CHITKARA UNIVERSITY

RESEARCH IT.
LEARN IT.
DO IT.

Curious to know, to explore,
to research and innovate and
to advance frontiers of knowledge.

Doctoral Programs in

- Computer Science & Engineering
- Electronics & Communication Engineering
- Mechanical Engineering

Master of Engineering Programs in

- Computer Science & Engineering
- Electronics & Communication Engineering
- Electronics & Communication Engineering with specialisation in Embedded Systems and IOT in collaboration with ARM
- Construction Technology & Management in collaboration with ACC
- Mechanical Engineering
- M.Sc. in Physics
- M.Sc. in Mathematics

CHITKARA UNIVERSITY

STRONG ACADEMIC HERITAGE

INDUSTRY-LED COURSES

A+ TOP 30 RANKING

100% CAMPUS PLACEMENT

COUNTED AMONG THE BEST

LEARN REOM THE BEST

INTENSIVE FOCUS ON ENTREPRENEURSHIP & INNOVATION

WILL LET YOU EMBARK ON RESEARCH FROM DAY ONE

TRAVEL THE WORLD

100+ GLOBAL PARTNERSHIPS

CHITKARA UNIVERSITY

The Leading Non-Profit Private University of NORTH INDIA

Chitkara University is different. Our students are different. So are our faculty, our academic strengths and our outlook on teaching and learning. We are ranked within top 50 Indian Universities which speaks volume about our strong academic heritage, highly committed faculty, extensive industry collaborations, great global connections and state of the art campus facilities.

Dr. ASHOK CHITKARA
CHANCELLOR
CHITKARA UNIVERSITY

Selecting a university program marks the start of an exciting period of your life. When you are selecting a program at an institution, you add life-changing experiences and expanded opportunities as well.

Students from around the country are attracted to Chitkara University because of our commitment to teaching excellence, because we conduct research that makes a difference, because of our industry partnerships and because of our tailored courses.

We look forward to welcoming you to Chitkara University.

STRONG ACADEMIC HERITAGE

Dr. MADHU CHITKARA
PRO CHANCELLOR
CHITKARA UNIVERSITY

Chitkara Education brings with it a reputation that has been earned through years of serving the career-needs of the student community. It is a reputation for excellence and innovation among coveted employers for preparing graduates who have the knowledge and skills they need for success in their workplace.

There are many reasons to choose Chitkara University. Our graduates go on to great careers, we're hands-on and responsive in our teaching.

We provide a great environment to study and our research is world-class.

"The learning environment at CHITKARA UNIVERSITY represents a unique blend of distinguished faculty, brilliant and intellectual students with a proactive collaboration with industry."

WELCOME TO CHITKARA UNIVERSITY IN PUNJAB

Chitkara Educational Trust established its Punjab campus in the year 2002 on the Chandigarh-Patiala national highway which is 30kms from Chandigarh. In the year 2010, Chitkara University was established by the Punjab State Legislature under "The Chitkara University Act". Chitkara University is a government recognized University with the right to confer degrees as per the sections 2(f) and 22(1) of the UGC Act. 1956. Chitkara University Punjab is a multi-discipline student centric campus with more than 7000 students.

CONSTITUENT INSTITUTIONS OF CHITKARA UNIVERSITY (PUNJAB) ARE:

CHITKARA INSTITUTE OF ENGINEERING AND TECHNOLOGY

- 4-Year Bachelor of Engineering (B.E.) in
  - Computer Science & Engineering
  - Electronics & Communication Engineering
  - Electrical Engineering
  - Mechanical Engineering
- M.E. (Fellowship) Programs in
  - Computer Science & Engineering
  - Electronics and Communication Engineering
- Electronics and Communication Engineering with specialisation in Embedded Systems and IOT in collaboration with ARM
- Construction Technology & Management in collaboration with ACC
- Mechanical Engineering
- M.Sc. in Physics
- M.Sc. in Mathematics
- 2-Year MCA (Lateral Entry)
- 3-Year BCA
- 5-Year Integrated BCA-MCA

CHITKARA SCHOOL OF PLANNING & ARCHITECTURE

- 5-Year B. Architecture

CHITKARA BUSINESS SCHOOL

- 2-Year Management Program (MBA) in
  - Marketing
  - Banking & Finance
  - Financial Markets Practice in collaboration with BSE Institute
  - Healthcare Management in collaboration with Fortis Healthcare
  - Human Resource in collaboration with ManpowerGroup
  - Supply Chain Management in collaboration with Safeducate
- 3-Year B. Com (Hons.)
- 3-Year BBA

CHITKARA COLLEGE OF SALES & MARKETING

- 2-Year MBA (Sales & Retail Marketing)
- 2-Year MBA (Pharma Management)

CHITKARA COLLEGE OF HOTEL MANAGEMENT & CATERING

- 3-Year B. Sc Hospitality Administration
- 3-Year B. Sc Hospitality Administration (with 2 Year Hotel Management Diploma from George Brown College, Toronto, Canada)

CHITKARA COLLEGE OF PHARMACY

- 6-Year Pharm. D.
- 4-Year B. Pharm.
- 2-Year M. Pharm. (Pharmaceutics/ Pharmacology/ Clinical Research & Clinical Pharmacology)

CHITKARA SCHOOL OF MASS COMMUNICATION

- 3-Year BA in Journalism & Mass Communication
- 2-Year MA in Journalism & Mass Communication

CHITKARA SCHOOL OF HEALTH SCIENCES

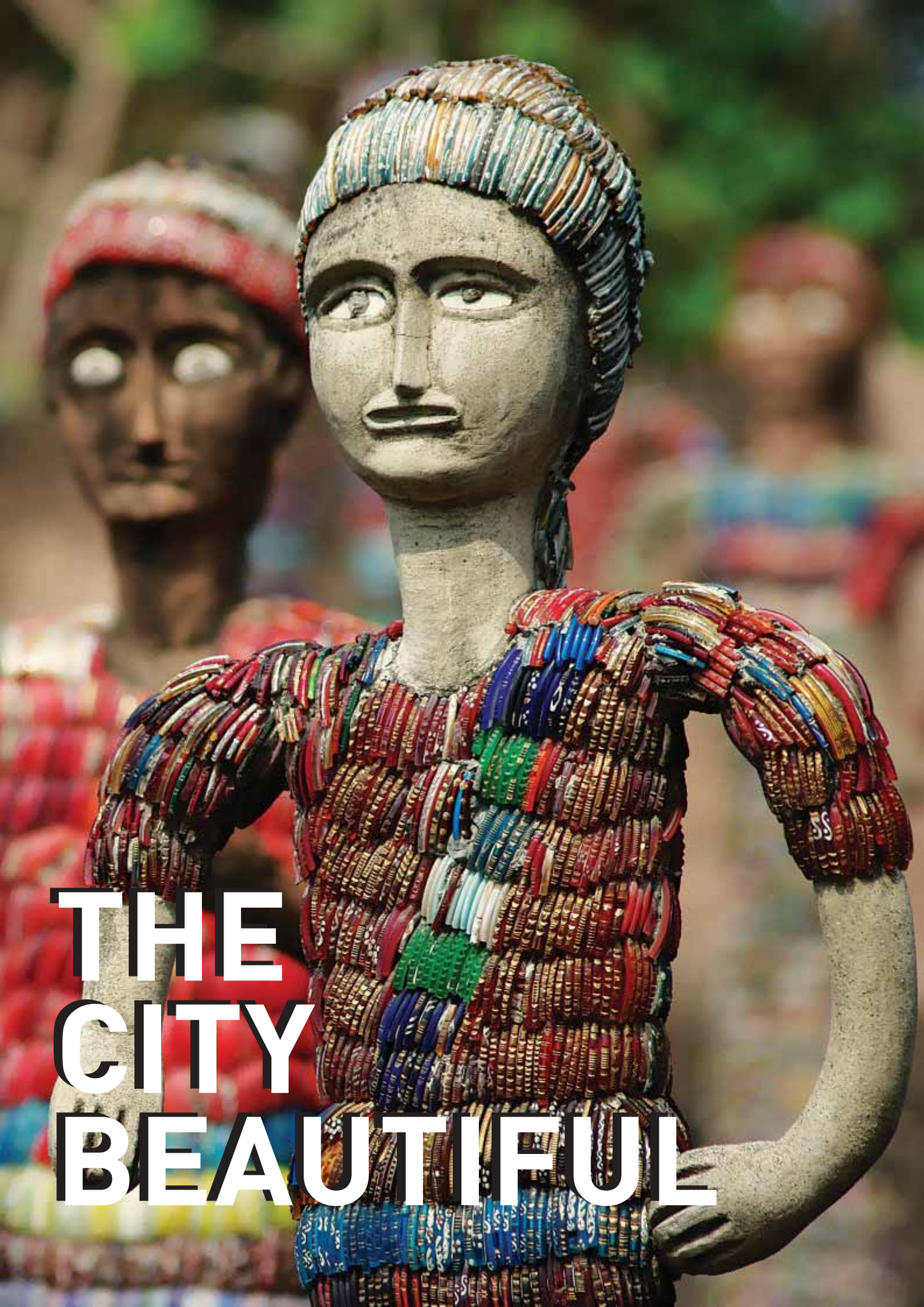
- 4-Year B. Sc Nursing
- 2-Year Post Basic B. Sc Nursing
- 3-Year B. Sc (Allied Healthcare)
- 4-Year B. Optometry | 2-Year M. Optometry
- 4.5-Year Bachelor of Physiotherapy | 2-Year Master of Physiotherapy

CHITKARA COLLEGE OF EDUCATION

- B. Ed.

CHITKARA SCHOOL OF ART & DESIGN

- 4-Year BFA in Applied Art
- 3-Year B. Sc. in Animation
- 3-Year B. Des in Interior Design



THE CITY BEAUTIFUL

CHANDIGARH

A million people; infinite possibilities

Located in the foothills of the Shivalik mountain ranges, Chandigarh is India's best planned city, with world renowned architecture and an unparalleled quality of life. The face of modern India, Chandigarh, is the manifestation of a dream that Pt. Jawahar Lal Nehru envisaged and Le Corbusier executed.

Chandigarh was the first planned city in India post independence in 1947 and is known internationally for its architecture and urban design. The city has projects designed by architects such as Le Corbusier, Pierre Jeanneret, Jane Drew and Maxwell Fry. It is an urban showpiece - where plants and trees are as much a part of construction plans as the roads and buildings.

Chandigarh and its surrounding areas, namely Mohali and Panchkula are on their way to become the north Indian hubs for IT industry with major presence of companies such as Infosys Technologies, Dell, Tech Mahindra, Quark and Wipro. Chandigarh is also home to several regional offices for major multinational banks, retail establishments and real estate corporations.

With its world class infrastructure and highest per capita income Chandigarh is fast emerging as the entrepreneurship hub of the country. Chandigarh is also attracting the service industry, education, health, food processing and a host of other companies who view it as their regional center for all north Indian states namely Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab and Haryana.

- Chandigarh is a city that comes under 'Times' 15 best Asian spots. 'Times' magazine has dubbed Chandigarh as "the thinking man's city" amidst a continent of mindless growth
- In major surveys, Chandigarh beats Bangalore, Chennai & Hyderabad in the overall ranking of India's best cities for doing business.
- A confederation of Indian Industries (CII) commissioned study has ranked Chandigarh as the overall third best city for doing business among 35 cities with an urban population exceeding population of one million.

With easy connectivity to major cities across India by flight as well as rail Chandigarh serves as the gateway to northern India. There are also direct flights to connect with the rest of the country mainly Mumbai, Delhi and Bangalore. Indian rail network connects this city to various Indian cities chiefly Delhi, Shimla, Lucknow, Jaipur, Mumbai, Goa and Kerala.

WHY CHITKARA UNIVERSITY

Chitkara University is different. Our students are different. So are our faculty, our academic strengths and our outlook on business. Within a short span of time Chitkara University has emerged as one of the top private Universities of the country.

Educational programs at Chitkara University aim even higher and go beyond the traditional approach of imparting an analytic framework to solving problems.

