

Hostel accommodation on the ICT campus used to be a privilege in the past. Hostel No. 1, which is popularly called the Old Hostel, was built in 1951, as University and Birla Hostel, with provision of accommodation for students of all departments of the University of Mumbai. Students admitted on All India basis were given preference. In 1966, The so-called New Hostel (now Hostel No. 2) was built for accommodating UG and research students; however, the capacity was still inadequate. In 1987, a Joint Hostel (now Hostel No.3) was built to accommodate both ICT and JJ School of Architecture, which was exclusively reserved for ICT students in mid-1990s.. There was no hostel facility for girls whatsoever. During mid-1990s, a 66-seater girl's hostel (now Hostel No. 4) was built. Hostel No. 5, a 7-storey building for 352 students was built during early 2000s and occupied in 2005. The hostel surroundings and grounds were beautified during 2007-9 and Hostel No. 2 was reserved for girls. In view of growing number of lady students, the hostels were renovated and hostels were reallocated. Now Hostel No. 1, 4, and 5 accommodate boys whereas Hostels 2 and 3 girls.

15.2. Allocation of Hostels

1. Hostel No. 1, 4, and 5 are allotted to boys. Hostel No. 4 is only for 1st year students. Hostel No. 2 and 3 are only for ladies. All hostels are unaided and maintained by the Institute.

2. The total number of hostel accommodation seats available for the students at the ICT is nearly 840 (for all courses and years) including lady students.

3. Total number of seats available for fresh admissions is about 200 per year, which includes all Undergraduates, Master's and Doctoral students (of all courses about 55 girls, 145 boys), out of which seats available for the first year UG admissions (B.Chem.Eng., B.Pharm. and B.Tech.) is limited to only 30 girls and 66 boys.

4. Accommodation in hostels cannot be guaranteed to all candidates, who are advised to verify personally by contacting the hostel office. (Phone:91-22-24140867, Time:9.00 a.m. to 5.00 p.m.) email: hostel@ictmumbai.edu.in.

5. Admission will be offered on '**first come- first served**" basis. Preference is given to out-station students who come from places beyond Mumbai and suburbs (i.e, beyond Virar, Titwala, Ambarnath and Panvel) are eligible for hostel accommodation. As a proof of stay beyond Mumbai and suburbs, they are required to submit certified copies of ration card and school-leaving certificate. Any false representation in this regard will be strictly dealt with.

6. Prescribed application form for accommodation to hostels may be obtained from the Institute Office. The Master's and Doctoral students are required to submit their applications through the heads of the concerned departments. The completed application forms should be submitted to the Head Warden, ICT Hostels at the 'Central Hostel Office' in Hostel No.5.
7. The Hostel Office will advise aspirant students if a seat can be allotted to him/her. Once a seat is offered, the payment of charges should be done in two modes –common charges and accommodation fees.
   (i) **Common Charges** (as per section 15.3.2 below) should be paid by a Demand Draft/Banker's cheque (drawn in favour of : **'Warden, ICT Hostels**' payable at Mumbai) at the Hostel Office and a receipt for the same should be procured. The student should then submit personally the form and fees, with proper remarks of the hostel authorities to the **Accounts Section** located in the Main Building of the institute.
   (ii) **Accommodation Fees** (as per 15.3.1 below) should be paid by Demand Draft/Bankers cheque (drawn in favour of **'Director, ICT' Payable at Mumbai**).

(iii) The hostel form should then be submitted to the Hostel Office along with a copy of the receipt for Accommodation Fees from the Accounts Section.

15.3 Hostel Fees

It is mandatory that all the new entrants to the hostels get their hostel admission forms signed by the Student's Counselor - Prof. (Ms) Rita Doctor, whose office is located on the first floor, Godrej Students Centre) (Tel No. 33611351) within a short time after joining the hostel.

15.3.1 Accommodation Fees

(including Electricity and Development Charges) for the Year 2010-11 for the academic year

Hostel	Category	Type of Accommodation	No. of Seats	Fees, Rs.	Remarks
Hostel No. 1	Boys Hostel	Single Seated	52	15,000/-	Fees for UG and Masters' Students
		Triple Seated	144	12,000/-	
		Six Seated	18	6,000/-	
Hostel No. 2	Ladies Hostel	Single Seated	27	15,000/-	
		Double Seated	22	12,500/-	
		Triple Seated	69	12,000/-	
Hostel No. 3	Ladies Hostel	Double Seated	88	15,000/-	
		Triple Seated	9	15,000/-	
Hostel No. 4	First Year UG Boys	Double Seated	66	12,500/-	
Hostel No. 5	UG, Master's and Ph D. Boys	Double Seated (UG)	176	17,000/-	
		Double Seated (Master's and Ph D.)	176	17,000/-	Only for Master's Students

Accommodation fees should be paid by a Demand Draft/Banker's cheque in the name of "Director, ICT" payable at Mumbai. No Cash payments will be accepted.

15.3.2 Common charges to all Hostels – Rs. 3000/- per year to be paid in the beginning by all students – UG, PG and Ph. D.s

i) Students Sports & Cultural Activity Fees Rs. 2000/- per year

ii) Other Fees / Charges (Mess Depreciation, Insurance, etc.) Rs. 1000/- per year

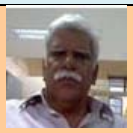
- **Thus, total hostel charges per year are Accommodation Fees for particular seat plus Rs. 3000/-.**

The hostel fees for Ph.D. students are deducted from the HRA component of their fellowships at source. They only need to pay the common charges to ensure a hostel seat.

15.4. Hostel Messes

It is mandatory for all hostel students to join the Hostel Mess allotted to them. Each mess is run by the students on co-operative "no-loss - no-profit" basis under the Control of the concerned Warden. Hostel students have been managing their messes since 1951, with an excellent tradition and managerial skills. Typical mess charges including breakfast and two meals a day are around Rs. 1300/- per month. Mess Deposit Advances / Monthly Expenses will be extra as per the norms of the respective messes.

15.5. Hostel Management

Hostel #	Warden		Telephone
	Head Warden - Prof. S. S. Bhagwat		**24140867**
1	**Prof. B. N. Thorat** (Department of Chemical Engineering) Email: bn.thorat@ictmumbai.edu.in		24140866
2	**Dr. D.D. Sarode** (Department of General Engineering) Email: dd.sarode@ictmumbai.edu.in		24140373
3	**Dr. Mrs. Shalini Arya** (Department of Food Engineering & Technology) Email:ss.ghodke@ictmumbai.edu.in		24140868
4	**Dr. U. S. Annapure** (Department of Food Engineering & Technology) Email: us.annapure@ictmumbai.edu.in		24140867
5	**Prof. S. S. Bhagwat** (Department of Chemical Engineering.) Email: ss.bhagwat@ictmumbai.edu.in		24140867
Hostel Office	**Shri Prakash Patole,** Hostel Officer Email: hostel@ictmumbai.edu.in		24140867

15.5.General

1. Guest Rooms are available at Hostel No. 2, 3 (only lady guests) and 5 for visitors/ parents who wish to make a short visit to meet their Wards studying at ICT on payment basis.
2. Hostels are equipped with T.V. Room, Reading Room, Playground, Health Centre, Gymkhana and Study Room Facilities.
3. Physicians visit the hostel health centre on all working days at designated times.
4. All hostel students are covered under Accident Policy.
5. Each hostel block is supervised by a Warden, who is a faculty member of the Institute.
6. It is mandatory that all the new entrants to the hostels get their hostel admission forms signed by the Student's Counselor - Prof. (Ms) Rita Doctor, whose office is located on the first floor, Godrej Students Centre) (Tel No. 91-22-33611351; email: rf.doctor@ictmumbai.edu.in) within a short time after joining the hostel.