Our programs enable you to find the route to success at the intersection of theory and practice, discover and implement innovative solutions to real-world problems. The main focus of educational programs at Chitkara University is to make each and every graduate industry ready and exposed to latest trends.

Chitkara University views the world-and the traditional educational programs differently. Our strengths include topics that will matter in the next global economy.

A Rigorous, Flexible Curriculum

Chitkara University has established an unassailable reputation for strong on-campus recruitments on the sheer virtue of our intensive focus on making all our graduates "industry ready". Our students have gained employment in diverse professional roles and areas across the globe. From managing hotels to discovering new drugs to helping patients in hospital to analyzing the stock market, your Chitkara University degree can lead to varied and rewarding career paths.

Excellent campus placements is the hallmark of our programs

You will also learn from experienced teaching staff and be exposed to some of the industry's top employers through opportunities such as field trips, internships, real-life scenarios and practical assignments, guest lectures from industry professionals and networking events.

Passionate Scholars & Teachers

Chitkara University curriculum is based on the framework of strategic competitiveness, which teaches the concepts of creativity, entrepreneurship, innovation, sustainability, leadership and incisive decision making. You will learn how to compete–and create transformative change–in your profession.

Learning By Doing

CHOOSE YOUR PATH. EMBRACE YOUR POTENTIAL.

COUNTED AMONG THE BEST

Chitkara University's reputation for innovative teaching, strong industry links and highly employable graduates continues to set us apart from other Indian Universities.

SMALL WORLD

Whether you are a Bachelor's student, Master's student or taking part in one of our exchange programs, we make sure you feel right at home with us.

Chitkara University provides a specially safe and serene setting for studies. Students get to enjoy the changing seasons and are able to grow in various ways.

At Chitkara University, Education is not only "State-of-the-art" but truly "State-of-the-heart". Everything we do shares the same mindset and determination.

We feel passionately about what we do and we hope you will become part of our family.

CLEARED FOR LAUNCH

Any decent road map to success requires that you know where you are going – and also where you have been. The third element is momentum.

In accordance with Chitkara strategy, we allocate more and more resources to excellence in teaching and learning. The entire approach at Chitkara University is learning-centric, enhancing knowledge, skills and understanding through practical experience.

Today, we have impressive world-wide collaboration agreements with top International Universities and research institutions which is helping us train Chitkara students for the new global economy.

We strongly believe that we are creating the right kind of future for the professionals of tomorrow who we are educating today. Our Education is always supported by the exceptional research that we conduct.

INDUSTRY-LED COURSES

Chitkara University offers a learning experience that improves your employment prospects. We maintain close links with leading blue-chip companies and professional associations to deliver most of our academic programs. Through these alliances we stay in touch with industry, ensuring that our courses are relevant, practical and deliver the skills in demand allowing our graduates to hit the ground running.

Strong corporate relationships also have a direct influence on our degree programs and have resulted in our "industry facing" curricula. This ensures that our education is up to date and valued by the future employers of our alumni.

GREAT CAMPUS RECRUITMENT

Chitkara University has established an unassailable reputation for very strong campus recruitment on the sheer virtue of our intensive focus on making all our graduates "industry ready".

START ME UP

The possibility to combine business and technology in their studies gives our students unique opportunities to build their future careers, be it through top-class companies or capitalizing on their own innovations in order to create new businesses.

Think of it as your very own, personal launch pad.

LEARN THE CHITKARA WAY

One-on-one discussions with the professors make the classes very interesting and interactive. The faculty is very helpful and approachable at all times–even for the slightest of doubts. We have lot of group projects and presentations which help students in team-building, understanding and bonding with classmates.

GRADUATE WITH A HOLISTIC SKILL SET

Our holistic educational approach is designed with an intensive focus to equip you with a total skill set comprising hard knowledge skills, soft people skills and 'heart' skills. You will be equipped with both depth and breadth of knowledge. You will be transformed into a well-rounded individual, and become a valuable asset to your future employer and society at large.

Hard knowledge skills (specific to your chosen track of study) + **Soft people skills** (analytical thinking, problem solving, communication, presentation, leadership and team-building) + **'Heart skills'** (ethical and social responsibility)

LEARN FROM THE BEST MINDS

Tradition of Teaching Excellence

Chitkara University faculty members are explorers and discoverers, seeking new ideas and insights at the frontiers of knowledge. They are internationally recognized leaders in the study of the economic, social, political, and technological forces shaping the world today.

The faculty at Chitkara University includes people from core academics having vast experience in academics and industry. Among our talented faculty, you meet academic scholars with doctorate degrees, experts from Industry and authors of important texts in all fields. Our faculty enjoys a good reputation and strong relations with leading industrial houses in terms of consultancy and research work.

Chitkara University faculty members play an active role in national and international business & research communities, serving as consultants, board members, and speakers at major conferences and seminars.

With serious students and talented teachers, you will become a stakeholder in pursuit of purposeful learning and experience. Faculty at Chitkara University is striving hard to impart best of professional experience to students through its fast growing & challenging academic environment.

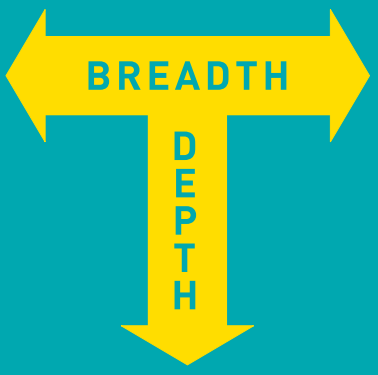
A RIGOROUS, FLEXIBLE CURRICULUM

PREPARES YOU FOR EVERY KIND OF LEADERSHIP CHALLENGE

Hands-on and interactive learning means classes are never dull. Theories are brought to life, and you learn by experiencing them.

Classes incorporate activities, such as simulations and problem sets conducted in format of mini lectures, video lecturettes, small group recitations, hands-on demos, designettes and concept quizzes to cement the understanding of different concepts in a subject.

The interactive session foster collaborative learning and you will enjoy and better understand concepts that are traditionally viewed as difficult. Real-life examples are demonstrated regularly.



FOUNDATION COURSES	UNIVERSITY CORE	GLOBAL STUDIES	SPECIALISATION
TECHNOLOGY STUDIES	ENTREPRENEURSHIP STUDIES	MODES OF THINKING	GENERAL EDUCATION

OUR PEDAGOGY

Our degree programs prepare students for the real world and offer the opportunity for practical, hands-on experience, internships and projects. Take advantage of this experience to gain the practical skills employers are looking for and open your mind to career opportunities. Academics at Chitkara University keep pace with workplace demands and ensures that students are 'work ready' and in touch with what's expected in a professional environment.

Academic Excellence

Our academic programs enjoy a great reputation in the industry. To maintain our leadership position, we focus on inducting the best faculty from across the industry and academia. Our faculty is known for its strong academic orientation contributing to the creation of knowledge in a dynamic, ever changing environment. Classes are built around experiential learning where students are pushed to their limits to take conceptual framework and apply them. Teaching methods include lectures and tutorials that emphasize a learning-centric approach and application of knowledge. Faculty brings their broad based experience into the classroom to enrich the learning process and to ensure that coursework reflects current industry practices.

Problem Based Learning (PBL)

Some of our courses are being taught using the PBL approach where students apply their knowledge to solve problems they may encounter in a professional context and in doing so, extend their experience beyond their text books. Elements of the work situation are brought into the classroom by the PBL approach. Students undertake a series of tasks that bring industry problems into the academic environment.

Guest Lectures

Guest lectures are regularly organised by eminent industry experts, entrepreneurs and HR managers from large and medium sized companies to give information to students on latest trends and happenings.

Applied & Project Based Learning

Applied learning is a hallmark of all teaching at Chitkara University. We believe that the best way to learn is by "doing" and that's why we emphasize a hands-on approach. We lay stress on project based learning. Thus, the need for independent thinking and creativity is encouraged among students resulting in interesting and novel projects. Further, a significant increase in the open category credits enables students to have a broad base and pursue interests and adopt a multi-disciplinary approach.

Specialisation Options

In every program, further specialisation and electives are offered in the last year of the study.To help a student in this task, various tracks have been identified through our curriculum geared towards a variety of specialisations. Our goal is to prepare students for a satisfying career in Engineering. Following a particular curricular track will equip a student with the skills needed for progressing further in the chosen career.

Faculty

Chitkara University boasts of strong faculty with Masters and Doctorate degrees in different specialisations with appropriate academic and research blend of mind. The entire faculty has been drawn from leading academic institutions and corporations from across the country with years of teaching and research experience. Our faculty enjoys a good reputation and strong relations with leading industrial houses in terms of consultancy and research work. Our faculty not only focuses on conceptual understanding of various academic concepts but also gives first hand experience to all students through role plays, experiential exercises, industrial visits and classroom lectures.

AN EDUCATION AHEAD OF ITS TIME

At Chitkara University, our Engineering students receive a quality education that prepares them to advance the frontiers of technology. Through our "Hands-on" curriculum, students design and construct all-terrain vehicles; design, build and load steel bridges; produce computer animations and video games; and harness the power of the sun to race cars that they design, build and test. Our engineers don't just learn theory – they expand upon it and apply it.

ENGAGING STUDENT CENTRIC EDUCATION

Dedicated laboratories allow students to combine their practical and theoretical studies right from the first year and continuing throughout their four year program.

Compulsory projects are a part of the course curriculum. Students are engaged in Engineering design right from the first year.

Our students have competed in many national and international design projects like solar car, mini-Baja, steel bridge and video game design.

Small Classes allow faculty to provide for individual attention. Students learn in small groups, receive hands on experience every semester and participate in faculty research projects.

STRONG INDUSTRY COLLABORATIONS

Chitkara University has very strong industry collaborations with global industry leaders. These companies such as ARM, Cadence, Wipro, Infosys, Oracle, Microsoft, SAP and Dassault Systemes provide a platform for our budding Engineers to experience the latest technologies hand-on.

We are the preferred University for fresher intake for many leading blue chip companies around the country including Microsoft, Google, Amazon and Google.

Our Engineering facilities include a number of instructional and research laboratories including the Microsoft Innovation Centre, nVidia CUDA Teaching Centre, NXP Semiconductors Signal Lab and Dassault Design Centre.

A UNIQUE, HANDS-ON LEARNING EXPERIENCE

Hands-on and interactive learning means classes are never dull. Theories are brought to life, and you learn by experiencing them.

Classes incorporate activities, such as simulations and problem sets conducted in the format of mini lectures, video lecturettes, small group recitations, hands-on demos, designettes and concept quizzes to cement the understanding of different concepts in a subject. The interactive sessions foster collaborative learning and you will enjoy and better understand concepts that are traditionally viewed as difficult. Real-life examples are demonstrated regularly.

Students can participate in research projects of national character and work with blue chip companies such as Google, Texas Instruments & Hewlett Packard (HP) as well as the state governments.

Google
SAP
Texas Instruments
Microsoft
NVIDIA
ARM
ca technologies
NXP
cadence
ERICSSON

STRONG INDUSTRY COLLABORATIONS

Chitkara Engineering has established an unassailable reputation for very strong campus recruitment on the sheer virtue of our intensive focus on making all our graduates "Industry Ready".

For our Engineering programs, we realize that our technical graduates are the foundation of the new knowledge based Indian economy. We also know that an active industry-academic interface is required to achieve the goal of producing "industry ready" students who are well rounded and quick learners. For this purpose, linkages have been established with industry partners such as CISCO, CA, Dassault Systems, National Instruments and Cadence Design Systems to develop and deploy industry-relevant curricula on various technologies.

Marquee companies such as nVidia, ARM, cadence, nxP semi conductors and Texas Instruments have recently supported us in terms of supplying state of the art latest equipments for best hands-on training for our students.