15.6. Discipline and Decorum

1. The entire campus of ICT is smoking-free including public places and hostel.
2. Smoking and drinking liquor is strictly prohibited. Disciplinary action will be taken against anybody involved in misdemeanours and illegal activities.
3. All senior students must create a conducive and healthy atmosphere in the rich tradition of the ICT and the hostels. Several hostel residents have attained very high positions in their profession, as industrialists, educators and policy makers and brought laurels to the institute; including Padma awards of President of India. Three Directors of the ICT-Former Directors, Professor M.M. Sharma and Prof J.B. Joshi, and the incumbent Director Professor G.D. Yadav have been hostel residents on this campus. Prof Yadav has served as the Warden, and also as the Head Warden, before being selected as the Director (Vice Chancellor) of the Institute, as the deemed university. Several faculty members have been hostel residents. Faculty and staff quarters are also situated near the hostels bringing into picture a sense

of community feeling. Faculty members participate in the programmes arranged by the hostelites and make themselves available for counselling, whether they are wardens or not. Hostel Day is a special annual day in the lives of hostelites to show their skills and talents in sports, cultural programmes and the like.

4. Another grand tradition of the hostels is that the past students, from all over the world, try to assist the hostel activities by providing monetary help, either personal donations or company sponsorships.
5. **Action against ragging: Maharashtra Prohibition of Ragging Act 1999 is in effect from 15th May 1999. (See section 19 for details from UGC in this regard].** Any case of ragging should be reported by the victim in writing within three days of the incident to the respective warden with copies marked to the Head Warden, Prof. S. S. Bhagwat (ss.bhagwat@ictmumbai.edu.in), the Dean of Student Affairs and Human Resource Development, Prof. M. D. Teli (md.teli@ictmumbai.edu.in), and the Registrar, Prof. S. R. Shukla (registrar@ictmumbai.edu.in).

15.6.Counselling Services

Counseling services are available for the benefit of all the students of the Institute - right from First year to those doing their Doctorate. The Counselor – Professor (Ms) Rita Doctor, with her in-depth knowledge of Philosophy and Psychology, has been actively participating in this important activity.

It is mandatory for all the first year students (UG and PG) to meet the Counselor [in her office on 1st floor, Godrej Students Centre) (Intercom No. 1351)**, in groups of ten for an interactive session.** Interactive Sessions are held from time to time to make the students aware of their plus points and weak points. Later on, a one – to – one session is held in order to help them develop confidence and overcome difficulties which may be too personal.

The Counselor deals with all types of personal and academically related problems and students are free to meet her from Tuesday to Friday any time between 11.30 a.m. and 4.30 p.m.

All freshers including all hostelites are expected to meet her as soon as the new term begins.

16. TECHNOLOGICAL ASSOCIATION

The Technological Association (TA) is an official organization of the faculty and students of the ICT. It was founded along with the foundation of the UDCT in 1933. The president of the association is the Director of the Institute. Currently Professor G. D. Yadav, Director, is the President of the TA and Professor M. D. Teli is the Vice-President. The students and the faculty are the members of the association. The association organizes various co-curricular and extra-curricular activities for the students. Intercollegiate festivals **Manzar, Funtech and Sportsaga**, are the most enjoyable and dynamic events in the Institute. It is organized in the month of January/February and celebrated for three days. It provides a platform for the students to showcase their talents in various fields like sports, quizzes, fine arts, etc. The TA organizes its Annual Day in the same month of March.

Bombay Technologist: The Bombay Technologist is the annual technical journal of the Technological Association, started in 1951. The journal publishes technical articles in the thrust areas of science and technology, written mainly by the UG and PG students of the Institute. The three best articles in each volume get prizes. The Best Post-Graduate student in the Institute is given the 'Bombay Technologist Best Post-Graduate Student' award. To foster the talents of the ICTians in non-technical areas, the journal has also instituted 'Bombay Technologist Creativity' Award.

The Bombay Technologist also supports partial travel and registration expenses of students presenting technical papers within India.

The Spirit: The Institute also publishes an in house periodical, 'The Spirit', in which articles by the students on non-technical topics are published. The faculty and students' activities in the ICT are also presented in this magazine.

17. UDCT ALUMNI ASSOCIATION

UDCT Alumni Association (UAA) was formed in 1989 to foster fellowship and provide a forum to bring together the alumni of UICT, its past and present faculty members on a common platform and to promote the activities of the ICT in India and abroad and to institute awards, fellowships and grants. Several well wishers are members of UAA. All current students are invited to join UAA as well wiser members and participate in all activities. For the last 20 years, UAA has striven hard to achieve its objectives with valuable and timely support of the members, well wishers and through donations or membership fees.UAA currently has more than 3500 life members and14 Patron members. The main objectives of UAA are:

1. **Providing direct financial assistance to ICT :**
   - To support infrastructure development of the institute
   - To support student activities along with Technological Association
   - To support needy students
   - To provide books in special areas such as management
2. **Enhancing studentship at ICT :**
   - Sponsoring factory visits
   - Arranging lectures, seminars, symposia, workshops
   - Awarding best students of ICT for their meritorious performance
   - Encouraging, promoting, supporting providing, spreading and arranging for education and research in Chemical Technology, Chemical Engineering, Pharmaceutical Sciences and related Basic Sciences, Management studies and related topics.
   - The Diploma Course in Chemical Technology Management (CTM) for the Ph.D. students in ICT is fully supported by UAA
3. **Organising Institution level events :**
   - Instituting the UAA Dhirubhai Ambani Lifetime Achievement Award every year to the person who excels in the chemical field internationally.
   - Organising ICT Foundation Day celebrations
   - Awarding UAA Distinguished Alumnus awards every year to three or four distinguished persons for their contributions to teaching, research, industry, defence public/government
   - UAA Annual Day celebrations
   - Training and Placement Service to current students and alumni.
4. **Managing the Alumni Network :**
   - Managing the database of all alumni
   - Increasing UAA Membership - Any present or past student faculty member or a well-wisher can become a life member of the UAA. It has a membership of about 3500
   - Maintaining UAA Website
   - Issuing UAA bulletins
   - Promoting ICT at national and international level
5. **UAA Chapters**
   - UAA has local chapters in different cities in the country and also abroad in UK, USA, Singapore, Australia and Thailand.

18. CULTURE OF ENDOWMENTS

The ICT has a tradition of establishment of endowments with an objective of supporting faculty positions, foreign travel assistance, merit-cum-means scholarships, staff welfare, library, campus development, research fellowships and seed money for research by young faculty. There are 90 endowments in the Institute. All these endowments have been established through generous donations by alumni, industries, philanthropists and well wishers. Only part of the interest (upto 50-70%) is used towards the purpose of the endowment and the remaining is ploughed back into the corpus allowing it to grow with time.

18.1. Faculty endowments

1. R.T. Mody Professor of Chemical Technology and Director (1933)
2. Sir Dorabji Tata Reader in Pharmaceutical Chemistry (1943)
3. Singhanee Reader in Chemical Engineering (1936)
4. Singhanee Lecturer in Chemical Engineering (1936)
5. Singhanee Lecturer in Pharmacy (1943)
6. Singhanee Lecturer in Paint Technology (1946)
7. Singhanee Associate Lecturer in Chemical Engineering (1936)
8. Singhanee Associate Lecturer in Food Technology (1945)
9. Sir Homi Mehta Reader in Oil Technology (1943)
10. Sir Homi Mehta Associate Lecturer in Food Technology (1943)
11. Darbari Seth Professor of Inorganic Chemical Technology (1995)
12. BPCL Professor of Chemical Engineering (2001)
13. V.V. Mariwala Chair in Chemical Engineering (2004)
14. J.G. Kane Chair of Oil Technology (2008)
15. M.M.Sharma Distinguished Professor of Chemical Engineering (2009)
16. Narotam Sekhsaria Professor of Chemical Engineering (2009)
17. R.A. Mashelkar Chair of Chemical Engineering (2009)
18. K.V.Mariwala-J.B. Joshi Chair of Chemical Engineering (2009)
19. Gunavati Kapoor Chair in Pharmaceutical Technology (2009)

There are 108 faculty positions – 29 Professors, 38 Readers and 41 Lecturers and a support staff of 240.

18.2. Visiting Professors/Fellows/Lecturers/Orations Endowments

There are 46 endowments which have helped us immensely in attracting the best professionals to the Institute from all over the world who have interacted with UG and PG students, faculty and alumni. The honoraria range from Rs. 5000 to 1.25 lakhs for a period of one day to 15 days. Some eminent faculty from institutes such as MIT, Purdue, Cambridge, Monash, UC Berkeley, UCSB, Montreal have taught UG and PG courses in ICT under these endowments. These lectures will form part of audit courses for research students. Besides, public lectures are organized under each endowment. All departments have been benefitted and the list is as follows:

A. Institute Level

1. Professor B.D. Tilak Distinguished Lectureship
2. Professor B.D. Tilak Visiting Fellowships.
3. Golden Jubilee Visiting Fellowships.
4. Colour Publications-ICT Foundation Day Lecturership
5. Dr. Balwant S. Joshi Distinguished Visiting Professorship in Chemical Engineering / Chemical Technology / Applied Chemistry

6. Ambuja Visiting Professor for Economics
7. Ambuja Visiting Professor for Society, Science and Technology
8. Shri. B.S. Rajpurohit Visiting Fellow and Oration Endowment

B. Department of Chemical Engineering

9. Dr. G.P. Kane Visiting Professorship in Chemical Engineering.
10. The Dow Professor M.M. Sharma Distinguished Visiting Professorship in Chemical Engineering.
11. Shri V.V. Mariwala Visiting Professorship in Chemical Engineering
12. Shri G.M. (alias Dada) Abhyankar Memorial Distinguished Fellowship in Chemical Engineering
13. Professor R.A. Rajadhyaksha Memorial Lecture series.
14. Shrimati Kusumben and Shri Mathradas Kothari Visiting Professorship in Chemical Engineering
15. K.J. Somaiya Visiting Professor of Chemical Engineering (Green Chemistry and Technology)
16. Ambuja Visiting Professor in Environmental Engineering (1997)
17. Professor Arun S. Mujumdar Visiting Professor in Chemical Engineering (2009)

C. Department of Dyestuff Technology

18. K.H. Kabbur Memorial Silver Jubilee Lectureship.
19. Professor K. Venkatraman Lectureship.
20. Pidilite Industries Ltd. Visiting fellow in Dyestuff Science & Technology.

D. Department of Fibres and Textile Processing Technology

21. Professor G.M. Nabar Endowment Lectureship.
22. L.N. Chemicals UICT Diamond Jubilee Visiting Fellowship.
23. B.Sc. (Tech.) (Textiles) Class of 1966 Visiting Fellowship.

E. Department of Food Engineering and Technology

24. Professor A. Sreenivasan Felicitation Lectureship.
25. Marico Industries Visiting Fellowship
26. UICT - Lupin Visiting Fellowship for Bioprocess Technology

F. Department of Oils, Oleochemicals and Surfactants Technology

27. Professor J.G. Kane Visiting Professorship in Chemical Technology
28. Professor J.G. Kane Memorial Lectureship

G. Department of Pharmaceutical Sciences and Technology

29. CIPLA Distinguished Visiting Fellowship in Pharmaceutical Sciences
30. Themis Medicare - UICT Diamond Jubilee Distinguished Fellowship in Pharmaceutical Sciences
31. Professor (Mrs.) Malati R. Baichwal Visiting Fellowship in Pharmaceutical Science and Technology
32. AAIPS- Dr. R. S. Baichwal Pharmaceutical Seminar
33. Professor S.K. Pradhan Endowment
34. Professor V.M. Kulkarni Endowment

H. Department of Polymer and Surface Engineering

35. Shri K. S. S. Raghavan - Chemical Weekly Visiting Professorship in Polymer Science and Technology
36. Indian Plastics Institute (IPI)-UICT Diamond Jubilee Visiting Fellowship in Polymer Processing
37. Chemimpex Rastogi-UICT Diamond Jubilee Visiting Fellowship in Surface Coatings.
38. Synpol-UICT Diamond Jubilee Distinguished Visiting Fellow in Science & Technology of Pigment
39. Tipco-UICT Diamond Jubilee Distinguished Visiting Fellow in Thermosets

40. Jayvee Organics & Polymers(P)Ltd. Visiting Fellowship in polymer Additives and Compounding
41. Parmanand F. Parikh Endowment

I. Department of Chemistry

42. Dai-Ichi Karkaria Ltd. Visiting Fellowship
43. The Dharamsi Morarji Chemical Co. Visiting Fellowship in Chemistry
44. The (Late) Shri. G. D. Gokhale Endowment Lectureship
45. Spinco-Biotech - Ramanathan Lectureship

J. Department of Physics

46. Dr. Mooljibhai Shivabhai Patel Trust Visiting Fellowship in Polymer Physics

18.3. Scholarships for UG Students

The ICT supports 251 students under merit-cum-means scholarships. The range is Rs. 3000/- to Rs. 75,000/ per annum per person through several endowments, private trust and annual commitments by alumni. All economically deprived students are given assistance in the form of tuition fees, hostel fees, mess bills and travel assistance to present papers in national conferences. During 2009-10, two endowments were established for supporting UG students –Dr Kangle Endowment (Rs. 5.00 lakhs) and Swati Bhagwat Endwoment (Rs. 1.25 lakhs); whereas M/s Borogue have started 12 UG scholarship of US$ 500 per student, for students of Polymer Engineering and Technology (10) and Chemical Engineering (2).

18.4. Ph.D. Fellowships Endowments

1. Prof. M. M. Sharma Endowment (2 Ph D Fellows)
2. Dow-ICT Woman Chemical Engineers Ph D Fellowship
3. Narotam Sekhsaria Foundation (2 Ph D Fellows)

UNIVERSITY GRANTS COMMISSION

REGULATIONS ON CURBING THE MENACE OF RAGGING IN HIGHET EDUCATION INSTITUTIONS, 2009

NO. F 1-16/2007 (CPP-II)

April, 2009

In exercise of the powers conferred by Clause (g) of Sub-Section (1) of Section 26 of the University Grants Commission Act, 1956, the University Grants Commission hereby makes the following Regulations, namely -

1. Title, commencement and applicability:-

1.1. These regulations shall be called the "UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009".

1.2. They shall come into force with immediate effect.

1.3. They shall apply to all the universities established or incorporated by or under a Central Act, a Provincial Act or a State Act, to all institutions deemed to be university under Section 3 of the UGC Act, 1956, to all other higher educational institutions, including the departments, constituent units and all the premises (academic, residential, sports, canteen, etc) of such universities, deemed universities and other higher educational institutions, whether located within the campus or outside, and to all means of transportation of students whether public or private.