- Chitkara University is privileged to be part of the SAP University Alliance.
- The Google Student Ambassador Program is an opportunity for students to act as liaison between Google and the University.
- We have dedicated Apple funded labs for making our students proficient in IOS mobile applications.
- Microsoft Innovation Centre at Chitkara University provides incubation and expert hands-on support on Microsoft technology innovation, research, and software solutions.
- nVIDIA which is one of the leading companies in the parallel computing space has granted the status of "CUDA teaching Centre" to Chitkara University.
- Marquee companies such as ARM, Cadence and NXP Semiconductors are supporting us in terms of supplying state of the art equipments for best hands-on classroom training.
- Infosys Campus Connect and Wipro 10X Mission has provided us an important framework for our Engineering curriculum
- Strong linkages with Industry leaders such as CISCO, Ericsson & National Instruments to develop and deploy industry-relevant curricula on various technologies for our Engineering curriculum.

WIPRO
Applying Thought

Certificate of Accreditation

Wipro Technologies

Is proud to honor and accredit

Chitkara University, Chandigarh

as a

TRUSTED ACADEMIC PARTNER

By virtue of having met the qualifying standards of excellence in Wipro's Institutional Accreditation Framework and providing talent of the highest caliber

ACADEMIC ACCREDITED WIPRO

Girish S Paranjpe	Suresh Vaswani	Pradeep Bahirwani
Joint CEO	Joint CEO	Vice President
Wipro Technologies	Wipro Technologies	Talent Acquisition

Wipro Technologies has been hiring Engineering graduates from Chitkara Institute of Engineering and Technology for the last three years. Looking at the academic standards and performance of our alumni, Wipro Technologies has conferred "The Trusted Academic Partner" status to Chitkara University. Our Engineering curriculum now boasts of Wipro's Talent++ series which consists of bouquet of student engagement initiatives exclusively designed for Chitkara University students.

Integrated Circuit (IC) design is a crucial Engineering field, where one has to learn the nitty-gritty involved in designing chips for complex applications. Cadence has its largest market share in design of state of the art EDA tools. Chip design in India has also moved into the big league with multinationals, design services companies, product companies and start-ups in the country growing by the day. Chitkara University has invested in procuring the necessary industry standard tools which enables innovators to design a full-fledged integrated circuit chip right from inception of an idea to layout to customize for the full scale design. Many microelectronic circuits design courses have been embedded into the course curriculum for Electronics and Communication Engineering students.

ARM is the world's leading semiconductor intellectual property (IP) supplier. The technology designed by ARM is at the heart of many of the digital electronic products sold. ARM Technologies has taken an initiative in establishing a Microcontroller laboratory by donating state of the art mbed kits. This enables students to explore their potential and use the latest technologies to build the applications, which can compete with the best in the world.

NXP semiconductors lab has been established by a 4 billion dollar Multi National company with its presence in 25 different countries of the world. NXP Semiconductors provides High Performance Mixed Signal and Standard Product solutions that leverage its leading RF, Analog, Power Management, Interface, Security and Digital Processing expertise. As a part of this laboratory, Chitkara University has been granted state of the art software as well as hardware for realizing various electronic circuit design applications.

ORACLE®

Oracle Workforce Development Program (WDP) is one of the most popular database management education programs in the world and we have integrated important elements of WDP in some of our programs.

Mr. Ratan Tata interacting with Chitkara students at Auto Expo where our students got the opportunity to display their design concepts for the next generation automobiles.

Cisco Networking Academy program is an e-learning program that delivers Web-based educational content, online testing, student performance tracking, instructor training and support, as well as hands-on labs. The Networking Academy program combines lectures and online learning with hands-on laboratory exercises in which students apply what they learn in class while working on actual networks. Chitkara University seeks to play a major role to provide individuals the knowledge, and teach problem-solving abilities and critical thinking skills they need to pursue a career in ICT industry in the 21st century workplace. Cisco programs prepare students for industry-recognized certification exams such as the Cisco Certified Network Associate (CCNA), Cisco Certified Network Professional (CCNP), and NetPlus+.

CISCO™
Networking Academy

Infosys Campus Connect is an industry-academia partnership initiative taken by Infosys to assist the budding engineers improve their employability skills and make them industry ready. Chitkara has partnered with Infosys for this program to increase competitiveness and to enhance the pool of highly capable talent for growth requirements in IT space.

The courseware comprises of the IP and experience of Infosys in training thousands of entry-level engineers from diverse backgrounds and disciplines so that they perform their best in delivering world-class projects to global customers.

Chitkara University has integrated the foundation progam in the curriculum for all engineering programs which covers essential generic topics like -

- Computer hardware and system software concepts
- Programming fundamentals
- RDBMS
- System development methodology
- Analysis of algorithms
- Object oriented concepts
- User interface design
- Web technologies Client/server concepts

Texas is the company of the world, which boasts of the design of first Integrated Circuit sometime in late 60s. For more than 80 years, Texas Instruments has used increasingly complex signal-processing technology–with advances ranging from the incremental to the revolutionary–to literally and repeatedly change the world. TI has sponsored a full fledged laboratory with grant of beageboard kits, which enables students to fly their imagination and create their own electronics applications.

nVIDIA is a giant company in the design of world class Computers Graphics cards. Founded in 1993, nVidia has continuously reinvented itself to delight users and shape the industry. Of late, they have harnessed the parallel computing capabilities of the GPU to advance high-performance computing and this move from nVidia into mobile domain has put them at the center of one of the industry's fastest-growing segments. Chitkara University has been granted the status of CUDA Teaching Center (CTC) owing to a consistent performance in terms of organisation of large number of workshops on Parallel Programming and also offering courses on most advanced graphics supporting language CUDA.

aautosync
AUTOMOTIVE
centre of excellence

AAUTOSYNC

Automotive Centre of Excellence

Aautosync is an innovation research centre incepted at Chitkara University, formulated to provide automobile intellect with a blend of practical training and theoretical demonstrations and aims to feed the automotive sphere to fulfil their research targets every year. Aautosync has excellent resources in terms of Research and Validation laboratories and expert Industry faculty promoting academic excellence. We have very strong Industry collaboration with world leaders in automotive technologies.

Tata Technologies and Dassault Systemes lend their technical plus software knowhow to set up a brilliant lab for design, manufacturing and documentation to cater to the rising demands of designers, analysts in the Automotive industry.

Aautosync has collaborated with Steinbeis Centre for Technology Transfer India, which aims to bridge the world of science, academia, and business articulately.

Mahindra Rise Igniters have collaborated with the centre forming "Igniters Innovation Lab".

BOSCH Aftermarket - Automotive Testing equipment's and theories which the students shall undergo to form a more coherent linkage with what they have taught.

RASCO Auto and LMI Technologies, U.S.A. associated with the centre to initiate a state of art Laboratory for "Reverse Engineering and 3D Scanning" Technology development. Aautosync stands synonymous to Innovation, Technology Transfer, Live Project management.

WE LET YOU EMBARK ON RESEARCH FROM DAY ONE.

RESEARCH OPPORTUNITIES ARE OPEN TO 100% OF CHITKARA ENGINEERING STUDENTS.

We believe every student benefits from being taught by experts active in research and practice. You will discuss the very latest ideas, research discoveries and new technologies in seminars and in the field and you will become actively involved in a research project yourself. All our academic staff are active in internationally-recognised scientific research across a wide range of topics. You will also be taught by leading industry practitioners.

There are always numerous engineering research projects in progress, funded by industry, charities, government departments and research councils. Our undergraduate, Post graduate and Doctoral students benefit through access to up-to-date equipment, industrially linked projects and staff expertise.

CHITKARA UNIVERSITY RESEARCH & INNOVATION NETWORK (CURIN)

Through **Chitkara University Research and Innovation Network (CURIN)**, our researchers, staff and students work across disciplines to extend the boundaries of knowledge. Six focus areas of research under CURIN build and sustain Chitkara University's competitive advantage through leadership. These centers and institutes are the loci of research for collaborative groups of investigators pushing the frontiers of knowledge forward. They are involved in cutting edge research, exploring new technologies to improve the country's infrastructure and safety — and contributing to society through many other discoveries and innovations.

http://www.chitkara.edu.in/curin/

RESEARCH CENTRES AT CURIN

MISRC (Micro Electronics and Information Systems Research Centre)

CRPLM (Centre for Research in Product Life Cycle Management)

RPMS (Research Centre for Physical and Mathematical Sciences)

CRNSS (Centre for Research in Natural and Social Sciences)

CACR (Centre for Advanced Computing Research)

CrEiLa (Centre for Research in Education Innovation and Learning Analytics)

CENT (Centre for Research Excellence in Nano Technology)

CRPS (Centre for Research in Pharmaceutical Sciences)

GIBTRC (Geo- Informatics and Building Technology Research Centre)

IAER (Institute of Advanced Energy Research)

HC (Health Catalyst)

SOME FOCUS AREAS IN RESEARCH

Sustainable Software Development:
Sustainability and sustainable development have become pressing concerns over the last several decades. Software systems strongly affect our everyday lives in many aspects and in varying contexts. Consequently, supporting sustainability in software engineering explicitly is likely to have a substantial impact on making our planet greener in the long run and improving our communities as well as our environment. At CURIN – CACR (Centre for Advanced Computing Research), projects are going on to support the dimensions of sustainability - human, social, economic, environmental, and technical - within different phases of the software lifecycle, with a focus on requirements engineering (RE) and quality assurance (QA).

Effective Cloud Management:
Resource management in a cloud environment is a hard problem, due to the scale of modern data centers; the heterogeneity of resource types and their interdependencies; the variability and unpredictability of the load; as well as the range of objectives of the different actors in a cloud ecosystem. Consequently, both academia and industry began significant research efforts in this area. A few of the ongoing projects at CURIN-CACR (Centre for Advanced Computing Research) are aligned to provide solutions for effective cloud resource management

Assistive Technologies for differently-abled:
Technology has changed the way learning is created and consumed in the 21st century. It has also brought in tremendous possibilities to create 'inclusive' learning that takes into consideration the special needs of differently abled learners - in educational institutes as well as corporate organizations. At CURIN – CACR (Centre for Advanced Computing Research), we work to develop solutions to help the learners access learning material as well as contribute actively to gain an immersive experience. With the help of Assistive Computer Technology (AT) anybody – irrespective of any disability – can effectively interact with a computer. We work in the areas of Speech-to-text transcribers, Text-to-text transcribers, and developing visual, audio and physical aids for these differently-abled persons, thus creating avenues for two-way interaction and participation as well.

Assistive technologies for better health care:
Smartphones can monitor many of your vital signs at home—and do it more cheaply than your doctor. But will technology deliver better medical care?

At CURIN – Center for technologies for better health care we strive to answer this and many other questions. Researchers from College of Health Sciences, School of Computer Science Engineering and School of Applied sciences came together to work with leading hospitals, clinical practitioners, biochemists and genetic scientists from research labs in the region to discover newer pathways to solve the mysteries of Type II Diabetes and use bioinformatics principles to simulate them to find answers to ever intriguing protein mis-folding mechanisms. Novel technologies are getting invented in the centre to bring better technologies to healthcare professional and in turn to the patients.

Microwave impedance spectroscopy with electrode characteristics enabling wave penetration of conducting skin depth (Human skin tissue) and 6-port reflectometer are being designed. Master students are working on Industry sponsored projects to find out retinal blood vessel parameters from fundus images giving better insight into Retinal images and linking them to pre-diagnostic stages.

Precision Farming:
Increased use of chemicals in form of fertilizers, insecticides and pesticides has raised health issues in farmer and consumers. Also, the climate changes and conventional farming methodologies have resulted in reduced crop yield. These challenges drive the need of precision farming by designing corresponding mechanized solution for each process. In our Microelectronics and Information Systems Research Centre (MISRC), we use technology to develop all terrain robot and using smart sensors for weed control.

We use hydroponic farming to develop vertical farms and use technology to monitor the conditions of plants therein. Students and faculty from faculty of pharmacy, civil engineering and Computer sciences come together to better theses farms on a continuous basis.

Human Computer Interaction:
How can humans communicate with computers better and vice versa? At Centre of Excellence in Education Innovation and Learning Analytics (CURIN – CrEiLa) we are harnessing the power of Augmented Reality to develop teaching aids for Engineering education and K -12 education. We use the ARLE (Augmented Reality Learning Environment) to improve concept visualization of students and also improve their skills in Engineering and Sciences.