2. Objective:-

To root out ragging in all its forms from universities, colleges and other educational institutions in the country by prohibiting it by law, preventing its occurrence by following the provisions of these Regulations and punishing those who indulge in ragging as provided for in these Regulations and the appropriate law in force.

3. Definitions: - For the purposes of these Regulations:-

3.1. "college" means any institution, whether known as such or by any other name, which provides for a programme of study beyond 12 years of schooling for obtaining qualification from a university and which, in accordance with the rules and regulations of such university, is recognized as competent to provide for such programme of study and present students undergoing such programme of study for the examination for the award of such qualification.

3.2. "Head of the institution" means the 'Vice-Chancellor' in case of a university/deemed to be university, 'Principal' in case of a college, 'Director' in case of an institute.

3.3. "institution" means a higher educational institution (HEI), like a university, a college, an institute, etc. imparting higher education beyond 12 years of schooling leading to a degree (graduate, postgraduate and/or higher level) and/or to a university diploma.

3.4. "Ragging" means the following:
Any conduct whether by words spoken or written or by an act which lias the effect of teasing, treating or handling with rudeness any other student, indulging in rowdy or undisciplined activities which causes or is likely to cause annoyance, hardship or psychological harm or to raise fear or apprehension thereof in a fresher or a junior student or asking the students to do any act or perform something which such student will not in the ordinary course and which has the effect of causing or generating a sense of shame or embarrassment so as to adversely affect the physique or psyche of a fresher or a junior student.

3.5. "Statutory/Regulatory body" means a body so constituted by a Central/ State Government legislation for setting and maintaining standards in the relevant areas of higher education, such as the All India Council for Technical Education (AICTE), the Bar Council of India (BCI), the Dental Council of India (DCI), the Distance Education Council (DEC), the Indian Council of Agricultural Research (ICAR), the Indian Nursing Council (INC), the Medical Council of India (MCI), the National Council for Teacher Education (NCTE), the Pharmacy Council of India (PCI), etc. and the State Higher Education Councils.

3.6. "University" means a university established or incorporated by or under a Central Act, a Provincial Act or a State Act, an institution deemed to be university under Section 3 of the UGC Act, 1956, or an institution specially empowered by an Act of Parliament to confer or grant degrees.

4. Punishable ingredients of Ragging:-

- Abetment to ragging;
- Criminal conspiracy to rag;
- Unlawful assembly and rioting while ragging;
- Public nuisance created during ragging;
- Violation of decency and morals through ragging;
- Injury to body, causing hurt or grievous hurt;
- Wrongful restraint;
- Wrongful confinement;
- Use of criminal force;
- Assault as well as sexual offences or unnatural offences;
- Extortion;
- Criminal trespass;
- Offences against property;
- Criminal intimidation;
- Attempts to commit any or all of the above mentioned offences against the victim(s);
- Physical or psychological humiliation;

- All other offences following from the definition of "Ragging".

5. Measures for prohibition of ragging at the institution level:-

5.1 The institution shall strictly observe the provisions of the Act of the Central Government and the State Governments, if any, or if enacted, considering ragging as a cognizable offence under the law on a par with rape and other atrocities against women and ill-treatment of persons belonging to the SC/ST, and prohibiting ragging in all its forms in all institutions.

5.2 Ragging in all its forms shall be totally banned in the entire institution, including its departments, constituent units, all its premises (academic, residential, sports, canteen, etc) whether located within the campus or outside and in all means of transportation of students whether public or private.

5.3 The institution shall take strict action against those found guilty of ragging and/or of abetting ragging.

6 Measures for prevention of ragging at the institution level: -

6.1 Before admissions:-

6.1.1 The advertisement for admissions shall clearly mention that ragging is totally banned in the institution, and anyone found guilty of ragging and/or abetting ragging is liable to be punished appropriately (for punishments, ref. section 8 below).

6.1.2 The brochure of admission/instruction booklet for candidates shall print in block letters these Regulations in full (including Annexures).

6.1.3 The 'Prospectus' and other admission related documents shall incorporate all directions of the Supreme Court and /or the Central or State Governments as applicable, so that the candidates and their parents/ guardians are sensitized in respect of the prohibition and consequences of ragging. If the institution is an affiliating university, it shall make it mandatory for the institutions under it to compulsorily incorporate such information in their 'Prospectus'.

6.1.4 The application form for admission/ enrolment shall have a printed undertaking, preferably both in English/Hindi and in one of the regional languages known to the institution and the applicant (English, Hindi and Marathi versions appended), to be filled up and signed by the candidate to the effect that he/she is aware of the law regarding prohibition of ragging as well as the punishments, and to the effect that he/she has not been expelled and/or debarred from admission by any institution and that he/she, if found guilty of the offence of ragging and/or abetting ragging, is liable to be punished appropriately.

6.1.5 The application form shall also contain a printed undertaking, preferably both in English/Hindi and in one of the regional languages known to the institution and the parent/ guardian (English Hindi and Marathi versions appended), to be signed by the parent/ guardian of the applicant to the effect that he/ she is also aware of the law in this regard and agrees to abide by the punishment meted out to his/ her ward in case the latter is found guilty of ragging and/or abetting ragging.

6.1.6 The application for admission shall be accompanied by a document in the form of the School Leaving Certificate/Transfer Certificate/ Migration Certificate/ Character Certificate which shall include a report on the behavioral pattern of the applicant, so that the institution can thereafter keep intense watch upon a student who has a negative entry in this regard.

6.1.7 A student seeking admission to the hostel shall have to submit additional undertaking in the form of 6.1.4 (both Parts) along with his/ her application for hostel accommodation.

6.1.8 At the commencement of the academic session the Head of the Institution shall convene and address a meeting of various functionaries/agencies, like Hostel Wardens, representatives of students, parents/ guardians, faculty, district administration including police, to discuss the measures to be taken to prevent ragging in the Institution and steps to be taken to identify the offenders and punish them suitably.

6.1.9 To make the community at large and the students in particular aware of the dehumanizing effect of ragging, and the approach of the institution towards those indulging in ragging, big posters (preferably multicolored with different colours for the provisions of law, punishments, etc.) shall be prominently displayed on all Notice Boards of all departments, hostels and other buildings as well as at vulnerable places. Some of such posters shall be of permanent nature in certain vulnerable places.

6.1.10 The institution shall request the media to give adequate publicity to the law prohibiting ragging and the negative aspects of ragging and the institution's resolve to ban ragging and punish those found guilty without fear or favour.

6.1.11 The institution shall identify, properly illuminate and man all vulnerable locations.

6.1.12 The institution shall tighten security in its premises, especially at the vulnerable places. If necessary, intense policing shall be resorted to at such points at odd hours during the early months of the academic session.

6.1.13 The institution shall utilize the vacation period before the start of the new academic year to launch wide publicity campaign against ragging through posters, leaflets, seminars, street plays, etc.

6.1.14 The faculties/ departments/ units of the institution shall have induction arrangements (including those which anticipate, identify and plan to meet any special needs of any specific section of students) in place well in advance of the beginning of the academic year with a clear sense of the main aims and objectives of the induction process.

6.2 On admission:-

6.2.1 Every fresh student admitted to the institution shall be given a printed leaflet detailing when and to whom he/she has to turn to for help and guidance for various purposes (including Wardens, Head of the institution, members of the anti-ragging committees, relevant district and police authorities), addresses and telephone numbers of such persons/authorities, etc., so that the fresher need not look up to the seniors for help in such matters and get indebted to them and start doing things, right or wrong, at their behest. Such a step will reduce the freshers' dependence on their seniors.

6.2.2 The institution through the leaflet mentioned above shall explain to the new entrants the arrangements for their induction and orientation which promote efficient and effective means of integrating them fully as students.

6.2.3 The leaflet mentioned above shall also inform the freshers about their rights as bona fide students of the institution and clearly instructing them that they should desist from doing anything against their will even if ordered by the seniors, and that they have nothing to fear as the institution cares for them and shall not tolerate any atrocities against them.

6.2.4 The leaflet mentioned above shall contain a calendar of events and activities laid down by the institution to facilitate and complement familiarization of freshers with the academic environment of the institution.

6.2.5 The institution shall also organize joint sensitization programmes of 'freshers' and seniors.

6.2.6 Freshers shall be encouraged to report incidents of ragging, either as victims, or even as witnesses.

6.3 At the end of the academic year:-

6.3.1 At the end of every academic year the Vice-Chancellor/ Dean of Students Welfare/ Director/ Principal shall send a letter to the parents/ guardians of the students who are completing the first year informing them about the law regarding ragging and the punishments, and appealing to them to impress upon their wards to desist from indulging in ragging when they come back at the beginning of the next academic session.

6.3.2 At the end of every academic year the institution shall form a 'Mentoring Cell' consisting of Mentors for the succeeding academic year. There shall be as many levels or tiers of Mentors as the number of batches in the institution, at the rate of 1 Mentor for 6 freshers and 1 Mentor of a higher level for 6 Mentors of the lower level.

6.4 Setting up of Committees and their functions:-

6.4.1 The Anti-Ragging Committee:- The Anti-Ragging Committee shall be headed by the Head of the institution and shall consist of representatives of faculty members, parents, students belonging to the freshers' category as well as seniors and non-teaching staff. It shall monitor the anti-ragging activities in the institution, consider the recommendations of the Anti-Ragging Squad and take appropriate decisions, including spelling out suitable punishments to those found guilty.

6.4.2 The Anti-Ragging Squad:- The Anti-Ragging Squad shall be nominated by the Head of the institution with such representation as considered necessary and shall consist of members belonging to the various sections of the campus community. The Squad shall have vigil, oversight and patrolling functions. It shall be kept mobile, alert and active at all times and shall be empowered to inspect places of potential ragging and make surprise raids on hostels and other hot spots. The Squad shall investigate incidents of ragging and make recommendations to the Anti-Ragging Committee and shall work under the overall guidance of the said Committee.

6.4.3 Monitoring Cell on Ragging:- If the institution is an affiliating university, it shall have a Monitoring Cell on Ragging to coordinate with the institutions affiliated to it by calling for reports from the Heads of such institutions regarding the activities of the Anti-Ragging Committees, Squads, and Mentoring Cells, regarding compliance with the instructions on conducting orientation programmes, counseling sessions, etc., and regarding the incidents of ragging, the problems faced by wardens and other officials, etc. This Cell shall also review the efforts made by such institutions to publicize anti-ragging measures, cross-verify the receipt of undertakings from candidates/students and their parents/guardians every year, and shall be the prime mover for initiating action by the university authorities to suitably amend the Statutes or Ordinances or Bye-laws to facilitate the implementation of anti ragging measures at the level of the institution.

6.5 Other measures:-

6.5.1 The Annexures mentioned in sub-clauses 6.1.4, 6.1.5 and 6.1.7 of these Regulations shall be furnished at the beginning of each academic year by every student, that is, by freshers as well as seniors.

6.5.2 The institution shall arrange for regular and periodic psychological counseling and orientation for students (for freshers separately, as well as jointly with seniors) by professional counselors during the first three months of the new academic year. This shall be done at the institution and department/ course levels. Parents and teachers shall also be involved in such sessions.

6.5.3 Apart from placing posters mentioned in sub-clause 6.1.9 above at strategic places, the institution shall undertake measures for extensive publicity against ragging by means of audio-visual aids, by holding counseling sessions, workshops, painting and design competitions among students and other methods as it deems fit.

6.5.4 If the institution has B.Ed, and other Teacher training programmes, these courses shall be mandated to provide for anti-ragging and the relevant human rights appreciation inputs, as well as topics on sensitization against corporal punishments and checking of bullying amongst students, so that every teacher is equipped to handle at least the rudiments of the counseling approach.

6.5.5 Wardens shall be appointed as per the eligibility criteria laid down for the post reflecting both the command and control aspects of maintaining discipline, as well as the softer skills of counseling and communicating with the youth outside the class-room situations. Wardens shall be accessible at all hours and shall be provided with mobile phones. The institution shall review and suitably enhance the powers and perquisites of Wardens and authorities involved in curbing the menace of ragging.

6.5.6 The security personnel posted in hostels shall be under the direct control of the Wardens and assessed by them.

6.5.7 Private commercially managed lodges and hostels shall be registered with the local police authorities, and this shall be done necessarily on the recommendation of the Head of the institution. Local police, local administration and the institutional authorities shall ensure vigil on incidents that may come within the definition of ragging and shall be responsible for action in the event of ragging in such premises, just as they would be for incidents within the campus. Managements of such private hostels shall be responsible for not reporting cases of ragging in their premises.

6.5.8 The Head of the institution shall take immediate action on receipt of the recommendations of the Anti-Ragging Squad. He/ She shall also take action suo motto if the circumstances so warrant.

6.5.9 Freshers who do not report the incidents of ragging either as victims or as witnesses shall also be punished suitably.

6.5.10 Anonymous random surveys shall be conducted across the 1st year batch of freshers every fortnight during the first three months of the academic year to verify and cross-check whether the campus is indeed free of ragging or not. The institution may design its own methodology of conducting such surveys.

6.5.11 The burden of proof shall lie on the perpetrator of ragging and not on the victim.

6.5.12 The institution shall file an FIR with the police / local authorities whenever a case of ragging is reported, but continue with its own enquiry and other measures without waiting for action on the part of the police/ local authorities. Remedial action shall be initiated and completed within the one week of the incident itself.

6.5.13 The Migration / Transfer Certificate issued to the student by the institution shall have an entry, apart from those relating to general conduct and behaviour, whether the student has been punished for the offence of committing or abetting ragging, or not, as also whether the student has displayed persistent violent or aggressive behaviour or any inclination to harm others.

6.5.14 Preventing or acting against ragging shall be the collective responsibility of all levels and sections of authorities or functionaries in the institution, including faculty, and not merely that of the specific body/ committee constituted for prevention of ragging.

6.5.15 The Heads of institutions other than universities shall submit weekly reports to the Vice-chancellor of the university the institution is affiliated to or recognized by, during the first three months of new academic year and thereafter each month on the status of compliance with anti-ragging measures. The Vice Chancellor of each university shall submit fortnightly reports of the university, including those of the Monitoring Cell on Ragging in case of an affiliating university, to the Chancellor.