Image Processing:
Researchers at Microelectronics and Information Research Centre (MISRC) use latest tools and techniques of image processing for character and text recognition, sign language interpretation, plant disease detection and other ever growing related applications.

Network Security:
The purpose of network security is essentially to prevent loss, through misuse of data. There are a number of potential pitfalls that may arise if network security is not implemented properly. At CURIN – CACR (Centre for Advanced Computing Research), we work to develop solutions to prevent and monitor unauthorized access, misuse, modification, or denial of a computer network and network-accessible resources. We work to develop state of the art Intrusion Detection System (IDS) to mitigate the effect of intruders on corporate networks. We also work to propose novel concepts like Machine Learning in the state of the art research on IDS.

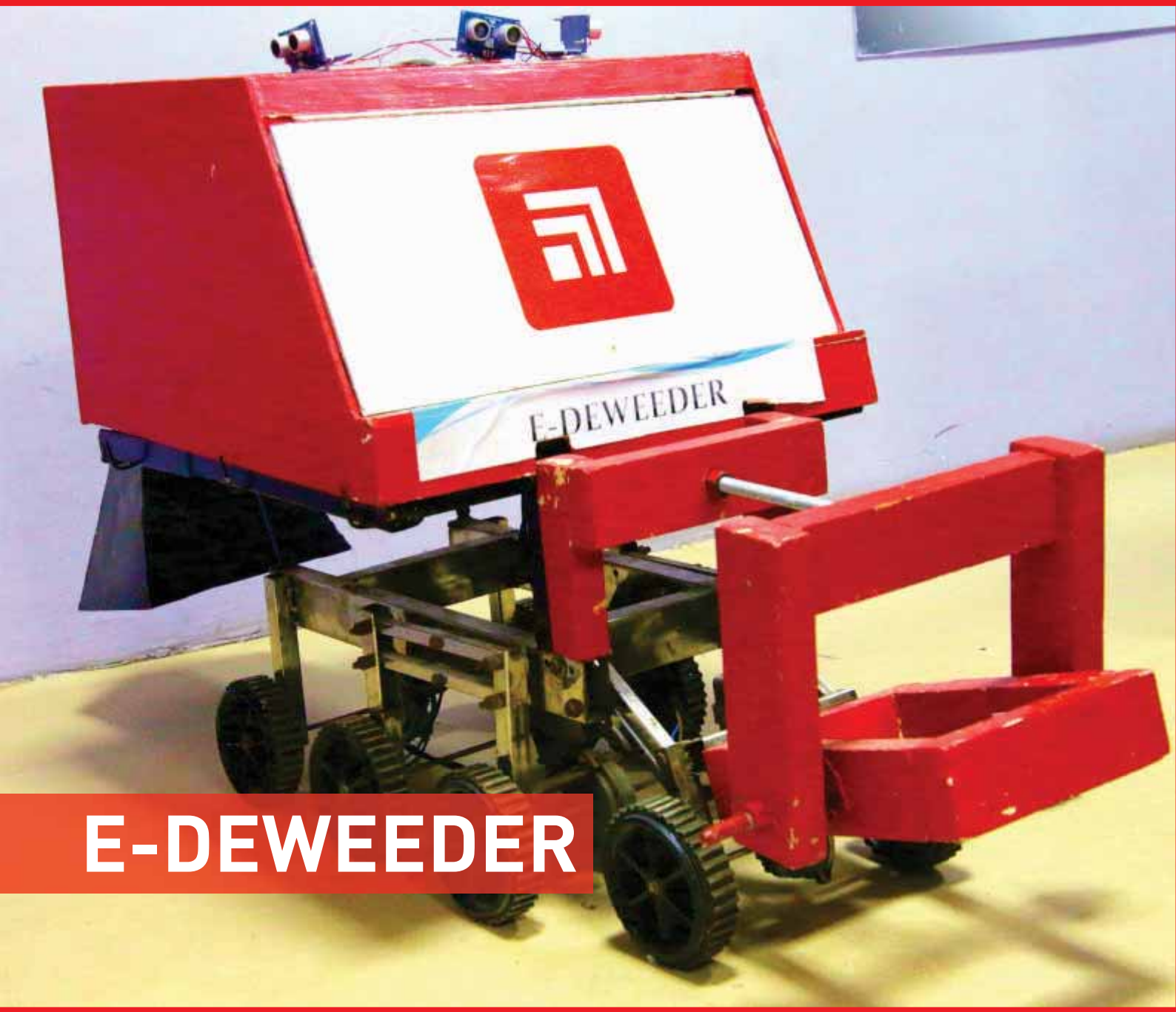
Mobile Adhoc Network:
Today security is the biggest challenge in mobile adhoc networks. At CURIN – CACR (Centre for Advanced Computing Research), we work to develop solutions for distributed key management that uses numerical methods. We use polynomial interpolations to apply distributed key management and the students are encouraged to implement the concepts in Android applications or respective simulators.

Design, Manufacturing and Product Development:
In the Design research area, everything from a steam turbine to a robot is conceived, designed, Fabricated, assembled, and delivered by an engineer who understands design, manufacturing, sustainability, and the supply chain. At Chitkara University we work on precision machining, machine design, product design and development, environment and sustainability, information and sensing, manufacturing process, and systems.

Sustainable Energy Development:
The Energy area focuses on technologies for efficient and clean energy conversion and utilization, aiming to meet the challenge of rising energy demands and prices, while simultaneously addressing the environmental issues. We at Chitkara University, work on engines, transportation, combustion control, Hydrogen research, electrochemical energy storage and energy conservation.

E- Pair

E-pair is a brand new concept in urban mobility which combines the potential of both cars and motorbikes. Based on the future of urban transport, E-pair was designed by Shivam Sahni and Divyam Deewan (both Mechanical Engineering students – now aspiring entrepreneurs) to ensure next generation performance in terms of ergonomics, driving, size and environmental factors. Its ultra compact size makes city roads feel wider thereby enabling ease of handling in confined spaces. It can run on crowded urban roads, and only needs a parking space of half or even a quarter that of a normal car. It delivers the convenience of a motorbike yet comfort & stability of a car. It is as maneuverable as a motorbike, but without the fear of getting wet in rain, and any need to wear a helmet. Since it is the vehicle that ensures balance, stability is maintained not only on curves, but on slopes and over uneven surfaces. Zero CO2 emissions makes it very environment friendly and anyone can drive E-pair safely and effortlessly without any registration or license.



E-DEWEEDER

Dr Nitin Saluja and his team worked on making de-weeding a hassle free operation by designing Smart sensor based E-Deweeder. The E-Deweeder is developed like an all terrain machine, which traverses the farms and kills the weeds (by cell necrosis) automatically after detecting them. The crop remains unaffected by deweeding operation. There are no chemical sprays to be used and no mechanical plucking or cutting of weeds. E-Deweeder is thus a cost and health effective alternate to chemical weedicides

Won DST-Lockheed Martin - India Innovation Growth Program 2016

- Won CII - India Innovation Initiative 2015
- Won IEEE Young Humanitarian Challenge 2014
- Endorsed by ICAR - Directorate of Weed Research, Jabalpur

A RESEARCH & PRACTICE LED CULTURE

E - Critical Care Unit

Dr S N Panda and his team is working to develop a cost effective and cloud based E-Critical Care Unit, which can be used to take care of patients in transit/remote/restricted places. The system is capable of transmission and monitoring of vital sign exceptions and periodic patient images/videos to remote doctors. It thus enables the doctors to diagnose and optionaly deliver life saving drugs using Multi Syringe Infusion Pump in presence of allied health care technicians. E-Critical care unit thus aims to provide timely medical assistance to patients till physical presence of doctor is mae possible and failitates quicker patient stabilisation leading to increase survival rate.

SOLAR LOUNGE

Shrey Dhiman student of final year Electrical Engineering won bronze medal for project 'Solar Lounge' in All India Design Competition for Engineering Students-2014 (EE) conducted by National Design and Research Forum, The Institution of Engineers (India).

MICRO ELECTROMECHANICAL SENSORS (MEMS) BASED AUTOMATIC WINDSCREEN WIPER

Hemant Bansal student of Masters Program filed a patent on Micro Electromechanical Sensors(MEMS) Based Automatic Windscreen Wiper under the guidance of Dr. Nitin Saluja and Mr. Vishal Mehta. The design relates to the field of automobile and particularly to the windscreen wiping mechanism. It uses Micro Electromechanical Sensors (MEMS) based automatic windscreen wiper claiming 100% cleaning of windscreen in comparison to 83% cleaning (The best in automobile segment). It is capable of automatically detecting dust and rain and cleans 100% area of the wind screen.

RFID BASED INTEGRATED PERSONAL IDENTIFICATION SYSTEM WITH SMART CARD

This system provides integration of various identification cards – driving license, PAN card, Debit and Credit cards into one card, based on integration of RFID tags. Thus, an individual is saved from the hassle of carrying multiple cards.

FOLDING BICYCLE

Lavan Jain, Divyanshu Sood and Akshdeep Chahl developed a novel bicycle folding mechanism, which is not only low cost but also very simple. The invention provides less time consuming and more efficient mechanism for folding the bicycle making it very very compact and easy to transport. The folding bicycle comprises of door hinge, crank set (bicycle chain) in the same alignment. Both the wheel axes coincide with each other to bring down folded version to half of its original length. Minimum Viable Product of this innovation is ready and is set to see the light of the day. When in the market, it has got huge potential to transform the way urban and rural community would commute.

IMPROVED MECHANISM FOR VALVE ACTUATION IN CAMLESS ENGINE

The present invention discloses an improved mechanism for valve actuation in camless engine. The inventors have replaced the sensors by using a laser light and LDR based circuit system. In this, a disc with a pin hole is attached on the crank shaft and it helps to track the orientation of the crankshaft. It helps to detect the instance at which the hole on the rotating disc comes in front of the laser beam. This signal goes to the Electronic Control Unit (ECU) which counts the Revolutions per minute (RPM) and helps to time the valves as per the crankshaft orientation. As the whole system is fixed outside the engine block. Thus, the laser light and LDR based circuit system used can be of low working temperature range. Therefore, reducing the cost of the system and making it possible for this technology to be used more often

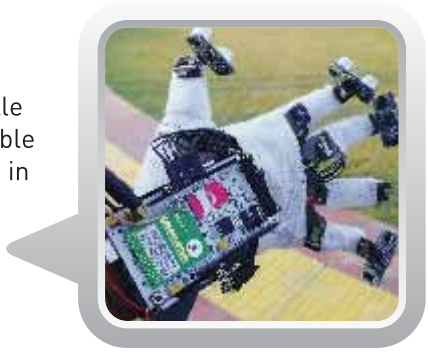
'INTELLIGENT SOLAR TRACKER WITH A COMPRESSORLESS REFRIGERATOR'

Nikita Aggarwal alongwith her team members Bhavika Mittal, Ravneet Kaur, Manmohit Kaleka and Kiran Chauhan got grant-in-aid of Rs. 20,000/- from The Institution of Engineers, Kolkata for their project 'Intelligent Solar Tracker with a Compressorless Refrigerator'.

LIVE BRAILLE

In 2014, our Engineering student Abhinav and his team developed Live Braille which is a breakthrough Innovation for Visually Impaired. It is a hand wearable glove that aids the blind to manouevre themselves and become self-reliant in terms of mobility.

- Recommended by NASA
- Winner of TiEGER award by TiE
- Awarded by IMechE UK
- Honored by Illinois State University
- Appreciated by various IITs



BIG BUSINESS GREETS OUR STUDENTS WITH OPEN ARMS ...

Strong academic legacy, personal attention, student centered education, outstanding teachers and a great place to study are just some of the highlights of the academic framework at Chitkara University. We have established an unassailable reputation for very strong on-campus recruitment by sheer virtue of our intensive focus on making our students 'industry ready'.

Some of the major companies that visited our campus this year and hired our Engineering graduates.

IT Industry

Some of the major companies that visited our campus this year and hired our Engineering graduates.

IT Industry

Some of the major companies that visited our campus this year and hired our Engineering graduates.

Semi Conductors / KPO / Consulting

BEROE The Future of Procurement Intelligence
Integreon
GENPACT
absolutdata Research&Analytics
Capital IQ A Division of Standard & Poor's
EVALUESERVE YOUR GLOBAL KNOWLEDGE PARTNER
Copal Partners
SAMSUNG
cadence
NXP
ARM
KPMG
Texas Instruments
SAP
hp
EY Building a better working world

Some of the major companies that visited our campus this year and hired our Engineering graduates.

Heavy Engineering /Automobile / Construction

Mahindra
L&T Construction
ESCORTS
DENSO
u-shin
JMD
VE COMMERCIAL VEHICLES A VOLVO GROUP AND EICHER MOTORS JOINT VENTURE
apollo
KEC INTERNATIONAL LIMITED
JINDAL
JCB
Godrej

Some of the major companies that visited our campus this year and hired our Engineering graduates.

Heavy Engineering /Automobile / Construction

TATA
TATA TECHNOLOGIES

JSW Steel

ASHOK LEYLAND

AIS
Asahi India Glass Ltd.

Coca-Cola

Hero

LUMINOUS
Engineering & Technology Services

IR
Ingersoll Rand
Inspiring Progress

JK TYRE & INDUSTRIES LTD

SML ISUZU

ISMT LIMITED
Solutions You Can Trust

Kirloskar

Punj Llyod

SONALIKA INTERNATIONAL
ISO 9001:2000 COMPANY

LG

ŠKODA

CINDA

THE 3C COMPANY
CREATE I CARE I CONSERVE

AFCONS
AFCONS INFRASTRUCTURE LIMITED
A Shapoorji Pallonji Group Company

COLLAGE GROUP
people make spaces

EVEREST
Complete Building Solutions

STERLING AND WILSON

ERA
Believe in difference

CUMI

SOBHA
PASSION AT WORK

Shapoorji Pallonji

LAFARGE
Building better cities

DLF
BUILDING INDIA

RAHEJA DEVELOPERS

NCC
NCC Limited

GMR
GMR Infrastructure

AMARA RAJA

OPPORTUNITIES AREN'T GIVEN

THEY'RE MADE.

CHITKARA MADE

DOCTORAL PROGRAMS

PhD Programs

We offer following PhD programs under CURIN:

Regular PhD (Get full time employment with CURIN) (Eligibility - Post Graduation)

- Electronics & Communication Engineering (ECE)
- Computer Science & Engineering (CSE)
- Mechanical Engineering (ME)

External PhD (For external candidates employed full time with industry / academia / research labs) (Eligibility – Post Graduation)

- Computer Science & Engineering (CSE)
- Electronics & Communication Engineering (ECE)
- Mechanical Engineering (ME)
- Applied Sciences
- Pharmaceutical Sciences
- Health Sciences
- Education

Direct PhD (Integrated ME - PhD) program (Eligibility - Bachelors degree)

- Computer Science & Engineering (CSE)
- Electronics & Communication Engineering (ECE)
- Mechanical Engineering (ME)

Regular PhD program / PhD (Fellowship)

Program Objectives

The regular doctoral program is different than a traditional PhD program. It is uniquely designed for promising professionals, who wish to pursue their careers in applied research and who seek the advanced knowledge, skills and perspectives of doctoral education.

Program Mission:
The Mission of our regular Doctoral Program is to enable researchers with inquisitive minds to build their careers in one of the applied research areas. We infuse them with theoretical knowledge to conceptually understand cotemporary issues in education, science and technology and simultaneously apply them to develop cutting edge technologies so as make a positive impact on the society. This enables them to do better problem solving and generation of workable solution to the complex real – life problems.

Educational Objectives:
The educational objectives of our regular doctoral program are to enable students to:

a) Apply theoretical and analytical competency in one of the research areas of CURIN, by working on funded projects with one of the advanced researchers.
b) Exhibit analytical and research skills necessary to create knowledge and apply it to emerging research problems.
c) Demonstrate expertise in specific topic through the design, execution and completion of doctoral dissertation that contributes to the knowledge and practice of the field.

Admission Eligibility:
A candidate is eligible for Admission and Registration for PhD program provided he/she has qualified:

a) For the award of Master's Degree of any recognized University/other qualification in a relevant discipline. The minimum qualifying marks are 60% at Post Graduation level (55% in case of reserved categories

And

b) In the Entrance Examination conducted by the University at the national level on the pattern of UGC followed by interview.

Age Limit: Candidate must not be more than 55 years of age on the date of the entrance test.

External PhD program / PhD (part time)

Program Objectives

The doctoral program is uniquely designed for accomplished executives / academicians, who seek the advanced knowledge, skills and perspectives of doctoral education without interrupting their careers.

Program Mission:
The mission of our external PhD Program is to enable successful professionals to pursue their academic career by infusing them with theoretical knowledge to conceptually understand contemporary issues and develop enhanced research skills. This enables them to do better problem solving and helps them in generating optimized solution to the complex real life problems.

Educational Objectives:
The educational objectives of our external doctoral program are to enable students to:

a) Apply theoretical and analytical competency in own working and functional area.
b) Exhibit analytical and research skills necessary to create knowledge and apply it to emerging research problems.
c) Demonstrate expertise in specific topic through the design, execution and completion of doctoral dissertation that contributes to the knowledge and practice of the field.

Admission Eligibility:
A candidate is eligible for Admission and Registration for PhD program provided he/ she has qualified:

a) For the award of Master's Degree of any recognized University/other qualification in a relevant discipline. The minimum qualifying marks are 60% at Post Graduation level (55% in case of reserved categories

And

b) In the Entrance Examination conducted by the University at the national level on the pattern of UGC followed by interview.

Age Limit: Candidate must not be more than 55 years of age on the date of the entrance test.

Direct PhD (Integrated ME – PhD) Program

Program Objectives

The doctoral program is uniquely designed for students who have earned their bachelor's degree and have realized that they have a research bent of mind. This program gives them an opportunity to seek admission into this program and earn a direct PhD degree.

Program Mission:
The mission of our Direct PhD Program is to mentor academically acclaimed students to embark on extremely rewarding research path and work for their doctoral research. An early entry will not only help them to keep their focus but also enable them to contribute to the research projects of societal importance with problem solving approach.

Educational Objectives:
The educational objectives of our Direct PhD program are to enable students to:

a) Apply theoretical and analytical competency in one of the assigned areas of research.
b) Learn and practice analytical research skills necessary to create knowledge and apply it to emerging research problems.
c) To continuously innovate and keep in touch with the latest industrial trends
d) Demonstrate expertise in specific topic through the design, execution and completion of doctoral dissertation that contributes to the knowledge and practice of the field.

Admission Eligibility:
A candidate is eligible for Admission and Registration for PhD program provided he/ she has qualified:

a) For the award of Bachelor's Degree of any recognized University/other qualification in a relevant discipline. The minimum qualifying marks are 60%. (55% in case of reserved categories

And

b) In the Entrance Examination conducted by the University at the national level on the pattern of UGC followed by interview.

Age Limit: Candidate must not be more than 30 years of age on the date of the entrance test

Exit Option:
After first two years of course work, the students have to appear for an aptitude test to continue their PhD. Only successful candidates go on to complete their PhD program. Rest of them take an exit option to earn a Masters degree by completing dissertation with a parallel batch of ME students.

Academic Framework of Regular & External Phd programs

Deliverable – 1 | Submission of Application Form

Deliverable – 2 | Acceptance by Chitkara University
After acceptance of the form, the admission process will be as follows
a) Written test
b) Personal Interview
The syllabus of written test is communicated to the candidates on e-mail.

Deliverable – 3 | selection for Doctoral Program
Once you are selected for the Ph.D Program at Chitkara University, you would need to deposit a fee of Rs.50,000/- towards registration and commencement of your course.

Deliverable – 4 | Coursework
Every candidate should complete four courses before working on Doctoral Dissertation. Every course is held twice in a year and on the weekends. Course work dates for the year are announced ahead of schedule so that one can plan well in advance. Each course will normally be for four days duration including the weekends.

Deliverable – 4(a) | Research Methodology
Deliverable – 4(b) | Advanced Research Methodology
Deliverable – 4(c) | Doctoral Foundation Seminar
Deliverable – 4(d) | Doctoral Concentration Seminar

Deliverable – 5 | Finalization of Research Proposal and Approval
This commences immediately after a candidate successfully completes the course work (i.e. Deliverable 4). A suitable research supervisor is allotted and the following process is followed for smooth :

- Extensive review of literature under guidance of the thesis guide.
- Selection of a topic and alternative topic.
- Preparation of research proposal
- Presentation research proposal to the Doctoral Research Committee (DRC)
- Approval of proposal and commencement of research

Deliverable – 6 | Progress Review Seminars
The candidate approaches the guide for a suitable schedule after the deliverable 5. A minimum of three progress seminars are held to assess the progress of the candidate in his/her chosen research area.

Deliverable – 7 | Publishing Tutorials
Each doctoral candidate is expected to publish a minimum of one research article in a domain specific journal during the entire research period. Progress seminars and the mentoring by DRC are useful to prepare such articles.

Deliverable -8
Deliverable 8(A) | Final Thesis Submission
Deliverable 8(B) | Defence of Thesis
Deliverable 8(C) | Award of Degree and Convocation at the campus

Program Structure of Regular & External PhD programs:

The Doctor of Philosophy curriculum includes compulsory course work, preparing research proposal and objectives, research work and progress, pre thesis and thesis defense.

The course work is composed of four components, namely, Research methodology, Advanced Research methodology, Doctoral Foundation Seminar and Doctoral Concentration Seminar. After successful completion of coursework, the research scholar works in close coordination and under strict supervision of his / her research guide and prepares the research proposal and identifies the objectives of the research work. Progress of the research work is reviewed every six months and finally the scholar submits his thesis and defends it. The Doctoral Research Committee (DRC) closely mentors and monitors this whole process.

Phase	Sub components	Outcome
Coursework	Research Methodology	Enabling scholars to purse research in a methodical manner
	Advanced Research Methodology	Enabling scholars to know about tools and technologies to process their data
	Doctoral Foundation Seminar	Enabling and equipping scholars with required tools and technologies in their broad discipline area
	Doctoral Concentration Seminar	Motivation to Research, b) identification of base paper(s), c) State-of-art, d) Identification of research gaps, e) Identification of Tools/ technologies for conducting proposed research
Submission of Research . Proposal		Extensive literature review / patent data bases, research proposal submitted to Dean (DRC) in prescribed format
Progress Seminar – I		Progress on identified research objectives
Progress Seminar – II		Progress on identified research objectives
Progress Seminar – III		Progress on identified research objectives
Pre Thesis Seminar		Achievement of all objectives, Thesis ready in final shape, Research paper(s) communicated to Conferences / Journals
Thesis Submission and defense		Eligibility for award of PhD degree

MASTER OF ENGINEERING

Full time Master of Engineering (M.E.) Programs in

- Computer Science & Engineering
- Electronics & Communication Engineering
- Electronics & Communication Engineering with specialisation in Embedded Systems and IOT in collaboration with ARM
- Mechanical Engineering
- Construction Technology & Management in collaboration with ACC

ACC LIMITED

M.Sc in Physics
M.Sc in Mathematics

Chitkara Institute of Engineering & Technology

Chitkara University (Punjab)

Chitkara Institute of Engineering & Technology established in the year 2002, has become the first choice among the student community in North India and this fact has been reinforced by being consistently ranked in the top 50 private Engineering colleges in the country.

For the academic year 2017, we are following postgraduate research programs

Full time Master of Engineering (M.E.) Programs in

- Computer Science & Engineering
- Electronics & Communication Engineering
- Electronics & Communication Engineering with specialisation in Embedded Systems and IOT in collaboration with ARM
- Mechanical Engineering

M.Sc in Physics | M.Sc in Mathematics

Chitkara School of Engineering & Technology

Chitkara University (Himachal Pradesh)

Chitkara School of Engineering & Technology (CSET) was established in the year 2008 at Chitkara University (Himachal) and is well on its path to become one of the leading Engineering schools of the country. Since inception, CSET has been at the forefront of forging strong collaborations with companies like ARM, Cadence, Microsoft, ACC, etc. In a short time it has become one of the premier Engineering institutes of North India.