6.5.16 Access to mobile phones and public phones shall be unrestricted in hostels and campuses, except in class-rooms, seminar halls, library etc. where jammers shall be installed to restrict the use of mobile phones.

6.6 Measures for encouraging healthy interaction between freshers and seniors:-

6.6.1 The institution shall set up appropriate committees including the course-in-charge, student advisor, Warden and some senior students to actively monitor, promote and regulate healthy interaction between the freshers and senior students.

6.6.2 Freshers' welcome parties shall be organized in each department by the senior students and the faculty together soon after admissions, preferably within the first two weeks of the beginning of the academic session, for proper introduction to one another and where the talents of the freshers are brought out properly in the presence of the faculty, thus helping them to shed their inferiority complex, if any, and remove their inhibitions.

6.6.3 The institution shall enhance the student-faculty interaction by involving the students in all matters of the institution, except those relating to the actual processes of evaluation and of faculty appointments, so that the students shall feel that they are responsible partners in managing the affairs of the institution and consequently the credit due to the institution for good work/ performance is due to them as well.

7. Measures at the UGC/ Statutory/ Regulatory body level:-

7.1 Regulatory measures:-

7.1.1 The UGC and other Statutory /Regulatory bodies shall make it mandatory for the institutions to compulsorily incorporate in their 'Prospectus' the directions of the Supreme Court and/or the Central or State Governments with regard to prohibition and consequences of ragging, and that non-compliance with the directives against ragging in any manner whatsoever shall be considered as lowering of academic standards by the erring institution making it liable for appropriate action.

7.1.2 The UGC (including NAAC and UGC Expert Committees visiting institutions for various purposes) and similar Committees of other Statutory/Regulatory bodies shall cross-verify that the institutions strictly comply with the requirement of getting the undertakings from the students and their parents/ guardians as envisaged under these Regulations.

7.1.3 The UGC and other funding bodies shall make it one of the conditions in the Utilization Certificate for sanctioning any financial assistance or aid to the institution under any of the general or special schemes that the institution has strictly complied with the anti-ragging measures and has a blemish-less record in terms of there being no incidents of ragging during the period pertaining to the Utilization Certificate.

7.1.4 The NAAC and other accrediting bodies shall factor in any incident of ragging in the institution while assessing the institution in different grades.

7.2 Incentives for curbing ragging:-

7.2.1 The UGC shall consider providing special/ additional annual financial grants-in-aid to those eligible institutions which report a blemish-less record in terms of there being no incidents of ragging.

7.2.2 The UGC shall also consider instituting another category of financial awards or incentives for those eligible institutions which take stringent action against those responsible for incidents of ragging.

7.2.3 The UGC shall lay down the necessary incentive for the post of Warden in order to attract the right type of eligible candidates, and motivate the incumbents.

7.3 Monitoring mechanism to ensure compliance:-

Apart from the monitoring mechanism built in under different sub-clauses of these Regulations, there shall also be the following monitoring mechanism:

7.3.1 The UGC shall constitute an Inter-Council Committee for prevention of

Ragging consisting of representatives of the AICTE, the IITs. the NITs, the IIMs, the MCI, the DCI, the NCI, the ICAR and such other bodies which have to deal with higher education to coordinate and monitor the anti-ragging movement across the country and to make certain policy decisions. The said Committee shall meet at least twice a year in the normal course.

7.3.2 The UGC shall also have an Anti-Ragging Cell within the Commission as an institutional mechanism to provide secretarial support for collection of information and monitoring, and to coordinate with the State level and university level Committees for effective implementation of anti-ragging measures.

8 Punishments:-

8.1 At the institution level:-

Depending upon the nature and gravity of the offence as established by the Anti-Ragging Committee of the institution, the possible punishments for those found guilty of ragging at the institution level shall be any one or any combination of the following:

1.1 Suspension from attending classes and academic privileges
1.2 Withholding/ withdrawing scholarship/ fellowship and other benefits.
1.3 Debarring from appearing in any test/ examination or other evaluation process.
1.4 Withholding results
1.5 Debarring from representing the institution in any regional, national or international meet, tournament, youth festival, etc. .
1.6 Suspension/ expulsion from the hostel.
1.7 Cancellation of admission
1.8 Rustication from the institution for period ranging from 1 to 4 semesters
1.9 Expulsion from the institution and consequent debarring from admission to any other institution for a specified period ,
1.10 Fine ranging between Rupees 25,000/- and Rupees 1 lakh .
1.11 Collective punishment: When the persons committing or abetting the crime of ragging are not identified, the institution shall resort to collective punishment.

8.2 At the university level in respect of institutions under it:-

If an institution under a university (being constituent of, affiliated to or recognized by it) fails to comply with any of the provisions of these Regulations and fails to curb ragging effectively, the university may impose any one or any combination of the following penalties on it:

8.2.1 Withdrawal of affiliation/ recognition or other privileges conferred on it
8.2.2 Prohibiting such institution from presenting any students then undergoing any programme of study therein for the award of any degree/diploma of the university
8.2.3 Withholding grants allocated to it by the university, if any
8.2.4 Withholding any grants chanellised through the university to the institution
8.2.5 Any other appropriate penalty within the powers of the university.

8.3 At the appointing authority level-

The authorities of the institution, particularly the Head of the institution, shall be responsible to ensure that no incident of ragging takes place in the institution. In case any incident of ragging takes place, the Head shall take prompt and appropriate action against the person(s) whose dereliction of duty lead to the incident. The authority designated to appoint the Head shall, in its turn, take prompt and appropriate action against the Head.

8.4 At the UGC/Statutory/Regulatory body level: -

If an institution fails to curb ragging, the UGC/Statutory/Regulatory body concerned may impose any one or any combination of the following penalties on it:

8.4.1 Delisting the institution from section 12B of the UGC Act or any similar provision in the Act of the Statutory/Regulatory body concerned
8.4.2 Withholding any grants allocated to it
8.4.3 Declaring the institution ineligible for consideration for any assistance under any of the general or special assistance programmes of the UGC/Statut'6ry/ Regulatory body concerned
8.4.4 Declaring that the institution does not have the minimum academic standards and warning the potential candidates for admission accordingly through public notice and posting on the UGC Website/ Website of the Statutory/Regulatory body concerned.
8.4.5 Taking such other action within its powers as it may deem fit and impose such other penalties as provided till such time as the institution achieves the objective of curbing ragging.
8.4.6 Collaborating with one another to work out other possible deterrents.

INSTITUTE OF CHEMICAL TECHNOLOGY

(UNIVERSITY UNDER SECTION 3 OF UGC ACT 1956)
MATUNGA, MUMBAI – 400 019.

UNDERTAKING BY PARENT/GUARDIAN

1. I _____

   Father of/ Mother of/ Guardian of _____

   have carefully read and fully understood the law prohibiting ragging and the direction of the Supreme Court and the Central / State Government in this regard as well as the UGC Regulation on Curbing the Menace of Ragging in Higher Educational Institutions 2009. (Section 19 of this Handbook)

2. I assure you that my son/daughter/ward will not indulge in any act of ragging.
3. I hereby agree that if he/she is found guilty of any aspect of ragging, he/she may be punished as per the provisions of the UGC Regulations mentioned above and/or as per the law in force.

Signed this _____ day of _____ month of _____Year

Name Signature

Address: ……..

……

……..