For the academic year 2017, we are following postgraduate research program

Full time Master of Engineering (M.E.) Programs in

- Construction Technology & Management in collaboration with ACC LIMITED

Welcome to Research programs at Chitkara University, an exceptional program to advance your skills and accelerate your career in the field of applied engineering. Masters from Chitkara University not only ensures hallmark education standards but also apex professional training imbued with latest techniques and technologies.

Our mission

Our mission is to provide students with a deep foundation in engineering concepts alongwith required essential skills for a successful career in academia and research. To cope up with the ever changing engineering world, our curriculum is grounded on state-of-art engineering technologies and research problems. Our expert pool of academicians, researchers and industry experts is exemplary in imparting knowledge through advanced laboratory equipment and mentoring research oriented problems.

Our philosophy

We strive to offer a personalized, flexible, challenging, and rewarding educational programs, based on contemporary engineering needs and technologies. In doing so, we emphasize on the enduring foundations of the field and adhere to a pragmatic style of instruction blended with the best of art and science of engineering.

Our coursework

Our coursework offers a realistic balance between the foundation courses and applied courses. Foundation courses such as mathematics, programming concepts and computer systems etc. are meant to coagulate the primary engineering concepts of the domain, chosen by the student. The applied courses can either be chosen in accordance to the field in which an aspirant student is working or it can be chosen from listed options which are offered and designed to gain expertize in extending and implementing foundation courses.

Our distinguished faculty

Chitkara University is proud to have a team of renowned researchers and skilled technocrats as its faculty. Our collaborations with industry giants offer trainings, technologies and resources from the partner organizations, so as to make our students industry ready. Students have numerous opportunities to interact with and learn from our in-house faculty and industry experts from partner organizations.

As a Masters student

Being a Masters student at one of the world's premier university, you will be a member of unique and distinguished intellectual community and enjoy the many benefits of academic life offered by Chitkara University. A Masters degree from Chitkara University, will not only signify to the academia / research community and industry your deep understanding of the foundations of applied engineering but will also attest to your new and critical skills in the evolving field of technology. We truly live in a technology-driven world where in-depth technical knowledge, advanced skills and forward-thinking philosophies are essential for taking your career to the next level!

M.E.(Computer Science & Engineering)

Masters in Computer Science and Engineering indicates two things to prospective employers. Firstly, it guarantees that you have a broad grounding in computer science as a discipline. Secondly, it certifies that you have studied a particular area in detail and thus have additional depth in a particular specialty. The Masters of Engineering in Computer Science and Engineering is designed for professionals whose primary interest is in continuing on their career paths while acquiring critical skills to move them into positions and projects of greater responsibility and impact.

Framework for M.E. Computer Science & Engineering

Entry Point 1

Entry Point 2
(After Proficiency Exam)

Level-1
Two Foundation Courses

Level-2
Six Compulsory Core Courses

Level-3
Three Concentration Courses

Level-4
Three Elective Courses (Designed in reference to Concentration Courses)

Level-5
Internship Dissertation

Program Structure: Level 1

Foundation Courses

Concepts of Programming

- Data types (native and derived)
- Operators, precedence and exceptions
- Assignment and statements
- Control flow (Conditional logic and looping logic)
- Recursion functions, return types and parameters
- Console and file I/O
- Common libraries

In addition familiarity with the following tools and techniques is useful:

- Express algorithms as pseudo code
- Version control systems
- Integrated development environments
- Advanced libraries.

Mathematics for Computer Science

- Logic
- Mathematical Reasoning
- Functions
- Summations
- Relations
- Modular Arithmetic
- Graphs

In addition familiarity with the following tools and techniques is useful:

- Calculus
- Algebra

Level 2

Core Courses

- Advanced Data Structures
- Software Engineering Methodologies
- Advanced Database Management Systems
- Advanced Programming Languages
- Computer Networks and Security
- Research Methodology

Level 3

Concentration Courses

The concentration courses are a coherent group of advanced courses that is relevant to integrating computer science with your career goals.

Software Development

Rationale: This concentration provides a solid foundation for a career that involves design, implementation, and maintenance of large, complex software systems.

The Courses are based on:

- Computer Graphics
- Database Systems
- Programming Languages
- Compiler Construction
- Advanced Web Technologies
- Artificial Intelligence
- Testing

Artificial Intelligence

Rationale: Many problems do not have algorithmic solutions. Artificial Intelligence is the study of computer information processing to deal with such problems or to simulate some aspect(s) of intelligent behavior.

The Courses are based on:

- Natural Language Processing
- Knowledge Representation
- Internet Information Gathering Systems
- Multi-Agent Systems
- Language Acquisition
- Internet based reasoning

Bioinformatics/ Biotechnology

Rationale: Advances in Biotechnology and theoretical biology are fueled by computer technology. To fully understand how computers might be applied to this field, knowledge of Biochemistry and Cellular and Molecular Biology are important. The courses taken in this concentration emphasize such understanding.

The Courses are based on:

- Concepts and technologies in Biotechnology
- Use of databases, tools, and methods for the storage, searching, and analysis of biological molecules
- Computational problems common to bioinformatics and apply classical computer science solutions to biotechnology
- Data Mining

Cognitive Science

Rationale: Cognitive Science studies the computational and representational structure of the mind. This concentration provides a general background in Cognitive Science that will provide an understanding of how Computer Science will contribute to Cognitive Science studies, and how Cognitive Science can impact Computer Science.

The Courses are based on:

- Artificial Intelligence
- Language Acquisition
- Data Mining for Decision Making
- Neural networks

Web Design

Rationale: With the internet growing at such huge rates, everything is going to be tied to it soon. Java knowledge along with networking skills will prepare one well for dealing with internet applications.

The Courses are based on:

- Computer Networks
- Data Compression in Multimedia
- Simulation of Computer Networks
- Advanced Web Technologies
- Legal Issues of the Mass Media
- Theories of Mass Communication

Econometrics & Banking

Rationale: A concentration in Economics provides an opportunity to study the role that technology, especially computers, has played in money and labor management issues and how technology has changed the way, businesses on a whole interact with one another.

The Courses are based on:

- Intermediate Microeconomic Theory
- Banking and Monetary Policy
- Economics of Human Resources
- Econometrics
- Data Mining for Decision Making
- Knowledge Representation
- Internet Information Gathering Systems
- Data Visualization and Knowledge Discovery
- Trend Forecasting and Association mining

Game Design

Rationale: In order to have a good chance of getting a job in game programming, it is necessary to be familiar with the techniques and technologies used in designing games for today .

The Courses are based on:

- Educational Game Design
- Computer Graphics
- Computer Networks
- Simulation of Computer Networks
- Advanced Web Technologies
- Artificial Intelligence
- Artificial Intelligence and Games
- Elementary Linear Algebra

Information Technology

Rationale: An information technology professional today should be skillful and knowledgeable of networking issues, multimedia, databases, and programming for the internet, given the nature of today's applications. This concentration will prepare one in these important areas.

The Courses are based on:

- Multimedia and Interactive Design
- Database Systems
- Computer Networks
- Data Compression in Multimedia
- Simulation of Computer Networks
- Advanced Web Technologies
- Internet Information Gathering Systems

Management Information Systems & Project Management

Rationale: This concentration provides a general background in business, with a concentration in the use of computers as a management tool. As there are many different areas of business in which computers can be applied, there are many different business concentrations that could be appropriate, however, if your primary interest is in how business uses computers to gather and process information in order to make better management decisions, this concentration will provide a strong background in these areas.

The Courses are based on:

- Survey of Accounting
- Management information systems
- Decision Support Systems
- Data Mining and Data Warehousing
- Introduction to Technology in Business Process
- Systems Analysis and Implementation
- Enterprise Resource Planning
- Technological Problem Solving
- Problem Solving Project Management

Education Technology

Rationale: The fast emerging field of Educational Technology refers to the thoughtful design, implementation and assessment of new media and technology. Initiatives to give the necessary impetus to create effective learning organizations are required. Educational Technology is the domain of the techno-cognitive era.

The Courses are based on:

- Research, discovery and sustainable technologies
- Distinctive education through the pioneering use of technology
- Using technology to develop talent for sustainable growth of industry and society
- Thoughtful design, implementation and assessment of new media and technology to develop effective learning organizations
- Use and development of ICT concepts for Engineering Education

Level 4

Elective Courses

Designed to Support Concentration Courses

Application Development

- iOS Application Development
- Android Application Development
- Web Development
- Security
- User Interface Design

Data Analytics

- Foundations of Data Analytics
- Advance Data Analytics
- Big Data
- Data Warehouse
- Data Mining

High Performance Computing

- Big Data
- High Performance Computing
- Cloud Computing
- Data Science

Software Engineering

- Agile Software Development
- Software Testing & Quality Assurance
- Software Project Management
- Object Oriented Analysis & Design Using UML
- Automated Testing

Machine Learning

- Soft Computing
- Artificial Intelligence
- Pattern Recognition

Advance Programming Concepts

- Advanced Java Programming
- Advanced Object Oriented Programming
- .Net Programming
- R Programming Language
- Computer Graphics and vision

Networks

- Ad-hoc Networks
- Wireless Networks
- Network Protocol Design
- Advanced Network Forensics and Analysis

Level 5

Internship / Dissertation

The students write their research based dissertation under the supervision of a mentor (on-roll faculty member), assigned by university.

Eligibility - Candidate having BE/BTech (Electronics/Electrical/CSE/IT) or MSc[CS]/MSc[IT] or MCA with 60% marks or CGPA of 6 on a scale of 10 .

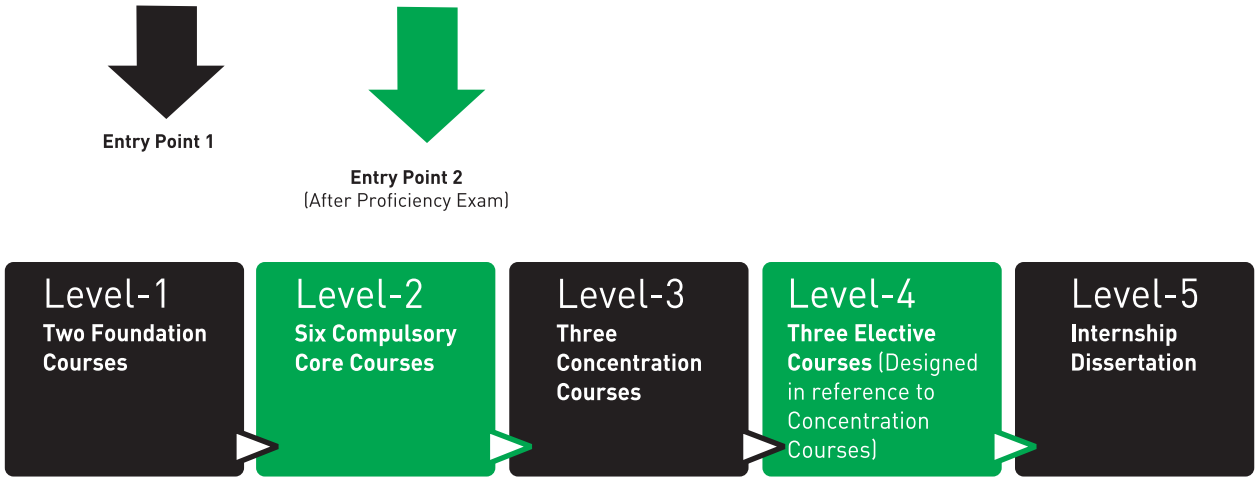
Course Fees - Rs.60,000 per semester

M.E. (Electronics & Communication Engineering)

Master of Engineering program in Electronics and Communication delivers advanced core knowledge required in the electronics area to allow graduates to work in many different disciplines of electronics. It also covers very important area of modern electronic computing. Most modern electronic devices and systems contain microprocessor or computing hardware. There is growing demand for electronics professionals having expertise in most modern computational and simulation tools.

Framework for M.E. (Electronics & Communication Engineering) & M.E. Electronics & Communication Engineering

with specialisation in Embedded Systems and IOT in collaboration with ARM



We offer two foundation courses "Digital Electronics" and "Mathematics & Basic Programming" that all incoming M.E. (ECE) students are required to take or place out, prior to start the course curriculum. These courses are of prime importance for students with little or no prior exposure/ experience in the field of Electronic and Communication Engineering. These courses are intended to provide students with foundation knowledge for the rest of the program. However, Students with prior knowledge/ experience in Digital Electronics and Mathematics Programming can opt for proficiency exam. We offer flexible options for prerequisite requirements, to ensure that our incoming students are prepared for the ever demanding curriculum.damental and introductory skills that are required to successfully begin masters level course work.

Program Structure:
Level 1

Foundation Courses

Digital Electronics
Candidate must have basic knowledge of digital electronics which includes:

- Number System & Codes
- Logic Gates & Boolean Algebra
- Combinational Logic
- Digital Arithmetic
- Latches & Flip-Flops
- Counters & Registers

Mathematics & Programming

Mathematics

- Introduction to Integral Calculus
- Matrix Algebra
- Differential Calculus &Differential Equations
- Complex Numbers
- Vectors

Programming Languages

- C/C++
- Core java

Level 2

Core Courses

- Research Methodology (Compulsory)
- Embedded System Design & Computing
- Computer Communication Networks & Protocols
- Applied Computational engineering
- Advanced Signal Processing
- Neural Networks and Fuzzy Logic

Level 3 Concentration Courses

The concentration courses are a coherent group of advanced courses that is relevant to your career goals.

Wireless Networks & Standards

Rationale: This concentration provides a foundation for a career that involves study and implementation of wireless networks and systems.

The Courses are based on:

- 3G/4G Wireless networks
- Smart Antenna designs
- Security issues in Wireless networks
- Wireless protocols & Sensors
- Wireless ERP/CRM

Mobile Communication & Technology

Rationale: This concentration provides latest developments and trends in mobile computing and technologies which involves mobile communication, mobile hardware, and mobile software. Moreover, it includes communication issues highlighting ad hoc and infrastructure networks as well as communication properties, protocols, data formats and concrete technologies.

The Courses are based on:

- Mobile application development
- Smart Mobile devices
- Mobile device management
- Mobile device Platforms & Applications
- Mobile Services Protocols
- Mobile based internet services

Antenna Design &Propagation

Rationale: This concentration covers all aspects of radio frequency engineering and design of antennas, that incorporate theory and practices to illustrate the concept of electromagnetic spectrum in cellular networks such as GSM, CDMA, UMTS.HSPA+, LTE, LTE-Advanced, Wi-Fi, Bluetooth, Zigbee, WiMAX, Satellite Communications, VSAT, two-way radio, and Public Safety Solutions.

The Courses are based on:

- Computer Aided Microwave circuit design
- Waveguides and Transmission lines
- Electromagnetic Boundary problems
- Guided wave optics
- Radar and remote sensing
- Micro-electromechanical antennas (MEM-tennas) and nano-antennas.
- RF MEMS
- Smart (adaptive) antenna arrays

Low Power CMOS VLSI Design

Rationale: This concentration involves methods to design and analyze digital circuits, to understand transistor operations, circuit families, area-power-performance analysis, layout design techniques, signal integrity analysis, memory design and clocking issues. These courses also cover various design methodologies such as custom, semi-custom, standard cell, arrayed logic, sea-of-gates.

The Courses are based on:

- Introduction to VLSI; CMOS; design metrics
- Combinational logic, layout, design rules
- Manufacturing process;
- Low Power design strategies
- Circuit families; Static and Dynamic
- Sequential Circuits
- Clocking and Synchronization
- Deep sub-micron designs
- Memory design
- Emerging topics; On-chip Sensors, Variability and Hardware Security
- CMOS system design, Floor plan, Placement and routing, Project design

Advanced HDL for Programmable Logic

Rationale: A concentration in HDL provides an opportunity to study the role that how technology has changed the way to implement large and complex digital system with low power and energy efficient.

The Courses are based on:

- HDL overview and latest developments
- VHDL syntax
- HDL test bench design
- Combinational and sequential circuit design
- Finite State Machine HDL design

Internet of Things

Rationale: This concentration aims to provide the innovative contributions concerning the issues in Internet of Things solutions that involve interconnected smart things which interoperate with the objective of solving problems and provide functionality or optimize multiple tasks.

The Courses are based on:

- Basic principles and instrument characteristics.
- Smart things network and communication:

architectures, services and protocols.
- Smart things: privacy, security and identification.
- Internet of Things systems and applications.
- User-centric solutions to define IoT collaborative process.
- Innovative IoT Solutions for handicapped persons.
- Smart things and RFID/NFC communications.
- Intelligent systems based on connected vehicles.
- Smart things networks for real world data management.
- Practical experiences in Smart cities, large-scale IoT systems.

Embedded Computation & Automation

Rationale: This concentration provides analytical and refined knowledge about processes and mechanism involved in latest embedded systems ideally suited for automotive, aerospace, defense, and consumer electronics, as well as for practicing engineers in the embedded systems industry who want to gain knowledge in state-of-the-art tools, theories, & specifications of embedded systems.

The Courses are based on:
- Analysis of embedded systems,
- Interface to the real-time operating systems,
- Hard and soft real-time operating systems, and fault tolerant systems.
- Embedded Processor Design
- Fuzzy System
- Embedded Application Development

Nano-Electronics

Rationale: This concentration imparts detailed theories about methods and processes involved to fabricate Nano materials, optimizing Nano instruments which can be used in automobile, defense, medical industries and some others areas.
The Courses are based on:
- Nanotubes /Nano-materials
- Nano-measurements
- Nano Fabrication
- Nano-Optics
- Biomedical Instrumentation
- Medical electronics

Advanced Signal & Image Processing

Rationale: This concentration provides knowledge about concept of digital communication, Digital Signal Processing which is the core technology of almost every modern electronic system. All Complex computational processes like seismic analysis and environmental modeling use DSP and other signal processing to interpret vast quantities of data.
The Courses are based on:
- Advanced Digital design
- Adaptive signal processing
- Mathematics for signal processing
- Speech processing
- Biomedical Signal processing
- Information theory & error control coding
- Signal processing for Communication

Control System

Rationale: This concentration provides information about methods, processes and technologies used in designing automatic control systems with integrated stability and driving capabilities.
The Courses are based on:
- Linear and Non-Linear Control System
- Robust Control Systems
- State-space Control System
- Modeling of Systems
- Transforms and Stability Measures

Efficient Embedded systems design on FRDM KL25Z

- ARM processor architectures
- ARM-based microcontrollers as modern embedded computing platforms
- Software design basics, software engineering principles

Basic SoC Design on CM0 DS & Nexys3 FPGA

- ARM processor architectures and ARM-based SoCs
- Capture the design of ARM-based SoCs in a standard hardware description language
- Low-level software design for ARM-based SoCs and high-level application development

Level 4 Elective Courses

Designed to Support Concentration Courses

Wireless and Tele Communication
- Digital Wireless fundamentals
- Smart Antenna design & Propagation
- Advanced Communication Security

VLSI Design
- Processor Architecture for VLSI
- Semiconductor device modeling
- CAD/CAE Designs

Nano/Opto electronics
- Nano-materials
- Nanofabrication characterization
- Nano photonics
- Nano-Optics

Advanced Programming Concepts
- Advanced Java Programming
- Advanced Object Oriented Programming
- C/System C Language

Digital Communication
- Coding for discrete sources & Quantization
- Random process & Noise
- Channel modulation, demodulation and interference
- Vector space & Signal space

Rapid Embedded systems Design on FRDM KL25Z
- ARM processor architectures
- ARM-based microcontrollers as modern embedded computing platforms
- Software design basics, software engineering principles

IoT Appcessory Design on ST Nucleo 401
- Smart phone architecture and technologies
- ARM-based SoCs: architecture and development
- Appcessory programming and embedded programming
- BLE technology
- Sensor networks and applications
- IoT fundamentals

Graphics and Gaming
- ARM Mali GPU architecture
- Core OpenGL ES rendering techniques
- Game design methodology

Real Time operating systems design on FRDM KL25Z
- Basic concepts of RTOS, task and threads
- Task scheduling and memory allocation
- File system and data management
- Parallel programing principles

Digital Signal Processing on Fm4
- DSP basic concepts such as sampling, reconstruction and aliasing
- Fundamental filtering algorithms such as FIR, IIR, FFT
- ARM-based microcontrollers as low-power DSP computing platforms
- Software programming basics and principles

Level 5

Dissertation / Thesis

The students write their research based dissertation under the supervision of a mentor (on-roll faculty member), assigned by university.

Eligibility - Candidate having BE/BTech (Electronics/Electrical/CSE/IT) or MSc(Electronics) with 60% marks or CGPA of 6 on a scale of 10.

Course Fees - Rs.60,000 per semester

M.E. in MECHANICAL ENGINEERING

Master's program in Mechanical Engineering has a strong flavor of core disciplinary and multi-disciplinary approach to research and learning that strikes a unique balance of trend-setting research, challenging coursework and real-world impact that is highly respected around the world. Hghlights of the program are:

- A core team of researchers directly feeding into teaching. You are thus supervised and taught by world-class academics on courses that are at the leading edge of thinking in the field.
- Broad range of advanced level courses across the breadth of Mechanical Engineering.
- Our strong links with industry ensures that our courses meet employer needs, one of the many reasons why our graduates are highly sought after by employers.

The institute encourages active learning to help build critical thinking skills of its students and prepare them for research. Quality research needs committed students to move the research agenda forward. For the students it is an ideal place to learn how high quality research is done. Being a science intensive engineering education, the students are more future ready and are able to adapt to new technologies. And thanks to the big emerging opportunities for new technologies, more and more students are today choosing a research-oriented job over a job that does not involve formal research.

Independent, non-classroom based learning and problem solving is a core aspect of the ME degree in Mechanical Engineering at Chitkara University. Upon completion of his/her dissertation the student shall be ready to contribute to discover innovative solutions for the problems of organizations, communities and society.

The program focuses on many core and advanced courses such as (but not limited to):

- Advance Thermal Engineering
- Advance Engineering Mathematics
- Product Design and Development
- Advance Fluid Mechanics
- Advance Heat and Mass Transfer
- Advance Power Plant Engineering
- Finite Element Method
- Modeling and Simulation
- Work Engineering and Ergonomics
- Computational Fluid Dynamics
- Design of Gas Turbines
- Research Methodology & Operation Research
- Renewable Energy Systems
- Sustainable Environmental Technologies

Eligibility - Candidates having BE / BTech (Mechanical Engineering) with 60% marks on CGPA of 6 on a scale of 10.

Course Fees - Rs.60,000 per semester

M.E in CONSTRUCTION TECHNOLOGY AND MANAGEMENT

in collaboration with ACC

ACC LIMITED

At Chitkara University, we understand and appreciate the potential of growth in infrastructure particularly in the construction technology and management and the need for program, which are practice oriented. We have collaborated with ACC Cement which is one of the foremost companies in Indian cement and concrete industry to offer ME program in construction technology and management.

About ACC Cement

17 MODERN CEMENT FACTORIES

50 READY MIXED CONCRETE PLANTS

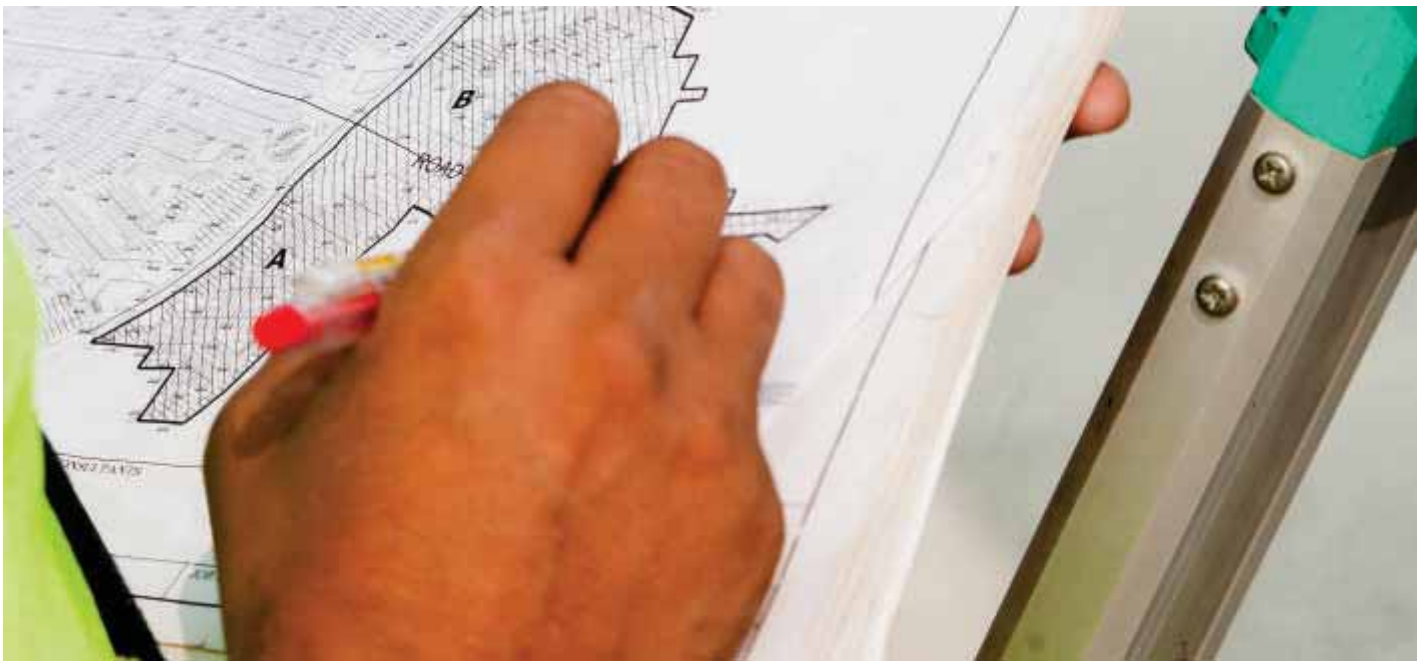
21 SALES OFFICES

10,000+ COUNTRYWIDE DISTRIBUTION DEALERS NETWORK

50,000 RETAIL OUTLETS

Course Overview

Construction engineering and management apply scientific and technical knowledge to the processes used to construct infrastructure projects. Graduates in Construction engineering and management are can apply their broader knowledge to the Architecture/Engineering/Construction industry. The instructional program is highly interdisciplinary and aims at developing strong abilities to conduct construction



engineering and management work involving basic concepts and principles, technical analysis, planning, design, and management, and the development of knowledge that positively impacts the A/E/C industry. The program provides the student with skills in planning, designing, and implementing construction processes and systems. The course offerings provide both a broad awareness of construction concepts and an understanding of scientific and technical knowledge to address construction problems.

Program Objectives:

- To train the students with the latest and the best in the rapidly changing fields of Construction Engineering, Technology and Management.
- To prepare the students to be industry leaders who implement the best engineering and management practices and technologies in the construction industry.
- To continually work with industry to enhance the program's effectiveness and the opportunities for innovation in the construction industry.
- To conduct research to develop advanced technologies and management approaches.

PROGRAMME OUTCOMES:

On successful completion of the programme, the students will

- Be able to apply theoretical and practical aspects of project management techniques to achieve project goals.
- Possess organizational and leadership capabilities for effective management of construction projects.
- Be able to apply knowledge and skills of modern construction practices and techniques.
- Have necessary knowledge and skills in accounting, financing, risk analysis and contracting.
- Be capable of using relevant software packages for planning, scheduling, executing and controlling of construction projects.
- Be able to use the latest softwares in construction management such as MS Project, PRIMAVERA and PERT MASTER

- Be able to apply the knowledge of repair, rehabilitation and retrofitting of buildings
- Be able to apply the knowledge of sustainability in civil engineering structures going to be used in the development of smart cities in near future
- Be able to use the knowledge of GIS in construction engineering and disaster management

Course work

The Course work comprises the study of following main courses and thesis submission

- Construction and Contract Management
- Green Buildings and Sustainability in Civil Engineering
- Construction and Environment
- Airport Construction Management
- Advanced Construction Technology
- Principles and Practices in Management
- Construction Methods and Equipment.
- Repair Rehabilitation and Retrofitting
- Software use in Construction Management
- Site Organization and Management.
- Estimation and Quantity Surveying
- Materials and Equipment Management
- Management of High-Rise & Special Structures
- Quantitative Methods in Construction Management
- Maintenance Planning and Control
- Thesis Submission

Career Opportunities

In India, organized construction industry is in the starting phase and hence offers vast opportunities to construction management professionals. A course in construction management trains techno managers to be leader in construction work management and open vistas to rich career avenues.

Big construction firms normally hire their own construction management people. CPWD, PWD, Delhi Metro, L&T, Gammon India Ltd., Indian Railways, National Highway Authority of India are some of the construction majors and potential employers in India famous for building structures worldwide.

All students who complete a degree or diploma in this particular field of management studies are eligible for employment in reputed construction and other companies. Graduate candidates specializing in Construction Management could become planning engineers, designers of infrastructure projects, controllers and monitors, procurement and coordination executives and appraisers of project proposals submitted to funding agencies. Post graduate students in Construction Management (PG Diploma, MBA, M.Tech etc) work as assistant managers, planning managers and project managers in construction companies in collaboration with specialists such as architects, structural engineers, electrical engineers, sustainability experts, finance experts, and others. Also many of them start their own construction management firms. Job opportunities are plenty in:

- large development companies
- international consulting firms
- multi-national architectural firms
- government sector organizations
- construction firms

Eligibility

1. Candidate should have passed B.E. / B.Tech / AMIE in Civil Engineering with minimum C.G.P.A of 6 /60% marks from the Government / UGC recognized University.
2. Candidate should have cleared GATE / Entrance examination conducted by State Government / Entrance examination conducted by the University.

Course Fees - **Rs.60,000 per semester**

2-Year M.Sc in Physics

The M.Sc Physics program a meticulous postgraduate study program that deals both in depth and breadth, with all the relevant areas and delivers substantial research training. It has particularly been designed to impart knowledge of the fundamental principles of several branches of physics with necessary mathematical and experimental orchestration. The program proposes to tutor a future generation of physicists with specialization in high energy physics, condensed matter physics, astrophysics, cosmology, medicine, mining, geophysics or other such frontiers of research-oriented modern physics. Still, the basic nature and prime focus of the program has been preserved. It is indeed a versatile degree that offers an optimal balance between a defined sequence of study and flexible elective options to the students. M.Sc in Physics will cover a wide range of topics in physics with an element of specialization in the research activities within the department, such as condensed matter physics, Nuclear Physics, Electronics, Computational Physics. The program will enable physics graduates to explore advanced physics topics and to specialize in a selected area by undertaking a significant piece of research work for their dissertation.

Core Modules

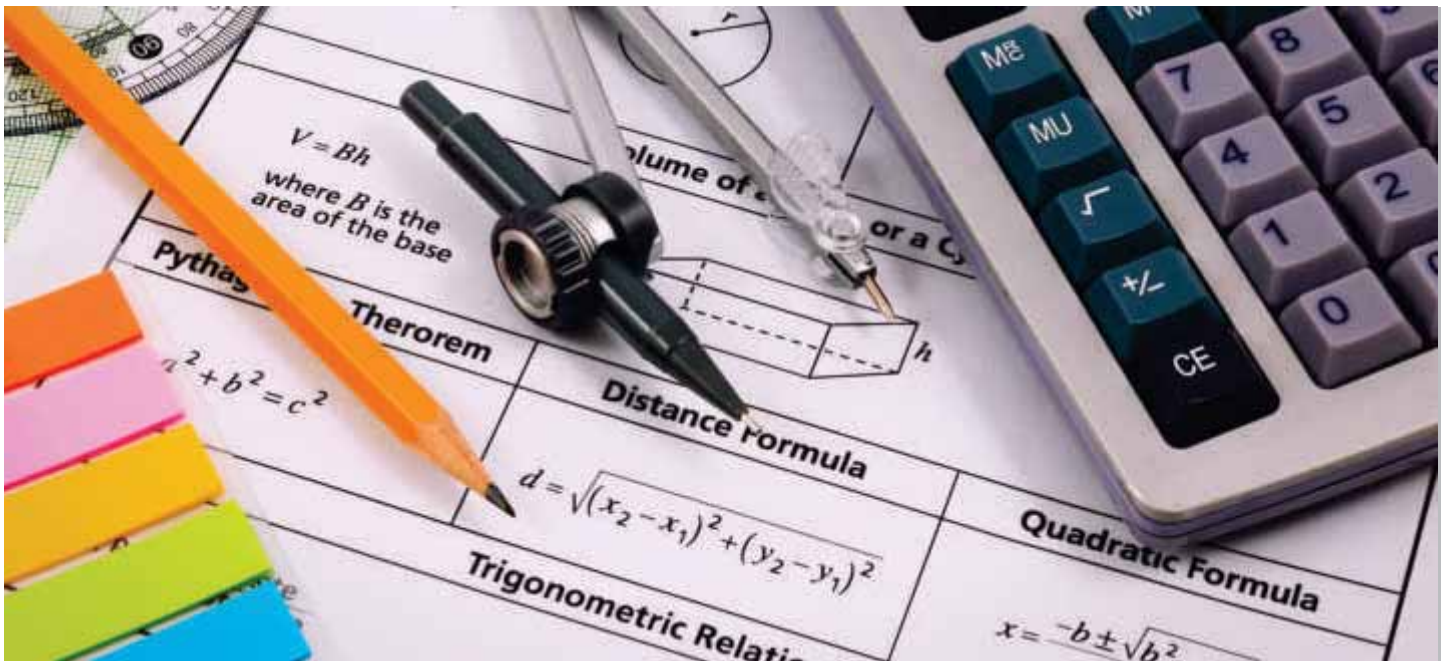
Mathematical Physics, Classical Mechanics, Quantum Mechanics, Statistical Physics, Electromagnetic Theory, Electronics, Condensed Matter Physics, Atomic and Molecular Physics, Particle Physics, Computer applications in Physics.

Career Prospects

Master graduates go on to take research degrees, or take up employment in a range of industries in roles such as material science, computer programming, teaching and research.

Eligibility - B.Sc (Hons in Physics)/B.Sc with a minimum of 50% marks aggregate

Course Fees - Rs.30,000 per semester



2-Year M.Sc in Mathematics

Mathematics is one of the most ancient sciences of the world and has wide applications in various fields of study and research.

A degree of Mathematics provides a range of skills which enable one to enter into a wide range of careers, in the areas of research, design and development, actuarial sciences, mathematical modeling, management services, computing, finances and academics. Training in mathematics is also necessary for research in many areas of Computer Sciences, Social Sciences and Biology

The purpose of the Master's Degree program in Mathematics is to give an advanced theoretical as well as practical knowledge of Mathematics.

Students are exposed to advanced research topics through electives and a mandatory project work.At the end of the program, students shall acquire sound analytical and practical knowledge to formulate and solve challenging problems and shall be well prepared to take up jobs in software industries, research and development organizations or to pursue higher studies in mathematical and computing sciences.

Our M.Sc in Mathematics degree graduates will be respected for their excellent quantitative and problem- solving abilities and win a wide range of rewarding positions in the public and private sectors. There has been an increase in the number of students studying mathematics being employed in banking, finance, insurance and risk-management. After the completion of our program, you may work in universities, scientific institutes, government or the private sector or go on to study advanced degrees. go on to research positions at universities

Eligibility - B.Sc (Hons in Mathematics)/B.Sc/B.Tech with Mathematics as one of the subjects with a minimum of 50% marks aggregate

Course Fees - Rs.30,000 per semester

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Admissions Helpline:
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CHITKARA UNIVERSITY

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