……

……

Tel:

Mobile:

Email: ……

INSTITUTE OF CHEMICAL TECHNOLOGY

(UNIVERSITY UNDER SECTION 3 OF UGC ACT 1956)
MATUNGA, MUMBAI – 400 019.

UNDERTAKING BY CANDIDATE/STUDENT

1. I, _____

   Son of / Daughter of Mr./Mrs._____

   have carefully read and fully understood the law prohibiting ragging and the directions of the Supreme Court and the Central / State Government in this regard as well as the UGC Regulation on Curbing the Menace of Ragging in Higher Educational Institutions 2009. (Section 19 of this Handbook).

   I hereby undertake that

   - I will not indulge in any behaviour or act that may come under the definition of ragging.
   - I will not participate in or abet or propagate ragging in any form.
   - I will not hurt anyone physically or psychologically or cause any other harm.

4 I hereby agree that if found guilty of any aspect of ragging, I may be punished as per the provisions of UGC Regulations and/or as per the law in force.

5 I hereby affirm that I have not been expelled or debarred from admission by any institution.

Signed this_____ day of_____ month of _____ year

Name Signature

Address: ……..

…….

…….

…….

…….

Tel:

Mobile:

Email: ……

रसायन तंत्रज्ञान संस्था

(विद्यापीठ अनुदान आयोग कायदा 1956 कलम 3 अंतर्गत विद्यापीठ)

माटुंगा, मुंबई – 400 019

पालकद्वारा स्वीकार पत्र

1. मैं ——————————————————————————————————————— श्री./कु. ——————————————————————— का/की पिता/माता/पालक आपको लिखके देता/देती हूँ कि मैं सर्वोच्च न्यायालयद्वारा दिये हुए निर्देश तथा उसी प्रकार केंद्र/राज्य शासन तथा विद्यापीठ अनुदान आयोग के नियमानुसार उच्च शिक्षण संस्था मे लागू हुए रॅगींग प्रतिबंधक नियमोंसे परिचित हूँ। (पुस्तिका साथमें जोडी हुअी है।)

2. मैं आपको विश्वास दिलाता/दिलाती हूँ कि मेरा/मेरी पुत्र/पुत्री इस प्रकार की किसी भी रॅगींग की प्रक्रिया मे सहभागी नही होंगे।

3. मेरा/मेरी पुत्र/पुत्री/पाल्य अगर किसी भी प्रकार के रॅगींग प्रक्रिया मे सहभागी/दोषी पाये गये तो ऊपर दिये गये विद्यापीठ अनुदान आयोग नियमानुसार वह दंड के पात्र होंगे।

आपका/आपकी विश्वासु,

( )

दिनांक :-

नाम :-

पता :-

रसायन तंत्रज्ञान संस्था

(विद्यापीठ अनुदान आयोग कायदा 1956 कलम 3 अंतर्गत विद्यापीठ)

माटुंगा, मुंबई – 400 019

विद्यार्थीद्वारा स्वीकार पत्र

1. मैं ——— श्री./श्रीमती ———————————————————————————————— का/की पुत्र/पुत्री आपको लिखके देता/देती हूँ कि मैं सर्वोच्च न्यायालयद्वारा दिये हुए निर्देश तथा उसी प्रकार केंद्र/राज्य शासन तथा विद्यापीठ अनुदान आयोग के नियमानुसार उच्च शिक्षण संस्था मे लागू हुए रॅगींग प्रतिबंधक नियमोंसे परिचित हूँ। (पुस्तिका साथमें जोडी हुआी है।)

2. मै आपको लिखित स्वरुपमें देता हूँ/देती हूँ कि,
   - मैं किसी भी प्रकार की रॅगींग प्रक्रिया मे सहभागी नही रहूँगा/रहूँगी।
   - मै रॅगीग की किसी भी प्रक्रिया को प्रोत्साहन नही दूँगा/दूँगी, या प्रोत्साहन मै सम्मलित नही रहूँगा/रहूँगी।
   - मै किसी को भी शारिरीक या मानसिक रुप से तनाव नही दूँगा/दूँगी।

3. यदि मै रॅगींग संबंधी किसी भी प्रक्रिया मे दोषी पाया गया/गयी तो मुझे विद्यापीठ अनुदान आयोगद्वारा उचित दंड दिया जायेगा, इस नियम से मैं परिचित हूँ।

4. मैं जाहीर करता/करती हूँ कि किसी भी संस्था से इस वजह से मेरा प्रवेश रद्द नही किया गया है ।

आपका/आपकी विश्वासु,

(   )

दिनांक :-

नाम :-

पता :-

रसायन तंत्रज्ञान संस्था

(विद्यापीठ अनुदान आयोग कायदा 1956 कलम 3 अंतर्गत विद्यापीठ)

माटुंगा, मुंबई – 400 019.

स्वीकारपत्र पालकांसाठी

1. मी. ..... श्री/कु. ..... चा/ची वडिल/आई/पालक असे लिहून देतो की, मी सर्वोच्च न्यायालयाने दिलेले निर्देश तसेच केंद्र/राज्य शासन आणि विद्यापीठ अनुदान आयोग नियमाप्रमाणे उच्च शिक्षण संस्थामध्ये लागु असलेले रॅगींग प्रतिबंधक नियम समजुन घेतले आहेत. (प्रत www.udct.org या संकेत स्थळावर इंग्रजीत उपलब्ध आहे)

2. माझा मुलगा/मुलगी/पाल्य कुठल्याही रॅगींग प्रकरणात सहभागी होणार नाही याची मी ग्वाही देतो/देते.

3. माझा मुलगा/मुलगी/पाल्य कुठल्याही रॅगींग प्रकरणात सहभागी/दोषी आढळल्यास तो/ती वर नमुद केलेल्या विद्यापीठ अनुदान आयोग विनियमाप्रमाणे शिक्षेस पात्र राहील.

दिनांक स्वाक्षरी

नाव :

पत्ता :

रसायन तंत्रज्ञान संस्था

(विद्यापीठ अनुदान आयोग कायदा 1956 कलम 3 अंतर्गत विद्यापीठ)

माटुंगा, मुंबई – 400 019.

स्वीकारपत्र विद्यार्थ्यांसाठी

1. मी. ..... श्री/श्रीमती ..... चा/ची मुलगा/मुलगी असे लिहून देतो/देते की, सर्वोच्च न्यायालयाने दिलेले निर्देश तसेच केंद्र/राज्य शासन आणि विद्यापीठ अनुदान आयोग नियमाप्रमाणे उच्च शिक्षण संस्थामध्ये लागु असलेले रॅगिंग प्रतिबंधक नियम समजुन घेतले आहेत. (प्रत www.udct.org या संकेत स्थळावर इंग्रजीत उपलब्ध आहे)

2. मी असे लिहुन देतो/देते की
   – मी रॅगींग संदर्भातील कुठल्याही प्रकरणात सहभागी असणार नाही.
   – मी कोणत्याही पद्धतीने रॅगींगला प्रोत्साहित करणार नाही किंवा प्रोत्साहनात सहभागी असणार नाही.
   – मी कुणाचाही शारीरीक अथवा मानसिक छळ करणार नाही

3. रॅगींग संदर्भातील कुठल्याही प्रकरणात मी दोषी आढळल्यास मी विद्यापीठ अनुदान आयोगाच्या नियमानुसार शिक्षेस पात्र आहे याची मला पूर्ण जाणीव आहे.

4. मी असे नमुद करतो की, यापूर्वी कोणत्याही संस्थेकडुन माझी हकालपट्टी करुन प्रवेश रद्द करण्यात आलेला नाही.

दिनांक स्वाक्षरी

नाव :

पत्ता :

Proforma – A

(Authorization letter from candidate who fails to attend the FY Under Graduate admission round at ICT in person due to valid unavoidable circumstances beyond control)

I ……(Name of the candidate) having ICT merit

No……...for F.Y.B.Chem.Engg./ F.Y.B.Tech. degree admission, have my

admission counselling on ……..(Date of counselling)

As I cannot attend the admission counselling personally, I am authorizing

Mr./Mrs…… (Name of the authorized person) who is

my……(Relation of the authorized person to the candidate)

to attend the admission counselling on my behalf. He /She will produce all the original

documents needed for the admission and pay the necessary fees on my behalf. The

decision taken by Mr./Mrs ……(Name of the authorized person)

during the admission counselling in respect of my admission is acceptable and binding on me.

Date : (Name &Signature of the Candidate)

Place : ICT Merit No. :

Attestation

The signature of ……is as under.

(Name of the authorized person)

(Signature of the authorized person)

Attested by

(Signature of the Candidate)

Proforma – B

(For P1/P2/P3 Candidates)
(For Physically Handicapped Candidates)

CERTIFICATE

Photograph of the candidate showing the Physical disability

This is to certify that I have examined Mr./Ms _____

_____ on date_____He/She has

_____

(Name of the Physical Disability)

Which comes under the sub category
Blindness (P1)/ Speech & Hearing impaired (P2)/ Orthopedic disorder(P3)

Certified that :

1. The percentage of handicap is ***not less than 40%*** and is equal to …….%.
2. The disability is permanent in nature.
3. The candidate is capable of carrying out all activities related to theory and practical works as applicable to degree course in Engineering/ Technology without any special concessions and exemptions.
4. This certificate is issued as per the provisions given in the Person with Disability Act, 1995 and its amendments.

This certificate is issued for the purpose of his/ her admission to first year of four years degree course in Technical education for the academic year 2009-2010.

Outward No. and Date :

Place : (Name and Signature)

Director
All India Institute of
Physically Handicapped, Mumbai
(Or) Dean/ Civil Surgeon of Government Hospital
(Name of the issuing Authority)

Seal of the office

Proforma – B-1

(To be issued on the printed letterhead of the concerned office)

(For Physically Handicapped Candidates)

P3 (Learning Disability) Candidates

LEARNING DISABILITY CLINIC

L.T.M.G, HOSPITAL, SION, MUMBAI 400 022

CERTIFICATE

Photograph of the candidate

Name : Date:

Age :

Date of Birth :

Date of Registration: L.D. No.

Father's Name :

Std : School Name:

Physical & Neurologic Assessment (Date) :

Psychological Assessment (Date) :

WISC (R) Verbal IQ :

Performance IQ :

Global IQ :

Interpretation:

Educational Assessment (Date) : WRAT: R

S

A

Certified that :

1. The percentage of handicap is ***not less than 40%*** and is equal to …….%.
2. The disability is permanent in nature.
3. The candidate is capable of carrying out all activities related to theory and practical works as applicable to degree course in Engineering/ Technology without any special concessions and exemptions.
4. This certificate is issued as per the provisions given in the Person with Disability Act, 1995 and its amendments.

This certificate is issued for the purpose of his/ her admission to first year of four years degree course in Technical education for the academic year 2009-2010.

Recommendations

Outward No. and Date :

Place :

(Name and Signature of Issuing authority)

Proforma – C

(Undertaking to be given by candidate who is unable to produce original certificates at the time of his / her admission round,
as admission is already taken elsewhere)

UNDERTAKING

I……..have secured admission to…….Course at ……..
……the ICT for first year degree on date…….

And therefore, I have not produced the following original documents at ICT at the time of my admission as I have already secured admission for……..Course at ……College/Institute.

(Please put X against 'not submitted' document)
1. HSSC Mark sheet
2. Institute leaving Certificate after passing the qualifying examination
3. ……..

I have produced the photocopies of the above documents, attested by the Head of the Institution (along with the certification) where my original documents are retained on account of my admission to that college/institute.
I hereby undertake to submit the original documents as mentioned above on or before (within 3 working days)……at ICT.
I am aware of the fact that failure on my part to submit the original documents in given time results in cancellation of my admission without any refund of tuition fees as per the provisions of the admission rule.

Date : (Name of candidate with signature)
Place : ICT Merit No.

Proforma- D
(Specimen Application form for cancellation of admission)
(To be submitted in duplicate)

Date:……..

To
The Director,
ICT, Mumbai

Respected Sir,

Full name of candidate:……

Course:……Branch:.....Date of Admission ……

ICT Merit Number :……

Amount of fees paid : Rs. ……

Fee Receipt Number and Date :…… (Attach Photocopy)

I request you to kindly return my original documents and refund the fees paid as per the rules.

……
Signature of candidate

For Office use only:

Full address of the candidate : Tel./Mobile No. : E mail:	Amount Paid, Rs.
	Amount Deducted, Rs.
	Amount Refunded, Rs.
	Cheque No. & date
	Bank particulars

Signature of Accounts Officer

Received the following original documents from the Admission Authority, along with the cheque towards refund of fees after deductions.

1

2

3

Signature of the candidate

Proforma E

भारत सरकारची मॅट्रीकोत्तर शिष्यवृत्ती योजनेचा लाभ घेणाऱ्या विद्यार्थी/विद्यार्थिनीचे आई–वडील/पालक यांनी उत्पन्नाच्या संदर्भात रु. 20/– च्या स्टॅम्पपेपरवर सादर करावयाच्या प्रतिज्ञापत्राचा नमुना

1) विद्यार्थी/विद्यार्थिनीचे नाव :

2) शाळा/महाविद्यालयाचे नाव व पत्ता :

3) प्रवेश घेतलेल्या अभ्यासक्रमाचे नाव/शैक्षणिक वर्ष/कोणत्या वर्षासाठी :

4) विद्यार्थी/विद्यार्थिनीच्या आई–वडील/पालक यांचे नाव :

5) राहण्याचा संपूर्ण पत्ता :

6) उत्पन्नाचे स्त्रोत (आई–वडील/पालक/ विद्यार्थी/विद्यार्थिनी) :

वार्षिक उत्पन्न (सन _____)

अ)	जमीन (एकर)	रु.
ब)	घर (अंदाजे किंमत)	रु.
क)	इतर मालमत्ता	रु.
ड)	व्यवसाय (नोकरी/धंदा इत्यादी)	रु.

सर्व मार्गाने मिळणारे एकूण वार्षिक उत्पन्न रु.

प्रतिज्ञापत्र :

मी असे प्रतिज्ञापूर्वक नमूद करतो/करते की, वर नमूद केलेली माहिती बरोबर व सत्य असून ती बंधनकारक राहील. खोटी माहिती दिल्याचे आढळून आल्यास मी कायदेशीर शिक्षेस पात्र ठरेन.

(आई– वडील /पालक यांचे नाव व स्वाक्षरी)

साक्षीदार – 1

नाव व स्वाक्षरी ठिकाण:

ठिकाण:

दिनांक:

साक्षीदार – 2

नाव व स्वाक्षरी

ठिकाण:

दिनांक:
